

May 8, 1928.

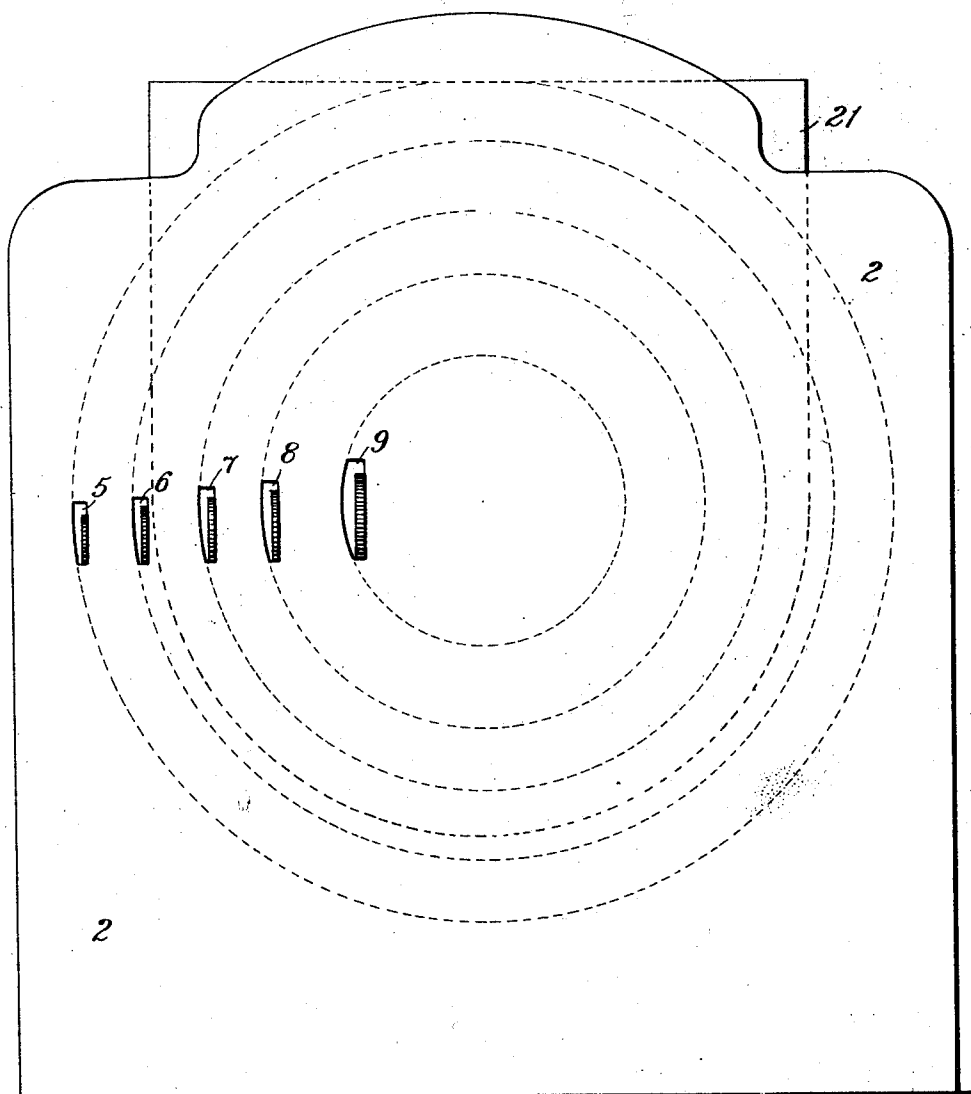
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E. J. BRANDT
COIN ASSORTING MACHINE

Filed Jan. 17, 1927

4 Sheets-Sheet 2

Fig. 2.



