No. 757,612. PATENTED APR. 19, 1904.

E. N. GILFILLAN.

COIN COUNTING AND PACKAGING MACHINE.

APPLICATION FILED MAY 28, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

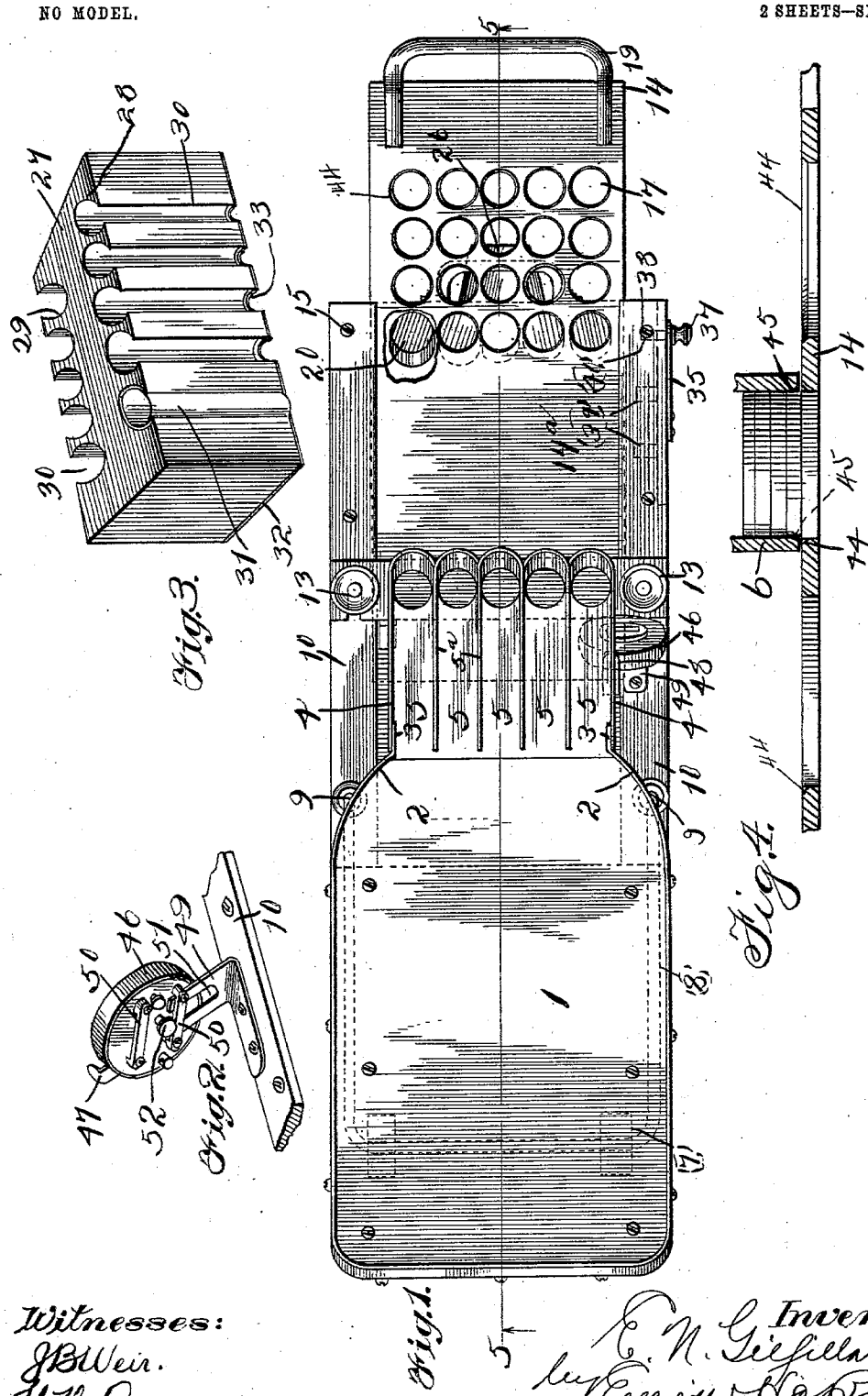


Fig. 1.

