

SCALE JOURNAL

Scales, Weights and Measures

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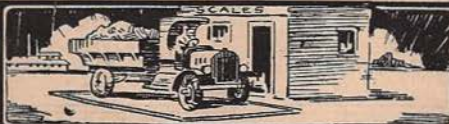
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Entered as second-class Oct. 23, 1914, at post-office at Chicago, Ill., under the Act of Mar. 3, 1879





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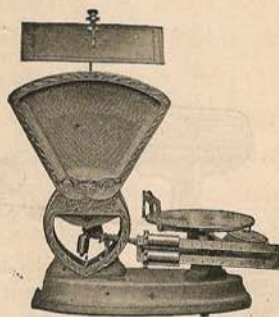
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LETTERS

and inquiries are respectfully solicited from our readers. The Editor desires to receive current news matter and articles on all matters of general interest pertaining to scales.

OFFICIAL ORGAN

This paper is the official organ of the National Scale Men's Association and the National Conferences on Weights and Measures of the United States.

PURPOSE

It is the purpose of the Editor to be fair in all matters pertaining to the scale industry. Every one who wishes to express an unprejudiced opinion in these columns is welcome to do so. We hope to promote honesty and square dealing in all phases of the scale business, from manufacturing to testing and operation.

ADVERTISING

Rates furnished upon application. The Scale Journal as a medium reaching the buyers of scales, testing apparatus, tools, warehouse equipment, etc., furnishes advertisers maximum service at a minimum cost.

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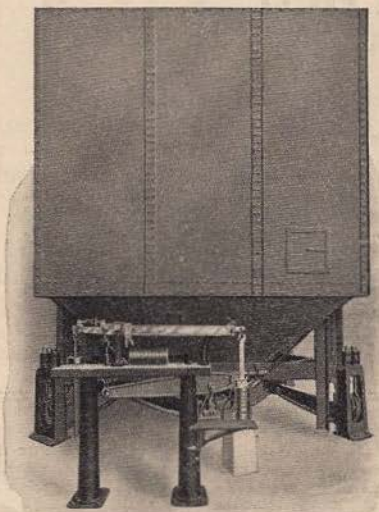
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Don't Think Like a Bug

FABRE, the French naturalist, found that insects had some very curious thought processes. He discovered that a mud wasp followed a series of steps in building its nest. First, a cell was made, then honey was collected and put in, then the eggs were laid after which the cell was closed. Then another was begun. If a hole were broken in the bottom of a cell after the filling of honey was started the liquid would run out. The wasp would note the unusual condition and examine the rent but all it could think of doing was to add more honey until a large wasted quantity dripped from the hole. Finally tiring it would lay the egg and close the cell and start on the next.

Care must be taken by scale men that they do not drop into a fixed routine of this character. Several years ago a poise was defective,—the spacer of the fractional bar of a type registering poise did not operate correctly. The scale man put a bushing under the spring in a manner to force it to act with greater pressure. This did not help matters at all, but evidently it was thought that it ought to have fixed it and it was let go at that. A later investigation showed that there was a wear or corrugation set up in the roller which was the cause of the trouble. The pressure of the spring had nothing to do with the difficulty, for by putting in a new roller the trouble was removed. This is but one of several instances that show that scale men sometimes have their minds on matters other than those which are immediately at hand, and habit alone guides. Routine or habit is sufficient for making mud nests but it does not work so well in repairing scales.

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Scale Journal

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Weighing Conditions and Weighmen vs. Good Scales

By W. E. THOMPSON

Minnesota Railroad and Warehouse
Commission

It has been said that good weights may be obtained over a poor scale on a good foundation.

This is predicated upon two major suppositions: First, that the operator of such a machine is careful, intelligent and scrupulously painstaking in his work; and second, that either he or someone for him keeps the machine in a clean and well maintained condition. It must be freed from dirt, rust, and the parts must be kept reasonably well in place.

As a corollary, the statement might be offered that a good scale, on a good foundation, is no assurance that accurate weights in its operation will result. This, I believe, to be evident to you all, for unless we have a combination of the two personal elements that are supremely essential, good scales on good foundations will not be productive of good results. These two elements might be stated as—the personality of the operator—and that he must be in love with his job. It is fundamentally necessary that the person doing the weighing be alive to the necessities, duties, and obligations lying upon him as the weigher; that whole-hearted interest in the employment be given, or results will not be the best.

In weighing we have to deal with two elements, one personal and the other mechanical. This paper is predicated upon the supposition that the mechanical element is fairly well perfect, or in other words it is a good and a sufficient scale for the service in which it is to be used. We must deal with the other side of the subject, and in connection with that, we wish to make a few observations that have come to us in the service through the past years:

If the operator should be indifferent to the following conditions:

1. Dirt in the scale pit, in the scale bearings, around the pivots and on the levers;
2. If there should be a repeated failure to daily examine the scale and all of the facilities, in the case of grain hopper scales, attendant upon the delivery of the grain to the scale;
3. If the beam is yanked sideways in the printing of the ticket, or for other reasons;
4. If buckets from the belt, sticks, strings or other obstructions accumulate in the garner;
5. If garner slides and garnerers should not be kept free from leaks;
6. Lax methods employed in the operation of the scale, in balancing the beam and in the other essential elements of weighing;
7. If there is a sustained and a repeated failure to balance the beam, daily or at every opportunity, during the day;
8. If the operator should permit the snubbing of cars on the track scale by the use of

sticks or a violent bumping of cars off of the scale;

9. If, as on one occasion was reported, weighing is done with the scale out of balance, due to instructions from superior officers of the owning concern, not to touch anything mechanical about the scale, other than to merely operate the beam and poise, good weights will not be the result.

Then, regardless of how fine the installation may be, how adequate the foundation and scale, good weights from such a machine will not be regularly obtained.

Analyzing some of the foregoing that are found occasionally; if a daily examination of receiving pits is not made to see that they are clearing or daily examinations of garnerers are not made, and elevator buckets, sticks or strings, coming up with the load cover or partly cover one or more of the discharge openings, thereby withholding a part of the load, faulty weights result. The car immediately being handled does not receive full credit for all of the grain it should. In such a case it may happen that these obstructions are removed in the natural course of handling the next car, consequently that car would receive more credit than it should, because there would have been weighed with it the grain that was held up from the preceding car.

If the garner slide is leaking, or if there has been a hole worn through the bottom of the garner, allowed to go unnoticed through a failure of the daily examination, then inaccurate weights are the result because, while the contents of one car is being weighed, the garner is supposed to be closed and tight, the next car is being received into it. Consequently during the out-flow of grain from the hopper there is also an in-flow into it from the car, which has not yet had its weight taken.

In one instance a scale was found a little over 1,000 pounds out of balance. True that it was against the scale owner, but it might just as well have been against the shipper. This out of balance condition was due to the positive instructions from the owner to the person doing the weighing, not to move anything except the poise; that the other mechanical parts of the scale would be taken care of by the owner's other agents. This was developed when the operator was asked if it was not known that the scale was out of balance, and the reply came very straightforwardly, "Why yes, of course, but my instructions are not to touch anything except to move the poise out to do the weighing."

In the snubbing of cars on track scales as in the violent bumping of cars off of a scale

by roughly pulling the next car or pushing the next car into it, makes an impact on the scale that is extremely detrimental to its life and to the accuracy of weights from it.

The foregoing all point to one thing, which is the conscientious study and observations of the needs, duties and obligations of a weigher. It points to the need of his putting into his work his whole interest and making that work of the highest quality. Without such a personal service, unstintingly given and without the interest of his employer at heart, the best of results will not be secured.

As to weighing conditions for which a scale owner is responsible and which militate against accurate weights, we are frequently confronted with out-of-level condition of approach rails, with their being out of alignment with the scale rails, and we sometimes find soft or spongy ties, which allow of a settlement of scale rails with the attendant dropping of the cars from the rigid approach to the yielding scale rail, to the extreme detriment of the life and the service of the scale.

In times past engines were frequently found standing on scales. They necessarily leak water, which of course is a detriment to the scales; and sometimes we have found fires pulled or cinders racked out onto the scale deck. Sand is discharged sometimes from sand boxes in an effort to suddenly stop an engine. Now, it goes without my telling you, that engines should as a general problem never cross a track scale on the live rails. There are exceptions to be made to that rule, but they are mighty few. It is just as important that engines should not stand on scales, even if on the dead rails. Then again, in the spring of the year, particularly in this northern country, we may find icicles in scale bearings, we may find frozen up conditions of the working parts of a track scale, due to neglect and failure of owners to properly keep surface water from entering a scale pit.

The pulling apart of scale frames either inside or outside, the twisting of these frames, due to shrinkage and warping or to settlements, are conditions conducive to and causing inaccurate weights.