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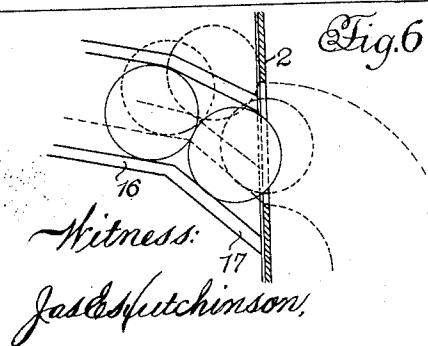
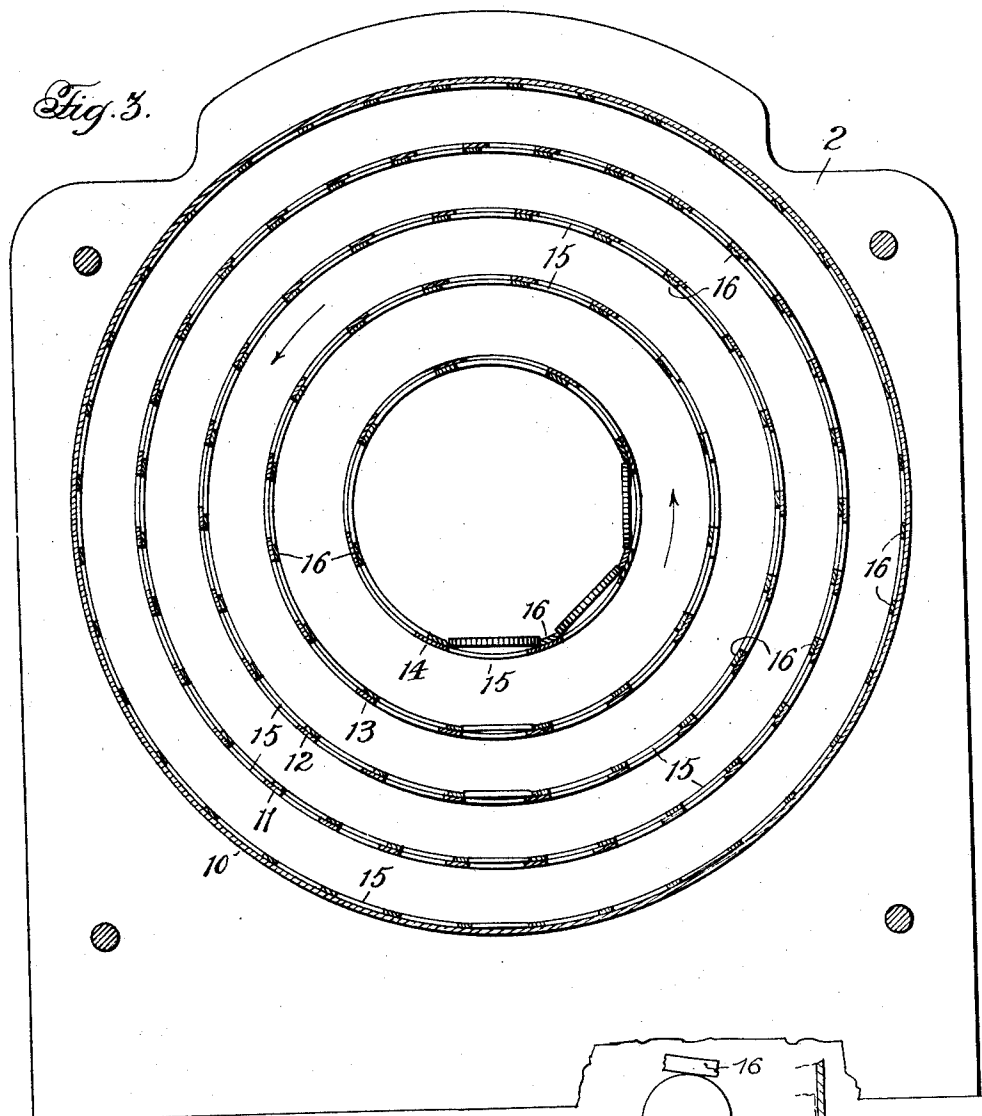
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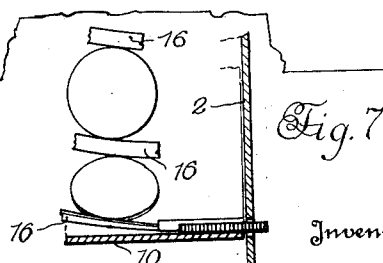
