

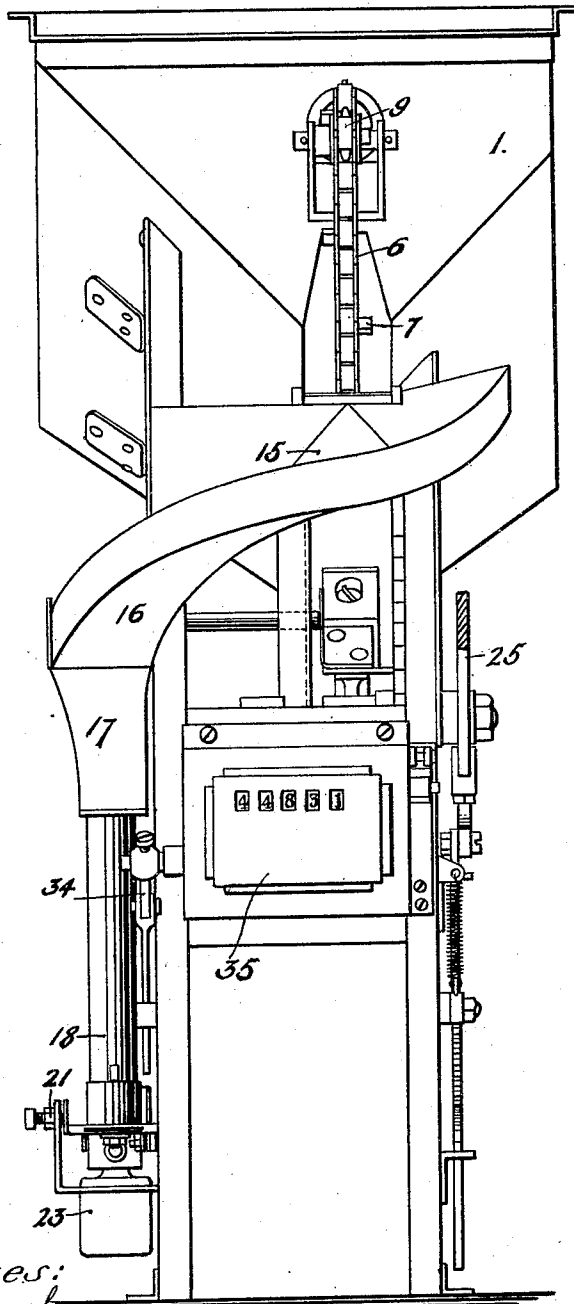
C. WIGG.  
APPARATUS FOR DELIVERING TOKENS OR COUNTERS.  
APPLICATION FILED SEPT. 5, 1911.

1,047,470.

Patented Dec. 17, 1912.

6 SHEETS—SHEET 1.

FIG. 1.



Witnesses:  
M. C. Smook  
C. L. Lamb.

Inventor:

Charles Wigg  
by his attorney  
R. L. Davis.

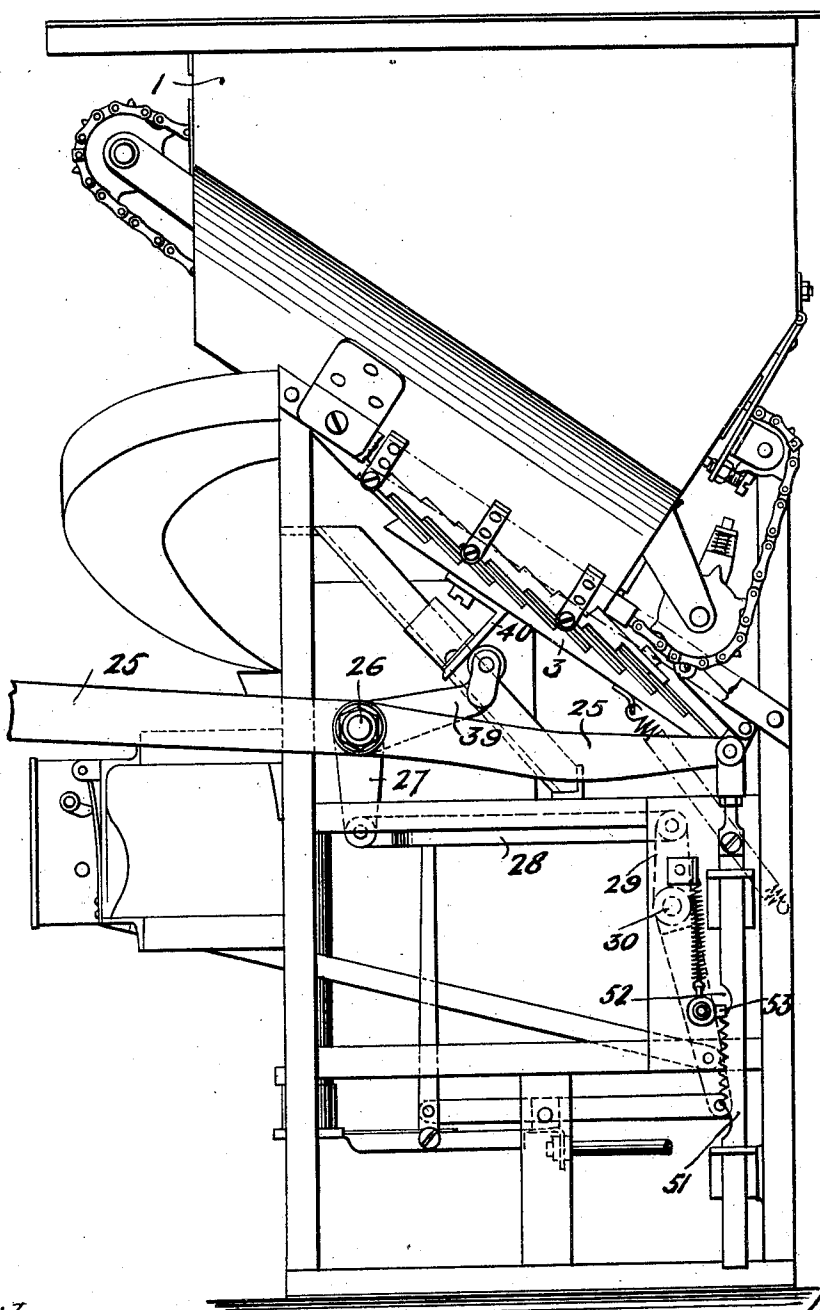
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6 SHEETS-SHEET 2.

