

Aug. 22, 1939.

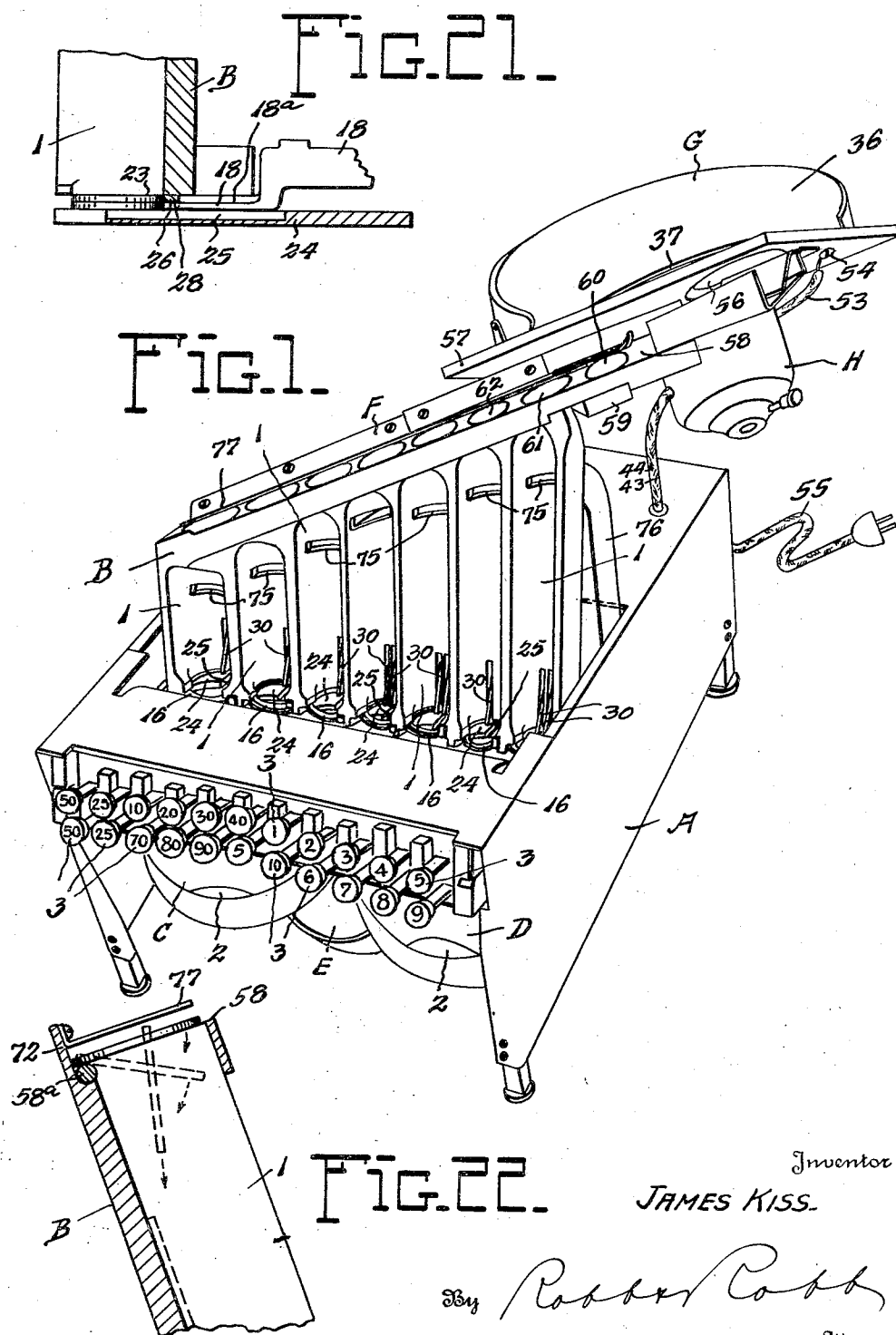
J. KISS

2,170,288

COIN FEEDING APPARATUS

Filed May 18, 1936

6 Sheets-Sheet 1



Aug. 22, 1939.

