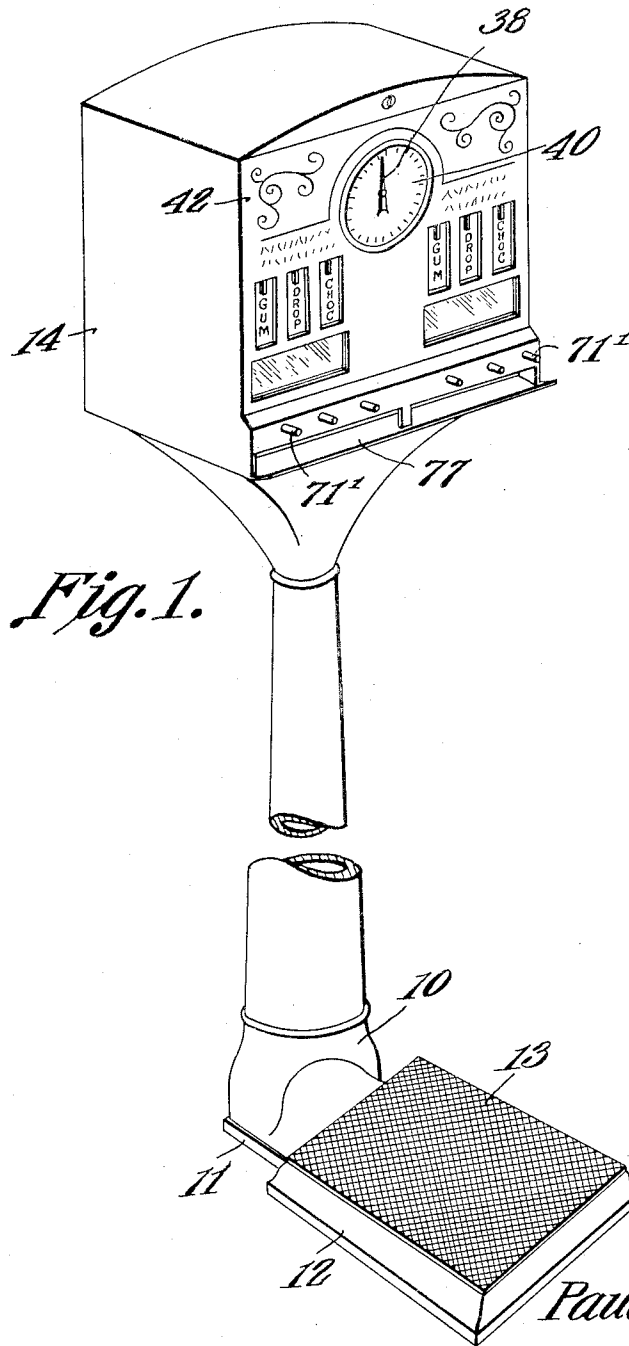


P. WHITING.
 COMBINED VENDING AND WEIGHING MACHINE.
 APPLICATION FILED NOV. 2, 1911.

1,040,077.

Patented Oct. 1, 1912.