The failure of elevator builders to first make provision for adequate foundation for the hopper scale in a terminal elevator is something that has been the curse of a scale man's life for a good many years. It has often happened in times past that plans for an elevator would be prepared and everything taken care of for the arrangement of machinery, and then someone would spring the bright idea that perhaps they had better have a scale put somewhere to weigh the grain. If a hole could be found for it anywhere, that is where it went, and often it was placed in a corner, and on the cribbing

(Continued on Page 14)

Tribute Paid Mr. Samuel Hastings—President Dayton Scale Company

Of general interest to all of the 2,000,000 readers of *The American Magazine* and of particular interest to all scale men is the feature article by Neil M. Clark in the September issue of that national publication in which the career of Samuel Miles Hastings, president of the Dayton Scale Company, is described in a story spread over nine pages. Publication of the article about Mr. Hastings is a signal honor not only to the Chicago man but, indeed, to all members of the scale world. In this article a detailed and graphic account is given of Mr. Hastings' life and his activities in the scale world.

Tribute, that is entirely justifiable, is paid Mr. Hastings for his efforts in developing the Dayton Scale Company from a humble beginning to an enterprise that now does an international business.

We, of the Scale Journal, humbly offer our congratulations to you on this increased public recognition of the valuable service you are constantly rendering.



SAMUEL M. HASTINGS,
President of the Dayton Scale Co.

THE WAYNE WINNER

A credit to the industry, an inspiration to the sales force, and a model house organ is the July issue of that breezy, informative journal, *The Wayne Winner*, published for the sales division of the Wayne Tank and Pump Company of Fort Wayne, Indiana. From its Pen Portraits of Prominent Personages in the *Wayne World* to the news articles about new Wayne products the magazine has a direct personal appeal to every one of its readers, all of whom are members of the organization who are located in various parts of the world. One of the features of the July number is a description of Wayne's new exhibition room, a new wing in the administration building at South Wayne. The editorial style of the issue is "easy to read and worth reading," is peppy, has punch, and obviously is the work of a trained editor. It is one of the best edited house organs published.

The Signs of the Times

The most important item of interest in a business way, is that the exchange value of the farmer's wheat-corn-oats-cattle-hogs-cotton dollar was worth \$1.07 in "All Commodities" in July. In other words, the composite price of those farm commodities was 152 per cent of the 1909-13 average, while Bradstreets Commodity Index, (the average price per pound of 96 different commodities of common usage) was 142 per cent of the 1909-13 average. This is the first time that the farm product's dollar has been at or above the comparative percentage of all commodities, since September, 1920.

A glance of the two curves of the accompanying graph will show immedi-

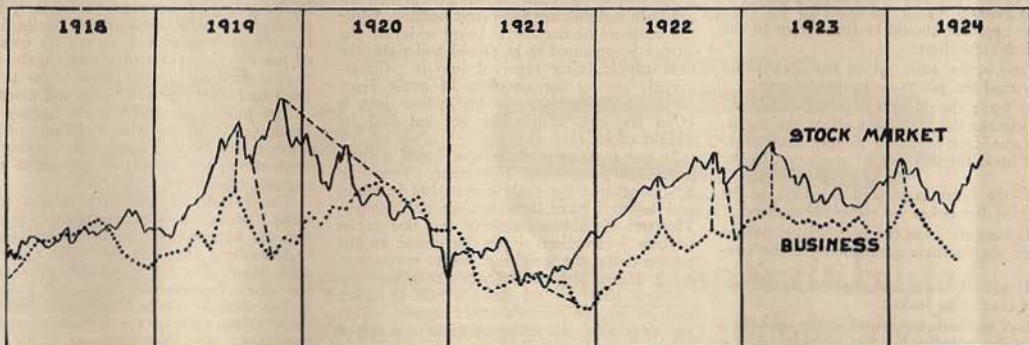
ately the similarity of their trend. Further study will show that the curve of The Stock Market precedes in its turns, and therefore forecasts the turns of the curve of Business.

Arrow lines have been drawn to emphasize where The Stock Market has made a top or bottom prior to the curve of Business. It will be noted that this precedence in the turn of The Stock Market comes as far as nine months ahead of the big declines that have occurred in business, such as in 1917 and in 1920.

The Stock Market made a bottom in April and May this year, and since then has been advancing. Business was still on the down grade during the first part

of July, but since then has shown many signs of improvement. Our forecast is that this improvement will continue until after the Stock Market has made a top. COMPOSITION OF CURVES: The Stock Market curve consists of the average closing price of 20 Industrial Stocks. This is the same 20 Stocks used in our forecast page of stocks in *The Round-Up*.

The Business curve is composed of the following factors: (1) Unfilled Steel Orders (2) Pig Iron production, (3) The Volume of Building in an average of 172 cities, (4) the Volume of Exports, and (5) the composite exchange value of the above-mentioned farm products for All Commodities.—MARK W. PICKELL.



*Footnote: As long as the Volume of Business is good, prices reasonable, and wages in proportion, Business is profitable and Capital (which is wealth loaned for productive purposes and receiving interest) is confident of the future. When these get out of proportion, then a re-adjustment must take place. So it is that a rising Stock Market and low or falling Interest Rates indicate confidence in the future and usually precede and therefore forecast a rise in the Volume of Business, accompanied by steady or rising Wholesale prices and increasing wages. Conversely, a declining Stock Market, and rising Interest Rates indicate a lack of confidence in the future, and usually precede and therefore forecast a decline in the Volume of Business, and (except in very abnormal times) a decline in Wholesale Prices and in wages.

The Merits of a Two Section Scale

By D. J. McGRATH, State Scale Inspector Minnesota Railroad and Warehouse Com.

The subject of this paper, "The Merits of a Two Section Scale," has long been a much discussed question among scale men. While the above subject does not specifically state what service a two section scale may be intended for, my remarks will be confined primarily to railroad track scales for commercial service.

There can be no question about the merit or practicability of a two section scale for master scale service, as they have long been in use and have proved beyond question their merit and efficiency.

For commercial purposes the writer is only able to find that a few of these scales have been installed. At this point it might be well to give a general definition of the term "commercial" as pertaining to railroad track scales.

The term "commercial railroad track scales" is generally intended to cover scales with 50 feet or longer effective weighrail. These scales are generally used at terminal railroad yards and industries for weighing various kinds of freight with cars of different length wheelbase.

The Naval Ordinance plant at South Charleston, W. Va., installed a two section scale in 1921 for weighing heavy guns. This scale is two hundred tons per section with 30 feet weighbridges and effective rail of 24 feet. As this scale was only in service a few months when the plant closed down, much cannot be said about the relative merits of the same.

The Duluth and Iron Range Railroad also installed one of these scales at Biwabik, Minn., for weighing iron ore. This scale is rated at 75 tons per section with weighbridge 28 feet long and effective weighrail of 24 feet. It was in continuous service during the ore season of 1923 and gave good results.

The above scales on account of their length could not in a strict sense be referred to as commercial scales.

For comparative purposes the merits of a two section versus a four section track scale will have to be largely of a theoretical nature.

In the following double set of paragraphs I will try to point out the advantages of a two and four section track scale:

Points in Favor of a Two-Section Scale

1. Simplicity of design.
2. Simplicity of inspection.
3. Simplicity of sealing.
4. Simplicity of maintenance.
5. Less friction points.
6. Elimination of loose main levers.
7. Elimination of sealing scales with slow or quick sections.
8. Reduction of friction will improve and help maintain a better S. R.

Points in Favor of a Four-Section Scale

1. Pivots one-half the length of a two section scale.
2. Simplicity of maintaining contact and alignment of shorter pivots.
3. Increased cost of handling massive weighbridge and levers of a two section scale for repairs or installation.
4. Facilities for shop repairing scale levers.
5. Increased cost of plate girder weighbridge to equip a two section scale.

9. Increased weight of weighbridge will have a greater tendency to absorb shocks from impact of cars on scale.

6. Increased cost of installing deeper pit to accommodate a two section scale necessitated by the greater depth of weighbridge.

From a digest of the above comparisons, it will be readily seen that both designs of scales have some very strong points in their favor, simplicity of design and what it accomplishes is a very strong point in favor of the two section scale. Less parts mean less trouble.

In all things mechanical of today, the paramount aim of the manufacturer is simplicity.