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2,170,288

COIN FEEDING APPARATUS

Filed May 18, 1936

6 Sheets-Sheet 2

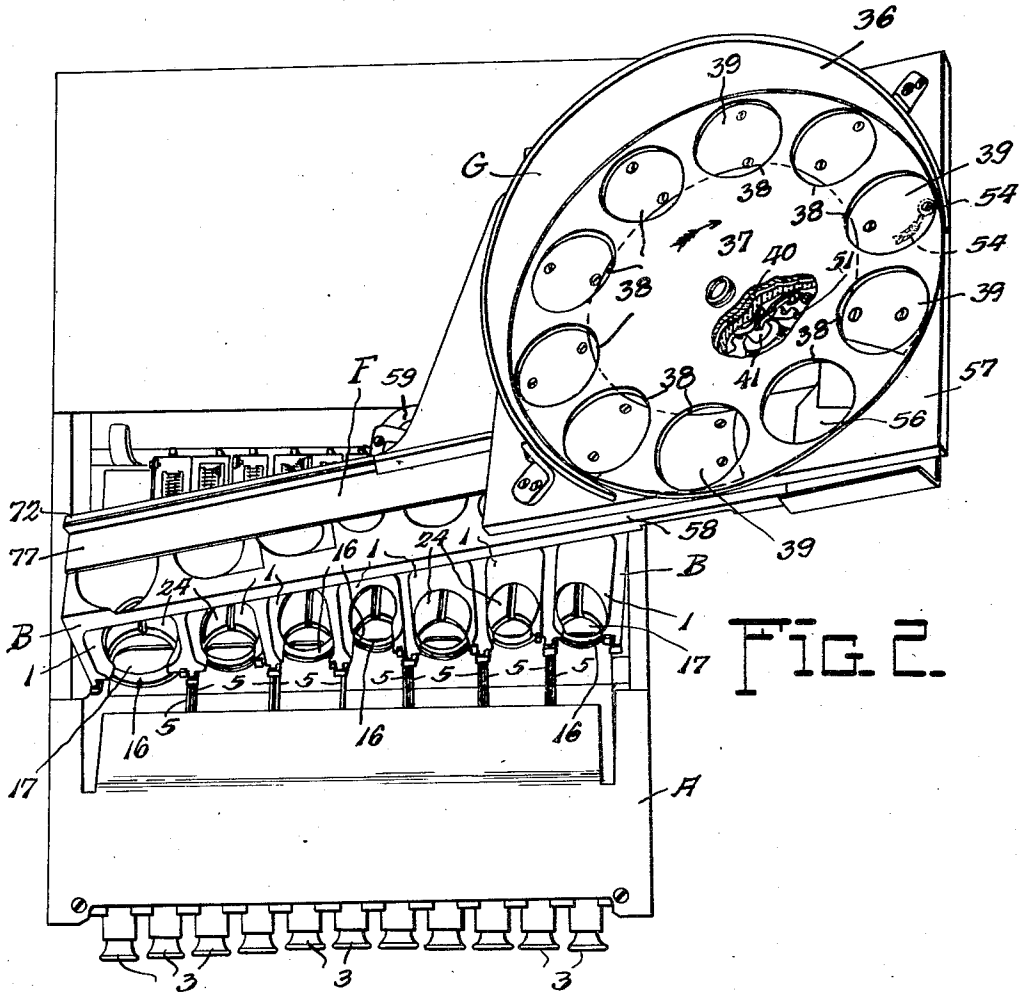


FIG. 2.

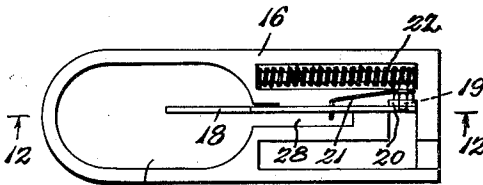


FIG. 11.

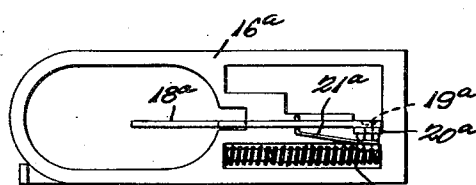


FIG. 13.

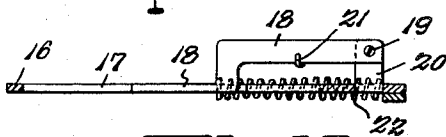


FIG. 12.

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COIN FEEDING APPARATUS

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6 Sheets-Sheet 4

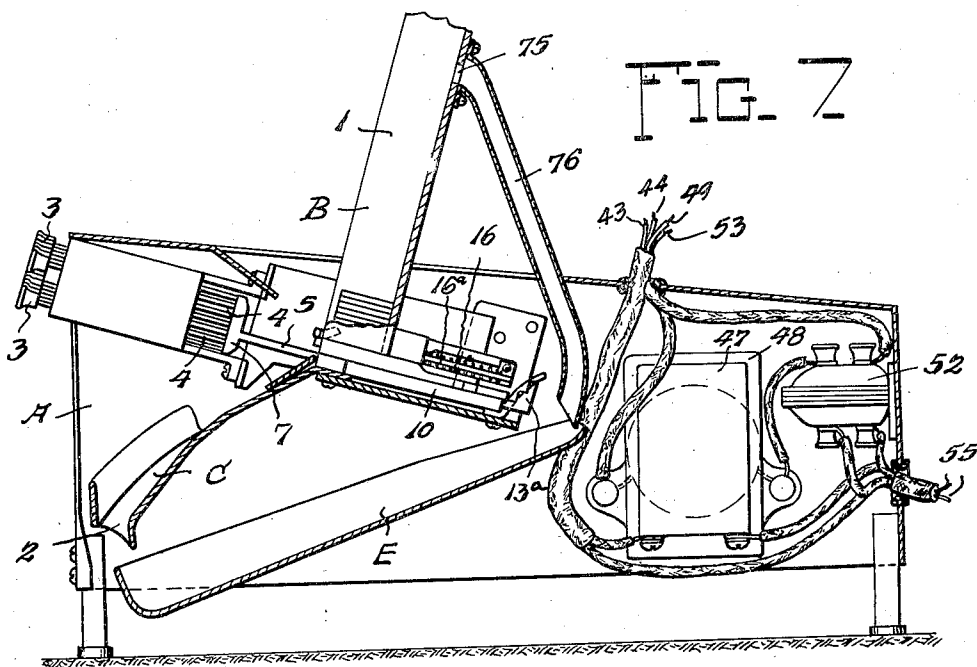


FIG. 14.

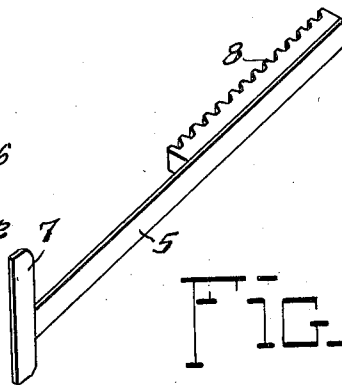
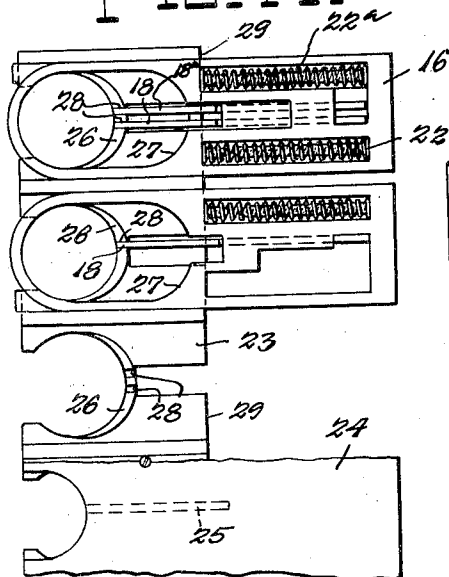


FIG. 15.

