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CHANGE MAKING MACHINE


My invention relates to new and useful improvements in change making machines of the well known "Brandt" type wherein there is a tray for supporting coins of different denominations, pusher fingers for delivering the coins from the tray into a discharge chute and keys and associated mechanism for operating the pusher fingers, the primary object of the present invention residing in the provision of such a machine which is relatively simple in construction and operation, cheap in manufacture and compact in form, being relatively small in size so that it may be readily moved from one place to another.

A further object of the invention consists in providing a plurality of swinging frames for operating the pusher fingers, said frames being operated by depressing keys extending to the front of the machine, the keys having designating marks denoting the amount of change to be discharged from the tray upon the depression thereof.

Another object resides in providing the swinging frames with upwardly extending projections adapted to be engaged by the keys, said projections being formed on plates which are detachably connected to the frames whereby they are removable and interchangeable so that by attaching different plates with different frames different combinations of coins will be discharged upon the depression of the keys, frames being connected to the pusher fingers.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the novel details of construction and arrangement of parts, described in the following specification and illustrated in the accompanying drawings, and while I have illustrated and described the preferred embodiments of the invention, as they now appear to me, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawings:

Fig. 1 is a transverse vertical section through the machine with parts shown in elevation.

Fig. 2 is a longitudinal vertical section through the machine with parts shown in elevation.

Fig. 3 is a horizontal section through the machine with parts shown in top plan.

Fig. 4 is a perspective of one of the swinging frames adapted to be engaged by the keys for operating the coin pusher fingers.

Fig. 5 is a front elevation of the swinging frame, shown in Fig. 4, and

Fig. 6 is an end view with parts broken away.

In the drawings 1 and 2 indicate the ends of the frame which are connected at their rear edges by means of the longitudinally extending angle iron bar 3 and at the front edge by means of the plate 4 which has a plurality of longitudinally spaced vertically extending openings 5 formed therein. A base plate 6 is secured to the bottom of the ends 1 and 2, this base plate having the upwardly extending flange 7 formed on the rear longitudinal edge and the upwardly extending flange 8 formed on its forward longitudinal edge. The plate 4 has the flange 9 formed on its bottom edge and this flange will be secured to the base plate 6. A back plate 10 is secured to the rear vertical edges of the end pieces 1 and 2 and a front plate 11 is secured to the forward edges thereof. End plates will preferably be connected to the outer faces of the ends 1 and 2 to give a somewhat neater appearance thereto.

Secured to the ends 1 and 2 are the plates 12 which support the longitudinally extending shaft 13. Pivotedly connected to the shaft 13 are the key arms 14 which extend forwardly through the openings 5 formed in the plate 4, said arms being bent upwardly at their forward ends as shown at 15 to receive the buttons 16 having designating marks thereon.

The shaft 13 also carries the swinging frames 17, 18, 19, 20, 21, 22, 23 and 24, the frames being elongated in shape as shown and of such a size that one will be received within the confines of the others as is more clearly illustrated in Figs. 1 and 3 of the drawings. These swinging frames normally extend downwardly at an angle as more clearly illustrated in Fig. 1 of the drawings.
being held or supported in this position by means of the plates 25 and 26 which are secured to the bottom plate 6 intermediate the ends 1 and 2. The upper edges of these plates 25 and 26 are each inclined downwardly, towards the forward edge, as shown at 27 to allow the frames to be swung in a manner which will be later described. Secured to each of the plates 25 and 26, adjacent the upper edges thereof, are the reinforcing strips 28 and 29, the strips 28 extending from the front of the plates and the reinforcing strips 29 being positioned adjacent the rear edges thereof. Secured to the plate 26 and to the end 1 is a guide bar 30, more clearly illustrated in Fig. 2 of the drawings, which is provided with the upwardly extending projections 31 between which the ends of the frames will operate and be guided. Secured to the forward edge of each of the frames by means of the screws 32 or the like is a plate 33 which has upwardly extending projections 34 to be engaged by the key arms 14. The arrangement of these plates relatively to the frames is more clearly illustrated in Figs. 4, 5 and 6 of the drawings and it is thought that a description of one will suffice for all. Any number of projections may be formed on the plate and they may be of different widths as shown. It will be understood that when some of the key arms are operated that only one frame will be swung whereas when other key arms are operated or depressed a plurality of frames will be swung. Where the frame is to be swung by a single key the projection 34 will be relatively narrow but when a plurality of the key arms operate the same frame the projections will be relatively wide so as to be engaged by a plurality of the key arms. The plates are removable and interchangeable so that different plates may be positioned upon different of the frames and by doing this various combinations may be obtained for discharging coins upon the operation of the different key arms. The arrangement of the projections on the plates relatively to the key arms is more particularly illustrated in Fig. 5 of the drawings and a more detailed description of the operation will be later described.

