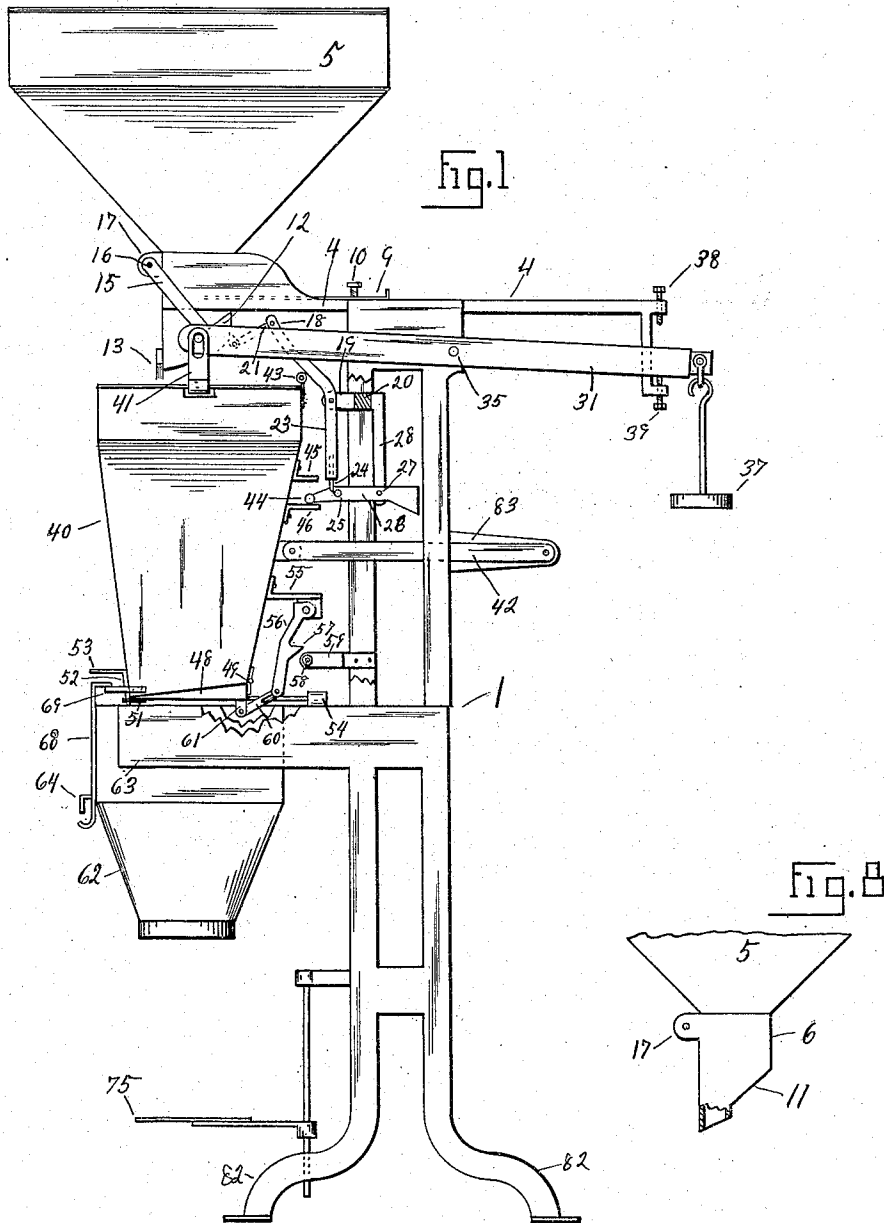


R. J. ZANONE.
AUTOMATIC SCALE.
APPLICATION FILED MAR. 15, 1915.

1,152,868.

Patented Sept. 7, 1915.
3 SHEETS—SHEET 1.