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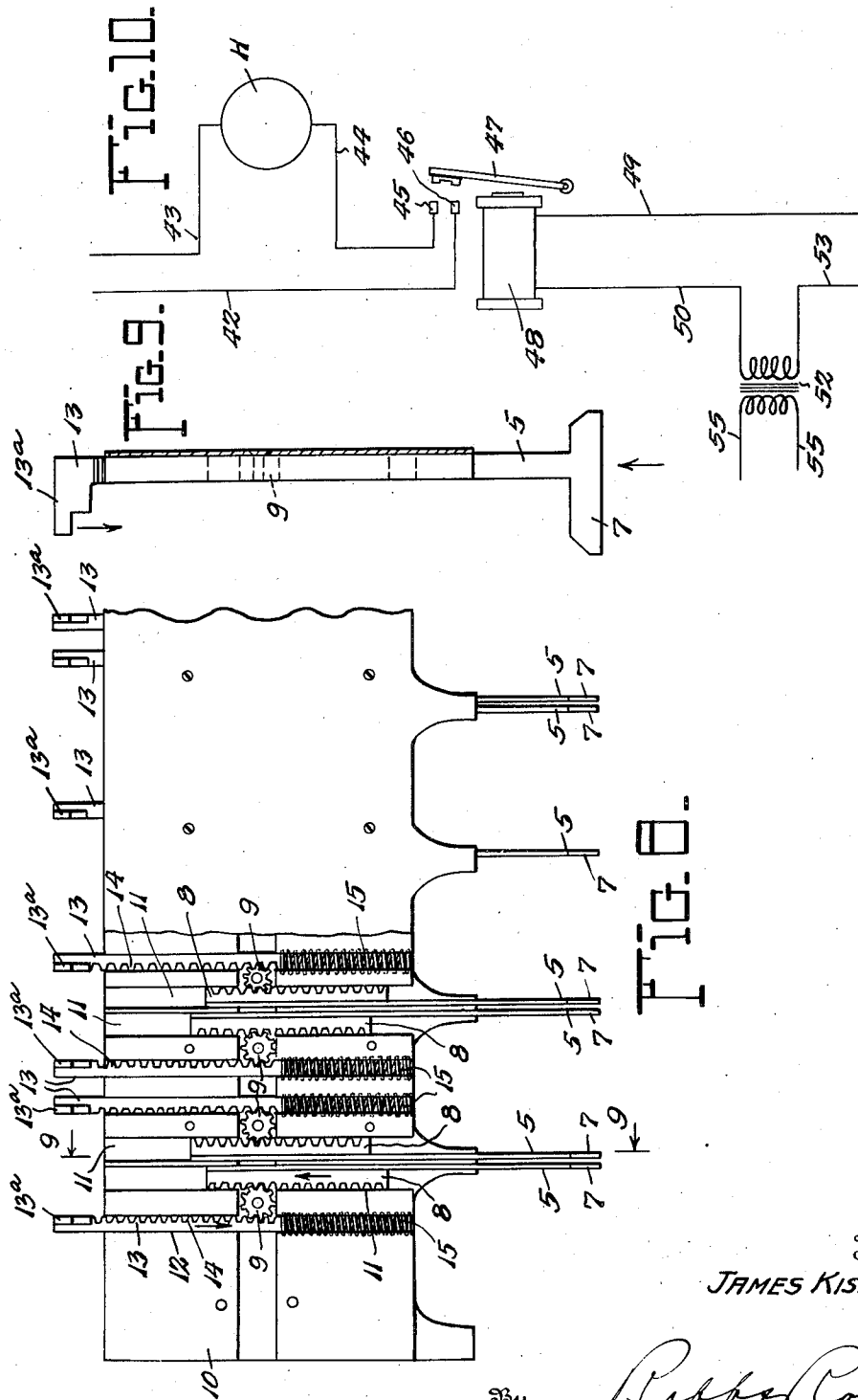
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COIN FEEDING APPARATUS

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6 Sheets-Sheet 5



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COIN FEEDING APPARATUS

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Fig. 18.

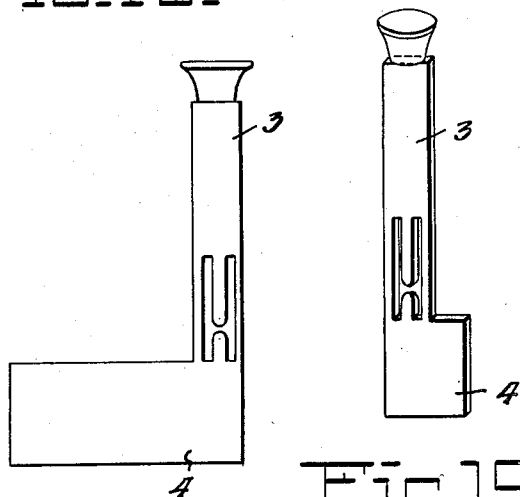


Fig. 20.

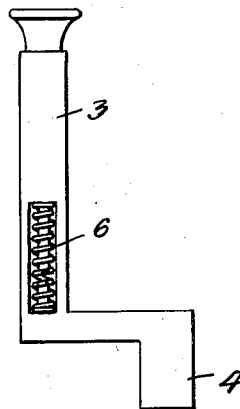


Fig. 19.

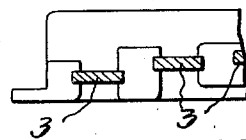
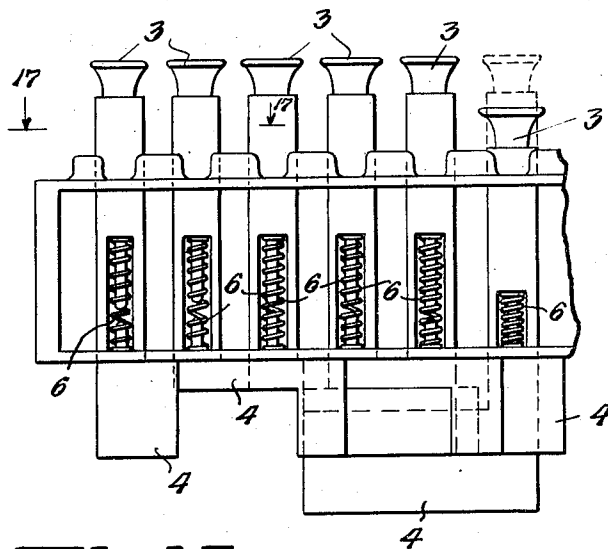


Fig. 17.