FIG. 2.



Witnesses:  
M. E. Smoot.  
W. H. L. Smith.

Inventor:  
Charles Wigg  
by his attorney  
J. L. Quinn.

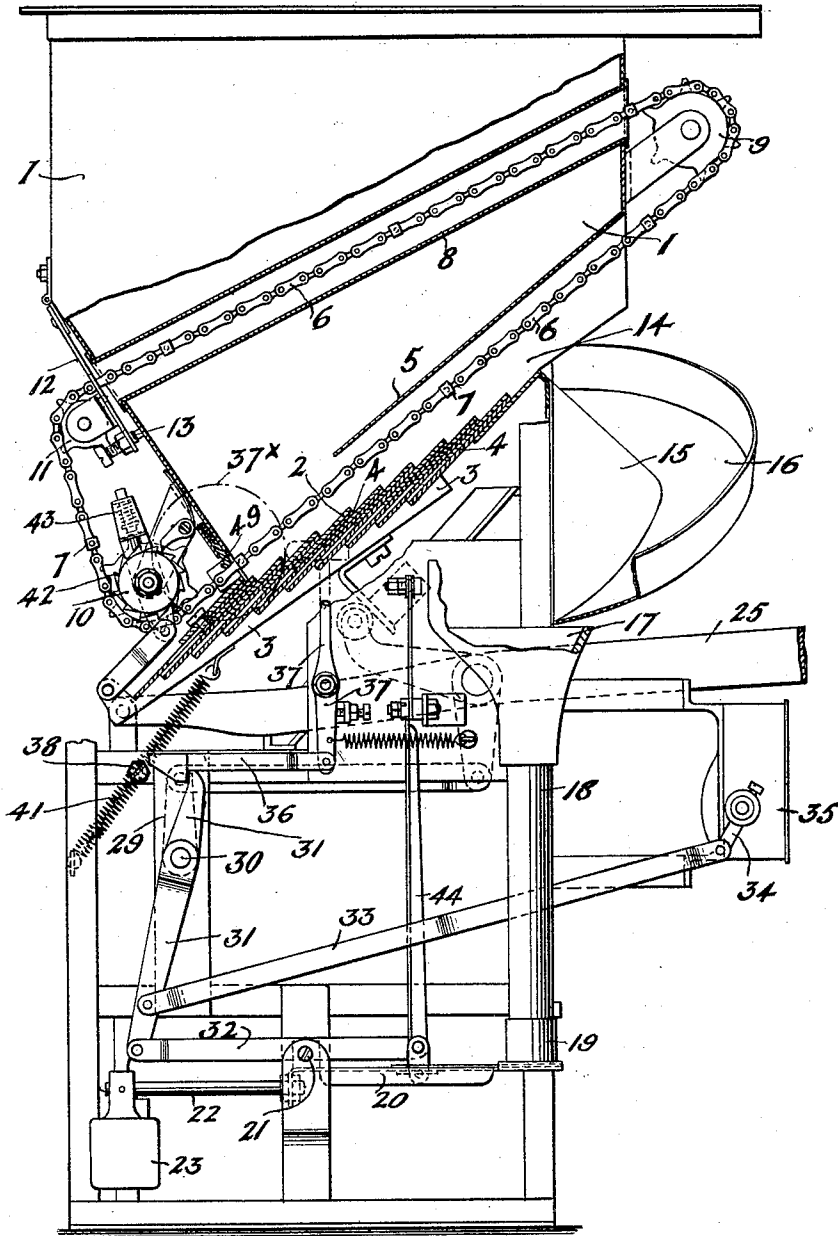
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6 SHEETS—SHEET 3

FIG. 3.