Fig. 3.

Fig. 4.

Fig. 2.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

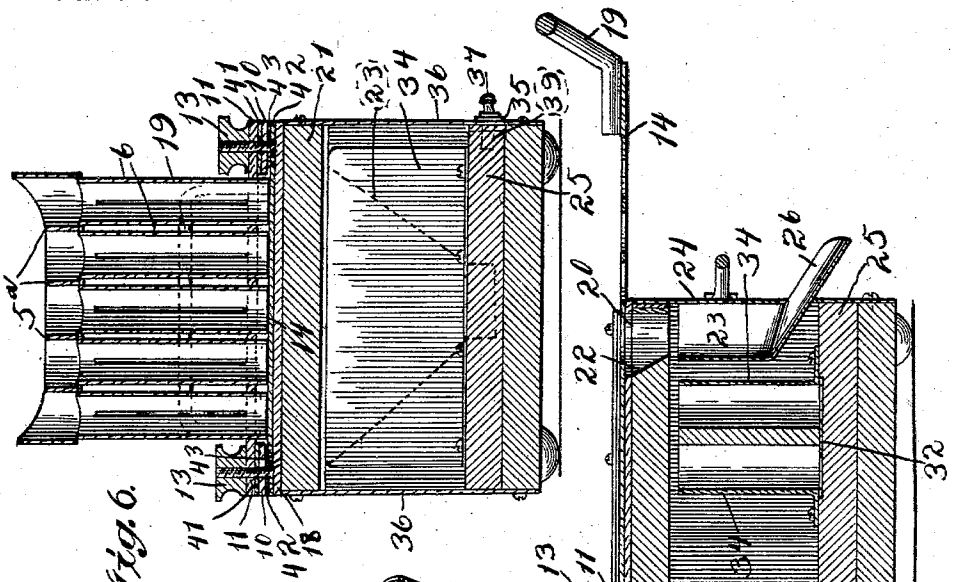


Fig. 6.

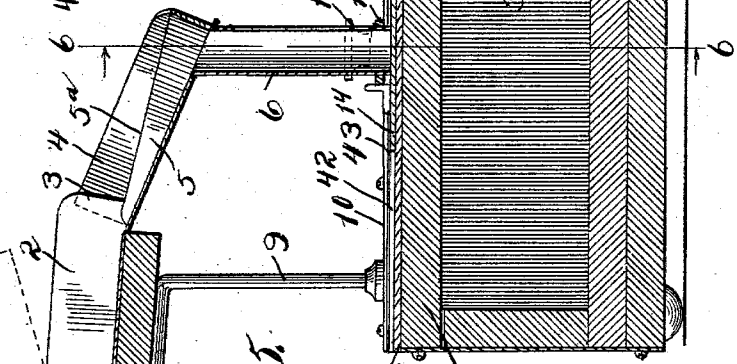


Fig. 5.

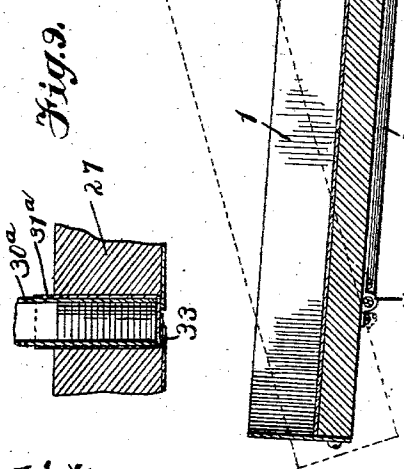


Fig. 3.

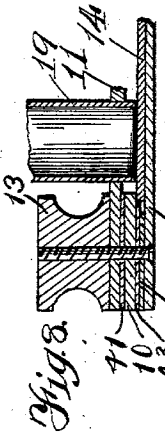


Fig. 8.