Fig. 16.

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UNITED STATES PATENT OFFICE

2,170,288

COIN FEEDING APPARATUS

James Kiss, Bethlehem, Pa.

Application May 18, 1936, Serial No. 80,433

6 Claims. (Cl. 133—3)

The present invention comprises a novel money paying and coin assorting machine.

One of the principal features of the invention resides in the provision of an assorting mechanism peculiarly combined with a money paying mechanism whereby the coin assorting means will supply to the coin magazines of the paying or ejecting mechanism, the different denominations of coins designed to be ejected from said magazine coin holders.

Another feature of the invention resides in the provision of novel coin assorting mechanism per se wherein the assorting mechanism as a unit device is operable by a motor, preferably of the electrical type, and the motor is initiated and maintained in operation as an incident to the maintenance of a supply of coins in the hopper of the assorting unit. The operation of the motor is adapted to be automatically cut off when the supply of coins in the supply hopper or holder has been exhausted. Under these conditions the motor which operates the coin assorting unit will not be operative save and except when there is work for the motor to do by way of actuating the assorting instrumentalities, thereby affording a saving of power or energy required to operate the assorting mechanism.

Still another feature of the assorting unit of the machine lies in the employment of electrical contact means cooperative with a movable assorting member or disc, said electrical contact means being conductively connected with the disc for completing a control circuit by which the motor is operated, by means of the coins in the coin hopper of the assorting unit. When said coins are exhausted from the hopper by being properly fed to the holders in which they are mechanically assorted, the current supply to the motor is automatically cut off, resulting in the special control of the motor operation previously referred to.

Other features of the invention reside in provisions for enabling overflow of coins in the coin holders of the magazine to pass to a storage compartment for the coins when the quantity of coins in each coin holder of the magazine has reached the maximum capacity of the holder; the provision of coin holders for the coin magazine, which holders are of rectangular form to facilitate a proper dropping of the coins in flat condition in each holder as the coins are fed thereto, thus preventing the coins from falling in edgewise vertical positions and resulting in clogging of the coin holders; and provisions for locking the ejectors of the coin holders from operation when any one or more of the coin holders

becomes empty and the supply of coins is not available.

Additionally, the invention contemplates the special construction of a feed or distributing chute or device for conducting coins to the coin holders in filling the same. In the present machine this feed or distributing chute or device leads from the assorting unit to the coin holders, but the invention may be availed of irrespective of whether a coin assorting unit is employed or not. The object of this feature is to equally divide a supply of coins fed to two coin holders of the same denomination of money. In other words, where two coin holders are provided for pennies, or two for nickels, as the pennies are fed to such two coin holders they will be compelled by the controlling mechanism of the feeding device to be fed first one coin to one coin holder and a second coin to the second coin holder, the alternating feeding action being continued until the supply of coins fills the two holders.

Still another feature of the invention resides in the arrangement of the key mechanism of the machine, which is of the type directly actuating the ejectors, whereby the keys may be pushed in for the money selection and ejection by the thumb of the hand whilst the palm of the hand adjacent to the thumb receives the coins directly therein. By the above arrangement of my mechanism the entire sum of money or combination of coins ejected at one operation of the machine is deposited in the hand and thus the operator is sure to give to the customer the true or correct amount of change.

Still another feature of invention resides in the construction of my ejector mechanism such that the ejectors do not support the coins in the coin holders associated with the said mechanism; also in the provision of ejector devices so associated with the keys and connected therewith by gearing that the movement of the keys will effect a reverse or opposite movement of the ejectors to accomplish their ejecting function. The ejectors and keys as constructed for the above purpose occupy a very small amount of space affording a most compact arrangement of parts for the purpose in view.

In the accompanying drawings—

Figure 1 is a perspective view of the coin assorting and paying machine embodying the invention, certain parts of the distributing mechanism being omitted.

Figure 2 is a top plan view thereof, certain parts of the distributing mechanism and the lock mechanism being omitted.

Figure 3 is an enlarged top plan view of the coin distributing mechanism for the coin magazine.

Figure 4 is a front elevation, partly broken away and partly shown in section, of certain of the coin holders of the coin magazine, showing certain parts of the control devices for the distributing mechanism.

Figure 5 is a detail fragmentary perspective view of the portion of the coin holder selecting means that forms a part of the coin distributing mechanism.

Figure 6 is a fragmentary vertical sectional view showing more clearly one of the ejector locking devices by which the ejecting mechanism is locked from action when any coin holder becomes empty.

Figure 7 is a vertical sectional view through the machine, the upper part of the coin magazine being broken away and the coin assorting unit not illustrated.

Figure 8 is a top plan view of the ejecting section of the machine with the cover plate of the mechanism partly broken away to show the arrangement of the actuating slides and selector bars cooperative therewith.

Figure 9 is a section on the line 9—9 of Figure 8, showing the side by side arrangement of the ejector actuating slide and one of the selector bars.

Figure 10 is a diagrammatic view of the electric circuit including the motor which operates the coin assorting unit.

Figure 11 is a top plan view of the lower one of the ejector devices, which may be employed alone or in cooperation with a superposed ejector device such as shown in Figure 13.

Figure 12 is a sectional view of the ejector devices of Figure 11.

Figure 13 is a view similar to Figure 11, of one of the superposed ejector devices.

Figure 14 is a fragmentary bottom plan view of certain of the ejector devices assembled with relation to the coin holders.

Figure 15 is a perspective view of one of the actuator slides operated by the keys.

Figure 16 is a fragmentary view showing more clearly the keyboard mechanism.

Figure 17 is a section taken on line 17—17 of Figure 16.

Figures 18, 19, and 20 are individual views of certain of the key members.

Figure 21 is a fragmentary sectional view of the lower portion of a coin holder of the coin magazine and the coin supporting plate associated therewith, certain parts being omitted.