Witnesses:  
 M. E. Smooh.  
 W. L. Lamb.

Inventor:  
 Charles Wigg  
 by his attorney  
 J. D. Smith.

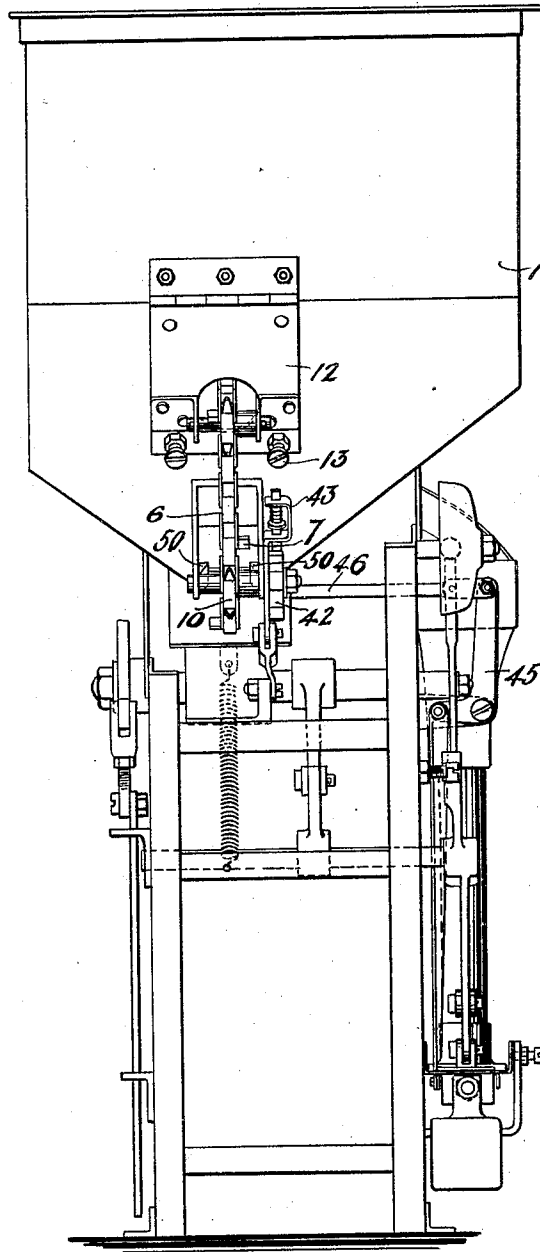
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6 SHEETS—SHEET 4.

FIG. 4.



Witnesses:  
M. D. Smook.  
Wm. L. Lamb.

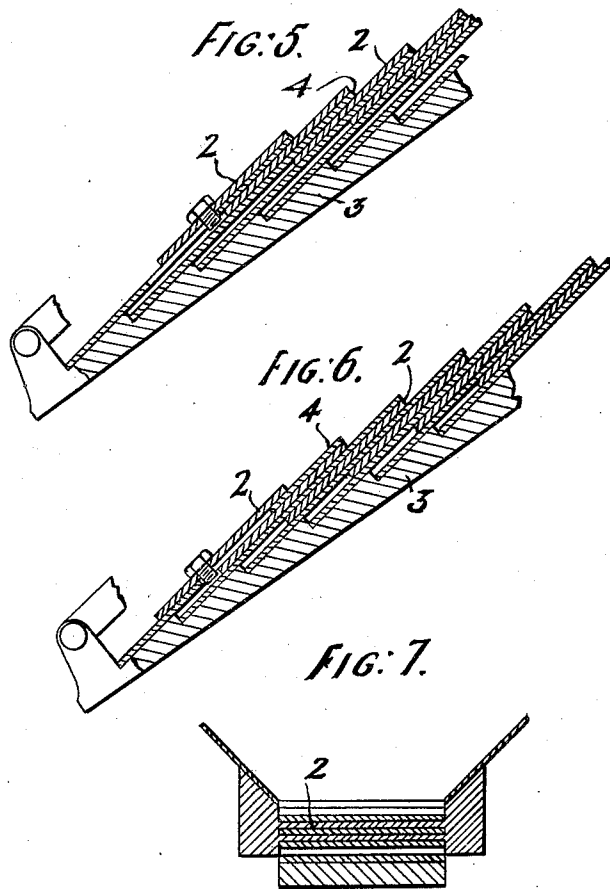
Inventor:  
Charles Wigg  
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6 SHEETS—SHEET 5.