5 SHEETS—SHEET 1.



Witnesses

J. R. Tomlinson
J. H. Wilson

by

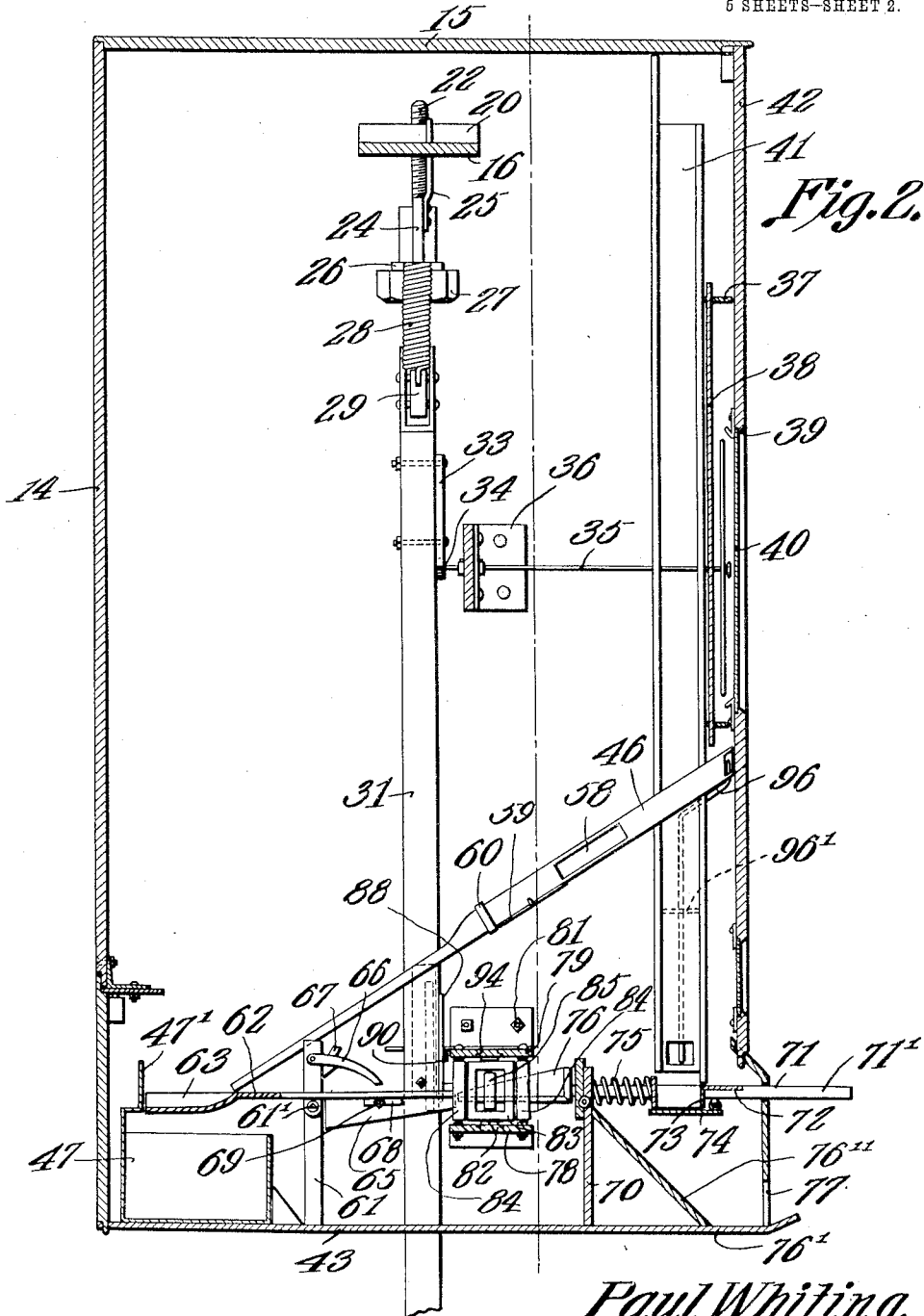
Paul Whiting,
 Inventor
C. A. Snow & Co.
 Attorneys

P. WHITING.
 COMBINED VENDING AND WEIGHING MACHINE.
 APPLICATION FILED NOV. 2, 1911.

1,040,077.

Patented Oct. 1, 1912.