The minimum length of the end extension lever of a two section commercial track scale would be 27 feet with 30-inch pivots in the main levers where the sectional capacity is 150 tons. Serious consideration should be given to the practicability of repairing levers of these dimensions and pivots of this length. Levers with pivots of this length would be hard

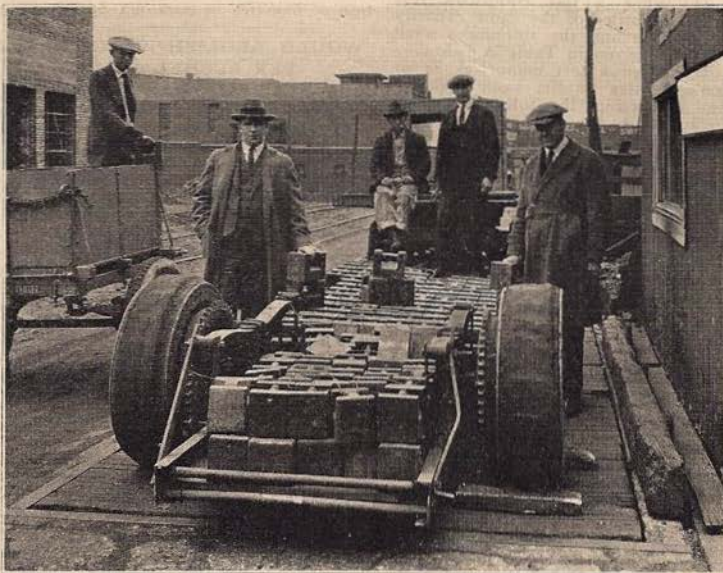
BIG WEIGHING MACHINE FOR CELITE PLANT

Lompoc, Cal.—The Pacific Southwestern Railroad is now using the track scale recently installed at the White Hills. It is a five-lever type "C" scale of 200,000 pounds capacity, with a length of 60 feet and can accommodate the longest freight cars used in transcontinental shipping. The construction of the scale pit required 120 cubic yards of concrete and two tons of steel reinforcing. The scale is used for weighing shipments of chalk rock originating on the branch line which runs from Lompoc. It greatly facilitates the handling of these shipments which often go out as full train loads since the cars can now go through without being held up for weighing on the main line of the Southern Pacific. Previous to the installation of this scale, the nearest point for weighing carloads were Santa Barbara on the south and San Luis Obispo on the north.

to set and keep in contact and alignment.

In this paper the writer has merely tried to point out the advantages of both designs of scales, so that scalemen interested in the development of a two section track scale for commercial purposes could better judge for themselves as to their merits or demerits.

Testing Scales At Kansas City



Recently a test on an auto truck and wagon scale at Kansas City was sponsored by Mr. Crowe, City Sealer, assisted by Mr. J. Stivers and Mr. Mitchell of the Coal Credit Bureau of Kansas City.

Scales were given a light and heavy test. The light test was made with an 800-pound trailer, and 2,200 pounds of standard test weights. The heavy test was made with a 3,000-pound trailer; using 10,000 pounds of standard test weights. The light test was first put on one end of scale, then on the other. Most

all scales passed the light test. Then the heavy trailer of 13,000 pounds was put on the scale, which showed the truth of things. Result of test—90 scales inspected, 26 condemned.

It was first thought that the owners of auto truck and wagon scales would be hostile toward such a test, but it has proven to be adopted by all the merchants who want such a test annually.

Mr. Crowe, City Sealer, is the second man from the left on the photograph, the man on the extreme right is Mr. Stivers.

ALL THE NEWS OF YOUR FELLOW SEALERS

Published Monthly

CHICAGO, SEPT

REPORT OF COMMITTEE ON SPECIFICATIONS AND TOLERANCES

Linear Measures

"Specification No. 1.—Measures of length shall be made of a material the form and dimensions of which remain reasonably permanent under normal conditions—for example, steel, brass, hardwood, etc.: Provided, however, that tapes for commercial purposes may be made of cloth, but only when this is wire-woven, and when by this means an actual and sufficient reinforcement and permanency is obtained."

Amend by striking out that portion of the specification beginning with the words: "Provided, however, * * *" to the end of the specification.

Milk Bottles—Tolerances

Amend this paragraph to read as follows:

The tolerances to be allowed in excess or deficiency on bottles to be used in the sale of milk or cream shall be as follows:

(1) When a test comprises less than 25 bottles of the same capacity and ownership, the tolerances shall be those given in Table A below:

(2) When a test comprises 25 or more bottles of the same capacity and ownership, the tolerances shall be applied to the average capacity of at least 25 such bottles, these to be taken at random when the whole supply available is not tested. The error on any individual bottle among those tested shall not exceed the values shown in Table A below. The error on average capacity of the bottles tested shall not exceed the values shown in Table B below. Provided, however, that in the case of bottles already in use, if the average error is greater than that above specified, then, if desired all of the bottles of the particular size and ownership in question may be treated as individual measures, in which case all of these bottles shall be separately tested, and the tolerances shown in Table C below shall be applied.

TABLE A

TABLE B

TABLE C

Capacity of Bottle	Tolerance on Individual Bottles	Tolerance on Average Capacity	Special Tolerance for Individual Bottles Already in Use
	Dr. In. Cu.	Dr. In. Cu.	Dr. In. Cu.
2 quarts	6 1.4 1.5	0.35	6 1.4 3 0.7
3 pints	5 1.2 1.25	.39	5 1.2 2.5 .6
1 quart	4 .9 1.0	.23	4 .9 2 .5
1 pint	3 .7 .75	.17	3 .7 1.5 .3
1/2 pint	2 .5 .5	.12	2 .5 1.0 .2
1 gill	2 .5 .5	.12	2 .5 1.0 .2

USE SCALES TO CHECK TRUCK WEIGHTS IN N. J.

The New Jersey state highway commission has six sets of 40-ton scales along the Lincoln highway between Newark and Jersey City. These are used to check up the weight carried on the heavily loaded trucks which traverse the route.

MUST WEIGH AND MARK LOAF BREAD

On September 1, there will go into effect in New York State an amendment to the department of farms and markets laws in relation to the regulation of the manufacture and sale of bread.

Except where otherwise provided, all bread manufactured for sale or offered for sale in this state shall be sold by weight only in 1 lb., 1 1/2 lb., or multiples of the one pound.

When sold in the standard units described, whether wrapped or unwrapped, it does not have to be marked.

Other size loaves, not of the standard units, when manufactured and offered for sale, when wrapped shall contain the name of the manufacturer and the net contents of the container; when unwrapped, they shall have a label or sticker attached to the loaf in a sanitary manner with the same information.

The public safety department is provided with authority to enforce the amendment and make regular inspection of bakeries in Saratoga Springs.

WOULD ABOLISH WEIGHTS PER BUSHEL IN NEW YORK

Legislation seeking to define a cord of wood and to abolish weights per bushel will be introduced in the Legislature next season, according to Charles H. Bulson of Theresa, Jefferson county sealer of weights and measures and president of the New York state organization of those officials.

The success which the legislation had in getting a standard bread loaf bill through the Legislature this year has encouraged the sealers to make another attempt at obtaining an exact definition of the cord or wood, officials say. They assert that the absence of such a definition is responsible for much inconvenience, if not fraud.

The Jefferson county sealer maintains that under present laws there is nothing to prevent dealers from selling a pile of chips four feet high and eight long for a cord of wood, regardless of the length or size of the chips. The association will seek to have a bill passed designating the size of the pile.

Elimination of weights by the bushel and the abolition of all existing dry measures would decrease chances of fraud by short weight, the dealers believe.

CALIFORNIA HAS STATE BREAD LAW

Mr. Flaherty, Sealer of Weights and Measures in San Francisco, said that the California State Bread Law very closely follows the model law endorsed by the National Conference of Weights and Measures.

COURT UPHOLDS DECISION ON "APPLE CIDER VINEGAR"

The United States Supreme Court has upheld, in a case brought by the Department of Agriculture under the Federal food and drugs act against the manufacturers of vinegar made from evaporated apples, the contention of the department that vinegar manufactured from dried apples should not be labeled "apple cider vinegar."

The legal labeling of cider vinegar has been the subject of controversy for several years. The department has taken the position that the term "cider vinegar" should be applied only to the product made from fermented apple juice while the manufacturers of vinegar from evaporated apples have contended that the vinegar made from dried apples is identical with the vinegar made from fresh apples and is therefore entitled to be labeled as cider vinegar.

Judgment for the Government was rendered in the lower courts, but in an appeal brought by the manufacturers the United States Court of Appeals reversed the findings of the lower court. The United States Supreme Court, where the case was finally carried, held that vinegar made from dried apples was not the same as that produced from apples without dehydration; and that, therefore, evaporated-apple vinegar should not be labeled "apple cider vinegar," the term generally applied to vinegar made from fresh apples.

The Supreme Court in this decision recognized a principle that is of great importance in enforcing legislation aimed to prevent misbranding in any form.

The court stated: "The statute is plain and direct. Its comprehensive terms condemn every statement, design, and device which may mislead or deceive. Deception may result from the use of statements not technically false or which may be literally true. The aim of the statute is to prevent that resulting from indirection and ambiguity as well as from statements which are false. It is not difficult to choose statements, designs, and devices which will not deceive. Those which are ambiguous and liable to mislead should be read favorably to the accomplishment of the purpose of the act. The statute applies to food and the ingredients and substances contained therein. It was enacted to enable purchasers to buy food for what it really is."

KEEPING THE CITIZENS INFORMED

Mr. Warren P. Riordan, Sealer of Weights and Measures for Lowell, Mass., spoke before the Advertising Club, outlining the work of his department.

STANDARD MEASURES FOR ALL BE LISHED BY HEA

The following standards for berries, when sold in state of California, state department of agriculture be strictly enforced according to Harold Strawberries—

12 ounce minimum 33.6 cubic inches; 1 ounce in deficiency.