Pivotedly connected to the shaft 13 are the arms 35 which may be termed pusher arms, these arms being of the shape more particularly illustrated in Fig. 1 of the drawings and provided on one edge, intermediate the upper and lower ends, with a lug or projection 36 having the vertically spaced eyes 37 and 38. As shown in Fig. 2 there are eight of these arms and one arm is connected to each of the frames 17, 18, 19, 20, 21, 22, 23 and 24 by means of a bracket 39 so that each frame as it swings will operate one of the arms. Pivotedly connected at 40 adjacent the upper end of each of the arms 35 is a finger 41 which extends substantially at right angles to the arm and has at the rear end a downwardly extending projection 42 provided with the eye 43. A coiled spring 44 has one end connected through the eye 43 and the opposite end connected through the eye 35 formed in the lug or projection 36 of the arm 35. A coiled spring 45 has one end connected through the eye 37 formed in the lug or projection 36 and the opposite end is connected to the angle iron bar 3. The coiled spring 45 tends to draw the upper end of the arm 35 rearwardly and thereby hold the frame in the position disclosed in Fig. 1 of the drawings. The pusher fingers 41 extend through longitudinally spaced openings 46 formed in a plate 47 which is connected to the ends 1 and 2. The coiled springs 44 normally hold the forward ends of these fingers in raised position in contact with the upper edges of the openings 46 in position to engage the lowermost coins carried in the compartments 48 of a coin tray 49 of usual construction. As the specific form of coin tray forms no part of the present invention it is thought that a detailed description thereof is not necessary other than to say that it has eight compartments for supporting the coins and is held upon the substantially horizontal portion 50 of the vertically extending plate 51 which is supported intermediate the ends 1 and 2 of the machine. The horizontal portion 50 has the upwardly extending projections 52 which extend through openings formed in the bottom of the coin tray and the plate 47 carries the pivoted catches 53 which engage projections formed on the back of the tray for holding the same against displacement. The vertically extending plate 51 has formed on each end 4 a receive screws 55 or other suitable fasteners for connecting the plate to the ends 1 and 2.

A plate 56 extends parallel with the plate 51 but spaced therefrom. This plate 56 has the lugs 57 formed on each end to receive the screws 58 or other suitable fasteners whereby the plate is connected to the ends 1 and 2. A brace 59 is secured between the plates 51 and 56 by means of the screws 60 or other suitable fasteners, this brace acting as a support for the chute 61 which is positioned between the plates 51 and 56 as more clearly illustrated in Figs. 1 and 2 of the drawings. The chute is inclined so that its lower end passes through an opening 62 formed in the end 2, the upper end of the chute having a horizontal portion 63 which rests upon the upper edge of the end 1. The chute 61 is so positioned as to receive the coins discharged from the coin tray and deliver them through the opening 62 in the end of the machine.

The plate 56 is provided along its lower edge with a plurality of longitudinally spaced hooks 64 to each of which is connected one end of a coiled spring 65 the opposite ends of which extend through holes 66 provided in the plate 51. As shown in Fig. 4 the coiled spring 65 tends to displace the plate 56 rearwardly as the lugs 57 work up through the openings 65 formed in the plate 56. As mentioned above, the lugs 57 extending from the plate 47 are provided with a downwardly extending projection 42 provided with an eye 43 and a coiled spring 44 has one end connected through the eye 43 and the other end connected through the eye 35 formed in the lug or projection 36 of the arm 35. As the coiled spring 44 is wound around the plate 56 it tends to pull the plate 56 rearwardly and thereby hold the plate 56 in the position shown in Fig. 1 of the drawings.
of the coiled springs being connected through eyes 66 formed in the key arms 14. These springs 65 normally holding the key arms in raised position.

A bar 67 extends longitudinally of the frame and is supported by the ends 1 and 2. This bar has the notches 65 formed along its lower edge to receive the upper edges of the key arms 14 as more clearly illustrated in Fig. 1 of the drawings. These notches act as guides for the key arms and prevent lateral movement of said arms.

