

No. 781,920.

PATENTED FEB. 7, 1905.

J. L. TAYLOR.
WEIGHING SCOOP.
APPLICATION FILED APR. 6, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

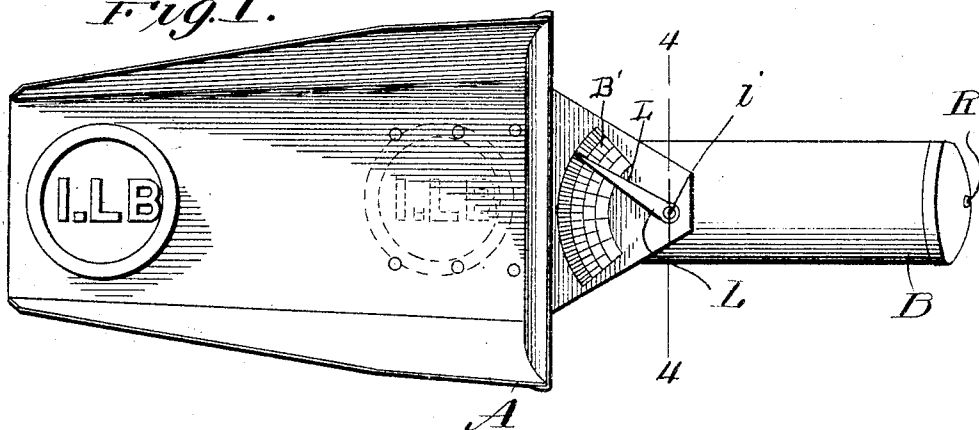


Fig. 2.

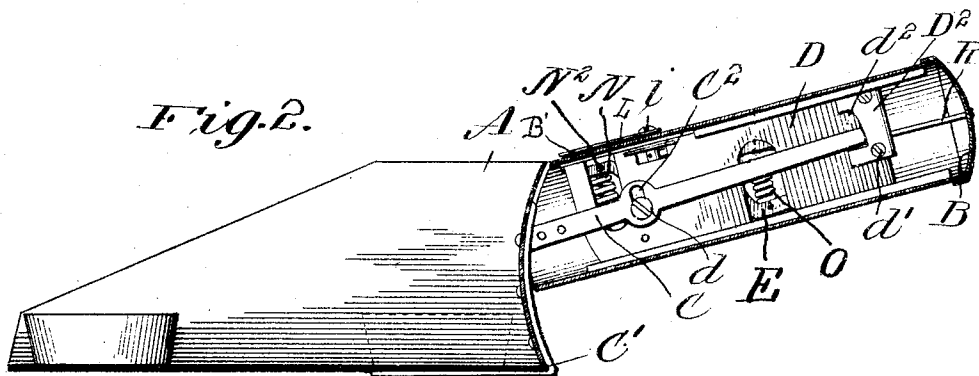


Fig. 3.

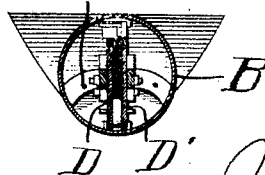
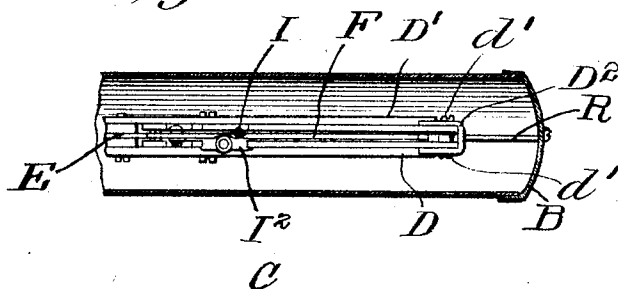


Fig. 4.

WITNESSES

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2 SHEETS—SHEET 2.