Loganberries—12 ounce minimum 33.6 cubic inches; 1 ounce in deficiency.

8 ounces minimum half pint, 16.8 cubic inches; 1/2 ounce in deficiency.

Blackberries—12 ounce minimum 33.6 cubic inches; 1 ounce in deficiency.

8 ounces minimum half pint, 16.8 cubic inches; 1/2 ounce in deficiency.

Raspberries—8 ounces minimum half pint, 16.8 cubic inches; 1/2 ounce in deficiency.

For the purpose of following table for recommended:

Pint baskets
Half-pint baskets
Half-pint baskets

CONFER WITH FACTU

A conference to improve the quality of pharmaceuticals was held by the officials of Chemistry and a joint representative of the American Pharmacists' Association.

This conference an investigation in the direction of Dr. of the Bureau of in charge of the drugs under the drugs act. Wide dermic tablets, and galenicals from ards were shown in the course of After considering the joint committee its first efforts to dermic tablets in or formity of weight with standards. will be held in No

ERS NEWS

HELP MAKE THIS
PAGE MORE
INTERESTING

EMBER 10, 1924

Vol. 10. No. 12

MEASUREMENTS SERIES ESTAB- LISHED BY STATE LAWS

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DRUG MANU- FACTURERS

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CITY SEALER'S JOB IN CIVIL SERVICE

Payson Dana, State Commissioner of Civil Service, has received an opinion from Atty. Gen. Benton relative to the position of sealer of weights and measures in the city of Boston. He rules that the position is under civil service, which is as Commissioner Dana had previously ruled when Mayor Curley recently appointed James E. Norton to fill the vacancy caused by the death of Charles B. Woolley.

At the time Mayor Curley sent the appointment for confirmation, Commissioner Dana told the Mayor that the position was under civil service and should be filled through regular channels. Following that communication, there was a conference between Commissioner Dana, the Mayor and Assistant Corporation Counsel Joseph Lyons, the Mayor at that time requesting Commissioner Dana to ask Atty. Gen. Benton for an opinion.

Commissioner Dana has sent Mayor Curley a copy of the opinion and said that if the position was to be filled that requisition should be made in the regular way, adding that he would hold a special examination upon receipt of the requisition.

SUPERVISE MAKING BUTTER FOR THE NAVY

Some 430,000 pounds of America's best butter is now being made for the United States Navy by four creameries in Minnesota and one in Wisconsin. It is made from selected sweet cream pasteurized and churned without ripening. The selection of the cream and the entire process of manufacturing and packing the butter are under the immediate supervision of an inspector stationed at each creamery and working under the direction of the Bureau Dairying. All this butter is being packed in 5-pound hermetically sealed tins as it is to be used aboard our warships and may be taken through the tropics without refrigeration.

GASOLINE PUMPS O. K., CITY SEALER REPORTS

Grand Rapids automobile owners may feel assured that the corner gasoline man is not giving them short measure for the 94 cents they are paying out for every five gallons of "gas," William Geldersma, city sealer of weights and measures, announced.

A citywide testing campaign has revealed that all of the 265 pumps in use at service stations and garages are pumping out legal measure, Geldersma said. Oil containers used at stations were also tested, and out of a total of 2,000 in use, 161, considered a very small number, were condemned by the sealer and Asst. Sealer George Smith.

THE NEW MEASURES LAW

"The Sale by Weight Law" which became effective July 1st, 1924 provides that, "All commodities heretofore commonly offered for sale, or sold by dry measure or by basket, barrel or container of any kind, except as hereinafter provided shall be offered for sale or sold upon the basis of avoirdupois net weight or by numerical count only, and it shall thereafter be unlawful for anyone to use or employ any dry capacity measure, basket, barrel or container of any kind as a means of determining the amounts of quantities of any such commodities offered for sale, etc."

"The purpose of this law is to establish the practice of buying and selling dry commodities on a basis of avoirdupois net weight or numerical count."

"It abolishes the dry capacity measure from use in trade in New Jersey."

"It permits the sale of certain commodities by the bunch, such as beets, radishes, and other vegetables which by custom have been sold in this manner."

"It allows the sale of berries in standard containers as theretofore."

"It permits the sale of commodities in original standard containers, viz: those containers of standard capacity as used by the grower or packer, provided the contents of such containers have not been removed or repacked subsequent to original packing, and upon which is plainly marked the exact quantity of contents in terms of weight, measure or numerical count."

The law applies to retailing and will not directly affect the farmers, who dispose of their products in standard size carriers.

SELLING BY WEIGHT

Wisconsin Sealers of weights and measures will request legislation at the next meeting of the legislature requiring that eggs and oranges be sold by the pound instead of by the dozen. It is expected that they will meet with the opposition of commission merchants.

INSPECTION MADE

from
JULY 1, 1923 TO JUNE 30, 1924
IN CITY AND COUNTY OF SAN FRANCISCO
Thomas Flaherty, Sealer

Type of Scales	App'd	Adj'd	Con'd	Conf.	Totals
Counter	2,958	316	26	8	
Spring	2,841	147	28	21	
Computing	3,965	506	101	7	
Platform	3,369	956	203	10	
Weights	13,133	1,925	358	46	15,462
Measures (Liquid)	19,932	51	7	147	20,137
Measures (Linear)	51,249	1	116	231	
Pumps	6,970				58,567
Merchandise in packages and containers	58,219				58,567
re-weighted	2,072	206	151		2,429
Milk Bottles	442,394		2,660		445,054
Arrests 15	6,080,664		85,538		6,166,202
Fines	\$370.00				Persecutions 13

UTAH SHOULD ADOPT BETTER WEIGHT AND MEASURE LAWS

Legislation which would place responsibility for inaccurate scales and measuring devices, including gasoline pumps, on dealers, rather than on the state as is virtually the effect under the present law, was favored at the regular meeting of the state board of agriculture of Utah. The action was taken on recommendation of Hugh J. Cannon, chief of the dairy and food division of the state agricultural department.

According to the present law, scales and measuring devices must be inspected once a year. Mr. Cannon states that this is utterly impossible and as it is illegal to sell commodities weighed on scales which have not been inspected, many lawbreakers are made. Mr. Cannon also states that:

If a dealer's scales are short, it is impossible to obtain a conviction so long as they have been inspected within a year. Thus responsibility is placed on us. He contends that it is as much the duty of dealers to see that their scales are accurate as it is that they do not sell underweight butter. A merchant who sells any food in package form must be sure that he gives full weight or he is subject to prosecution, but if a product not in package form is weighed on scales, which may have got out of adjustment since they were tested, he is safe even though he may be giving short weight. A man can sell a short gallon of gasoline and be safe, but he is in jeopardy if he sell a short weight loaf of bread or a pound of butter.

We believe that if the state of Utah would adopt the model law endorsed by the National Conference of Weights and Measures, it would be much more satisfactory than the suggestion made by Mr. Cannon. In the first place it would provide enough sealers to test the scales as often as necessary. It would also provide for the conviction of merchants who openly give shortweight regardless of when the scale was inspected. If Mr. Cannon's suggestion is adopted the unscrupulous dealer will be able to get away with murder and instead of conditions being better than they are now, the state of Utah will be harking back to the Dark Ages.

LABEL GRAPES SOLD IN LUG BOXES

Grapes in lug boxes, whether lidded or uncovered, are considered food in package form, according to a recent announcement by Dr. C. A. Browne, chief of the Bureau of Chemistry. As such they come under the Federal food and drugs act which requires that the containers be marked to show the quantity of grapes in the package, if they are shipped into interstate or foreign commerce.

Installation and Maintenance of Motor Truck Scales

By A. F. HAINLIN

Department of Weights and Measures
Winsted, Minn.

Much has been said, and almost as much written, with reference to the necessity of proper installation of scales, and the care that should be given to them after they are installed. Nothing I might say will add to the knowledge of the engineering world on these questions, but from the point of view of the scale inspector there seems to be just a few points where there is either a lack of specific requirement or a lack of general understanding as to the importance of proper installation and maintenance.

To secure good weighing results it is indisputable that four things are necessary: First, a good scale of the type and capacity suitable for the service required of it. Second, a foundation and installation that is substantial, and this includes a reasonable degree of permanency. Third, care and prompt attention to faults that may develop with use or abuse. Fourth, intelligent and careful usage.

There can be no denying the fact that if any one of these factors is neglected, the result desired is not attained, but this brief discussion is confined to the second and third only.

I have heard it remarked by a man considered to be well versed in scaleology, that a poor scale on a good foundation was superior in most instances to a good scale on a poor foundation—my experience leads me to believe that he was right. Our experience further leads us to know that proper installation is becoming more recognized as being the first essential of good weighing, but there is still room for improvement. It is not at all uncommon to find owners who recognize the need of modern scales of a much higher capacity than those which were suitable in the past years to attempt to save part of the increased cost by cheapening the installation. False economy never had a better illustration.