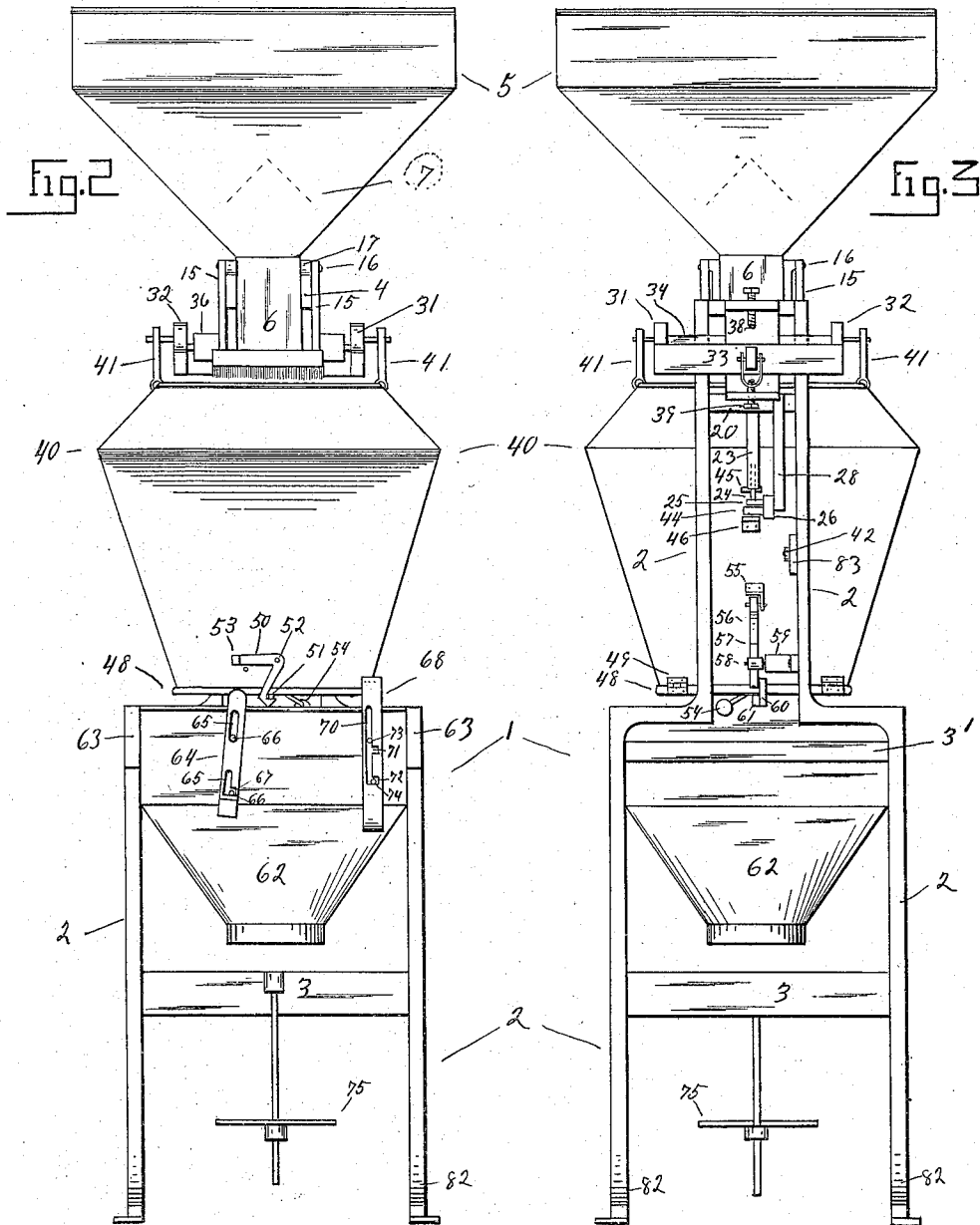
WITNESSES:
F. H. Kappa.
J. E. Heller

INVENTOR.
Richard J. Zanone
BY
W. B. Munnell.
ATTORNEY

R. J. ZANONE.
AUTOMATIC SCALE.
APPLICATION FILED MAR. 15, 1915.

1,152,868.

Patented Sept. 7, 1915.
3 SHEETS—SHEET 2.