5 SHEETS—SHEET 2.



Witnesses

J. R. Thorne
L. H. Wilson.

Paul Whiting,
 Inventor

by

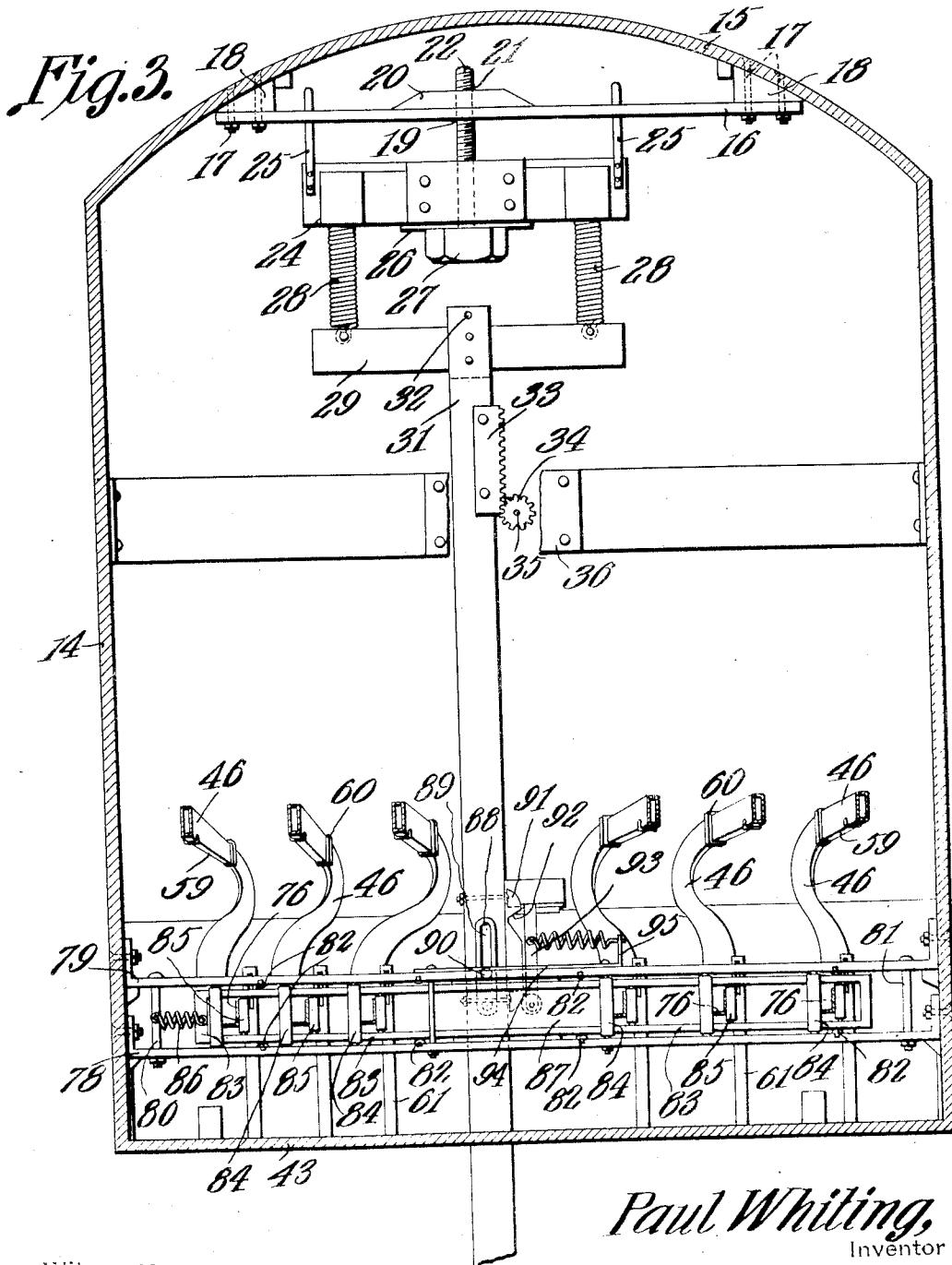
C. A. Snow & Co.
 Attorneys

P. WHITING.
 COMBINED VENDING AND WEIGHING MACHINE.
 APPLICATION FILED NOV. 2, 1911.

1,040,077.

Patented Oct. 1, 1912.

6 SHEETS—SHEET 3.



Witnesses

J. P. Torrey
L. H. Wilson

Paul Whiting,
 Inventor

by *C. A. Snow & Co.*
 Attorneys

6 SHEETS--SHEET 4.



by *CA Snow & Co.*
Attorneys

P. WHITING.
 COMBINED VENDING AND WEIGHING MACHINE.
 APPLICATION FILED NOV. 2, 1911.

1,040,077.

Patented Oct. 1, 1912.

6 SHEETS—SHEET 5.

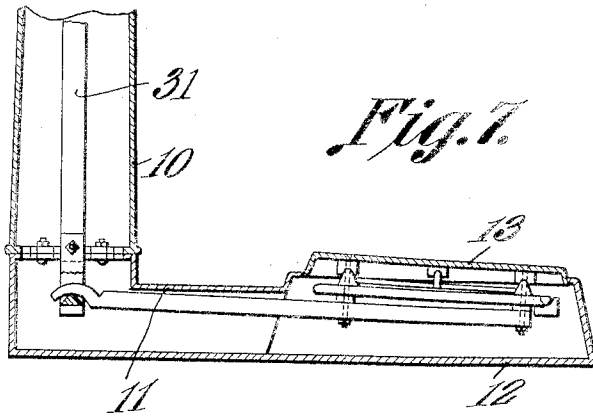


Fig. 7.