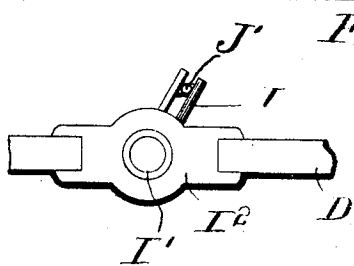
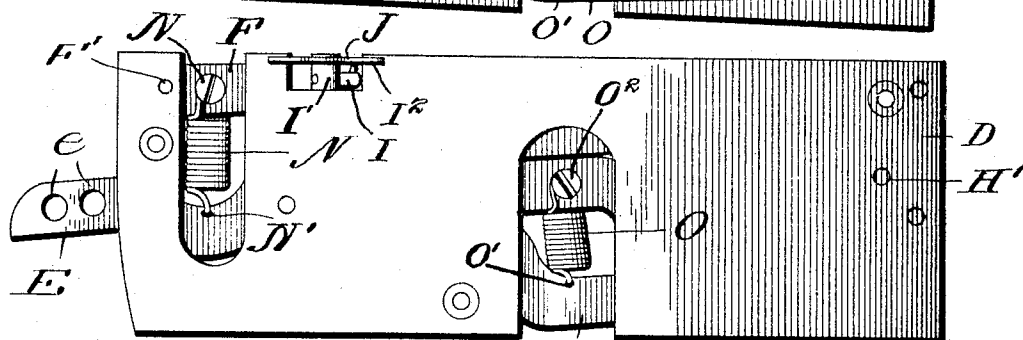
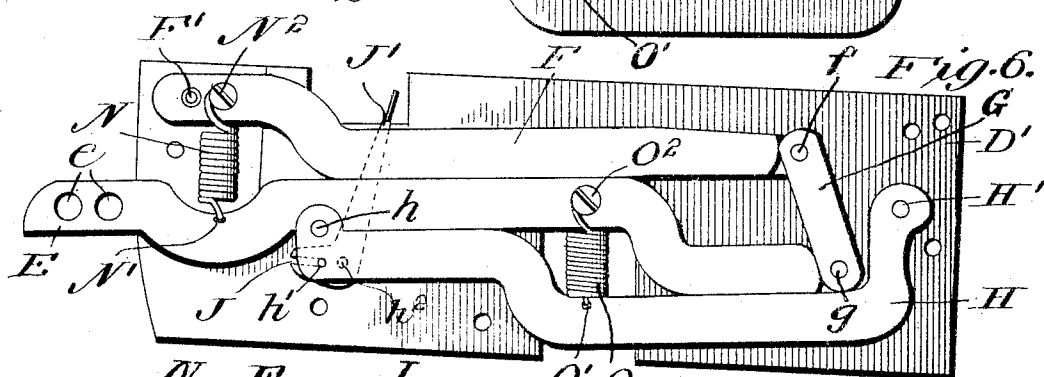
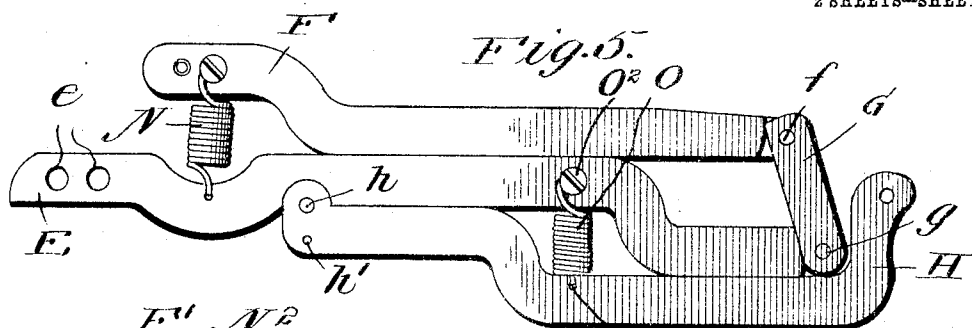


Fig. 8.

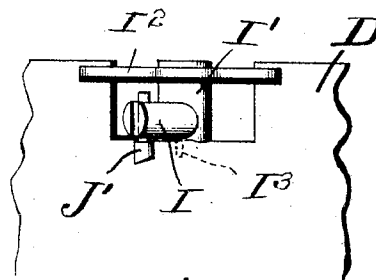


Fig. 9.