Figure 22 is a fragmentary sectional view of a portion of one of the coin holders and coin distributing mechanism.

GENERAL CONSTRUCTION OF MACHINE

Reference is made to Figure 1 wherein my machine is shown as comprising a housing or casing A, and a coin magazine B, comprising a series of coin holders 1 in which the coins are stacked for ejection from the bottom of the holders in a manner well known in this art. At the front of the casing A are located chutes C and D, the one at the left to receive coins ejected by the keys at the left half of the keyboard and the one at the right, namely D, to receive coins ejected by the keys at the right half of the keyboard. Intermediate the chutes C and D is shown the lower end of an overflow hopper E, seen best in Figure 7. The chutes C and D are provided

with openings 2 at their lower portions so that coins discharged therein for delivery by means of the ejecting mechanism may be received directly in the hand or palm of the operator while his thumb is being used for the depression or actuation of keys conveniently located above the particular chute.

At the upper end of the coin magazine B is disposed a coin assorting and distributing unit generally designated at F and inclining downwardly toward one end. At the upper end of the distributing unit F is located the coin feeding unit G, and this unit comprises a coin receptacle in which coins may be placed by the hand so that these coins may be individually operated upon in a manner to be described, for causing the same to be assorted in their respective denominations and passed downward to the distributing unit F by which they are caused to be distributed to the various coin holders 1. The distributing mechanism controls the proper passage of the coins of proper denominations to the holders 1 that are designed to receive such denominations. There is seen in Figure 1 a motor H for driving the mechanism of the coin feeding unit G, as will be later more fully pointed out.

Keyboard and ejecting mechanism

The keyboard availed of for the purposes of my invention comprises a series of keys 3, the fingerpieces of which are provided with indicia corresponding with the amounts of money that are to be delivered by the machine in its ejecting operation. The key members of my keyboard mechanism are of substantially the same type as described in my application for patent Serial No. 577,810, filed November 28, 1931, for "Money paying machine". Each key member 3 is formed with a selector arm or section 4, the form of which depends upon the number of ejector slides 5 that a particular key member is intended to operate. Thus the key member 3 shown in Figure 18 is designed to eject 40¢ from the machine, and it will therefore cooperate by its selector arm 4 with the actuating slides 5 that cooperate to eject one coin from each of the 25¢ holder 1, the 5¢ holder 1, and the 10¢ holder 1, the 40¢ falling into the proper discharge chute and passing therefrom into the palm of the operator.

Springs as seen in Figure 16, designated 6, normally hold the key members 3 outpressed and restore these key members to their normal outward positions after actuation thereof, in a well known manner. In Figure 16 one of the key members 3 is depressed, illustrating its selector arm 4 projected beyond the corresponding arms of other keys adjacent thereto. The means for transmitting the movement of the key members 3 to the ejector devices is seen best in Figures 8 and 9 and 11 to 15 inclusive, and will now be referred to.

Each actuating slide 5 is formed with an engaging head 7 adapted to be engaged by the selector arm 4 of one or more key members 3. Each slide 5 is equipped with a rack 8 meshing with a pinion 9 mounted on the support 10 for the coin magazine and key unit of the machine. The support 10 is provided with grooves 11 in which operate the actuating slides 5, and other grooves 12 in which are disposed auxiliary actuating slides 13 which have racks 14 meshing with the pinions 9 at the sides thereof opposite the racks 8. The auxiliary actuating slides 13 have springs 15 cooperating therewith to normally push the same rearwardly or hold members 13 in retracted

positions, these springs acting through the pinions 9 upon the slides 5 to hold the latter in forward positions and the key members 3 cooperating with the parts 5, outwardly pressed ready to be shifted for a money paying operation. The slides 5 and the auxiliary slides 13 are used so that the movement of the keys may be communicated to the ejecting devices in a simple advantageous manner by parts closely assembled in compact condition whereby to reduce the size of the machine as much as possible.

The ejecting mechanism per se is best seen in Figures 7 and 11 to 15, which will now be referred to particularly. The ejector devices may be single or double, and one of said devices, as shown in Figure 11, operates in a suitable seat of a base member at the lower end of the coin magazine B. The ejector device now described comprises an ejector frame 16, the outer end of which has a coin slot or opening 17 therein. On the frame 16, as shown in Figure 12, is a pivoted ejector finger 18, the pivot of which is designated 19 and carried by a lug 20 projecting upwardly from the metal of the frame 16. Normally a light wire spring 21 is interengaged with the upper portion of the ejector finger 18 and tends to lift said finger. There is provided for each ejector frame 16 a coil spring 22 coacting therewith to normally hold the ejector device retracted. It will be seen from Figure 14 that the ejector devices 16 are directly supported or mounted under the bottom portion 23 of the coin magazine B, and a supporting plate 24 supports the ejector devices, such as 16, in properly sliding relation against the bottom 23 of said magazine, see Figure 14. The weight of the coins in each holder 1 in the magazine B is carried by the plate 24, and the plate 24 is provided with slots 25.

As seen in Figs. 21 and 14, the rear wall of each coin holder 1 has at its lower end a downwardly extending projection contacting the plate 24 and forming an abutment 26 to engage the rear or inner end of the slot 17 of the ejector frame 16, as indicated at 27 in Figure 14. This little lug 26 has one or two slots 28 therein, through which the ejector finger 18, or ejector fingers 18, dependent upon whether one or two ejector devices are used at the bottom of the coin holder, may pass during the ejecting operation of the ejecting device or devices. The lowermost coin of each holder 1 of single delivery type will drop in front of the lug 26 and rest upon the plate 24 and be engageable by one of the fingers 18. If the ejector system for the particular holder 1 is of the double type where superposed ejector devices similar to 16 are used, then the two lowermost coins in the particular holder will drop in front of the lug 26 and be engageable by two fingers 18 of the dual ejector device when said devices are positioned outwardly for coin ejecting purposes. Under such conditions the weight of the coins in the stack is received on the plate 24 and not upon any portion of the ejector device or devices.