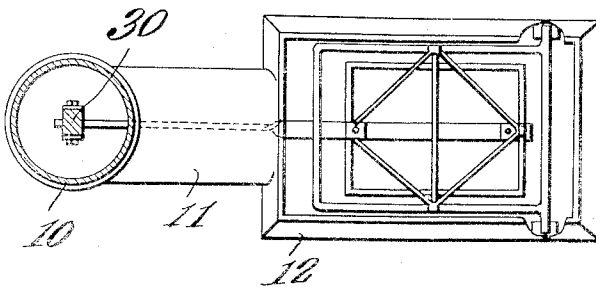


Fig. 8.

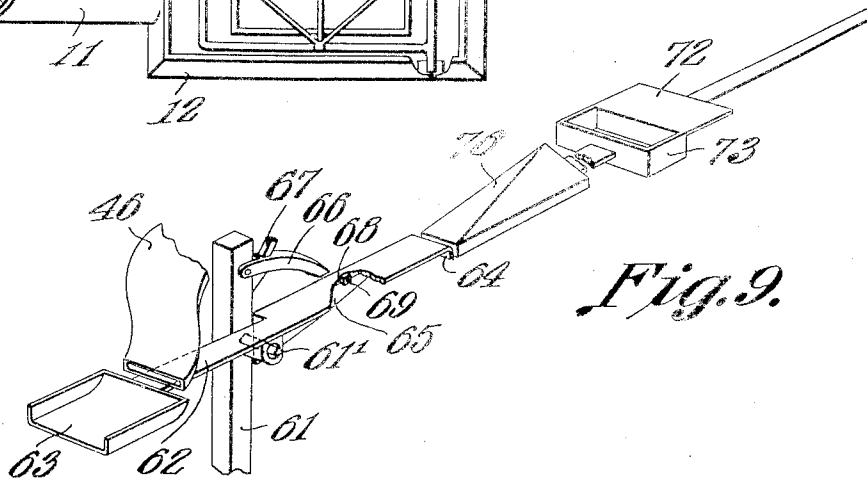


Fig. 9.

Witnesses

J. R. Foulley
L. H. Vickers

Paul Whiting,
 Inventor

by

C. A. Snow & Co.
 Attorneys

UNITED STATES PATENT OFFICE,

PAUL WHITING, OF KINGMAN, KANSAS.

COMBINED VENDING AND WEIGHING MACHINE.

1,040,077.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed November 2, 1911. Serial No. 658,257.

To all whom it may concern:

Be it known that I, PAUL WHITING, a citizen of the United States, residing at Kingman, in the county of Kingman and State of Kansas, have invented a new and useful Combined Vending and Weighing Machine, of which the following is a specification.

This invention relates to an improvement in a combined weighing and vending machine.

The primary object of the invention is to provide a machine which upon the insertion of a coin will deliver an article, the article delivering mechanism when actuated rendering operative a balance scale which is normally held in inoperative position.

A further object of the invention is to provide means for vending numerous articles which may vary in size and weight.

A still further object is to so construct and arrange the various parts which constitute the mechanism that the same may be economically manufactured and readily assembled.

In the drawings—Figure 1 is a perspective view of the complete machine. Fig. 2 is a transverse section. Fig. 3 is a longitudinal section. Fig. 4 is a detail view of the article holding tubes. Fig. 5 is a detail view of the article delivering plungers. Fig. 6 is a section on the line 6—6 of Fig. 4. Fig. 7 is a sectional view of the weighing platform showing the manner of connecting the same with the scale beam. Fig. 8 is a top plan view of the platform supporting mechanism, and Fig. 9 is a perspective of the article ejecting mechanism together with the pivotally supported plate which normally restricts the movement of said mechanism.

In the drawings 10 designates a pedestal which is secured to or otherwise supported by a base plate 11, said base plate being enlarged to form the boxing 12 which supports the scale platform 13. Secured to the stand or pedestal 10 is a casing 14 which contains the article vending mechanism as well as the mechanism which registers the weight which is placed upon the platform 13. The top wall 15 of the casing is arranged to support a hanger 16, said hanger being secured to the wall of top 15 by means of bolts 17, suitable blocks 18 being interposed between the hanger 16 and the top 15, these blocks being formed with a rounded face to conform to the curvature of the top