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UNITED STATES PATENT OFFICE.

JOHN L. TAYLOR, OF BENTON HARBOR, MICHIGAN.

WEIGHING-SCOOP.

SPECIFICATION forming part of Letters Patent No. 781,920, dated February 7, 1905.

Application filed April 6, 1904. Serial No. 201,900.

To all whom it may concern:

Be it known that I, JOHN L. TAYLOR, a citizen of the United States, residing at Benton Harbor, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Weighing-Scoops; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in weighing-scoops; and the object of the invention is to produce a device of this character in which commodities to be weighed, whether positioned at the forward end of the scoop or at the rear or at any other intermediate location, will weigh the same and accurately.

In carrying out my invention it is my purpose to provide a double spring-and-lever mechanism so arranged that when the commodity to be weighed is placed at the rear end of the scoop a certain tension will come upon one of the springs, whereby the weight of the commodity will be indicated accurately upon a dial and which indication will not vary, although the commodity be positioned at any location intermediate the rear end of the scoop and its forward portion, although in the latter event the second spring-and-lever mechanism will be brought into play and a relatively increased tension will come upon the spring which is utilized in weighing the commodity when positioned at the rear of the scoop. In the event of the commodity being positioned at any location in the scoop the pivotal movement of the indicator-actuating mechanism will be the same, as the increased leverage will be compensated for by the mechanical construction of my invention.

My invention consists, further, in various details of construction and in combinations and arrangements of parts, which will be herein-after fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, which, with the letters of

reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the views, in which—

Figure 1 is a top plan view of my improved scoop, showing the weight positioned in solid lines at the outer end of the scoop and in dotted lines at the rear end of the scoop. Fig. 2 is a central longitudinal section through the scoop and handle, showing the portions of the weighing mechanism in elevation. Fig. 3 is a longitudinal sectional view through the casing of the handle, showing a top plan view of the weighing mechanism carried by the handle. Fig. 4 is a sectional view on line 4-4 of Fig. 1. Fig. 5 is a side elevation of the lever-and-spring mechanism forming a part of my invention. Fig. 6 is a view of the construction shown in Fig. 5 as applied to one of the side plates with which the lever mechanism has pivotal connection. Fig. 7 is a side elevation of one of the plates with the lever mechanism secured thereto. Fig. 8 is an enlarged detail view of a feature of the invention. Fig. 9 is a perspective view of the post carrying the indicating-pointer.

Reference now being had to the details of the drawings by letter, A designates a scoop, which may be of any shape or size and of any suitable material, and B is a handle, which is hollow and is provided with a dial B', which is graduated by radial lines indicating pounds and fractions of pounds.

C C designate two bracket-arms having angled ends C', which are fastened to the bottom and rear end of the scoop. Each of the bracket-arms has a transverse slot C'', and D and D' designate two plates, (clearly shown in Figs. 6 and 7 of the drawings,) the former of which carries a pivot-pin d, which passes through the slot C'' and serves to guide the bracket-arm as it tilts under the weight of any commodity placed in the scoop.

In order to relieve the operative parts of the weighing apparatus from any sudden jar coming upon the scoop as the same is thrust into any material to be weighed and in order to hold the two plates D and D' securely in place, I provide a bracket-stop D². (Shown in Figs. 2 and 3 of the drawings.) Said stop member

D² is bracket-shaped in cross-section and is held, by means of screws d', to the plates and has its free ends recessed, as at d², in order to allow the outer ends of the two bracket members C to have a tilting movement and the bottoms of the recesses serving as stops against which the ends of the brackets may contact to prevent the jar from coming upon the operative parts of the weighing apparatus.