As the coin is ejected, by the device shown in Figure 11, for instance, the inner edge of the lowermost coin is engaged and the coin pushed out by said ejector finger 18. As the coin is pushed out it falls into one of the chutes C or D and the remaining coins move downwardly in the holder 1 toward the bottom plate 24 and press upon the ejector finger 18, which is thus lowered into the slot 25 against the upward tension of the spring 21 previously referred to. In this way the weight of the stack of coins in the holder is always

carried by the plate 24 and does not create undue friction upon the ejector finger 18, which therefore may be readily retracted by the action of the springs forming a part of the ejector mechanism. In this way a very smooth and easy operation of the ejecting mechanism is obtained.

Referring to Figure 13, it will be noted that the ejector device illustrated comprises an ejector frame 16a, spring means 22a, ejector finger 18a and pivotal means 19a, together with a lug 20a, all similar to the parts described as to Figure 11. The ejector device of Figure 13 will be superposed upon the device of Figure 11 when a dual ejector system for a particular holder 1 is required, as for the ejection of pennies and nickels. Of course, when the device of Figure 13 is superposed upon the device of Figure 11, the ejector finger 18a operates in a slot 28 of the frame 16, said slot affording the necessary clearance for such purpose. The finger 18a is actuated by a spring 21a that normally holds the finger 18a at a slightly greater elevation than the finger 18, so that the finger 18a will operate in a plane to engage the second from the lowermost coin in the holder when the double ejection action of the devices 16 and 16a is called for by the key 3 that happens to be operated. The finger 18a will be pressed into a slot 25 in the plate 24, in a manner similar to the action of finger 18, under the weight of the coins in the magazine during an ejection operation, as previously described in relation to the finger 18.

It is notable that the ejector devices 16 and 16a are disposed in front of the upwardly extending lug or lugs 13a of the auxiliary actuating slides 13, seen best in Figures 7 and 8. Figure 9 shows at 13a the upwardly extending lug of one of the auxiliary slides 13, which lug works on the ejector device or devices by engaging the rear ends of the parts 16 or 16a to compel the forward ejecting movement of said devices for coin payout action of the machine. The springs 22 and 22a of the ejecting devices of Figures 11 and 13 engage at their front ends with the back portions of the magazine B at 29, and the rear ends of said springs abut against the rear portions of the frame structures of the parts 16 or 16a. In this way the springs effect the retraction of the ejector devices in an obvious manner.

The operation of the ejecting mechanism simply involves the pressure upon the proper key member or members 3 to procure the desired amount of money denominated by the indicia on the key member or members. The rearward push on the key member operates the main and auxiliary actuated slides 5 and 13, respectively, and the slides 13 engage with one or more of the ejector devices 16 and/or 16a, thus effecting the paying out of the required coins by the action of the fingers 18 and/or 18a thereon. The coins drop into the chute C or chute D, and the parts C and D are arranged as previously suggested, so that the palm of the hand may be disposed beneath the same and the thumb of the hand readily used to depress the desired keys for effecting the ejecting operation.

Coin magazine ejector lock

In Figure 6 is shown a pivoted or swinging lock member 30 pivoted at 31, one of which is provided at the lower end of each coin holder 1, where there is a single delivery system for coins, while two of these devices are used side by side at the lower end of those coin holders 1 where dual coin delivery is desired. Each lock device

30 has a lock 32 to coact with a projection 33 on the upper portion of each finger 18, or 18a, as the case may be. The member 30 has a rearwardly extending arm carrying a weight 34 that normally tends to hold the lock member in the full line position of Figure 6 when the holder 1 becomes empty. When the said holder is empty and the lock member 30 is so positioned that the lock 32 is lowered into the path of the projection 33, any attempt to depress the keys of the coin holder 1 when in empty condition is prevented because the lock member 30 cannot swing forwardly beyond the point of impingement of its shoulder 35 with the rear end of the coin magazine or holder 1. Of course, when the coins are stacked in the holder 1 they press rearwardly against the front edge of the lock member 30 and swing the same to a rearwardly adjusted position where the lock 32 is above the projection 33 and the ejector finger 18 is operative to perform its ejecting function. The locking of any ejector system by the means just described will be indicated to the operator of the machine because of his inability to press the key or keys that remove coins from the particular coin holder 1, which is empty, and he can readily then attend to resupplying coins to such coin holder to render the machine available for proper use.

Coin assorting mechanism

Reference is made particularly, in conjunction with this mechanism, to Figures 1, 2, 7, and 10. The purpose of the assorting mechanism is to provide a convenient means for quickly causing the segregation of the different denominations of coins for the purpose of causing their distribution, by means of the distributing unit, to the various coin holders designed to receive and pay out or eject said coins. In the design of the assorting mechanism it is contemplated to have an automatic control for the driving of the feed mechanism from the motor, said automatic control being intended to automatically stop the motor when there are no coins disposed in the assorting receptacle or compartment. In this way the power for the actuation of the assorting unit is not put into use except when there is work for the unit to do in effecting the coin assorting operation.

In the drawings, G, previously referred to, denotes generally the feeding mechanism or unit, and said unit includes the coin receptacle 36 which is provided at its bottom with a rotating plate 37 equipped with a series of openings 38 which are preferably all of the size of the largest coin handled by the disc 37, namely, the 50¢ piece. Beneath the rotary disc 37 is a stationary plate 39 of nearly complete circular form, of conductive metal, and the plate 37 is likewise made of conductive metal. The two plates 37 and 39 are spaced apart as shown at 40, so as to be out of electrical contact with one another. The plate 37, which rotates, is mounted upon drive shaft 41 which is operated from the motor H previously mentioned, and, if desired, a gear reduction means, partially shown in the broken portion of Figure 2, may be availed of to reduce the speed of the driving of the disc 37 as compared with the driving speed of the motor. The motor is included in an electrical circuit illustrated in Figure 10 as comprising the line wires 42 and 43, the wire 43 leading to the motor at one terminal and the other terminal of the motor is connected by a wire 44 to a contact 45 spaced from the contact 46 which is connected with the wire 42. A

solenoid operated switch 47 is adapted to connect the terminals 46 and 45 in order to start the motor H into operation, and the solenoid 48 for actuating the switch 47 is included in a separate electric circuit comprising the wires 49 and 50. The wire 49 is connected to the rotary disc 37 at the point 51 and the wire 50 is connected to the output side of a transformer 52, the said transformer being also connected to the bottom plate 39 of the assorting receptacle by means of a wire 53, as shown at 54 in Figures 1 and 2 of the drawings.