Witnesses:  
M. E. Smoot.  
W. S. Lamb.

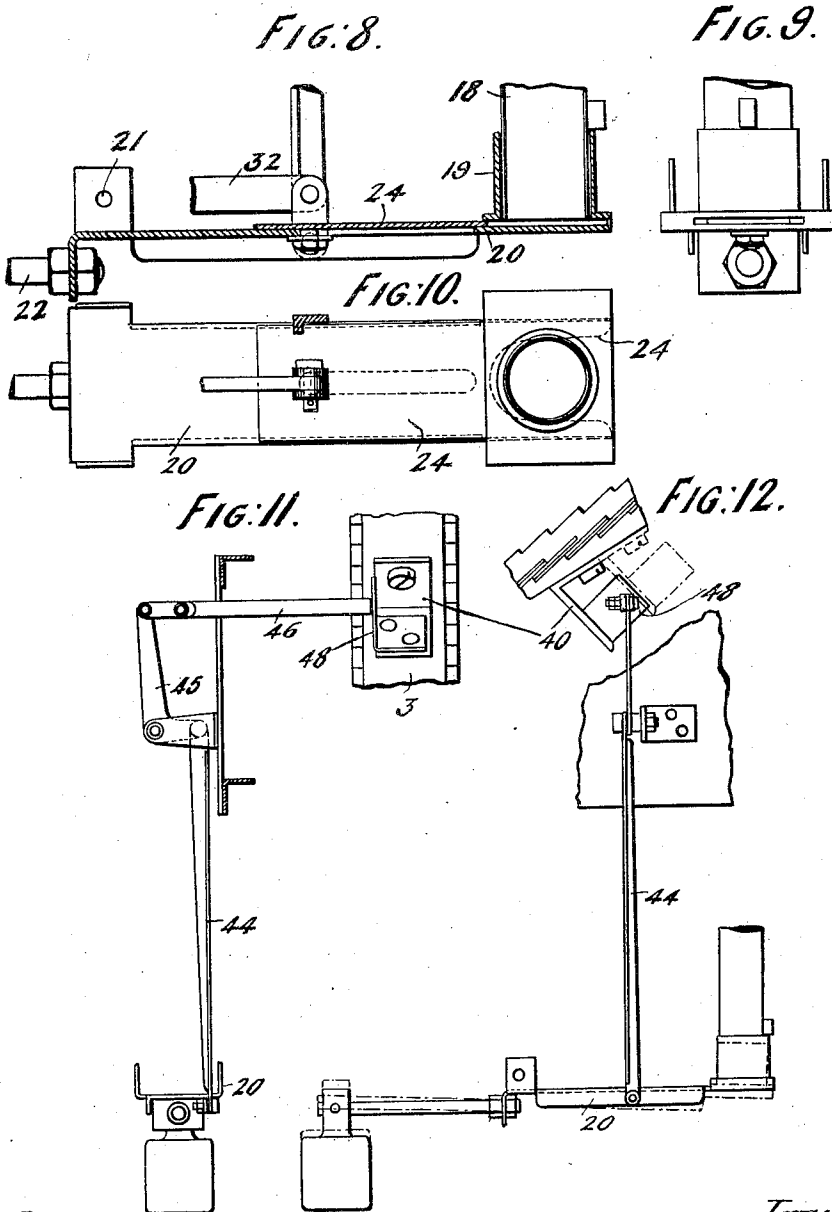
Inventor:  
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6 SHEETS—SHEET 6.



Witnesses:  
 M. E. Smook  
 W. J. Paul.

Inventor:  
 Charles Wigg  
 by his attorney  
 W. J. Paul.

# UNITED STATES PATENT OFFICE.

CHARLES WIGG, OF UPPER NORWOOD, LONDON, ENGLAND.

APPARATUS FOR DELIVERING TOKENS OR COUNTERS.

1,047,470.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed September 5, 1911. Serial No. 647,663.

*To all whom it may concern:*

Be it known that I, CHARLES WIGG, a subject of the King of Great Britain, residing at Upper Norwood, in the county of London, England, have invented certain new and useful Improvements in Apparatus for Delivering Tokens or Counters, and of which the following is a specification.

The object of this invention is to provide a machine which shall be simple in construction and reliable in operation, for the purpose of mechanically delivering a single token or counter at each operation of the machine by an attendant, from a supply or store of such tokens which has been placed within the said machine, the number of which tokens so delivered may be automatically registered. Such a machine for delivering single tokens would have many uses in commerce; for example in carrying merchandise it is already common practice to deliver by hand a token to each carrier as he or she passes a certain point in the distance which the carried goods have to be transported, and for that carrier at the end of a period of work to produce the tokens which he or she has collected singly in passing, and for the remuneration for such work to be paid in proportion to the number of tokens so produced. In such an example it will be obvious that where the tokens are given by an attendant by hand, he may by accident, or otherwise, give one or more carriers more than one token each as they pass that point, with the consequent result that payment would be made for more work than had actually been executed, and beyond this it is necessary for the total number of tokens so delivered, to be counted, and thus not only is work involved, but inaccuracies are extremely liable to occur.