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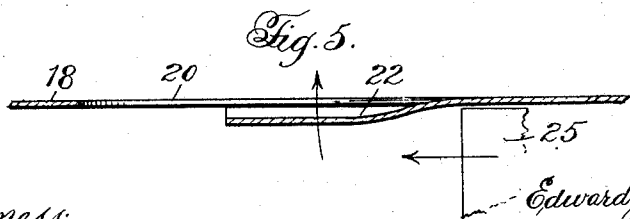
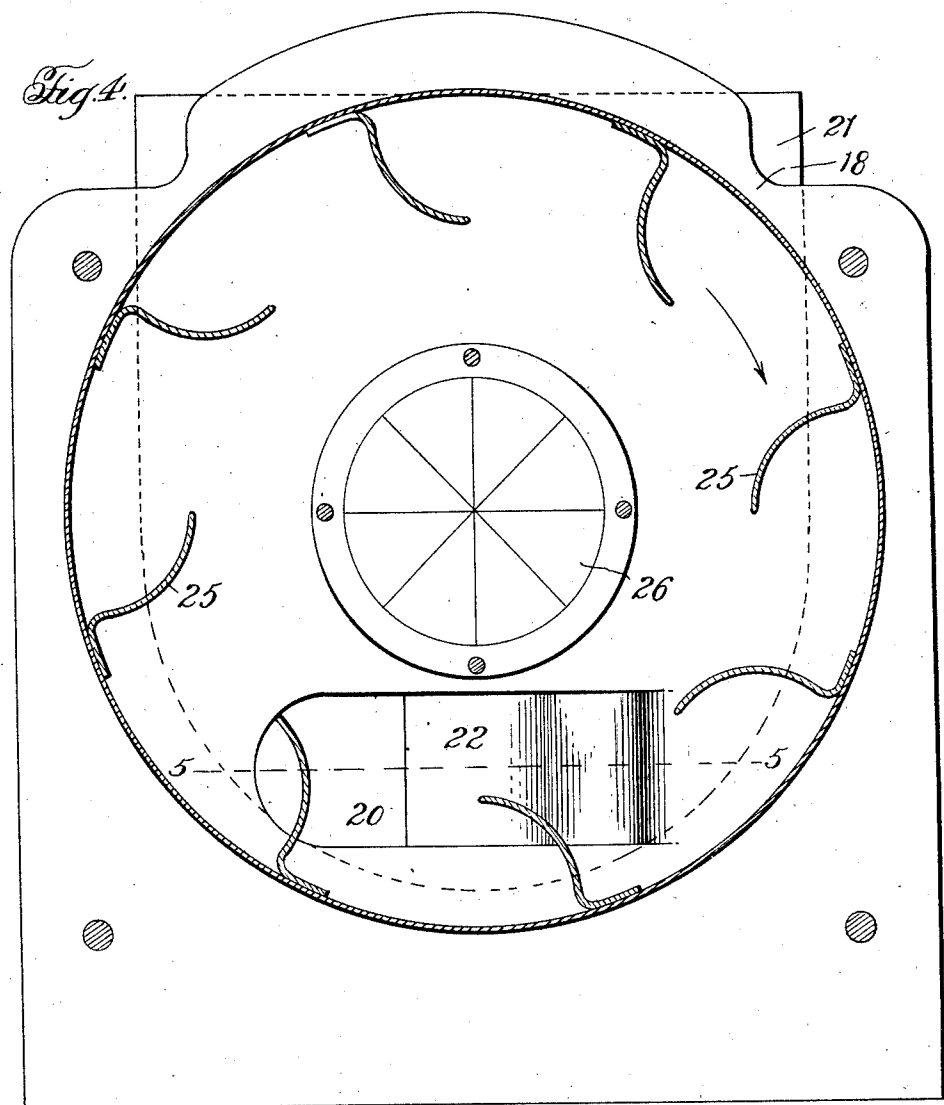
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COIN ASSORTING MACHINE