The primary side of the transformer 52 is connected to a source of power by means of the wires 55. The purpose of the transformer is to step down the current to about 6 or 10 volts for the operation of the solenoid 48. This is to prevent liability of shock when a person touches the receptacle 36 of the assorting unit, were the high voltage current delivered directly to the bottom plate 39 and the rotative disc 37. The high voltage current is used to operate motor H.

When coins are disposed in the receptacle or chamber 36 of the feeding unit, the coin or coins in said receptacle will drop into the openings 38 of the disc 37 which turns in the direction of the arrow, as per Figure 2 of the drawings. The metal of the coins is relied upon to establish contact between the bottom portion or plate 39 of the receptacle 36 and the rotary disc 37, under which conditions the circuit including the solenoid 48 is closed, energizing the solenoid and thereby drawing the switch plate 47 to a position connecting the contacts 45 and 46. Thereupon, the motor circuit including the motor H is closed and the motor remains in operation so long as there are any coins in the receptacle or compartment 36 to drop into the openings 38 and establish an electrical conductive connection between the parts 37 and 39. The receptacle 36 is tilted or at an inclination so that coins deposited therein will gravitate slightly toward the lowermost portion of the disc 37, thus ensuring that any single coin received in the receptacle 36 will ultimately drop into an opening of the disc 37 for establishing the conductive connection between the parts 37 and 39 to maintain the motor H in action so long as any coin remains in the receptacle of the feeding unit G. The disc 37 will carry the coins to a discharge opening 56 in the bottom of a base plate 57 of the assorting receptacle. The base plate for the feeding unit G, as indicated at 57 in Figure 1 and Figure 2, is of insulation substance and carries the stationary plate 39 as well as the rotary disc 37 and adjacent parts of the unit. Said base plate 57 is provided with a discharge opening 56 between the ends of the stationary plate 39 and near the uppermost portion of the receptacle 36. The coins are carried in the openings 38 of the disc 37 until, during a certain point in the revolution of the disc 37, each coin reaches the discharge opening 56 and drops therethrough onto the inclined distributing chute 58 of the distributing unit F. As soon as the coins handled in the receptacle 36 have been discharged through the opening 56, since there remains no coin in the receptacle 36 to maintain contact between the parts 37 and 39, the circuit including the solenoid 48 is broken and the solenoid is deenergized, causing the switch plate 47 to gravitate away from the solenoid armature and thus open the motor circuit, stopping the motor H immediately. Each coin in the receptacle 36

maintains contact between the parts 37 and 39 until such coin reaches the discharge opening 56, when the contact is broken.

Coin distributing unit

Referring now to Figures 3, 4, and 5 particularly, it will be seen that the chute 58 is inclined so that the coins discharged thereonto through the opening 56 will gravitate downwardly along the chute 58 under certain conditions, and some of the coins, notably the dimes, will pass down through an auxiliary distributing chute 59 as will now be set forth. The dimes, being the smallest coins, as they are discharged onto the chute 58 will drop through an opening 60 and immediately pass along the auxiliary chute 59 to the dime receptacle designated by the indicia 10¢ in Figure 3, and will be deposited in said receptacle, entering at the top and fed from the rear of the receptacle to its top portion. The pennies, which are the next size of coin, pass over the opening 60 to openings 61 and 62. Assuming that the opening 61 is reached by the first penny distributed, said opening being over the right-hand coin holder 1 for pennies, the penny will move in the manner shown in Figure 3, down the chute 58 with the edge of the penny supported by the inner ledge 58a of the chute and the other opposite edge of the penny carried by a ledge 63. Therefore, the penny will move down to the second or left penny opening 62 in the chute 58 and dropping therethrough will enter the holder 1 beneath said opening. As the penny drops into the left-hand penny holder 1 it hits the trip arm 64, mounted on a shaft 65 at the rear of the coin magazine and chute 58. The trip arm 64 extends through the back wall of the magazine B so as to be in the path of the penny which drops into the left-hand penny holder 1 and is thus depressed or moved downward by the gravitating penny entering the top of the left penny holder 1. The shaft 65 is thus rotated in the direction of the arrow in Figure 5 and causes an actuating arm 66 to engage and move forwardly the head of a plunger 67 mounted for transverse movement in the coin magazine structure B.

The plunger 67 has a head 68 directly engaged by the arm 66 at the rear side of the head, and the movement forward of the plunger 67 shifts the ledge 63 forward out of the way of the edge of the next penny gravitating down the chute 58. Therefore, the next gravitating penny, when it reaches the opening 61 above the first or right-hand penny holder 1, will drop into said coin holder. This penny, as it drops through the opening 61, strikes a trip arm 69 on a small shaft 70 like the shaft 65, said shaft 70 carrying an actuating arm 71 which impinges the front side of the head 68 and when the arm 69 is tilted downwardly by the dropping penny, the plunger 67 is forced rearwardly and the ledge 63 is brought back to its operative full line position of Figure 3, so that the next penny passing down the chute 58 will go past the opening 61 and drop through the opening 62 into the left hand penny holder 1, whereupon the operation previously described is repeated. In other words, the pennies which pass down the chute 58 drop alternately first through the opening 62 into the left-hand penny holder 1, and the next penny drops through the opening 61 into the right-hand penny holder 1, this operation being carried on indefinitely as long as pennies pass down the chute.