Referring to Figs. 5 to 7, inclusive, of the drawings, E designates a bar which has two apertures e formed in one end thereof for the reception of screws, whereby said bar may be fastened to the bracket members C, adjacent to the rear end of the scoop. F designates a lever which has pivotal connections with a pin F', which passes through the registering apertures in the two plates D and D', and the lever F is pivotally connected to a link G by means of a pin f, and the other end of the link G is pivotally connected, by means of a pin g, with the end of the lever E. A third lever H has pivotal connections with the lever E by means of the pin h, which is positioned immediately above a pin h', carried by the lever H, which has a play in a slot J in the angled end of the indicator-actuating lever J'. (Shown in dotted lines and partially in elevation in Fig. 6 of the drawings.) The opposite end of the lever H is pivotally mounted upon a pin H', carried by the plates D and D'. By the construction of levers illustrated it will be observed that the weight of the weighing-scoop comes entirely upon the two pivotal pins F' and H'. Said angled lever J' is pivotally mounted upon a pin h², which is carried by the plate D', and the upper end of the lever J' engages a slotted post I, (shown clearly in Fig. 9 of the drawings,) which is swiveled to the pointer-carrying member I', causing the latter to make a partial rotary movement as the angled lever J' tilts. The top plan view, Fig. 8, illustrates the member I' as having a chambered portion, the wall of which chambered portion is screw-threaded and adapted to receive a screw i, (shown in Figs. 1 and 2 of the drawings,) the head of which screw is adapted to clamp an indicating-pointer L to the top of the member I' with sufficient frictional force to cause the pointer to rotate with the member I' upon its pivot for the purpose of causing said pointer to move over the dial B to indicate the amount of the commodity being weighed. Said member I' is pivotally connected near its upper end to a plate I², (shown in Figs. 8 and 9,) and its lower end is mounted upon a pivot-pin I³. (Shown in dotted lines in Fig. 9.) A spring N, the strength of which has been predetermined by experiment, has one end fastened at N' to the lever E, and its other end is fastened to a pin N², carried by the lever F, and a second spring O of a strength relative to that of said spring N is fastened at one end, O', to the lever H,

while its other end is fastened to a pin O², carried by the lever E, Figs. 5 to 7, inclusive, showing clearly the springs referred to.

After the parts forming the lever-and-spring mechanism have been assembled in the manner illustrated in Fig. 7 the projecting end of the lever E is fastened, by means of screws which are passed through the apertures e, to the bracket-arm C, and the plates, with the lever mechanism thus connected to the bracket-arms, are inserted in the handle and a screw R (shown in Figs. 1 and 2 of the drawings) is passed through the end of the handle and its other end screwed into the stop-plate D², thereby holding the handle securely to the plates, after which the indicating-pointer is fastened to the rotary member I' by means of a screw i, as shown in Figs. 1 and 2 of the drawings. The parts being thus assembled, the scoop is in condition for use, and by the arrangement of the lever-and-spring mechanism a commodity to be weighed when placed in the scoop at the position illustrated in dotted lines in Figs. 1 and 2, adjacent to the rear end of the scoop, will cause a certain tension upon the spring N, and the scoop and its contents being hung upon the pivotal points F' and H' the bar E, supporting the scoop, will tilt a certain distance and will cause a tension upon the spring N. Said tilting of the lever E will cause the pivotal lever J' to tilt, and through its connections with the swiveled post I and the pointer-carrying member I' the pointer will cause the amount of the weight to be indicated upon the dial. In case the commodity being weighed is positioned as illustrated by the weight in solid lines in Figs. 1 and 2 the leverage will be greater, and the second spring O will be brought into play, and also the lever F through its connections with the other levers will cause a tension upon the spring N to equalize the extra leverage incident to the positioning of the commodity being weighed at or near the forward end of the scoop, and should the commodity be placed at any position in the scoop intermediate the forward and rear portions thereof a varying tension will be imparted to the spring N, and should the commodity be positioned either at the rear or forward end of the scoop or at any position intermediate the two the tilting movement of the lever J' will be the same, thereby causing the commodity being weighed to indicate the weight accurately regardless of the position that the commodity occupies in the scoop.

While I have shown a particular construction of apparatus embodying the features of my invention, it will be understood that I may make alterations in the detailed construction of the same, if desired, without in any way departing from the spirit of the invention.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. A weighing apparatus comprising a scoop, bracket members projecting therefrom, a handle, plates carried by said handle, levers pivotally connected to said plates, an intermediate bar secured to said bracket members and having pivotal connection with said levers, springs connecting said levers, indicator mechanism actuated by said levers and so arranged that the weight of a commodity, wherever positioned in the scoop, will indicate the same, as set forth.