WITNESSES:

F. M. Kappa.
J. E. Heller.

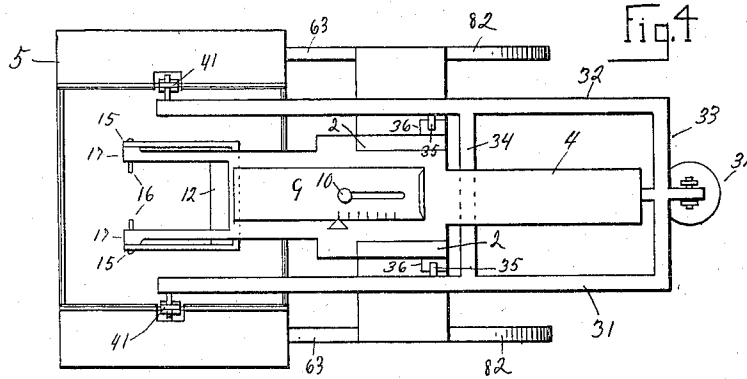
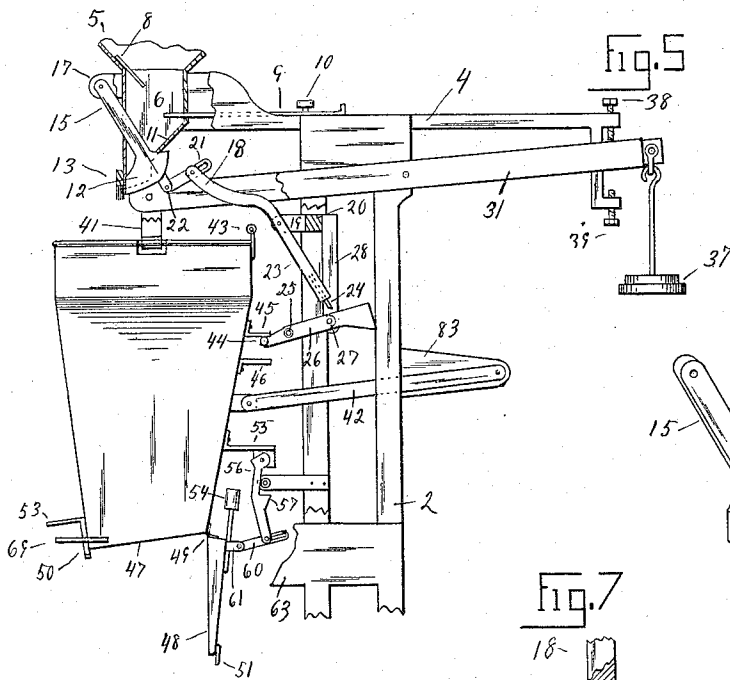
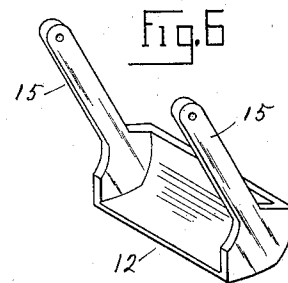
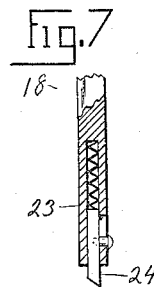
INVENTOR.

Richard J. Zanone,
BY W. B. Munnell.
ATTORNEY

R. J. ZANONE.
AUTOMATIC SCALE.
APPLICATION FILED MAR. 15, 1915.

1,152,868.

Patented Sept. 7, 1915.
3 SHEETS—SHEET 3.



WITNESSES:
F. A. Kappa.
J. E. Keller

INVENTOR.
Richard J. Zanone.
BY
W. B. Munnell.
ATTORNEY

UNITED STATES PATENT OFFICE.

RICHARD J. ZANONE, OF NEW ALBANY, INDIANA, ASSIGNOR TO JACOB ZINSMEISTER,
OF NEW ALBANY, INDIANA.

AUTOMATIC SCALE.

1,152,868.

Specification of Letters Patent.

Patented Sept. 7, 1915.

Application filed March 15, 1915. Serial No. 14,601.

To all whom it may concern:

Be it known that I, RICHARD J. ZANONE, a citizen of the United States, residing at 1316 East Spring street, in the city of New Albany, county of Floyd, and State of Indiana, have invented a certain new and useful Improvement in Automatic Scales, of which the following is a specification.