The machine will be supported upon the rubber feet 69 secured to the base plate 6.

In the case of the key arm 14, bearing the designating numeral 1, adjacent the left hand end of the machine, said arm is provided with a downwardly extending projection 70 which will engage the upper surface of the end of the frame 22, it being noted that this particular key arm is so positioned that it would be impossible to engage a projection carried by any other frame.

Having fully described the details of construction I will now endeavor to set forth more in detail the operation. As the keys are depressed they will swing the frames so as to in turn swing the arms 33 and direct the pusher finger 41 to cause and discharge the coins which are in the path of the fingers into the discharge chute 61, down which they pass out through the opening 62 in the end 2. As has been previously stated the coin tray has a plurality of compartments in which are supported coins of different denominations and the designating marks on the keys show the amount of change to be delivered from the coin tray. Preferably there will be stacks arranged in the following manner. The first three stacks from the left hand end of the machine will be pennies, the next stack will be nickels, the next two stacks dimes, the next stack quarters, and the last stack to the right of the machine fifty cent pieces. If one cent change is to be delivered either one of the keys bearing the designating mark 1 will be depressed and through means of the projections either on the frame or on the left hand key will depress the frame 22 and this will swing the arms 33 nearest the left hand end of the machine and discharge one penny from the stack nearest the left hand end of the machine and two pennies from the third stack from the left hand end. This operation will continue to deliver the desired amount of change and the depression of the various keys will swing those frames having projections in the line of that particular key arm and discharge the necessary coins from their respective stacks. I wish to call particular attention to the fact that the key arms, the frames, and the pusher arms, are all supported from a single shaft and that the frames have the removable and interchangeable plates connected thereto so that by using plates having a different number of projections or different width projections a different combination of coins may be delivered upon the depression of the various keys. This is a particular advantage for in order to change the different combinations of coins delivered it is not necessary to substitute entirely new frames, which would be quite expensive, but instead it is only necessary to detach one plate and substitute another having differently formed projections thereon. It will be noted that I have provided two sets of keys bearing the numerals 1, 2, 3 and 4, two keys bearing the numeral 5, two keys bearing the numeral 25, and two keys bearing the numeral 50. The keys bearing the numerals 1, 2, 3 and 4 at the left of the machine are adapted for operation with the left hand of the operator where as those keys bearing the numerals 1, 2, 3 and 4 at the right of the machine are adapted for operation with the right hand. The key bearing the numeral 5 at the left of the machine when operated will eject a single 5¢ piece whereas when the key bearing the numeral 5 adjacent the middle of the machine is operated it will eject five pennies. When the key 25 at the left of the machine is operated a single 25¢ piece will be delivered whereas when the key bearing the numeral 25 at the right of the machine is operated it will eject a 5¢ piece and two 10¢ pieces. When the key bearing the numeral 50 adjacent the middle of the machine is operated a single 50¢ piece will be ejected whereas when the key bearing the numeral 50 at the right is operated a 25¢ piece, a 5¢ piece, and two 10¢ pieces will be ejected.

From the above it will be seen that the parts may be assembled in very compact form, so that the machine may be moved quite easily from place to place, and that the operating mechanism is relatively simple.

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

1. A change making machine comprising a receptacle for containing a plurality of stacks of coins of different denominations, coin ejector arms, operating keys, and interchange-
able selector mechanism interposed between the operating keys and coin ejector arms whereby the ejector arms will be operated upon movement of the keys, and coins ejected from the desired stacks.

2. A change making machine comprising a receptacle for containing a plurality of stacks of coins of different denominations, coin ejector arms, operating keys, swinging frames interposed between the keys and ejector arms, and interchangeable selector means carried by the frames, said selector means being adapted to be engaged by the operating keys for operating the ejector arms for ejecting the coins.

3. A change maker including a coin receptacle for supporting stacks of coins of different denominations, coin ejector arms, operating keys, and swinging frames interposed between the keys and ejector arms and connected to the arms, a plate detachably connected to each of the frames and having a plurality of projections extending upwardly therefrom, the projections being formed and adapted to be engaged by one or more of the keys to swing the frames to discharge the desired coin or combination of coins from the stacks by means of the ejector arms.

In testimony whereof I hereunto affix my signature.

EDWARD J. BRANDT.