15 in order to properly support the hanger 16. The hanger or plate 16 is provided with a central aperture 19 and arranged adjacent said aperture on the upper face 60 of the hanger 16 is a block 20 which is formed with an aperture 21 in register with the aperture 19. The aperture 19 and the bore 21 of the block being screw threaded and adapted to receive the screw 22. This screw 22 extends centrally through an adjustable hanger 24. Secured to the hanger adjacent its ends are a plurality of guides 25 which extend through apertures formed in the stationary hanger 16 thus preventing the rotation of the adjustable hanger 24. Secured to the under face of the hanger 24 is a plate 26 which contacts with the enlargement or head 27 formed on the end portions of the screw 22. Thus it will be seen that by advancing or retracting the screw 22 the adjustable hanger 24 may be spaced from the stationary hanger 16. Secured adjacent the ends of the hanger 24 are a plurality of coiled springs 28, the other ends of these springs being secured to a beam 29. The rod or beam 31 which as shown in Fig. 7 has an operative connection with the scale platform extends vertically within the casing, the end portion of said rod being provided with a plurality of apertures 32 which form an adjustable connection with the beam 29. Arranged on the rod or beam 31 is a rack bar 33 which is arranged to mesh with a gear 34, said gear being arranged upon the end portion of an indicator shaft 35, said shaft being supported adjacent its ends by a bracket 36 which is secured to one wall of the casing. This indicator shaft extends within an interiorly arranged dial supporting frame 37, the dial 38 being viewed through the aperture 39 which is formed in the casing and which is covered with a glass 40, an indicating finger being arranged on the end of said shaft, said finger being of the usual construction. It will be noted by this construction that when weight is applied to the scale platform the vertically extending rod or beam will be drawn downward against the tension of the springs which connect the cross beam 29 with the adjustable hanger 24, this downward movement of the rod or beam 31 rotating the indicator shaft 35 through the medium of the rack 33 and the gear or pinion 34.

As before stated the vending apparatus

operates in conjunction with the weighing apparatus. While this vending apparatus may be employed to vend various articles which vary in size and weight, the same is particularly adapted for vending such goods as may be conveniently packed in rectangular packages which while varying in size are of the same general configuration. The articles which are to be vended are arranged in a series of tubes which extend vertically of the casing and which are supported adjacent the front of the same, access being had to the open ends of said tubes by the removable door 42, thus permitting the tubes to be conveniently filled with the articles which are to be vended. The tubes may be conveniently filled, the dial 38 being formed of two sliding sections, said sections being moved in order to place the articles to be vended within the tubes. The casing 14 is provided with a bottom 43, the end portions of the articles supporting tube 41 terminating at a point above said bottom.

In the preferred embodiment of the invention six article tubes are employed, said tubes being arranged adjacent the front of the casing 14, their upper ends being open to receive the articles to be vended, the front wall of the casing being removed in order to place the articles within the tube. The casing is provided with a bottom 43, the tube 41 terminating at a point above this bottom. Each of the tubes are provided with a cut away portion 44 which registers with a cut away portion in the casing, the opening in the casing being covered with glass, the goods being viewed through said openings. It will be noted by referring to Fig. 1 that the tubes are arranged in sets on either side of the weight indicator, there being a suitable plate arranged in the front of each tube which may contain the name of the article contained in the adjacent tube.

As before stated the various tubes are arranged to contain articles which vary in price and consequently each tube must be provided with a separate coin chute. Inasmuch as these coin chutes are identical in construction a detail description of one will suffice for all. The casing is provided with a slot adjacent each of the tubes and communicating with this slot is a chute 46. This chute 46 as shown in Fig. 3 is curved in order to pass around the article holding tube, said chute being given a turn the function of which will be hereinafter described. The chute terminates at a point adjacent the rear wall of the casing immediately above a coin receptacle 47. The chute as before stated is tilted and this tilted portion of the chute is formed with an opening 58 which is of a width almost equal to the width of the chute, thus if a coin smaller than the coin which is designed to actuate the vending mechanism should be

inserted within the chute the same would fall through the opening 58 to a suitable receptacle arranged below the chute. The chute is also provided with a trap 59 which is pivotally supported and which is so balanced that should a coin or plug of a size equal to the size of the correct coin yet heavier than said coin fall on said trap the same would fall within the receptacle which as before stated receives smaller coins which fall through the opening 58, thus it will be noted that even though the coin be of the same size as the required coin the same must also be of the same weight in order to reach the dispensing apparatus. A magnet 60 is arranged adjacent the trap 59 and this magnet will attract a plug which is not of the proper material. Thus it will be seen that the slot 58, the trap 59 and the magnet 60 combine to form a size, weight and material tester.