The above is merely given as an example of a use to which the machine—which is the object of the present invention—can be put to, the office of the said machine being that upon a single movement being given by hand to a mechanical part, there will result the automatic delivery of a single token, and that the delivery of that token may be immediately and instantaneously automatically registered by a counting device.

The apparatus according to this invention for delivering and counting tokens or counters will be described with reference to the

construction shown in the accompanying 55 drawings.

Figure 1 is a front elevation of the apparatus, the outer inclosing casing within which the apparatus is contained being omitted in order to render the mechanism 60 clear. Fig. 2 is an elevation of the apparatus shown at Fig. 1 looking from the right-hand side of same. Fig. 3 is a vertical sectional elevation taken at right angles to Fig. 1 to further illustrate the arrangement of 65 the hopper and its mechanical parts, and Fig. 4 is a rear elevation of the apparatus. Fig. 5 shows, on an enlarged scale, a portion of the base of the hopper with the moving part thereof in one position, and Fig. 6 is a 70 similar view in another position, Fig. 7 being a transverse section thereof. Fig. 8 is a sectional side elevation, Fig. 9 a front elevation and Fig. 10 a sectional plan view of a balance mechanism drawn to a larger scale than 75 the corresponding parts illustrated at Figs. 1, 2 and 3. Fig. 11 is a rear elevation and Fig. 12 a side elevation of a locking mechanism (hereafter described) shown detached.

The machine is constructed with a receptacle or hopper 1 into which a supply of tokens is tipped or placed promiscuously, and the base of the hopper 1 is inclined to the horizontal as shown at Figs. 1 and 2 and is composed of a number of stationary plates 85 2 (Figs. 3, 5, 6 and 7) placed one to overlap the lower edge of the next upper plate, and so on, a space remaining between the overlapping edges of the plates 2 somewhat after the fashion of a Venetian blind. Beneath the base of the hopper 1 so formed is an inclined carrying plate or slide 3, having on its upper surface—as shown in the detail view at Fig. 5—a number of tongues 4 which pass in between the stationary plates 95 2, which latter form the louver-like base of the hopper. Preferably, and as illustrated at Fig. 3, only a portion of the louver-like base of the hopper 1 is exposed, the remainder being covered by a stationary plate 100 5, and the lowermost tokens of the supply which are to be distributed and which have been poured into the hopper 1, rest upon the exposed part of the louver-like inclined base. 105

Passing through the hopper 1 and immediately above the louver-like base, and also having the same inclination as the said

base, is one longitudinal length of an endless chain 6, which chain is provided at intervals with laterally extending studs 7, preferably of square section, which as they pass through agitate the store of tokens, and the said chain 6 has an intermittent traveling motion communicated to it during the action of the machine in a direction passing upward along the base of the hopper.

The upper length of the endless chain 6 passes through the hopper by way of a tube 8, and the chain is carried by sprocket wheels 9 and 10 carried from brackets at opposite ends of the hopper, the chain at the rear of the hopper passing over a sprocket wheel 11 carried in bearings from a hinged plate 12 fitted with distance screws 13, whereby the tension of the chain can be adjusted.

With this mechanism, the token or tokens lying on one of the louvers 2 is or are supported by the tongue 4 working over that louver, and as the tongue 4 rises at the upward movement of the slide 3, that token or those tokens mentioned is or are transferred to the next louver 2, and so on, step by step at each stroke, until the tokens are delivered through a suitable aperture 14 at the upper end of the hopper 1.

The tokens so delivered fall on to a curved surface 15, which is somewhat in the form of a cone, around the base of which conical formation there extends a helical trough 16, the lower end of which (over which the tokens are delivered) being located over the splayed mouth 17 of a vertical tube 18 down which they fall on to a base hereafter described and form a pile one upon another, their flat surfaces lying in contact.

The base mentioned which forms the closure for the end of the tube 18 (Figs. 8, 9 and 10) includes a sleeve 19 which fits loosely around the lower end of the said tube 18, and the sleeve is carried upon one arm 20 of a two-armed lever fulcrumed at 21, the other arm 22 of which lever is counter-weighted by a weight 23, Fig. 3. The flat surface of the arm 20 of the balanced lever therefore forms the base carrying the sleeve 19 and closes the end of the tube 18, and the weight 23 is such or is so adjusted as to maintain the sleeve 19 in its upper position so long as a predetermined number of tokens is located in the tube 18.