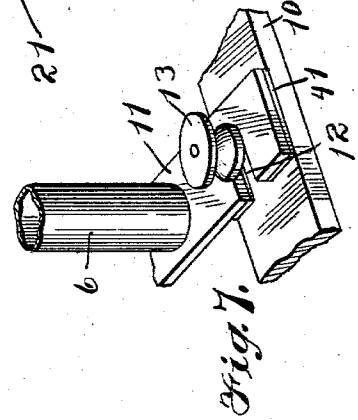


Fig. 7.

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No. 757,612. Patented April 19, 1904.

UNITED STATES PATENT OFFICE.

ESSINGTON N. GILFILLAN, OF CHICAGO, ILLINOIS.

COIN COUNTING AND PACKAGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 757,612, dated April 19, 1904.

Application filed May 28, 1903. Serial No. 159,069. (No model.)

To all whom it may concern:

Be it known that I, ESSINGTON N. GILFILLAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin Counting and Packaging Machines, of which the following is a full, clear, and exact specification.

My invention relates to machines for counting and also, if desired, packaging coins; and it has for its primary object to provide a machine of this character which shall be efficient and yet of simple and inexpensive construction.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said object and certain other objects hereinafter appearing are attained, all as fully described, with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a plan view of my improved machine. Fig. 2 is a detail perspective view of the rear side of the counter, showing the means of attaching the same to the machine. Fig. 3 is a perspective view of one of the shell-holding blocks hereinafter described. Fig. 4 is an enlarged vertical sectional view of the slide and one of the coin-chutes, taken longitudinally of the slide. Fig. 5 is a vertical longitudinal section taken on the line 5 5, Fig. 1. Fig. 6 is a transverse section on the line 6 6, Fig. 5. Fig. 7 is a detail perspective view showing the means for holding the coin-chutes in place. Fig. 8 is an enlarged detail cross-section taken on the same line as Fig. 6; and Fig. 9 is a transverse section of a part of the shell-holding block, illustrating a modification hereinafter described.

The supply of coins to be counted is placed in a tray or inclined pan 1, whose lower end is preferably provided with converging sides 2 and lips or flanges 3, which stand in an upright position on either side of the openings left at the lower end of the tray, and which lips or flanges serve as a means of coupling the lower end of the tray to the side flanges 4 of one or more, but preferably a plurality of, chutes 5, which are inclined downwardly from the lower end of the tray 1 and at a greater angle than the inclination of said tray, so that the coins placed in the tray may be worked by the hand of the operator *en masse* down into the chutes 5, whence they slide into vertical chutes 6, which are preferably cylindrical and approximately the same size in diameter as the coins to be packaged and counted, but not necessarily so, and, in fact, in practice it is perfectly feasible to have one size of chutes 6 serve for a number of coins of different diameters—such, for example, as dimes and pennies or nickels and quarters—the chute employed being the size of the maximum-sized coin which is to be used in that particular chute. The tray 1 is secured by hinges 7 or by any other suitable means to an inclined supporting-frame 8, which is secured by uprights 9 on side bars 10, so that the tray may be turned backwardly, as shown in dotted lines in Fig. 5, when it is desired to exchange the set of chutes 4 6 on the machine for a larger or smaller set, and to the end that the chutes 4 6 may be readily removed and secured in place the chutes 6 are firmly mounted upon a cross-bar 11, which is provided at each end with a slot 12, extending transversely thereof, and rests upon the bars 10 and is held in place by thumb-screws 13, which pass through the slots 12.