Arranged adjacent the coin receptacle 47 and spaced from each other are a plurality of standards 61 varying in number according to the number of coin chutes, there being a standard corresponding to each coin chute. Pivotally supported by each of said standards is a plate 62, one end of this plate resting directly above the coin receptacle 47, said end being arranged to form the coin receiving trough 63. The coin receptacle 47 is provided with the extended wall 47' which when the coin trough 63 is in the position shown in Fig. 2 is flush with the extreme end of said trough, thus a coin entering the trough 63 would not be deposited within the coin receptacle 47 until the plate 62 had been swung on its pivot. The plate 62 is provided with an offset 64 which is disposed at an angle, said plate being also formed with an extended side wall 65 which is tapered toward the offset 64. Pivotally secured to the standard 61 is a latch member 66 which is arranged to restrict the upward movement of the plate or arm 62, a lug or stop 67 formed on said latch member preventing its lift beyond a certain point. The plate 62 is hung on the bearing 61' which is so formed as to assure a perfect balance. In order to effectually balance the plate the extended wall 65 is formed with a slot 68 which receives the movable weight 69, said weight being adjusted longitudinally of the plate to properly balance the same.

The member 62 is adapted within its normal position to restrict the movement of an ejecting plunger which is arranged to receive the article to be vended and deliver the same within a tray which is accessible to the purchaser. Each of the distributing tubes are provided with a corresponding ejector arranged below the same. Extending longitudinally of the casing is a support 70 which is provided with openings through which the plungers 71 extend. The plunger

71 consists of the pusher rod 71' which is secured to a plate 72, said plate lying flush with the end portion of the article holding tube. This plate is formed integral with a frame 73 normally lying directly beneath the article tubes and resting upon a supporting plate 74, the rod 71' provided with a roller in contact with the supporting plate 74 to reduce friction as the frame travels across the supporting plate. A continuation of the rod 71' extends from the frame through the supporting bracket 70, a spring 75 being coiled around said continuation, one end of said spring bearing against the plate 70 the other against the article receiving frame, the tendency of said spring being to retain the frame in the position shown in Fig. 2. Arranged on the end portion of the extension which is formed integral with the frame 73 and which is a continuation of the pusher rod is a block 76 which is triangular in side elevation, the side wall and the base of said block being tapered to form a wedge. This wedge is arranged to lie in alignment with the plate 62 its edge portion so contacting with the angularly extending offset 64 as to effectually lock the members together, thus preventing the wedge from moving until the plate has been moved out of the path of movement.

When a coin has been deposited in the coin chute the same falls within the trough 63, the weight of the coin swinging the plate or arm 62 on its pivot, bringing the end portion 64 of said arm out of the path of travel of the wedge which is carried by the plunger, thus allowing the plunger to be forced inward its beveled face contacting with the tapered extension formed integral with the arm 62 thus forcing said arm upward. It will be noted that the arm is first moved out of the path of travel of the plunger by the coin, the further upward movement of the arm being accomplished by the continued forward movement of the plunger, the coin deposited merely bringing the end portion of the arm and the wedge out of locked relation. As before stated a frame 73 is normally arranged immediately below each of the article delivering tubes as will be seen by referring to Fig. 2. The end portion of the tube adjacent said frame has one extended wall which as before stated lies flush with the plate 72. Normally, when the frame is in this position the stack of articles to be vended rests on the plate 74, this plate forming a base for the stack. The space between said plate and the end portion of the stack being such as to allow but one of the articles to be vended to rest upon the plate 74. Attention being called to the fact that while the article is resting on the plate 74 the same is embraced by the frame 73. The frame 73 varies in size according to the articles vended but the plate 74 is of a uni-

form width for its entire length thus while the frame 73 may exceed the width of the plate 74 a sufficient surface of the plate 74 will be beneath the frame to hold the article against displacement until the coin has been inserted, this arrangement being such that the rod is given a uniform thrust and restricted to a certain forward movement regardless of the size of the package. It will be noted that as the plunger 71 is forced inward the package or article which is arranged on the plate 74 will be carried to a point out of alignment with the tube until the same is deposited in a tray 76 to which the purchaser may have access by means of an opening 77 arranged in the casing, a suitable deflector 76' being disposed at an angle to the bottom 43 in order to properly direct the package toward the opening 77. It will be noted that as the plunger 71 is forced inward, plate 72 will be moved from the position directly beneath the second article which holds them in position until the plunger is returned to normal position by the spring 75. While the plunger is returning to its normal position the flange or angle on the article tube will hold the articles in position and the lowermost article will be deposited in frame 73 and on seat 74.