In order to feed the lowermost token of the pile from within the tube 18, the sleeve 19 forming the end cap of the tube 18 is formed with a slot at its base extending at right angles to its axis, and the arm 20 of the balanced lever carries a slide 24 (Figs. 8 to 10) which can pass through the said slot and force the lowermost token out in front of it to a delivery chute to carry the token to the exterior of the casing inclosing the apparatus and which may be of any approved construction and not necessary to

illustrate in this specification. The forward end of the slide 24 is forked (Fig. 10), and the said slide 24 can be slid by mechanism hereafter described whether the sleeve 19 is in its raised or in its lowermost position.

The mechanism is to be operated for the delivery of each token by one movement of a mechanical part which is to be communicated thereto by an attendant and such a part for instance, as is shown in the example of construction, by a lever 25 (see Fig. 2) which is mounted on a rockshaft 26 carried in bearings in the framework of the apparatus. On the said rockshaft is fixed an arm 27, pivoted to one end of a connecting rod 28, the opposite end of which is pivoted to an arm 29 mounted on a rockshaft 30, Fig. 3. Upon the rockshaft 30 is fixed a downwardly extending arm 31, the lower end of which is, by a connecting rod 32 (Figs. 3 and 8), connected to the slide 24, while also a connecting rod 33 (Fig. 3) extends forwardly and operates the operating arm 34 of a counting mechanism 35 which is of any usual or well known construction. The arm 31 has an upward extension 31', Fig. 3, upon which rests a pivoted bell-actuating arm 36, Fig. 3, the forward end of which is connected to a spring-retained striker 37 which carries a hammer head to operate upon a bell 37<sup>x</sup> or other audible signal indicated by dotted lines at Fig. 3. In actuating this bell mechanism, the upward extension 31' of the arm 31 takes against a tooth on the bell-actuating arm 36 and carries the same forwardly until a cam-like end of this arm contacting with a fixed stud 38 is disengaged from the upper end of the arm 31, becomes thereby released and allows the hammer to strike the bell. With the mechanism just described, the downward motion of the forward end of the operating lever 25 (Fig. 2) communicates the forward delivery motion to the slide 24 to deliver a token, and simultaneously operates the counting mechanism to register the delivery of that token, while it also gives an audible signal by the striking of the bell. Upon the rockshaft 26 there is also fixed an arm 39 (Fig. 2) fitted at its end with a roller which acts against a bracket 40 fixed to the slide 3, and therefore the depression of the forward end of the lever also simultaneously produces the upward movement of the said slide, a spring 41 (Fig. 3) being provided acting between the slide 3 and the framework of the machine (in tension) to return the slide and consequently to bring about the return movement of the lever 25 and its correlated parts.

Upon the shaft of the sprocket wheel 10 is fixed a ratchet wheel 42, and upon the said shaft there is freely mounted an arm 43 carrying a spring-actuated pawl engaging the teeth of the ratchet wheel 42, and the lower



end of the pawl-carrying arm 43 is connected by pivoted links to the lower end of the tongue-carrying slide 3. A detent pawl (Fig. 3) is provided as indicated. When therefore the forward end of the operating lever 25 is depressed, the actuation of the slide 3 will cause the lower length of the chain 6 to be advanced, and at every upward movement of the tongue-carrying slide 3 a token or tokens will be delivered on to the conically formed receiver.

It is obviously necessary to prevent the vertical tube 18 becoming at any time overfilled with tokens; in machines for delivering coins from a container to a vertical tube means have been proposed by which the feed of the coins from the said container has been stopped when the pile of coins already in the tube has risen beyond a predetermined height; but in this known arrangement the base of the tube has not been composed of a balanced sleeve, but has been a base having no vertical movement, and in such known arrangement a lever has been provided with a pin normally passing through a slot in the side of the tube, it being prevented so passing when the height of the pile of coins has increased beyond the normal, and by mechanism which does not concern this invention the non-entrance of the pin into the tube has brought about the stoppage of the supply of coins from the container.

In the present invention, I arrange that the depression of the forward arm of the balance lever 20 shall effect the locking of the slide 3 and thereby render the delivery mechanism of the hopper inoperative, and this without locking the action of the other parts of the machine.

The balance lever 20 (Figs. 8 to 10) is, by a connecting rod 44 clearly shown in the two views Figs. 11 and 12, connected to one arm of a bell crank lever 45 fulcrumed on the framework of the machine, which lever 45 is connected by a link to a plunger rod 46 guided in the framework of the machine. The inner end of the plunger rod 46 extends beneath the slide 3, which carries the bracket 40 having a guard-plate 48, so that when the weight of the tokens in the vertical tube 18 is sufficient to force the plunger 46 (Fig. 11) toward the bracket 40, the end of the plunger 46 will bear against the guard-plate 48 during the next forward delivery motion of the slide 3 and then pass behind the bracket 40, and the slide 3 and chain 6 will not receive further motion until the weight in the tube 18 (by the delivery of tokens therefrom) is so decreased, that the balance motion is enabled to withdraw the plunger 46 away from engagement with the bracket 40.

