

F. VERPLAST.
WEIGHING MACHINE.
APPLICATION FILED JULY 2, 1909.

Patented Mar. 15, 1910.

952,157.

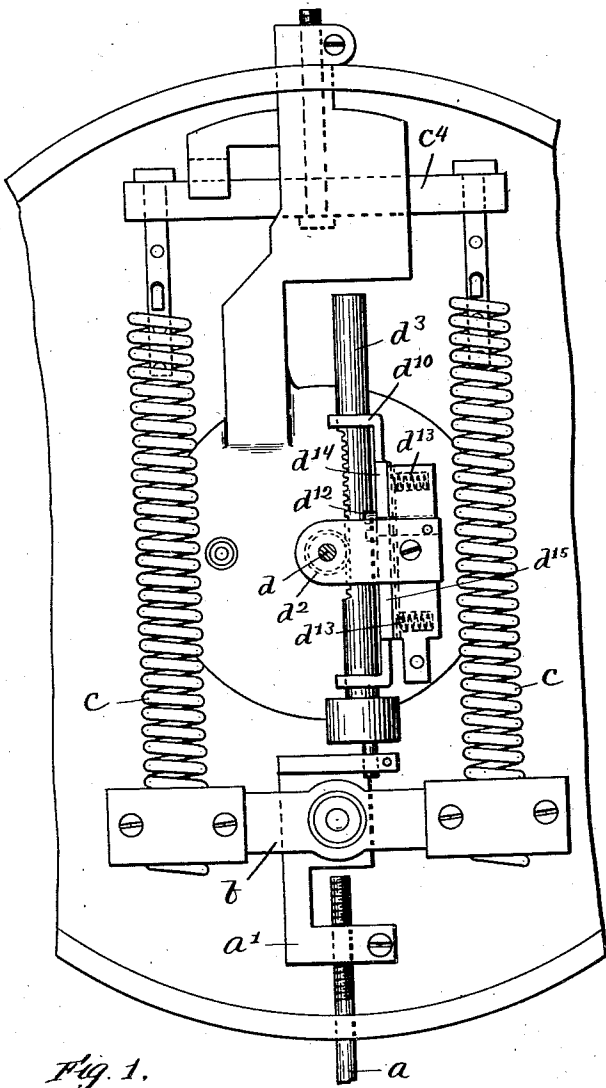


Fig. 1.

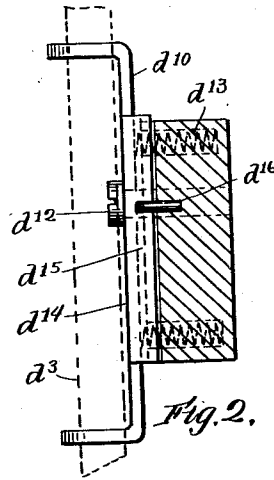


Fig. 2.

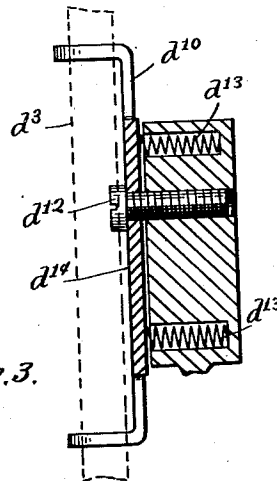


Fig. 3.

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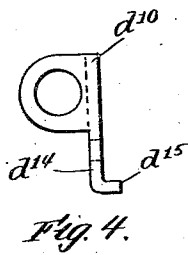


Fig. 4.

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UNITED STATES PATENT OFFICE.

FREDERICK VERPLAST, OF BOSTON, MASSACHUSETTS.

WEIGHING-MACHINE.

952,157.

Specification of Letters Patent.

Patented Mar. 15, 1910.

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To all whom it may concern:

Be it known that I, FREDERICK VERPLAST, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Weighing-Machines, of which the following is a specification.

This invention relates to weighing-machines of the type having a rack-bar engaging a pinion on the shaft bearing the indicator-hand and movable longitudinally for the purpose of turning said pinion, and movement of which is controlled by a spring-controlled platform-operated member; and the invention has for its object to provide means for supporting said rack-bar in upright position, and for holding it in a yielding manner in engagement with the pinion, preferably adjustably, whereby it may be set to operate the pinion positively yet accurately without binding.

Figure 1 is a front elevation of a portion of the head of a weighing-machine having supporting-means for the rack-bar embodying this invention. Fig. 2 is an enlarged vertical section of the supporting-means for the rack-bar. Fig. 3 is another vertical section of the supporting-means for the rack-bar. Fig. 4 is a plan view of the yoke engaging the rack-bar, to be referred to.