As heretofore stated the primary object of the invention is to provide a machine of the combined weighing and vending type. The weighing apparatus being arranged to coact with the vending apparatus, the arrangement being such that the weighing apparatus will be brought into operative position at each time a purchase is made. In carrying out this feature of the invention a plurality of spaced supporting plates 78 and 79 are secured to the walls of the casing at a point above the bottom 43, these plates 78 and 79 being connected adjacent their ends by bolts 80 and 81. The inner faces of both of the plates 78 and 79 are provided with rollers 82 and arranged for movement between said plates is a skeleton plunger 83 which is rectangular in cross section, a plurality of vertically disposed rollers 84 being supported adjacent the edges of the plates 78 and 79, said rollers contacting with the frame or cylinder 83 and coacting with the rollers 82 to facilitate the movement of said frame. A plurality of vertically disposed rollers 85 are supported at intervals by the skeleton frame 83. The wedge shaped members which are carried by the plunger 71 extend through the frame 83, the rollers 85 being in the path of movement of said wedges. It will thus be noted that as the plunger is forced inward the wedge which is carried by the same will contact with a roller supported by the frame 83, a continuous movement of the plunger moving the frame to one side, the direction in which the frame is moved depending upon which side

of the roller the wedge contacts with, however, it is intended that the frame be moved to the right and consequently the rollers are positioned to the right of the wedges thus when the plunger is inserted the frame will be moved toward the right, a spring 86 connecting the end portion of the frame 83 with the bolt 80, the tendency of said spring being to hold the frame in the position shown in Fig. 3. Secured centrally of the frame 83 is a plate 87, the center of this plate being in the path of movement of the rod or beam 31 of the weighing mechanism. A slotted link or plate 88 is pivotally supported by the plate 87, the vertically disposed slot arranged in said plate receiving a projection or pin 90 which is rigidly mounted on the member 31, said slot extending beyond the center of said plate as shown in Fig. 3. In referring to Fig. 3 it will be noted that with the plate 88 in the position shown the projection 90 which is formed integral or carried by the member 31 will contact with the end portion of the slot, a further downward movement of the member 31 thus being prevented. However when the vending apparatus has been operated, which operation forces the frame 83 to move to the right the plate 88 which is pivotally supported by said frame 83 will likewise move to one side. This movement of the plate bringing the projection 90 which is formed integral with the member 31 out of alinement with the pin which supports the plate 88, thus allowing the member 31 to be depressed, the depressing of the member 31 being caused by the weight of the purchaser on the scale platform, the weighing mechanism thus by means of the rack 33 and the gear 34 registering the weight of said purchaser on the dial 38. Thus it will be seen that with each operation of the vending apparatus the purchaser may if he so desires use the scale.

In order that the scale may not be again used until another coin has been deposited, the rod or beam 31 is provided with an extension 91 which is formed with a notch 92. Pivotally supported by the plate 87 is a latch member 93. Arranged on the supporting plate 79 is an L-shaped bracket 94, the offset end 95 of said bracket extending at right angles to the plate 79. A coiled spring is secured to the latch member 93, the other end of said spring being secured to the offset end of said bracket 94, thus when the frame 83 is moved to the right, the secured end of the latch member 93 will move with said frame, the other end lying in the path of the projection 90. Thus when the purchaser has stepped from the scale the spring 28 will immediately draw the bar 31 upward, the latch member 93 extending within the notch formed in the extension 91 carried by said bar, preventing the further downward move-

ment of the scale bar 31 until the weighing mechanism has been again operated, thus it would be impossible for more than one person to be weighed upon the scale even though the plunger 71 were held in its extended position after the article has been vended.

In order that the purchaser may not deposit a coin, to secure an article, the supply of which has become exhausted, a resilient member 96 is supported adjacent the article tube, said resilient member 96 having an offset end which normally bears against the articles arranged in the tube, thus when all of the articles in the tube have been dispensed, said offset end will extend within the tube, there being no article to prevent this inward pressure of the said offset end. The other end of the member 96 is arranged to extend within the coin chute, the member 96 being pivoted centrally at 96', the arrangement being such that when the offset end of the resilient member through its failure to contact with an article arranged in the tube, extends within the tube the member will swing on its pivot forcing the other offset end of the member 96 within the coin chute, said member extending within the chute at a point adjacent the entrance to the same thus preventing the purchaser from depositing his coin to receive an article the supply of which has become exhausted.