There is a possibility, however, that the users are not altogether at fault and that part of the blame for this condition must rest on those to whom the users look for guidance in the matter of scale installation and use. The specifications as adopted by the Railroad and Warehouse Commission in this, and I believe most other states, provide that the foundation of all built-in scales must be firm and substantial. This is very good as far as it goes, but the question in the mind of every inspector is whether or not it is definite enough. There can be no doubt that at least there is left a wide opportunity for an honest difference of opinion as to what constitutes "firm and substantial."

I well realize that there are difficulties in the formation of specific requirements covering scales of various capacities, for width and depth of foundation wall, for clearance between the levers and floor of the pit, for provision for entering the pit, for cleaning and inspection, for prevention of the accumulation of water and dirt, and for all the other factors that

may enter into the question of proper installation. The fact remains, however, that without precise and definite regulation of these questions, the inspectors are handicapped as well as the owners, by having to rely on their own individual judgment.

The matter of protective housing is another point which appears to be somewhat neglected. We have all experienced the situation which is more common we believe in this western part of the country than in the eastern part, where it has been impossible to test scales because of high winds to which the devices are too often entirely exposed. It must be true that the users of these scales cannot wait for calm days in which to do their weighing and there must be a resulting loss of accuracy. This is especially true in the case of stock scales which are additionally handicapped by the retaining fence built on the platform of the scale. In many cases the cost of scale housing would, in the protection afforded the scale and the accuracy gained in weighing results, pay for itself many times during the life of the scale proper. It probably would be difficult to classify scale installations so that housings could be required in those cases where it was most essential, but it is possible that through the influence of those who are working disinterestedly, as are the members of this organization, for better weighing results, a large proportion of the scale users have voluntarily done such things as are necessary to their best interests.

Proper installation of motor truck scales naturally tends to reduce the time and labor necessary for proper maintenance, first because the scale properly installed needs much less care than is otherwise the case, and second because in a proper installation provision is made for giving such care as is required. No inspector, however low he may be classed at times, cares to crawl into a dirty, slimy pit where there is just room for a starved rat to move around, and it seems only reasonable to assume that if the owner of the scale has too small an interest in his property to permit such a condition, the inspector would hardly be expected to unreasonably exert himself to remedy.

Such a condition is, of course, extreme, but it is not uncommon and without detracting from the credit due the considerable percentage of owners and users who take care of their scales, there is still too large a portion who consider that a scale is some mysterious device which in spite of all the laws of physics must function unaffected by wear or rust, by decay or dirt. This class we also find are those who are the first to criticize whoever dares to attempt to change this cherished notion, and to resent the failure

of an inspector to correct in a few minutes the faults due to years of neglect.

Scales are simply machines constructed to so function as to indicate through a system of levers or a combination of levers and other mechanism, the weight of whatever is placed on the scale platform. No machine yet made has ever functioned without a constant change in the parts and this change is in direct proportion to the attention that is given. Cleanliness and protection from rust are the two great principles of scale maintenance as well as the principles that apply to other machines. No one can specify how often a scale should be looked over as the conditions under which it operates must regulate the amount of attention required. It can be stated without fear of contradiction, however, that it should be looked over often enough so that it is kept clean and free from rust insofar as is possible at all times.

The purpose of scale inspection primarily is to see that scales used commercially are accurate within reasonable limits. It is somewhat immaterial to the inspector whether or not a particular scale is correct or incorrect. It can be said, however, that the inspector counts his day well spent when he finds a large percentage of the equipment he tests showing the result of proper care. No service rendered by the state is more impersonal in character than the service of Scale and Measures Inspection, and for that reason we are advocating a degree of care in the installation and maintenance which will make our work so unnecessary that it may be done away with.

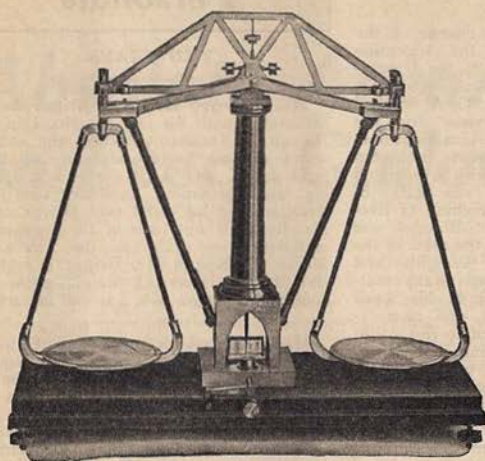
FEDERAL HAY LABORATORY OPENED

Standardization of hay and broom-corn is being furthered by the Department of Agriculture, by the opening of a laboratory at Kansas City, Mo., August 1. The office is located at 1513 Genesee Street and will be used as the field headquarters for the market news service on grain, hay, feed, and seed. On account of the large volume of alfalfa and prairie hay available for examination on the Kansas City market the department expects that a large amount of the work of the standardization of these hays will be done at Kansas City.

ADVICE ABSOLUTELY FREE

He who sitteth upon a
Throne
Or in a Presidential
Chair,
Hearing the complaints of the
Multitude,
Hath nothing on him
Who sitteth behind the
Wheel
Of the Family Car
With his Wife in the
Back seat.

*It takes sixty-five muscles of the face to produce a frown and only thirteen to produce a smile.
Why waste your energy?*



No. 9570 Gurley Precision Balance
Price \$450.00

Sensitive to $\frac{1}{7000}$ Lb.

Consider how accurate must be the balancing of parts and how frictionless the bearings for a one grain weight to move fifty pounds!

The Gurley Precision Balance has a capacity of 50 lbs. or 25 kilo. in each pan, with a sensibility of 1 grain or .06 gram at full load.

This balance is extremely accurate and sensitive for such capacity. All parts are of sufficient strength to support an overload of 100% without perceptible strain, making possible a long period of service without readjustment.

Confidence in weighing is established by the use of this balance. It is valuable, not only as a part of the equipment of City, State and National Departments of Weights and Measures, but many industrial concerns have found it economical to use a balance of this accuracy and quality.



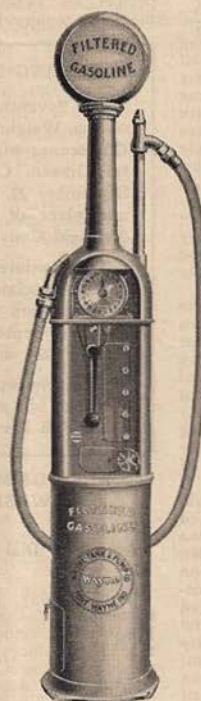
W. & L. E. GURLEY

Established 1845

TROY, N. Y., U. S. A.

Wayne New Hand Operated Pump a Great Success

One reason for the great success of our new Model 480 is that every known feature and device contributing to accuracy of measurement have been used in the design and construction of this new 5-gallon out door pump.



The plunger is durable and absolutely leak proof. The full stroke of the plunger is made certain by the tell tale on both sides of the housing indicating that the plunger has been lowered to the bottom of the stroke.

All valves have accurately ground seats and are proven to be absolutely tight by a test both before and after assembling.

Write for Bulletin 480

Wayne Tank & Pump Company

757 Canal Street, Fort Wayne, Indiana

Division Offices in: Atlanta, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Detroit, Kansas City, Los Angeles, Memphis, Minneapolis, New York, Philadelphia, Pittsburgh, San Francisco and St. Louis

Warehouses in: Philadelphia and San Francisco

Foreign Offices: Toronto, Ontario, Canada

In London: Wayne Tank & Pump Co., Ltd.

In Paris: Wayne Tank & Pump Co., S. A.

An International Organization with Sales and Service Offices Everywhere

Wayne

HONEST MEASURE PUMPS

RADIO

by
3CAB

Superheterodyne Receivers: It looks like it is going to be a superheterodyne year. The month of November will probably find the construction of enormous numbers of these sets by the home radio constructor under full swing. Some of the best and most up-to-date information on this type of receiver is to be found in the June and July issues of QST, the magazine of the American Radio Relay League and the official organ of the organized amateurs of the United States and Canada. Further articles will appear in the following issues. These articles are edited by S. Kruse, formerly of the Bureau of Standard and Weights, Washington, D.C., and well known among radio amateurs of both hemispheres. The articles bring the subject up to date and give a world of information and advice available nowhere else. The fact that the superheterodyne type of receiver can be interfered with under some circumstances by long wave code stations at great distances is frankly dealt with, and the fact that the superheterodyne oscillators can cause serious interference with other receivers is properly emphasized, but the important fact is pointed out that by the use of only 20 volts on the plate of the oscillator the trouble in radiating interference is greatly reduced.

Quartz Crystal Transmitters: Quartz crystals are now being used to govern the wave length or frequency of amateur radio transmitters. Before long many stations will possibly have these crystal controls which will fix the tuning so that the wave length will be of extraordinary constancy and independent of swinging antenna or accidental variations in the circuit or tube. The scheme is one of marvelous elegance.