This invention relates to improvements in automatic scales and has for an object the provision of a scale of the class described which shall be simple in construction, accurate and reliable in operation, and durable in service.

With the foregoing and other objects in view my invention consists of the novel arrangement and construction of parts illustrated in the accompanying drawing, wherein is set forth an embodiment of the invention, but it is to be understood that such changes and modifications may be resorted to as come within the scope of the appended claims.

Referring to the drawings, comprising three sheets, wherein similar reference characters designate like parts in the several views; Figure 1, is a side elevation of an embodiment of my invention showing the parts in normal position *i. e.* ready to receive a commodity to be weighed; Fig. 2, a front elevation; Fig. 3, a rear elevation; Fig. 4, a top plan; Fig. 5, a side elevation of a portion of the device, with portions broken away and parts in section, showing the position assumed when discharging a commodity after the same has been weighed; Fig. 6, a perspective view of the gate; Fig. 7, a detail of the lower end of the gate operating lever; Fig. 8, a detail of the lower end of the receiving hopper.

Referring more particularly to the drawing —1— designates a frame comprising side members —2— rigidly connected by transverse bars —3 and 3'—. At the upper end of the frame a longitudinal bar —4— extends fore and aft, and supports on its forward end a receiving hopper —5—, the downwardly converging walls of which lead to a delivery chute —6—. A retarding bar —7—, preferably triangular in shape with the apex pointing upward, within the hopper, just above the entrance to the chute

assists in sustaining the weight of a contained commodity and to retard the flow thereof. I also provide a projecting ledge —8— which serves to retard the flow and to prevent clogging in the chute. A slide —9— adjustably secured on the bar 4 by a thumb screw —10—, may be extended into the chute to regulate, or cut off, the flow of commodity therethrough. Below the regulating slide, the rear wall of the chute slopes forward, forming an incline —11— on which the commodity falls relieving from the shock a gate —12— which serves to close the lower end of the chute and cut off the flow of commodity. A brush —13— secured on the forward side of the chute in such a position that the bristles extend below the lower edge thereof provides a yielding abutment for the forward edge of the gate, thereby obviating any danger of the gate failing to close completely by reason of particles of the commodity being caught between the edge of the gate and its abutment. The gate is provided with arms —15— which are pivotally connected by means of bolts —16— to ears —17—, which are extended from the bar 4. The pivotal point of the gate lies forward of its center of gravity when in operative position, hence the gate tends to close by gravity. The gate is assisted in its closing movement by the weight of a lever —18— pivotally connected to a lug —19— which extends forward from a transverse bar —20— connected to the frame. The gate lever 18 extends forward and upward from its pivotal point, and its upper end is connected with the gate by means of a slotted link —21— which is pivotally connected to an ear —22— extended from the bottom of the gate. A depending leg —23— of the lever 18 has a spring pressed latch bolt —24— extended from its lower end which is adapted to engage with a pin —25—, on a trip lever —26—, when the gate 12 is opened, and hold it in that position. The trip lever is pivotally connected at —27— to a leg —28— which depends from the bar 20. A scale beam which comprises a pair of parallel arms —31 and 32— rigidly connected by transverse bars —33 and 34—, is pivotally connected with the frame, by means of pivots —35— which

rest on blocks —36—. Weights —37— are suspended by suitable means from the rear of the scale beam. The throw of the scale beam may be regulated by means of adjusting screws —38 and 39—. A weighing hopper —40— is suspended from the forward ends of the arms 31 and 32 by suitable means such as links —41—. A distance rod —42— is pivotally connected to the rear wall of the weighing hopper and to a bracket —83— extended from the frame. The distance between the pivotal point of the distance rod is the same as that between the pivotal point of the scale beam and the point of suspension of the weighing hopper, this insures the vertical position of the scale pan.