The essential parts of the weighing-machine here shown for the purpose of illustrating this invention are substantially the same as in Letters Patent #878,915, dated February 11, 1908, wherein a represents the platform-rod which is connected at its upper end to a frame a' , to which is pivotally connected a cross-bar b , to the opposite ends of which the lower ends of the weighing-springs c, c , are connected to the opposite ends of said springs being connected to the opposite ends of a cross-bar c' , which is supported by the frame.

d represents a shaft bearing the indicating-hand or pointer, not shown, and d^2 a pinion on said shaft which is engaged by a vertically movable weighted rack-bar d^3 , arranged in upright position, and supported upon the frame a' . Said rack-bar is supported in upright position, and is held in a yielding manner in engagement with the pinion and is adjustable relative thereto, and to accomplish this result, as here shown, said rack-bar is cylindrical, and is extended through vertically alined holes in the opposite ends of a yoke d^{10} , arranged in upright position and supported upon a screw d^{12} ,

which is screwed more or less into a frame d^{20} . Said yoke is movable along on the screw for a short distance, and is pressed against the head thereof, to thereby move the rack-bar toward the pinion and hold it firmly, yet yieldingly, by a pair of springs d^{13} , arranged above and below the screw, and contained in sockets in said frame d^{20} . The yoke is prevented from turning on the screw yet permitted to move back and forth thereon by suitable guiding-means. As here shown, said yoke has a forwardly extended ear d^{14} of any suitable dimensions, the end of which is bent at right angles, as at d^{15} , and the frame has a vertical groove adapted to receive the end-portion d^{15} of said ear, to thereby hold the yoke against rotary movement, and the edge of said end-portion d^{15} is slotted to receive the projecting end of a pin d^{16} , fixed to the frame, and located in said groove, to thereby assist in holding said yoke against vertical movement.

The yoke is arranged with its arms in engagement with the rack-bar at approximately equi-distant points above and below the pinion. The rack-bar, while thus yieldingly supported in upright position, is free to slide up and down for the purpose of turning the pinion when permitted or caused to thus move, and its position relative to the pinion may be regulated by the screw d^{12} , whereby the depth the rack-teeth enter the interdenal spaces of the pinion may be varied, to provide for operating the pinion positively, yet accurately, without binding.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, the arms of said yoke engaging the rack-bar at points above and below the pinion, and adjustable means for supporting said yoke, substantially as described.

2. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of an upright support engaging said rack-bar above and below the pinion and permitting free vertical movement of the rack-bar, and means for holding said support in upright

position yet permitting movement thereof bodily in a direction away from the pinion, substantially as described.

3. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of an upright support engaging said rack-bar above and below the pinion and permitting free vertical movement thereof, means for holding said support in upright position yet permitting movement thereof bodily in a direction toward and from the pinion, and means for limiting the movement of said support in a direction toward the pinion, substantially as described.

4. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, a support on which said yoke is free to slide having a stop for limiting movement thereof in a direction toward the pinion, and yielding means for holding said yoke in engagement with the stop, substantially as described.

5. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, means for supporting said yoke in upright position permitting bodily movement thereof in a direction toward and from the pinion, and means for limiting the movement of the yoke in a direction toward the pinion, substantially as described.

6. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, means for supporting the yoke in upright position permitting bodily movement thereof in a direction toward and from the pinion, and adjustable means for limiting movement of the yoke in a direction toward the pinion, substantially as described.

7. In a weighing-machine, the combination with a pointer-shaft and pinion there-

on, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke supporting said rack-bar in upright position, and permitting free vertical movement thereof, and adjustable means for supporting said yoke, substantially as described.

8. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, a supporting-screw on which said yoke is mounted and springs bearing upon the yoke which hold it in any position of adjustment permitted by its supporting-screw, substantially as described.

9. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, a yoke having vertically alined holes through which said rack-bar extends, means for holding said yoke in upright position and adjustable means for supporting it, substantially as described.

10. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, a supporting-screw for said yoke, said yoke having vertical guiding-means adapted to enter a groove in the frame to thereby hold it in upright position, substantially as described.

11. In a weighing-machine, the combination with a pointer-shaft and pinion thereon, a rack-bar engaging said pinion, and means for moving said rack-bar, of a yoke having vertically alined holes through which said rack-bar extends, a supporting-screw for said yoke, springs acting to press said yoke against the head of said screw, and vertical guiding-means for said yoke, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK VERPLAST.

Witnesses:

B. J. NOYES,
H. B. DAVIS.