When a quartz crystal, cut a certain way, is squeezed, electrical charges of contrary sign appear in opposite portions of the crystal, and conversely, when charges of contrary sign are imposed on the crystal its shape will change a microscopic amount. This principle is employed in the transmitter by placing the crystal so that the electrical currents and charges produced act to set the crystal in mechanical vibration which reacts electrically on the circuit and controls the frequency of the radio waves. The crystals for amateur work are not large, in fact they have to be so small that the natural period of vibrations is between one and two million times a second. Experimental work of this type of transmitter is being intensively pushed and a rapid development is anticipated.

1924 WEATHER NOT UNUSUAL

Much comment is heard concerning the unseasonable weather this year, but in the main no single element of the weather has been wholly adverse. Combinations of moderately unfavorable elements have produced markedly unfavorable conditions. Conditions similar in many respects occurred in the spring of 1907 and again in 1917, so that the present season is not unprecedented, save probably over a moderate area from the Ohio Valley eastward, where wet weather so greatly delayed planting that corn and some other crops are less advanced than has been the case in many years.

VISIT FROM MR. H. BINGGELI OF ARGENTINE

Mr. Henry Binggeli, in charge of the weighing of livestock for the Argentine Government, was a visitor to the Department of Agriculture in Washington recently to consult with Mr. C. A. Briggs, Livestock Weight Supervisor for the Packers and Stockyards Administration. The Argentine Government requested France to supply them with a weights and measures engineer to take charge of and develop the proper weighing of livestock in Argentina, and Mr. Binggeli was chosen for this work from the staff of the International Bureau of Weights and Measures at Paris, France. Many matters of important interest to his work were developed in his visit, and, as a result, he now plans to return to this country again in the early spring in order to accompany Mr. Briggs to various points throughout the United States, in order to perfect his equipment and methods to meet the requirements of Argentina.

COMING CONVENTIONS

The Seventh Annual Convention of the Weighmasters' Scalesmen's Conference will be held at the Hotel Gibson, Cincinnati, Ohio, on September 22, 1924, the same time and place of the Grain Dealers' National Convention.

The Conference of the Pennsylvania Association of Inspectors of Weights and Measures will take place on September 30, October 1 and 2, 1924, at Harrisburg, Pa.

Massachusetts Sealers will meet October 9th and 10th at Anawan Hall, Fall River, Mass.

SCALE COMMITTEE MEETS IN WASHINGTON

Automatic Dial Scales to Be Studied

On Thursday, July 31st, the Subcommittee on Scales of the American Railway Engineering Association met in Washington in the offices of Mr. Herman, vice-president of the Southern Railway. Those in attendance were Mr. R. Hayes of the Southern Railway, chairman; Mr. C. A. Briggs of the Packers and Stockyards Administration, Mr. Epright and Mr. Harrison of the Pennsylvania Railroad, Mr. Hunter of the Big Four Railroad, Mr. Mann of the Southern Railway, Mr. Roeser of the Bureau of Standards and Mr. Schlunkert of the Illinois Central Railroad.

The subject of Tolerances for Automatic Dial Scales was taken up for careful study. This subject will be approached from the maintenance standpoint and it will be determined what tolerances are practical under present existing conditions. The indications are that the conclusions reached will be somewhat different from those secured from the factory and new scales or from considerations which leave out practical experience.

The plans are being completed for compiling a large amount of data which has been accumulated. The results of this committee work will be of considerable importance in the rapidly enlarging field of automatic dial scales.

Personals

TEN YEARS

Ten years ago Mr. C. A. Briggs was in Minnesota with his test car No. 1 of the Bureau of Standards testing the master scales of that state and many of their track scales. Mr. L. R. Boyer was assisting and becoming familiar with the work so that he could take charge of it. Mr. Boyer is now one of the recognized authorities on scales of the Fairbanks, Morse & Co. and Mr. Briggs is responsible for the livestock weighing for the country. Test car No. 1 is still in service.

Mr. F. B. Fell recently completed a trip visiting the stockyards and examining the scales and weighing at points in the far west. Mr. Fell is right hand man for Mr. C. A. Briggs, Livestock Weight Supervisor for the Packers and Stockyards Administration of the U. S. Department of Agriculture. Mr. Fell's headquarters are at South St. Paul, Minn.

Mr. Arthur W. Chesley, formerly with Standard Scale & Supply Co., is now proprietor of the Chesley Sales Co., 1902 Spring Garden Court, Philadelphia, Pa. His interest includes a representation of the Strait Scale Co. of that city.

Mr. A. W. Epright, Supervisor of Scales for the Pennsylvania Railroad System, visited Washington, D. C., in the early part of August with his family. Mr. Epright has many old associations with the Capitol, and among them is music. It is not generally known that Mr. Epright is a master of several musical instruments and on special occasions has played with the Marine band at inaugural balls.

Mr. Epright made the trip by automobile, and his mechanical knowledge caused him to take pleasure in the excellent condition and performance of his machine.

A baby boy was left by the stork on August 3rd in the home of Mr. and Mrs. Jack Kritean of Chelsea, Mass. Mr. Kritean refused to let the doctor weigh the visitor but he himself recorded the weight of 8½ pounds on his own sealed scale.

AN OVERSIGHT

The letter in regard to a cleaning outfit for automatic dial scales, printed in the August issue of the Scale Journal was sent in by Mr. William Horacek of Topeka, Kansas.

DOUGH NUT?

"Now, my little man," said the barber to a youngster in the barber's chair, "how do you want your hair cut?" "With a hole in the top, like dad's," was the reply.

O! O! Oklahoma

Some people can't see much in their own town. Recently, a man from Oklahoma attended our meeting and when called upon to announce his place of domicile, he complied as follows:

"I am from the land where there are more rivers without any water in them—more cows without any milk—and where you can look farther and see less than any other damn place in the world."

Absolute Accuracy on Every Gallon

It is a distinctive and patented feature of the Fry Visible Pump that it can measure one, two, three, four gallons, and any intermediate quantity with the same automatic accuracy that it measures ten.

Operation is so simple! The control handle is set in the required measuring stop, fixing the top of the adjustable overflow tube exactly opposite the calibration of the gallonage demanded. Gasoline is pumped into the container until it overflows. This overflow—in excess of the exact amount to be measured—returns through the overflow to the storage tank. Note that pumping does not control measurement—no chance for error here.

After the gasoline has been measured as above, the operator opens a valve and the gasoline flows to the car by gravity.

Inside the container, out of reach and beyond the manipulation of the operator, there is an automatic indicator that shows whether the gasoline is being delivered back to storage or to the car. When gasoline is being delivered to the car, the automatic indicator reads "To Car." When gasoline is being returned to the underground storage tank, the indicator reads "To Storage."

The extreme simplicity of the Fry Visible Pump mechanism and its continuous, automatic, visibly checked accuracy make it the absolute ideal of gasoline measuring devices.

Fry alone has this principle—the result of being first in the field.

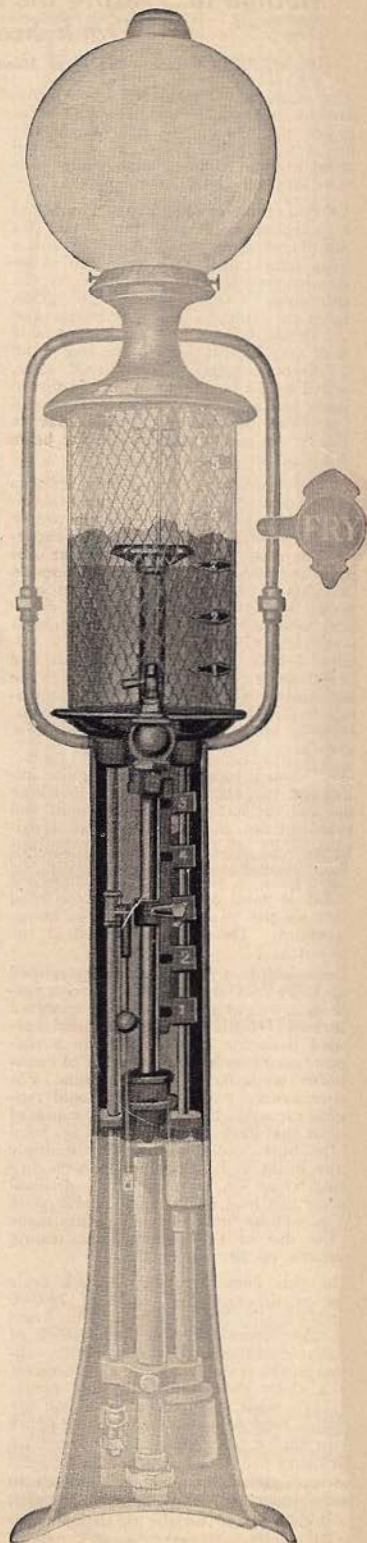
Write for complete details and quotation.

Dept. S. J.