2. A weighing apparatus comprising a scoop, bracket members secured thereto, a handle, plates carried by said handle, pins passing into said plates and passing through slots in said members, a double spring-and-lever mechanism having connection with said bracket mechanism and plates, and indicating means so arranged that a commodity, wherever positioned within the scoop, will indicate the same amount, as set forth.

3. A weighing apparatus comprising a scoop, bracket members secured thereto, a handle, plates mounted within the handle, levers pivoted at their opposite ends to said plates, a bar having pivotal connections with said levers, springs connecting said bar to said levers, said bar being secured to said bracket members, and indicating mechanism actuated by one of said levers, as set forth.

4. A weighing apparatus comprising a scoop having bracket members secured thereto, a handle, plates carried by said handle and spaced apart, pins projecting from said plates and engaging transverse slots in said arms, a double spring-and-lever mechanism carried by the handle and connected to the scoop and so arranged that a commodity, wherever positioned within the scoop, will weigh the same amount, and means for taking up jar upon said lever mechanism, as set forth.

5. A weighing apparatus comprising a scoop, bracket members secured thereto having arms, transverse slots, a handle, plates mounted within the handle, stop members against which the ends of said arms are adapted to contact, indicating means, a double lever-and-spring mechanism connected to said bracket members and so arranged that a commodity, wherever positioned within the scoop, will weigh the same amount, as set forth.

6. A weighing apparatus comprising a scoop, bracket members secured thereto and having arms projecting therefrom, a handle, plates mounted within the handle, a bar fixed to said arms, pivotal levers mounted, one above and one below said bar and pivotally connected to said pivotal levers, springs secured to the pivotal levers and connecting the same with the intermediate bar, and an indicating mechanism actuated by the levers, as set forth.

7. A weighing apparatus comprising a

scoop, bracket members secured thereto having arms, a handle, plates mounted within the handle, a double spring-and-lever mechanism carried by said plates and supporting the scoop, a tilting lever pivotally connected to said lever mechanism, a dial, and an indicating-pointer actuated by said tilting lever, as set forth.

8. A weighing apparatus comprising a scoop, bracket members secured thereto, a handle, plates carried by the handle, a double lever-and-spring mechanism pivotally mounted between the plates and supporting said bracket members, an angle-lever pivotally mounted on one of said plates, a pin carried by one of said levers and working in a slot in said tilting lever, and an indicating-pointer actuated by the tilting lever, as set forth.

9. A weighing apparatus comprising a scoop, bracket members secured thereto, a handle, plates carried by the handle, a double lever-and-spring mechanism pivotally mounted between the plates and supporting said bracket members, an angle-lever pivotally mounted on one of said plates, a pin carried by one of said levers and working in a slot in said tilting lever, a swiveled post and connections between the same and said tilting lever, a dial, and an indicating-pointer secured to said post, as set forth.

10. A weighing apparatus comprising a scoop, bracket members secured thereto, a handle, plates mounted within the handle, levers F and H pivotally mounted between said plates, an intermediate bar E pivotally connected to said lever H, a link pivotally connecting lever F and bar E, a spring O connecting bar E and lever H, and a spring N connecting bar E and lever F, the end of the bar E being fastened to said bracket members, a swiveled post carried by one of said levers, an angle-lever pivotally mounted upon one of said plates, a pin carried by lever H and engaging a slot in said tilting lever, the upper end of the latter engaging a projection from said swiveled post, a dial, and an indicating-pointer secured to said swiveled post, as set forth.

11. A weighing apparatus comprising a scoop, bracket members secured thereto, a handle, plates mounted within the handle, a double lever-and-spring mechanism supported by said plate, said bracket members fixed to said lever mechanism, a rod passing through one end of said handle, and adapted to engage said plates, a dial, and indicating means actuated by said lever mechanism as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOHN L. TAYLOR.

Witnesses:

A. L. HOUGH,
FRANKLIN H. HOUGH.