To prevent tokens choking the opening at the rear end of the hopper 1 through which the lower length of the chain 6 passes,

a spring-actuated sliding door 49 (Fig. 3) is fitted which rests upon the chain and rises and falls to permit the passage thereof, while laterally of this opening (see Fig. 4) inclined planes 50 are provided to prevent any possibility of the lateral extensions 7 of the chain being caught.

To prevent the operating lever 25 (Fig. 2) being only given a partial motion and not a complete operation, the inner end thereof is fitted with a sliding rack 51 co-acting with a spring-actuated rocking tooth 53, which at the end of each motion passes into a segmental space 52 in the rack 51.

From the foregoing description it will be very readily understood that when the forward end of the lever 25 (Fig. 2)—which projects to the exterior of the casing—is depressed, the arm 39 actuates the slide 3 and some of the tokens contained in the hopper 1 are delivered onto the conical formation 15 (Fig. 3) and helical trough 16, by the construction of which as they slide down, they are caused to become sufficiently separated one from the other and drop into the mouth 17 of the vertical tube 18 wherein they form a pile. The same operation of the lever 25 operates the slide 24 of the lever 20 in a forward direction and forces out the lowermost token of the pile, which is delivered down any suitable chute (not illustrated) to the exterior of the machine, and simultaneously with this operation the counting mechanism 35 is operated to register the delivery of that token, and an audible signal is likewise given by the bell described. Simultaneously with these operations the chain is moved through a step in its travel to agitate the tokens in the hopper. The return of the lever 25 brings the slide 3 back to its normal position and carries back the slide 24 of the lever 20.

As previously explained, when the weight of the tokens in the tube 18 exceeds a predetermined maximum, the mechanism which has been described (Figs. 11 and 12) is operated and the plunger 46 passes beneath the bracket 40 and the slide 3 ceases to operate, and this without preventing the operation of other parts of the machine.

The machine described is constructed to deliver a single token at each operation, but obviously it might be arranged to deliver more than one token at each operation.

The term "single token" in the appended claims is not intended to exclude two or more tokens so delivered at each operation.

What I claim as my invention and desire to secure by patent is:—

1. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper composed of sides and ends to contain a store of tokens, a series of stationary overlapping louvers arranged at a distance from

one another, said series of stationary louvers being located in an inclined plane to form the base of said hopper, a slide extending beneath and parallel with said louver base of said hopper, means for reciprocating said slide, tongues fixed on said slide calculated to pass between the spaces of said stationary louvers of said hopper to transfer tokens located in said hopper at each movement of said slide from one louver to the next upper louver, one end of said hopper having a delivery aperture adjacent to the upper end of the louver base thereof through which aperture tokens are delivered, and means for agitating the store of said tokens in said hopper; of a vertical tube into which said tokens are delivered, a base to said tube, and means for delivering a token from the base of said tube at each operation of the machine.

2. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper composed of sides and ends, a series of stationary inclined overlapping louvers arranged at a distance from one another, said series of stationary louvers being located in an inclined plane to form the base of said hopper, a slide extending beneath and parallel with said louver base of said hopper, means for reciprocating said slide, tongues fixed on said slide calculated to pass between the spaces of said stationary louvers of said hopper to transfer tokens located in said hopper at each movement of said slide from one louver to the next upper louver, one end of said hopper having a delivery aperture adjacent to the upper end of the louver base thereof through which aperture tokens are delivered, an endless chain one length of which passes through said tokens in said hopper, means for intermittently moving said chain to cause it to travel through said tokens, and laterally extending studs fixed on said chain to agitate the store of said tokens; of a conical structure onto the coned surface of which said tokens are delivered, a helical trough around the base of said structure, a bell-mouthed vertical tube into which said tokens are delivered from said trough, and means for delivering a token from the base of said tube at each operation of the machine.

3. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper to contain a store of tokens said hopper having an upwardly inclined bottom and a delivery aperture at the upper end of said bottom, means for agitating said store of tokens in said hopper, means for traversing said tokens to said delivery aperture, and a vertical tube into which said tokens are delivered; of a sleeve having a closed end located around the base of said vertical tube

said sleeve having a slot parallel with its base, a counter-weighted lever to carry said sleeve, a slide on said lever to pass through said slot in said sleeve to eject the lowermost token of the pile therein, means for operating said slide to deliver a token at each operation of the machine, a sliding plunger calculated in one position of its motion to lock the means by which said tokens are delivered from said hopper, and mechanical connections between said counterbalanced lever carrying said sleeve and said plunger to slide said plunger to lock said delivery mechanism of said hopper when said counterbalanced lever is rocked by the weight of a predetermined number of tokens in said vertical bell-mouthed tube.

4. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper to contain a store of tokens said hopper having a delivery aperture, means for agitating said store of tokens in said hopper, means for traversing said tokens to said delivery aperture, a conical structure onto the coned surface of which said tokens are delivered from said aperture of said hopper, a helical trough around the base of said structure to receive said tokens, and a bell-mouthed vertical tube into which said tokens are delivered from said trough; of a sleeve having a closed end located around the base of said vertical bell-mouthed tube said sleeve having a slot parallel with its base, a counter-weighted lever to carry said sleeve, a slide on said lever to pass through said slot in said sleeve to eject the lowermost token of the pile therein, means for operating said slide to deliver a token at each operation of the machine, a sliding plunger calculated in one position of its motion to lock the means by which said tokens are delivered from said hopper, and mechanical connections between said counterbalanced lever carrying said sleeve and said plunger to slide said plunger to lock said delivery mechanism of said hopper when said counterbalanced lever is rocked by the weight of a predetermined number of tokens in said vertical bell-mouthed tube.

5. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper to contain a store of tokens, a series of stationary inclined overlapping louvers at a distance from one another and located in an inclined plane to form the base of said hopper, a slide extending beneath and parallel with said louver base of said hopper, a spring to draw said slide in one direction, tongues on said slide to pass between the spaces of said stationary louvers of said hopper base said hopper having a delivery aperture adjacent to the upper end of the louver base thereof, an endless chain one

length of which passes through said tokens in said hopper, a tube passing through said hopper through which tube the other length of said endless chain passes, sprocket wheels exterior of said hopper to carry said chain, laterally extending studs on said chain to agitate the store of said tokens, a ratchet mechanism in connection with one of said sprocket wheels, and a link to connect said ratchet mechanism to said tongue-carrying slide to communicate motion to said chain at each operation of said slide; of a hand-operated lever and connections to actuate said tongue-carrying slide against the tension of its spring to advance said tokens on said louver base and to operate said agitating chain, a bell-mouthed vertical tube into which said tokens are delivered, and means for delivering a token from the base of said tube at each operation of the machine.

6. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper to contain a store of tokens, a series of stationary inclined overlapping louvers at a distance from one another and located in an inclined plane to form the base of said hopper, a slide extending beneath and parallel with said louver base of said hopper, a spring to draw said slide in one direction, tongues on said slide to pass between the spaces of said stationary louvers of said hopper base said hopper having a delivery aperture adjacent to the upper end of the louver base thereof, an endless chain one length of which passes through said tokens in said hopper, a tube passing through said hopper through which tube the other length of said endless chain passes, sprocket wheels exterior of said hopper to carry said chain, laterally extending studs on said chain to agitate the store of said tokens, a ratchet mechanism in connection with one of said sprocket wheels, and a link to connect said ratchet mechanism to said tongue-carrying slide to communicate motion to said chain at each operation of said slide; of a rockshaft, a hand-operated lever to rock said shaft, an arm on said rockshaft to actuate said tongue-carrying slide against the tension of its spring to advance said tokens on said louver base and to operate said agitating chain, a bell-mouthed vertical tube into which said tokens are delivered, means for delivering a token from the base of said tube at each operation of the machine, a second arm on said rockshaft and connections from said second arm to operate the means for

delivering a token from the lower end of said bell-mouthed tube at each operation of said rockshaft.

7. In a machine for mechanically delivering a single token at each operation by an attendant; the combination with a hopper to contain a store of tokens, a series of stationary inclined overlapping louvers at a distance from one another and located in an inclined plane to form the base of said hopper, a slide extending beneath and parallel with said louver base of said hopper, a spring to draw said slide in one direction, tongues on said slide to pass between the spaces of said stationary louvers of said hopper base said hopper having a delivery aperture adjacent to the upper end of the louver base thereof, an endless chain one length of which passes through said tokens in said hopper, a tube passing through said hopper through which tube the other length of said endless chain passes, sprocket wheels exterior of said hopper to carry said chain, laterally extending studs on said chain to agitate the store of said tokens, a ratchet mechanism in connection with one of said sprocket wheels, and a link to connect said ratchet mechanism to said tongue-carrying slide to communicate motion to said chain at each operation of said slide; of a rockshaft, a hand-operated lever to rock said shaft, an arm on said rockshaft to actuate said tongue-carrying slide against the tension of its spring to advance said tokens on said louver base and to operate said agitating chain, a bell-mouthed vertical tube into which said tokens are delivered, means for delivering a token from the base of said tube at each operation of the machine, a second arm on said rockshaft and connections from said second arm to operate the means for delivering a token from the lower end of said bell-mouthed tube at each operation of said rockshaft, means for locking said tongue-carrying slide located beneath the base of said hopper when the weight of tokens in said bell-mouthed vertical tube reaches a predetermined limit, and means to prevent said operating lever on said rockshaft receiving only a partial motion and not a complete operation.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES WIGG.

Witnesses:

GRIFFITH BREWER,  
WILLIAM A. MARSHALL.