GUARANTEE LIQUID MEASURE COMPANY
ROCHESTER, PENNSYLVANIA

*Made in 5 and 10 gallon capacities—Both
approved by the underwriter's laboratories.*

Fry Visible Pump



Method of Testing the Accuracy of Notches of Track Scale Beams

By J. R. METHVEN, Scale Inspector Minnesota Railroad and Warehouse Commission

The equipment considered by this department as essential to enable the accuracy of the spacing of notches of the railroad track scale beam to be tested and the method of doing that might briefly be described as follows:

An iron cradle of sufficient strength and size to accommodate the weights that are to be placed upon the load pivot, with a corresponding smaller hanger pan to be suspended from the tip pivot to carry the counterpoise standards of high grade weights of suitable denominations and form, should be provided. An adjustable pointer may be attached to the trig stand and its counterpart, the graduated scale, attached to the beam. Standard 50-pound weights and fractional test weights should be provided as the butt cradle load to enable a test of the multiple of the beam to be made at the tip pivot.

Closely calibrated, high grade weights of a sufficient amount and proper denominations should be used on the tip pan to enable the beam to be tested to its capacity. The assortment the department uses here is as follows: 1 weight of 1½ pounds, 2 weights of 2½ pounds, 1 weight of 5 pounds, 3 weights of 10 pounds and cylindrical, bronze, nickel-plated, grain weights of the following denominations: 2 500 grains, 1 1,000 grains, 2 2,000 grains and 1 4,000 grains, in addition to which an assortment of grain weights in denominations of ½ grain to 300 grains in the sets, ordinarily made up by Troemner & Sons, are used.

The beam is mounted on its regular fulcrum and trig stands on a rigid bench or table and the hanger pans, both butt and tip are placed in position. Counterbalance weights are suspended from the butt end pivot to balance the beam with the hanger pans in position and a sufficient amount or value of grain weights is used on the tip pan to allow for plus or minus corrections. The poise is placed at the zero notch.

The multiple of the beam is determined roughly by measurements and then is verified by a weight test by placing standard calibrated weights on the hanger suspended from the load pivot, with a corresponding ratio amount or value of counterpoise standards on the tip hanger. For greater accuracy these loads should represent capacity loads. While standard weights that have been calibrated are used on the butt cradle, to test the multiple of the beam to its tip pivot, for the following steps or tests of the individual notches this load on the butt cradle could just as well be junk, as the tests are made by the use of the counterpoise testing standards on the tip cradle.

For this demonstration a track scale beam of the type "S" scale of 250,000 pounds capacity has been used. This beam was taken from the first hand stock of the manufacturer and was carefully calibrated in the scale shop of the department and a chart showing the plotted errors has been made. This beam, as you are probably aware, is one having the notches on the under side. The stands are those in ordinary use in the regular installations. The multiple of the levers and beam to the tip pivot is 7,000. This means that one pound placed on the tip hanger pan should counterbalance or equal a pull of 7,000 pounds on the scale rail, or said in

another way, one grain on the tip hanger pan is equivalent to 7,000 grains or one pound on the scale rail.

The beam, having been brought to a balance at its mid-position in the trig loop and a sufficient amount of correction weights placed on the tip hanger pan, probably 200 grains, will ordinarily be sufficient, 416½ pounds of standard counterpoise weights should be placed on the butt cradle to be counterbalanced by 35 pounds and 5,000 grains placed on the tip hanger pan. The poise should be placed at the zero notch. The variation in weight indication, as found by the difference in the correction grain weights on at the close of the test and at its commencement, will indicate the error in the multiple of the beam as a single lever. The counterpoise standards on the tip hanger should now be removed and the poise moved out to the 250,000-pound notch, which will check the weight of the poise against the weight of the counterpoise standards. The poise should then be returned to the zero notch and the counterpoise standards replaced on the tip hanger pan. The S. R. should be determined after checking a balance by adding to and also by removing grain weights from the correction grain weights on the tip pan and recording the amount as the S. R. up and the S. R. down, indicating the movement thus checking one S. R. against the other for the upward and also for the downward movement to equilibrium in each direction. We are ready now to proceed with a test of the individual notches.

The poise is moved to the 1,000-pound notch and 1,000 grains is therefore to be removed from the tip hanger pan, the error is to be noted and recorded. This error is the variation between the grain weights on at the commencement of the test and those on at its conclusion. This procedure continues throughout the test, notch by notch, 1,000 grains being removed from the tip hanger pan, for each notch the poise is moved outward from zero. Readings may be rechecked by reversing this process and starting the poise at 250,000-pound notch, with the tip hanger pan empty. This would require the moving of the poise toward the zero point notch by notch and the adding to the tip hanger pan of 1,000 grains for each notch the poise is moved toward zero. By making up a set of bronze, nickel-plated, cylindrical grain weights in the denominations noted of 500 grains, 1,000 grains, 2,000 grains and 4,000 grains, we have a combination of weights that lends itself, together with the larger denominations up to 10 pounds to this method of testing; we are able to recheck a balance at each or any desired step without removing weights from the butt cradle.

The fractional bar is tested in the same manner. For every 20-pound notch the bar is moved outward, 20 grains are removed from the tip hanger pan. Continue the process until the fractional bar has been tested to its capacity.

It will be noticed that the weights placed on the butt cradle at the load pivot are not changed or disturbed during the test. This lessens the possibility of disturbing the balance. The standards used on the tip hanger pan are small and are accessible for quick handling with the least likelihood of a disturbance of the balance.

NEW SUGAR SCALES

The battery of four automatic electrical-operated scales for the weighing of sugar imports at Texas City have been completed and will be put into operation as soon as the installation can be inspected and the machines accepted by Fred W. Gast, engineer in charge of scales for the treasury department, according to Sam T. Zinn, assistant collector of customs.

Mr. Gast is expected here early this month from Washington to inspect and accept the new scale installation, and while here will also look over Pier 37 and other Galveston piers, the installation of a similar battery of scales at Galveston having been recommended by Robert W. Humphreys, collector, to handle sugar imports coming through this port for the Sugarland industries.

The scales at Texas City are located at shipside at the Texas Sugar Refining Company's new 1,000,000-pound daily refinery. Each scale is encased in a weatherproof housing and all are portable, moving along a track on the wharf apron which allows them to be spotted accurately beside each discharging hatch no matter what type or size of ship brings in sugar.

Sugar discharged by vessels when the new scales are put into operation will slide down a chute from the side of the vessel and a trip attachment will catch a certain number of bags on the scale platform and weigh them automatically, also tabulating the amount of each run. After being weighed, the sugar is released and slides down to the dock level onto trucks from which it can be carted into the warehouse after first being taken clear of the scale mechanism by a small conveyor. Specially constructed Dalton adding machines are also used for customs tabulation in connection with the scales.

The new scales will be put into operation as soon as accepted by the treasury department engineer. Their erection here was supervised by George W. Masten, a government scale expert, who has been assigned to have permanent charge of the weighing battery.

WEIGHING CONDITIONS AND WEIGHMEN VS. GOOD SCALES

(Continued from Page 5)

as a foundation. This, as you know, has variable levels, depending upon the soil upon which the elevator is constructed and depending upon the load that is in the house.

All of these conditions are mechanical. All can be rectified, and yet how many times when weights over such scales do not seem to check with weights taken over other scales, is the conclusion immediately jumped to that the scale is at fault. As a matter of fact, the weighing machine itself may be functioning, and nine times out of ten is functioning to within a reasonable degree of accuracy, which we, in the scale world, call within its tolerance or allowable error, and other things than the machine itself are causing the variation in weights.

When we have 100 per cent machines and when we have 90 or 95 per cent whole-hearted interest and efficiency on the part of the operator of these 100 per cent machines, shippers and railroads will be worried much less about their claims.

STANDARDS FOR COTTON AND WOOL

The readers of the *Scale Journal* have a close association with and active interest in standards of all kinds. The first standards were standards of weights and measures. Now the world has need for standards of great variety. Two paragraphs from the U. S. Department of Agriculture tell of recent work in the development of standards for Cotton and Wool, respectively, and read as follows:

Official standards for American Egyptian cotton in use prior to August 1, 1923, will on August 1, 1925, replace those now in effect, according to an announcement just made by the Secretary. The change in the standards was formally effected by an order of Secretary Wallace dated July 26, 1924, and issued under authority of the United States cotton futures act and the United States cotton standards act. It was made in response to requests received originally from producers of American Egyptian cotton in Arizona and later from shippers and spinners which were confirmed by a vote of more than two-thirds of the holders of the present standards. As the cotton standards act requires that before any change in the standards can become effective it must be given public notice of not less than a year, the present standards, which became effective August 1, 1923, must remain legally in force until August 1, 1925.

A two days' school for instruction in the use of the official wool grades was held at Ohio State University, July 21 and 22, under the auspices of the Bureau of Agricultural Economics. The instruction, like that given at the Michigan Agricultural College, was limited to agricultural leaders of the State. The four livestock specialists at the university and the four State extension leaders and the director of extension attended the school.

MAGNETISM AND SCALE BEAMS

Magnetism affects the action of scale beams more frequently than used to be suspected; and if at any time the beam castings have been handled by an electric lifting magnet the results are terrible. Generally the effects are slight, but are sufficient to bother and disturb the action of the beam if it swings and touches or comes very close to the iron trig loop. This is often disposed of by wrapping a cord about the iron of the loop, and is sometimes described as insulation. It is really not an insulator but it is effective for the reason that the strength of the magnetism falls off sharply when the beam and loop becomes separated, and a small fraction of an inch generally reduces the effect to a negligible amount. Brass loops and stands must be used in stubborn cases.