One of the vertical chutes 6 extends downwardly from each of the inclined chutes 5 and passing through the bar 11 terminates in close relation to the surface of a slide 14, resting upon the top of a box or casing on which the side bars 10 are also supported and held by screws 15 or other suitable means, additional side bars 16, narrower than the bars 10, being interposed under the bars 10, so as to constitute salient flanges and guides for holding and guiding the slide 14. This slide 14 is provided near one end with a plurality of rows or series of apertures 17, each row containing as many apertures as there are chutes 6 and the apertures thereof being so arranged as to center under the chutes 6, respectively, when the slide 14 is pushed in or pulled out a certain extent, and thus permit the coins in the chutes 6 to drop down one at a time into the aper-

tures 17. When the coins settle into the apertures 17, they rest upon a base-plate 18, upon which the slide 14 moves, and the slide is approximately the same thickness as the coins to be counted, so that by pushing the slide inwardly, and thereby successively bringing the rows of apertures 17 under the row of chutes 6, all of the apertures 17 receive a coin, one in each, and as the slide is again pulled out, which may be accomplished by any suitable handle 19, a plain portion 14^a of the slide comes under and across the lower ends of the chutes 6 and supports the remaining coins therein, while the apertures 17 successively come into register one row at a time with a row of apertures 20, formed at or near the outer end of the base-plate 18, and thereby permit the coins to slide downwardly through said base-plate. For convenience in construction the base-plate 18, which appears as a thin sheet of metal, is supported on a wooden block 21, and in order that the coins may have ample opportunity to drop out of the apertures 17 as the slide moves the apertures 20 are elongated longitudinally of the base-plate and inclined downwardly through the wooden block 21, as shown at 22. The inclines 22 in these apertures 20 serve to guide the coins either into a chute, which conducts them to a bag or other receptacle when it is desired to simply count the coins and bag them without putting them in packages, or into individual compartments or shells when it is desired to put the coins up in separate packages, so many in a package. The chute just referred to is shown in the drawings as being in register with apertures 20, and it preferably consists of an upwardly-flaring receiving end 23, secured to the inner side of the end 24 of a drawer 25, and a converging inclined spout 26, which extends outwardly through said end of the drawer. This drawer also serves as a means for carrying the coin-shell-holding block, such as that illustrated in Fig. 3 and consisting, preferably, of a block of wood 27 or a block composed of any other material and having its sides provided with vertical compartments or sockets 28 29, the sockets on one side being larger than those on the other, so as to make the block serve for holding shells of different diameters. The compartments 28 29 are preferably slotted or open on their outer sides, as shown at 30, so as to facilitate the removal of the shells, one of which is shown at 31, in one of the compartments or sockets 28, the shell 31 being composed of paper or any other suitable material, as usual. As a means of supporting the shells 31 in the sockets 28 29 while the block is being removed from the drawer I have shown the bottom of the block provided with a plate 32, which is rounded out under each of the sockets 28 29 to form flanges 33 for supporting the shell, while affording an aperture under the shell for the introduction of the finger to facilitate the removal of the loaded shell. The block 27 rests upon the bottom of the drawer 25 and may be held against movement longitudinally of the drawer by two side plates 34, secured to said bottom, so that when the drawer is partially withdrawn the block may be inserted either crosswise or from the top. By pulling the drawer out or pushing it in the proper distance the coins may be directed into either the chute 23 26 or the block 27 and into either set of sockets in said block, and for the sake of convenience in thus adjusting the drawer I provide a stop or catch comprising a spring 35, secured to the outer side of one of the side walls 36 of the casing and having a knob 37, whereby lug 38 on the inner side of the spring may be caused to fit into any one of a number of sockets 39 40 in the side of the bottom 25 of the drawer, the socket 40 corresponding to the position of the chute 23 and the sockets 39 to the positions of the compartments 28 29, respectively, when in register with the apertures 20.