What is claimed is:

1. In a combined vending and weighing machine, a vending mechanism, a weighing device, a vertically movable scale beam, a horizontally movable member arranged to normally hold said scale beam against movement, and means carried by said vending mechanism for imparting movement to said horizontally movable member.

2. In a combined vending and weighing machine, a weighing mechanism, a vending mechanism, an article ejector, a vertically movable scale beam, said scale beam being normally held against movement, and means actuated by said ejector to permit said beam to move vertically.

3. In a combined vending and weighing machine, a vending apparatus, a weighing apparatus, said weighing apparatus including a vertically movable scale beam, said beam being normally held against movement, and means actuated by the vending apparatus when operated to permit the vertical movement of said beam.

4. In a combined vending and weighing machine, a vending apparatus, a weighing apparatus, said weighing apparatus including a vertically movable scale beam, and means actuated by the vending apparatus to prevent the movement of said scale beam.

5. In a combined vending and weighing machine, a vending apparatus including a reciprocating plunger, a weighing apparatus

including a vertically movable scale beam, a longitudinally movable member normally holding said scale beam against movement, said plunger when actuated imparting movement to said longitudinally movable member.

6. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a longitudinally movable frame, said frame normally holding said beam against movement, and means carried by said plunger for imparting movement to said frame.

7. In a combined vending and weighing machine, a vending apparatus, a plunger arranged to actuate said vending apparatus, a weighing apparatus, said weighing apparatus including a vertically movable scale beam, a plurality of spaced plates, a frame movable between said plates, and means carried by said frame for normally holding said beam against movement.

8. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus, said weighing apparatus including a vertically movable scale beam, a plurality of supporting plates, a frame mounted for movement between said plates, a link connection between said frame and said vertically movable beam, said link normally holding said beam against movement, and means for moving said frame to permit the movement of said beam.

9. In a combined vending and weighing machine, a vending apparatus, said vending apparatus including a plunger, a weighing apparatus, said weighing apparatus including a vertically movable scale beam, a plurality of supporting plates, a frame mounted for movement between said plates, a link connection between said frame and said vertically movable beam for normally holding said beam against movement, and means carried by said plunger for moving said frame to release said beam.

10. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a plurality of supporting plates, a frame mounted for movement between said plates, a link pivotally supported by said movable frame, said link being formed with a slot, a projection secured to said beam, said projection extending within said slot, said link normally holding said beam against movement, and means carried by said plunger for actuating said frame to move said link.

11. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a plurality of supporting plates, a frame mounted for

movement between said plates, a plurality of rollers supported by said plates and arranged to contact with said frame, a plurality of rollers supported by said frame, and a tapered extension formed on said plunger arranged to contact with the last mentioned rollers to move said frame.

12. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a plurality of supporting plates, a plurality of rollers supported by said plates, said rollers facilitating the movement of said frame, rollers supported by said frame, and means carried by said plunger, said means contacting with said last mentioned rollers to move said frame.

13. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a plurality of supporting plates extending transversely of said beam, a frame mounted for movement between said plates, said plunger being provided with means for moving said frame.

14. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a plurality of supporting plates, a frame mounted for movement between said plates, means carried by said frame for holding said beam against movement and a latch member supported by said frame, said latch member having a resilient connection with one of said plates, means for moving said frame, said latch member preventing the downward movement of beam after movement has been imparted to said frame.

15. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a vertically movable scale beam, a plurality of spaced supporting plates, a frame mounted for movement between said plates, a slotted link secured to said frame, a projection carried by said beam, said projection resting within the slot formed in said link, means for imparting movement to said frame, said link moving with said frame, and means actuated after a single movement of said beam for holding the same against further movement.

16. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a resiliently supported vertically movable scale beam, means for holding said beam against movement, and means actuated by said plunger for permitting said beam to move.

17. In a combined vending and weighing machine, a vending apparatus including a plunger, a weighing apparatus including a

resiliently supported scale beam, means for holding said beam against movement, and means acting independent of the first mentioned means for locking said beam against
5 movement after a single movement of the same.

18. In a combined vending and weighing machine, a plunger, a frame movable with said plunger, a plate forming a continuation
10 of the upper edge of said frame, said plate supporting the stack of articles while the

plunger is projected, a tapered extension forming a continuation of said plunger, and means for normally restricting the movement of said plunger. 15

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PAUL WHITING.

Witnesses:

WILLIAM GEORGE CLUTTERBUCK,
ALFRED CHARLES POWELL.