On the upper rear edge of the weighing hopper is a roller —43— which is adapted to contact with the forwardly extended portion of the lever 18, whereby the movement of the scale pan controls the closing of the gate 12, and positively opens the same. The trip lever is provided on its forward end with a pin —44—, extended laterally therefrom. Extended from the rear wall of the scale pan 40, are brackets —45 and 46— disposed respectively above and below the trip lever 26, the bracket 45 being adapted to strike the pin 44 and depress the trip lever, thereby releasing the gate lever 18; the bracket 46 striking the pin 44 and positively raising the trip lever into, and maintaining it against accidental displacement from its locking position. The weighing hopper has downwardly converging walls leading to a hinged bottom —48— which is swung from the rear wall of the weighing hopper by suitable means such as hinges —49—. A counterweight —54— extended rearward therefrom serves to return the bottom, when open, to a closed position in which it is retained by means of a catch —50—, on the front wall of the hopper, which engages a pin —51—, extended from the forward edge of the closure. The catch 50 is pivoted at —52—, and has a lateral forward projection —53— which serves as a handle. From the rear wall of the weighing hopper there is extended a bracket —55— from which depends a latch —56— having a hook —57— adapted to be engaged with a pin —58—, on a bracket —59— extended from the main frame, to hold the weighing hopper in its down position. The lower end of the latch 56 is connected with the hinged bottom 48 by means of a slotted link —60—, which is pivotally connected to an ear —61— extended from the bottom. The arrangement being such that as the bottom 48 opens the latch 56 is permitted to swing into position to engage the pin 58 and prevent the weighing hopper from rising; and when the bottom closes the latch is withdrawn from its engagement with the pin, and the

weighing hopper is free to rise. A funnel —62— is supported on extensions —63— of the frame, beneath the weighing hopper, in position to receive commodity discharged therefrom. On the forward side of the funnel is positioned an adjustable stop —64— adapted to be interposed in the path of the handle 53, of the catch 50, to trip said catch. An adjustable detent —68— is positioned on the front of the funnel, and projecting above the same, is adapted to engage with a bar —69—, extended from the scale hopper, to hold the hopper in its down position. An adjustable platform —75— is provided to support packages into which the weighed commodity is discharged.

In operation, a commodity is conducted, either intermittently or continuously, from a suitable source of supply, into the receiving hopper from whence it flows into the weighing hopper, when the weighing hopper has received a quantity of commodity sufficient to counter-balance the weight on the scale beam it will descend. It is to be observed that at the moment the scale beam is in equilibrium the weighing hopper hangs free from connection with any actuating or controlling means which would tend to retard its movement or interfere with the accuracy of the weighing. As the weighing hopper descends the roller 43 ceases to contact with the gate lever 18, but the latter is still in operation by reason of the engagement of the latch bolt 24 with the pin 25 on the trip lever 26. As the point of equilibrium is passed the bracket 45 contacts with the pin 44 on the trip lever 26, depressing said lever and releasing the gate lever 18, whereupon the gate 12 will be moved into its closed position shutting off the flow of commodity. As the bottom opens it permits the latch 56 to swing rearward into position to engage with the pin 58. The out-flowing commodity holds the bottom open, and as the weight decreases the hopper will rise until the hook 57 engages with the pin 58, at which point it will be held until the bottom closes. As the flow of commodity lessens the bottom commences to close, but on account of the link 60 being slotted, will not release the latch 56 until the commodity ceases to flow. When the flow of commodity ceases the weight 54 will cause the bottom to close, releasing the latch 56 and permitting the weighing hopper to rise. As the hopper rises the roller 43 on the upper edge thereof, contacts with the gate lever 18 and through the medium thereof opens the gate 12, allowing the commodity to flow into the weighing hopper. As the gate lever reaches the limit of its travel the latch bolt 24 in the lower end thereof will pass over and engage with the pin on the trip lever 26. The foregoing cycle will be repeated con-

tinuously as long as the commodity is supplied to the weighing hopper, unless the stop 64 is shifted out of the path of the catch handle 53, in which case the weighing hopper will remain in the down position until the catch is released by hand when the hopper will discharge and rise for a fresh charge. It will be seen that by this means, single packages may be weighed at will. By means of the detent 68 the weighing hopper may be held in the down position when empty, in this way the weighing operation may be suspended while the character of the commodity is being changed.

It is thought that the construction, operation and the many advantages of my improved scale may be thoroughly understood from the foregoing description by anyone versed in the art pertaining thereto, and

I claim:

1. In a scale, a frame, a scale beam pivoted thereon, a hopper suspended from said beam, a hinged bottom on said hopper, means carried by said hopper adapted to engage a fixed point on said frame to hold said hopper in its down position, said means controlled by said bottom.