The slide 14 is theoretically the same in thickness as the coins to be fed by that slide; but in practice it is preferable to have the slide about as thick as the thicker of the two denominations for which the chutes 6 are adapted and to adjust the lower ends of the chute 6 about as close to the surface of the slide as practicable, and when it is desired to feed the larger size of coins that slide is withdrawn and a thicker slide inserted in its place, and the difference in thickness between the two slides is compensated for in the position of the chutes 6 by means of shims 41, placed under the ends of the cross-bar 11, so as to elevate chutes 6 the proper distance for holding their lower ends in close proximity to the surface of the thicker slide. This interchangeability of the slides makes it desirable to provide different means at the sides thereof for guiding them. As more clearly shown in Fig. 6, the longitudinal side bars 10 by overlapping the bars 16 form flanges for guiding the thicker one of the two slides, the thicker slide being shown in the drawings. The other is guided by side bars 42, secured to the base-plate 16. These side bars 42 are narrower than the side bars 10, and consequently the thinner slide is wider than the thicker slide, and the edges of the thicker slide are guided by thin strips 43, equal in thickness to the difference in thickness between the two slides, but wider than the side bars 42, so as to overlap the latter and the thinner slide, and thus hold the latter down firmly against base-plate 16, while constituting side guides for the thicker one of the slides.

In order that the thinner one of the coins of the two denominations adapted to be used in the same chute 6 may not catch on the end of the slide 14 around the apertures 17 where it projects below the end of the chute 6, the upper ends of the apertures 17 are beveled or rounded, as shown at 44, in such a manner as

to elevate the column of coins in the chute 6 as the slide is moved past these chutes. This beveling also serves as a means of preventing the locking of the slide in the event one of the coins should be abnormally thin from wear or other cause. To avoid the possibility of the upper edge of the bottom coin catching on the lower edge of the chute 6 in the event it should possess any irregularity, such lower end of the chute is also rounded or beveled, as shown at 45.

The forward or outward stroke of the slide 14 is registered automatically by any suitable counter 46, the one shown being of a well-known form, having an actuating knob or button 47 projecting through one side thereof, and the counter is so held on the machine that when the slide 14 reaches the extremity of its outward movement an inclined finger or cam 48, secured to the inner end of slide 14 at a point between the guide-bars 10, comes into engagement with the button 47 and depresses it, and thereby actuates the counter, which may be so constructed as to register one for each outward stroke of the slide, to be afterward multiplied by the number of apertures 17 in the slide, thereby giving the number of coins deposited in the bag or coin-shells, or the construction of the counter may be such as to automatically multiply the number of strokes of the slide by the number of apertures 17 therein. The counter 46 is detachably secured on the machine, so as to permit the finger 48 to pass when it is desired to remove the slide 14 and insert a slide of different thickness. This object may be economically accomplished by means of bracket 49, secured to one of the side bars 10 and adapted to be inserted through straps 50, especially provided on back of the counter 46, the bracket 49 having a slide 51, so as to pass over the usual knob 52, by which the counter is reset.

In the use of the device the coins are fed downwardly from the tray 1 into the chutes 5 as rapidly as may be required by one hand and the slide 14 is reciprocated at the requisite rate of speed by the other hand. In order that the coins may be thus conveniently fed into the chutes 5, so that all the chutes may be uniformly supplied, the intermediate partitions 5^a of the chutes 5 are made of less width at their upper ends than the side walls 4, as shown in Fig. 5.

In modification illustrated in Fig. 9 the coins are deposited in a thin cylinder or tube 30^a, which is secured in the socket or receiver 30 after a strip of paper 31^a has been wrapped around it to form the paper shell, so that the tube or cylinder 30^a may be withdrawn, leaving the coins in the paper shells. This expedient constitutes a convenient means of forming the paper shells by hand.

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

1. In a machine for the purpose described, the combination of a longitudinally-reciprocatory slide having a number of coin-apertures arranged in line longitudinally thereof, an apertured support for said slide for receiving the coins successively from said apertures in the slide, and an upright chute for the coins arranged over said slide with its lower end contiguous to the face thereof and in line with the apertures therein.