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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

EDWARD J. BRANDT, OF WATERTOWN, WISCONSIN, ASSIGNOR TO BRANDT AUTOMATIC CASHIER COMPANY, OF WATERTOWN, WISCONSIN, A CORPORATION OF WISCONSIN.

COIN-ASSORTING MACHINE.

Application filed January 17, 1927. Serial No. 161,566.

My invention relates to new and useful improvements in money handling machines and more particularly to a machine for assorting coins of different denominations, the principal object of the invention residing in the provision of such a device which is compact in form and suitable for various places such as cash cages, the machine being of such a height and so designed that it may be used in dealings with the public where transactions are desirable on a table or counter level.

Another object of the invention resides in the provision of a machine of the character described wherein the intake for the coins is on a relatively low level whereas the outlet for the coins is on a relatively high level, means being provided for forwarding or directing the coins from the relatively low inlet to the relatively high outlet.

Further objects consist in so forming the machine as to prevent "riders", to provide means for delivering single coins on edge, to provide means for preventing coins following the one to be discharged from clogging the discharge openings, and in the provision of means for preventing clogging of the coins in the receiving hopper.

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 longitudinal vertical section through the machine with parts shown in elevation.

Fig. 2 is a view of the discharge end of the machine.

Fig. 3 is a transverse vertical section through the machine looking towards the outlet opening therein.

Fig. 4 is a transverse vertical section, with parts shown in elevation, through the pocket which receives the coins from the hopper.

Fig. 5 is a detail horizontal section on the line 5-5 of Fig. 4.

Fig. 6 is a detail in side elevation showing one of the coin supporting ribs adjacent the discharge opening.

Fig. 7 is a fragmental detail showing a top plan at the point of the discharge opening shown in Fig. 6, and

Fig. 8 is a fragmental detail showing the relative positions of the openings in the cylinders and the coin supporting ribs formed interiorly of the cylinders.

In carrying out my invention I provide the end plates 1 and 2, the end plate 1 being formed with peripheral teeth whereby the same may be rotated through means of the worm gear 3 mounted upon the shaft 4 and adapted to be operated from any suitable source. The end plate 2 is stationary and is provided with the transversely spaced discharge openings 5, 6, 7, 8, and 9 through which the coins, of different denominations, are discharged in a manner to be later described. Carried by the end plate 1 are the concentric cylinders 10, 11, 12, 13 and 14, all but 10 being provided with openings 15 positioned between spirally extending ribs 16 extending longitudinally of the interior surfaces of the cylinders, the openings 15 being in edge alignment with one of the ribs between which it is positioned but relatively spaced from the opposite rib as more particularly illustrated in Fig. 8 of the drawings and the purpose of which will be presently described. The ends of the ribs 16, adjacent the discharge openings 5, 6, 7, 8 and 9 are angularly offset as shown at 17 in Fig. 6 of the drawings and each of the ribs is of a width or thickness to support only one coin on its edge and is too narrow or thin to support any two coins side by side on edge. A vertically extending plate 18 extends parallel with the plate 1, but spaced therefrom, as shown more particularly in Fig. 1 of the drawings and this plate forms a bearing for the shaft 19 carried by the end of the plate 1 so that the cylinders may be rotated as previously described. This plate 18 has an inlet opening 20 through which coins of a plurality of denominations are adapted to pass from the hopper indicated at 21. The plate 18, adjacent the opening 20, is cut away to provide the spring tongue 22 which is adapted to be moved or agitated in a manner to be later described to agitate the coins within the hopper and

to allow them to pass freely through the opening 20 and onto a band 23 secured to and carried by the plate 1. Secured to and carried by the band 23 are the circumferentially spaced blades 25 of the shape shown more particularly in Fig. 4 and as the plate 1 is rotated the blades 25 will pick up the coins which have been received on the band 23, from the hopper 21, and raise them so that they will be discharged into the innermost cylinder 14, a substantially conical or various sided guide member 26 being secured to the inner face of the plate 18 with its apex on a line with the longitudinal center of the inner cylinder. The blades 25 as shown extend inwardly towards the center of the plate 1 and are of such a length that as they are rotated they will engage the spring tongue 22 as shown more particularly in Fig. 4 of the drawings and force the same inwardly towards the hopper 21 and thereby agitate the coins within the hopper, adjacent the inlet opening 20, so that they will not become clogged.

From the above detail description it is thought that I have clearly set forth the construction of my machine and I will endeavor now to more clearly set forth, in detail, the operation. The coins of many denominations are poured into the hopper 21 and will be discharged therefrom onto the band 23 through the opening 20. The plate 1, with the concentric cylinders, 10, 11, 12, 13 and 14 is rotated as has been described through the worm gear 3 and the blades 25, rotating with the plate 1 and associated cylinders, gather the coins. The band and plate form a pocket for receiving the coins from the hopper. The coins are raised to the top of the machine and then drop from the blades, engaging the guide member 26 to be discharged into the innermost cylinder 14. The openings in this innermost cylinder 14 are of greater diameter than the openings in the other cylinders and will allow all coins to pass therethrough with the exception of that of the largest denomination being assorted, say fifty cent pieces. As the cylinders are rotated the coins within the cylinder 14 will ride upon the ribs 16 and as such ribs are spirally arranged will be directed towards the outlet end of the machine. As stated the larger coins, say the fifty cents coins, will ride along the ribs, or roll along them, and are discharged through the outlet opening 9 in the end plate 2. Those coins of a lesser size will be discharged through the openings for reception in the next adjacent cylinder.