The nickels that pass down the chute 58 are distributed alternately to the right hand 5¢ coin holder 1 and the left-hand 5¢ coin holder 1, as shown in Figure 3, by the same kind of a mechanism as previously described for the pennies, except that the shaft parts are a little longer because the two nickel holders 1 are separated a sufficient distance to permit the emplacement of a 10¢ holder 1 therebetween. The mechanism for alternately distributing the nickels to the two 5¢ holders 1 is indicated by the same numbers as used for the corresponding parts of the penny holders, except that each number includes a prime designation. A single holder 1 is used for the 10¢ coins, the 25¢ coins and the 50¢ coins. It is contemplated that one or two pennies may be ejected from both of the penny holders 1. It is also contemplated that two nickels may be ejected from one of the nickel holders 1 and one nickel from the other nickel holder 1, that the dimes shall be ejected singly only from the holder 1 therefor, and that either one or two quarters and 50¢ pieces shall be susceptible of being ejected from their respective holders 1.

The distributing chute 58 is provided at its rear with a flange 72 so as to form a guide for the coins sliding down said chute. The chute, as will be seen from Figure 1, is rearwardly inclined and the coins will therefore, during their downward travel on said chute, remain in contact with the rear flange 72 thereof. Adjacent the rear flange 72 of the chute and in alignment with the upper surface of the latter is a round ledge member 58a, as clearly seen in Figure 22. It may be seen, therefore, that the rear edges of the coins slide on top of the ledge 58a until they reach their respective coin holders 1. When a coin reaches its respective holder, the opening in the chute 58 will be sufficiently large to permit each coin to tilt downward at its front portion, as clearly seen in Figure 22. The coin will be thereby permitted to assume a vertical position in view of the fact that its rear end is held back by the ledge member 58a as it drops.

The coin holders 1 may be preferably made of square configuration in cross section, and in view of the fact that the coin holders are tilted backwardly toward the rear of the machine, it will be seen from Figure 22 that the downwardly falling coin will strike against the rear wall of the coin holder 1 and will slide downwardly on said rear wall until it abuts against the lower plate 24, or the coins in the holder 1 above the said lower plate. Thereupon, the upper end of the coin will turn forwardly and the coin will adjust itself in a horizontal position in the coin holder 1. The object in dropping the coins into the coin holders 1 while they are in a vertical position is to prevent the coins entering the slots 25 in the plate 24. These slots are positioned at an angle of 90° in respect to the vertical position of the falling coin and therefore it will be impossible for a coin to get locked in said slot, so that the same will align itself into a horizontal position. However, the coin holders 1 could also be made of round configuration in cross section, should this be desirable, and they have been so illustrated. Figure 22 shows the modification of the invention where the cross section of the coin holder 1 is made square, practically speaking.

The portions of the distributing chute 58 adjacent to some or all of the coin holders 1 may be provided with a recess 73 having a shoulder 74, so that during turning of the coin from horizontal to vertical position while the same is dropped

into the coin holders, it will engage the front surface of the coin and will prevent rotation of the coin in a direction toward the forward end of the machine above the limit of its vertical position. Therefore, the edge 74 serves as an additional means to adjust the coin to a vertical position during its dropping movement into the coin holder 1.

It is notable, referring to Figure 7, that when the coin holders 1 are filled entirely, practically speaking, with coins, the feeding unit G may still supply coins to the various coin holders, and it is desirable to have an overflow means for each of the holders 1. This overflow means includes an overflow opening 75 in the upper rear portion of each holder 1 communicating with an overflow conduit or passage 76 that leads down to the overflow hopper E previously referred to. It will therefore be seen that the coins in the coin holder 1 may be supplied automatically by means of the distributing chute 58, or when a supply of coins has filled the hopper E the user of the machine may manually remove the coins from the hopper E and place them back in the receptacle 36 of the assorting unit. A guard plate 77 on top of the chute 58 may be provided, spaced above the chute to prevent the coins from jumping out of the chute 58 as they travel downward to the various coin holders 1.

The present machine is especially advantageous for use in department stores where pneumatic change making systems are in use, because the operator at the change making station, using one of my machines, can dump the coins received in the pneumatic actuated boxes or holders, directly into the assorting receptacle 36, after counting same, with such quickness that no delay will be caused in the change making operation. Such delay would be incurred if an operator was required to assort the coins as they arrive from the different sales stations in the store, and this is something desired to be avoided.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a money handling machine of the class described, in combination, a coin feeding unit comprising a receptacle, a movable plate in the bottom of said receptacle having openings to receive coins and made of conductive material, a stationary plate cooperative with said movable plate and spaced therefrom so as to be out of conductive contact therewith, said stationary plate being arranged so that a coin received in

an opening of the movable plate will establish conductive connection between the movable and stationary plates, a motor, a circuit including said motor for supplying current to drive the same, a circuit including the movable and stationary plates, means in said last circuit operable on closing of the same by a coin or coins establishing conductive relation between the stationary and movable plates for closing the motor circuit to cause the circuit of the motor to become effective for operation of the said motor and actuation of the movable plate.

2. A machine as claimed in claim 1, wherein the movable plate is a rotary disc.

3. A machine as claimed in claim 1, combined with a base for the feeding unit having an opening through which coins operated upon by the movable plate may drop at a predetermined point in the movement of the movable plate, and a distributing chute for carrying said coins away from the feeding unit.

4. In a money handling machine, a coin feeding unit comprising a receptacle for coins, a coin feeding member within said receptacle, means for operating said member to move the coins for feeding action thereof, and instrumentalities within the receptacle and controlled by coins deposited therein to effect the operation of the last mentioned means.

5. In a money handling machine, a coin feeding unit comprising a receptacle for coins, a coin feeding member in said receptacle, comprising a movable plate having feeding openings to receive coins, an electric motor for moving the plate to cause it to perform its feeding function, an electric circuit including said motor for causing the operation of the latter, and instrumentalities associated with the receptacle and responsive to the reception of a coin in an opening of the plate aforesaid for closing said electric circuit and effecting the operation of the motor.

6. In a money handling machine, a coin feeding unit comprising a receptacle for coins, a coin feeding member in said receptacle, an electric motor for operating said feeding member, an electric circuit including the feeding member and said motor, and contact devices coacting with the feeding member and arranged in spaced relation thereto so as to be conductively connected with the feeding member by coins deposited in the receptacle thereby to close the electric circuit and effect operation of the motor to actuate the feeding member.

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