2. In a machine for the purpose described, the combination of a longitudinally-reciprocatory slide provided with a number of coin-apertures extending in rows, both lengthwise and transversely thereof, a row of coin-chutes equal in number to the apertures in the transverse rows of said slide, extending transversely of said slide and in line respectively with the longitudinal rows of apertures in said slide, a support for said slide and for the coins in the apertures therein, and means at the end of said support for receiving the coins from the apertures in said slide.

3. In a machine for the purpose described, the combination of a reciprocatory slide having a row of coin-apertures extending longitudinally thereof, a coin-chute for holding a column of coins over and in line with said row of coin-apertures, means below said slide for holding the coins in the apertures therein until the apertures reach a certain point in the stroke of the slide, and means below the slide shiftable longitudinally thereof for holding receivers in register with the apertures in the slide when the latter reach said point.

4. In a machine for the purpose described, the combination of a reciprocatory slide having a longitudinal row of coin-apertures, a coin-chute for holding a column of coins over and in line with said apertures, means below said slide for retaining the coins in the aperture therein until the apertures reach a certain point in the movement of the slide, a drawer arranged below the slide and movable lengthwise thereof, and means supported on said drawer for receiving the coins and adapted to be moved by the drawer into register with the apertures in the slide when they reach said point.

5. In a machine for the purpose described, the combination of a slide having a longitudinal row of coin-apertures, a coin-chute for holding a column of coins over and in line with said apertures, means below the slide for holding the coins in the apertures therein until the apertures reach a certain point in the stroke of the slide, a drawer arranged below the slide and movable lengthwise thereof, and a chute supported on said drawer and adapted to be brought into register thereby with said apertures when they reach said point.

6. In a machine for the purpose described, the combination of a reciprocatory slide having a transverse row of coin-apertures, a row of upright coin-chutes arranged in line with

said apertures respectively and extending across and over said slide, inclined coin-chutes leading downwardly to said upright chutes respectively, a tray for feeding said inclined chutes with coins, and means for retaining the coins in said apertures until the apertures reach a certain point in the stroke of the slide.

7. In a machine for the purpose described, the combination of a reciprocatory slide having a transverse row of coin-apertures, a row of upright coin-chutes arranged in line with said apertures respectively and extending across and over said slide, inclined coin-chutes leading downwardly to said upright chutes respectively, a removable tray for feeding said inclined chutes with coins, and means for retaining the coins in said apertures until the apertures reach a certain point in the stroke of the slide.

8. In a machine for the purpose described, the combination of a reciprocatory slide having a coin-aperture therein, means for retaining a coin in said aperture until the aperture reaches a certain point in the stroke of the slide, means for holding a column of coins over said slide in line with said aperture, a counter having an actuating member and an inclined finger on said slide adapted to strike and operate said actuating member.

9. In a machine for the purpose described, the combination of a reciprocatory slide having a transverse row of coin-apertures, a series of upright coin-chutes arranged over said slide transversely thereof, and respectively in line with said apertures, means for supplying said chutes with coins, means for detachably securing said chutes above said slide adjustably with relation to the slide, and means below the slide for retaining the coins in said apertures until the latter reach a certain point in the stroke of the slide.

10. In a machine for the purpose described, the combination of a reciprocatory slide having a transverse row of coin-apertures, a series of upright coin-chutes extending transversely of said slide and arranged respectively in line with said apertures, inclined coin-chutes supported on and leading to the upper ends of said upright chutes respectively, a removable support on which said upright chutes are carried, and means below said slide for retaining the coins in said apertures until the apertures reach a certain point in the stroke of the slide.

11. In a machine for the purpose described, the combination of a reciprocatory slide having a longitudinal row of coin-apertures, means for supplying said apertures with coins, means for retaining the coins in said apertures until the apertures reach a certain point in the stroke of the slide, receivers arranged in succession lengthwise of the line of movement of said slide for receiving the coins when they reach a certain point, means for moving said receivers longitudinally of the slide, and an automatic catch for respectively locking said receivers in register with said point.

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