2. In a scale, a frame, a scale beam pivoted thereon, a hopper suspended from said beam, a bottom hinged on said hopper, a stop on said frame, and a latch on said hopper adapted to be moved into position to engage with said stop to hold the hopper in its down position.

3. In a scale, a frame, a scale beam pivoted thereon, a hopper suspended from said beam, a bottom hinged on said hopper, a stop on said frame, a latch on said hopper adapted to be moved into position to engage with said stop to hold the hopper in its down position, and operative connections whereby the position of said latch is controlled by said bottom.

4. In a scale, a frame, a scale beam pivoted thereon, a hopper suspended from said beam, a bottom hinged on said hopper, a stop on said frame, a latch on said hopper, means operable by the opening of said bottom to permit said latch to move into position to engage with said stop to hold the hopper in its down position, said means operable by the closing of the bottom to release said latch and allow the hopper to rise.

5. In a scale, a frame, a receiving hopper having a bottom outlet supported thereby, a gate adapted to close said outlet, a lever adapted normally to hold said gate open, a trip lever adapted to hold said gate lever in its normal position, a scale beam pivoted on said frame, a weighing hopper suspended from said beam, means associated with said weighing hopper to actuate said trip lever and permit said gate to close, means adapted to actuate said gate lever to open said gate,

a bottom hinged on said hopper, a stop on said frame, and a latch on said hopper adapted to be moved into position to engage with said stop to hold the hopper in its down position.

6. In a scale, a frame, a receiving hopper having a bottom outlet, a gravity gate adapted to close said outlet, a lever connected with, and normally holding said gate open, a trip lever adapted to engage and hold said gate lever in its normal position, a scale beam pivoted on said frame, a weighing hopper suspended from said beam, a projection on said weighing hopper adapted to actuate said trip and permit said gate to close, a roller on the upper edge of said weighing hopper adapted to actuate said gate lever to open said gate.

7. In a scale, a frame, a receiving hopper having a bottom outlet, a gravity gate adapted to close said outlet, a lever connected with, and normally holding said gate open, a trip lever adapted to engage and hold said gate lever in its normal position, a scale beam pivoted on said frame, a weighing hopper suspended from said beam, a projection on said weighing hopper adapted to actuate said trip and permit said gate to close, a roller on the upper edge of said weighing hopper adapted to actuate said gate lever to open said gate, a bottom hinged on said weighing hopper, a stop on said frame, and a latch on said hopper adapted to be moved into position to engage with said stop to hold the hopper in its down position.

8. In a scale, a frame, a receiving hopper having a bottom outlet, a gravity gate adapted to close said outlet, a lever connected with, and normally holding said gate open, a trip lever adapted to engage and hold said gate lever in its normal position, a scale beam pivoted on said frame, a weighing hopper suspended from said beam, a projection on said weighing hopper adapted to actuate said trip and permit said gate to close, a roller on the upper edge of said weighing hopper adapted to actuate said gate lever to open said gate, a bottom hinged on said hopper, a stop on said frame, a latch on said hopper adapted to be moved into position to engage with said stop to hold said hopper in its down position, and operative connections whereby the position of said latch is controlled by said bottom.

9. In a scale, a frame, a receiving hopper having a bottom outlet, a gravity gate adapted to close said outlet, a lever connected with, and normally holding said gate open, a trip lever adapted to engage and hold said gate lever in its normal position, a scale beam pivoted on said frame, a weighing hopper suspended from said beam, a projection on said weighing hopper adapted to actuate said trip and permit said gate to close, a

roller on the upper edge of said weighing
hopper adapted to actuate said gate lever to
open said gate, a bottom hinged on said hop-
per, a stop on said frame, a latch on said
5 hopper, means operable by the opening of
said bottom to permit said latch to move into
position to engage with said stop to hold the

hopper in its down position, said means
operable by the closing of the bottom to re-
lease said latch and allow the hopper to rise. 10
RICHARD J. ZANONE.

Witnesses:

W. B. MUNNELL,
M. McALLISTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."