This operation will continue throughout the different cylinders until the coins of each particular denomination are discharged through their respective openings. Preferably the openings in the cylinder 13 will be of a size to allow all coins to pass therethrough other than those of a "quarter size", the

openings in the cylinder 12 will allow all coins to pass therethrough other than those of a "nickle size", the openings in the cylinder 11 being of such a size as to allow all coins to be discharged therefrom except "pennies"; the outermost cylinder 10 being the only one without openings but having the ribs of the same character as those of the remaining cylinders. As has been stated the fifty cent pieces are discharged through the opening 9 in the end plate 2, the quarters are discharged through the opening 8, the nickles through the opening 7, the pennies through the opening 6, and the dimes through the opening 5. So that only a single coin will be discharged through the openings in the end plate at time and to prevent following coins from clogging the discharge openings, the ends of the ribs 16 are angularly offset as shown at 17. It will be seen that as the cylinders are rotated there will only be sufficient time, due to the offset of the ribs, to allow a single coin to pass through the discharge opening. I also wish to lay particular stress on the fact that the ribs are only of such a width or thickness as to support a single coin and it will be impossible for any two coins to be supported side by side to provide what are known as riders. I also lay particular stress upon the spring tongue 22 which is agitated by the blades 25 to keep the coins within the hopper 21 agitated at all times to prevent clogging of the coins at the inlet opening 20.

As the coins are received upon the ribs of the various cylinders they are not only fed towards the discharge end of the cylinders but are raised by the ribs to position them on a suitable level for discharge through the openings in the end plate. As has been previously set forth the openings 15 in the cylinders are in edge alignment with one of the ribs but spaced from the opposite rib. Preferably they will be in edge alignment with that rib upon which the coins are supported and the coins of a smaller size will readily fall through the openings whereas those of the larger size to be retained in the cylinder will overlies the space formed between the edge of the opening and the opposite rib.

From the above it will be seen that I have provided a machine of the character described, for assorting coins of different denominations, which is very compact in form and might be easily supported upon a counter or shelf for dealings with the public. The inlet opening for the coins is adjacent the bottom of the machine or on a relatively low point whereas the discharge openings are on a relatively high point. By this arrangement the hopper 21 which initially contains the coins does not have to be high and in fact does not extend above the outermost cylinder circumference. It can readily

be appreciated that if the inlet opening was adjacent the top of the machine that the hopper would have to be raised to extend relatively high and if the discharge openings
5 were positioned relatively low or near the surface of the shelf or counter the coins could not readily be discharged into containers or receptacles for receiving the same.

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

1. In a coin assorting machine, comprising a revolvable cylinder, a stationary end plate at the discharge end of the cylinder,
15 said end plate having an elevated discharge opening therein in registry with the cylinder, and means associated with the cylinder for feeding the coins longitudinally thereof and elevating the same to the discharge opening in the end plate.
20

2. In a coin assorting machine, the combination of a series of concentrically arranged sorting cylinders, a supply hopper, a pocket in communication with the hopper, and revolvable means within the pocket for elevating the coins and depositing the same

within the inlet end of the coin sorting cylinders.

3. In a coin assorting machine, the combination of a series of concentrically arranged sorting cylinders, a coin hopper, a pocket in communication with the hopper for receiving the coins from the hopper, means within the pocket for delivering the coins to the inlet end of the cylinders, and
35 an agitator within the hopper, said agitator being actuated by the pocket delivery means to agitate the coins within the hopper.

4. In a coin assorting machine, comprising a series of concentrically arranged sorting cylinders, each of said cylinders being
40 provided on their inner surface with spirally extending ribs, a stationary cylinder head having elevated discharge openings therein in registry with each cylinder, said ribs
45 being angularly off-set at the delivery end to expedite the discharge of the separated coins through the corresponding elevated discharge opening in the cylinder head.

In testimony whereof I hereunto affix my
50 signature.

EDWARD J. BRANDT.