CONCRETE

Teacher—"Give an example of how circumstances alter cases."

Pupil—"Well, Milwaukee isn't famous now."

Smiles

"IF WE HAVE TEARS—"

One of the most pathetic sights nowadays is to see a man whose ancestors traded the Indians a quart of whiskey for a thousand acres of land, trying to trade back.

TAKING WAYS OF DOCTORS

"You're looking bad, Willie."
"Aye, I've been in the hospital an' the doctors have taken away ma appendix."
"These doctors 'll tak' anything. It's a peety ye didna have it in yer wife's name."

STREET CROSSING ANTHOLOGY

Hey diddle diddle
He crossed in the middle
Jaywalkin', his gaze on the moon
His tombstone erected
Reads: "Hardly expected
To get up to heaven so soon."

TOO LITERAL

A Chicago teacher gave a pupil a sum for home study which was in substance: How long would it take a certain number of men working 10 hours a day to complete a stated job?

The next morning one pupil handed the teacher a note written by the boy's father, saying: "Dear Sir: I refuse to let my son James do his sum you gave him last night as it looks to me like a slur on the 8-hour system. Any sum not more than 8 hours he is welcome to do, but not more."

COULD NOT ELIMINATE EGGS

"George, you may bring me two fried eggs, some ham, a pot of coffee, and some rolls," said the man to the waiter.

"Yes, sir."

His companion said: "You may bring the same. No; just eliminate the eggs."

In a moment the waiter returned. Excuse me, sir, but what did you say about them eggs?"

"I merely told you to eliminate them."
"Yes, sir." And he hurried away to the kitchen.

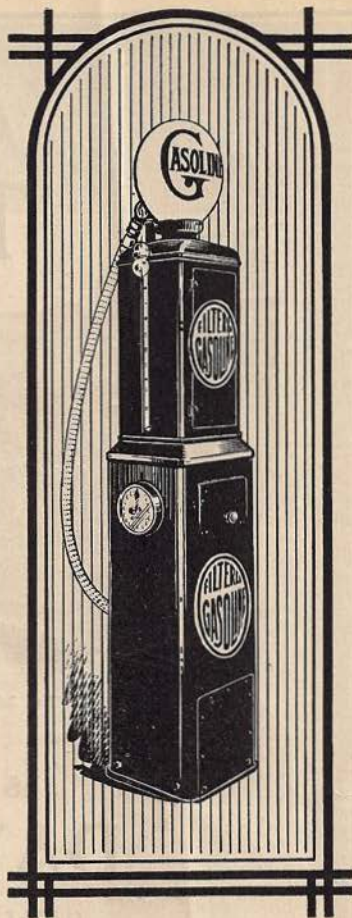
In two minutes he came back once more, leaned confidentially and penitentially over the table and said:

"We had a bad accident this morning, sir, an' the liminator got busted off, right at the handle. Will you take them fried, same as this gentleman?"

EXCITEMENT

Mob Hysteria—and then ill advised, hasty action. It happens at least once in every lodge and that fraternity is fortunate that does not suffer as a result. We heard a man "cool off" two hundred men in two minutes with this simple little story—

"A man was almost frantic with toothache. The only other person in the room was his pompous, pedantic-matter-of-fact aunt. Presently the man burst out: 'Oh, I wish to goodness people were born without teeth.' His aunt glanced up from her paper. 'A moment's consideration, my dear Alfred,' she said, 'will remind you that that is precisely what does happen.' And she went on reading."



Permanent Accuracy On Every Measured Quantity

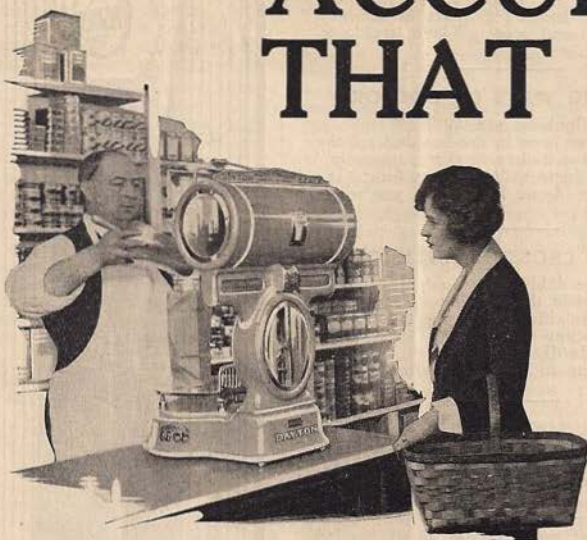
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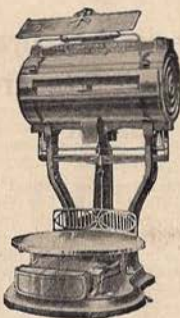
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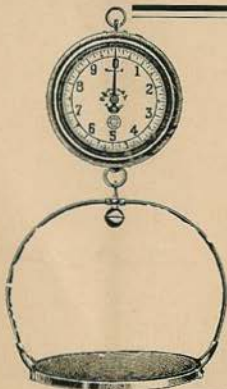
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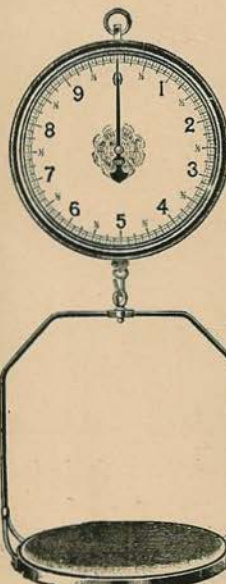
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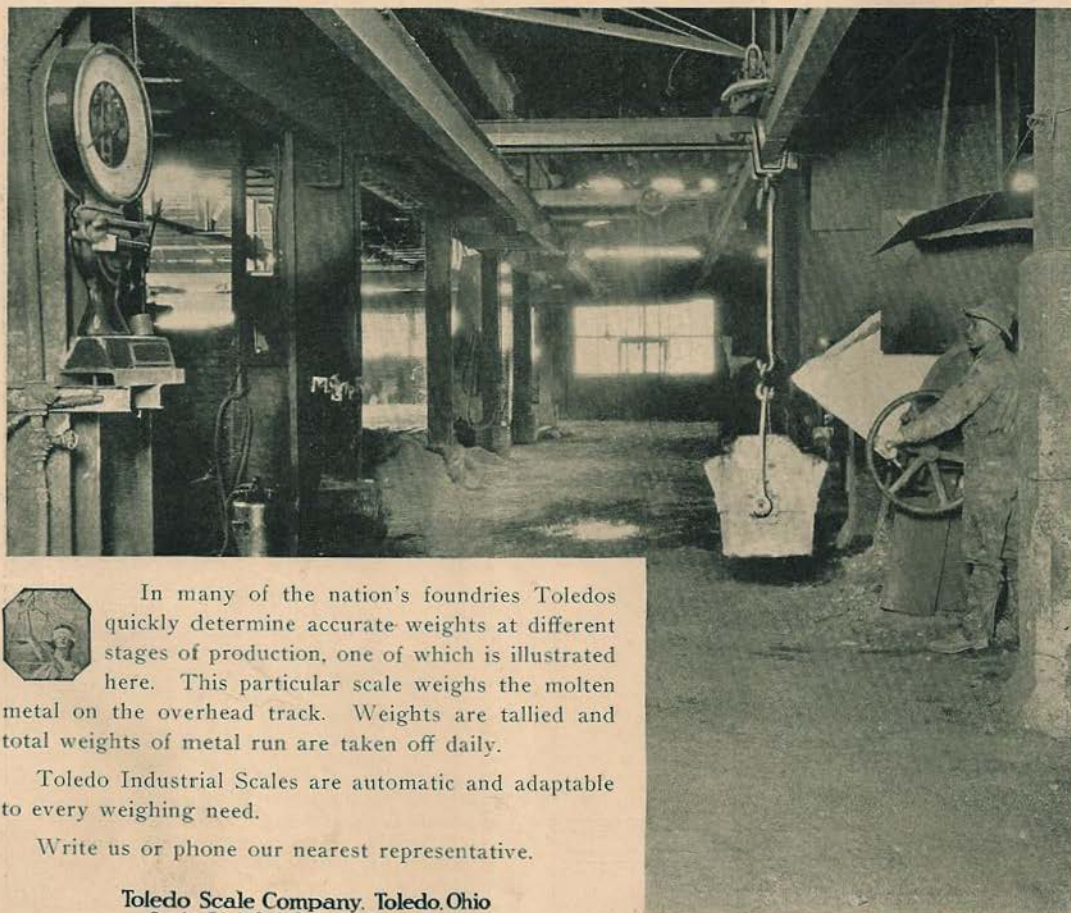
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