

T. I. POTTER.  
 COIN DELIVERING MACHINE.  
 APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.  
 10 SHEETS—SHEET 1.

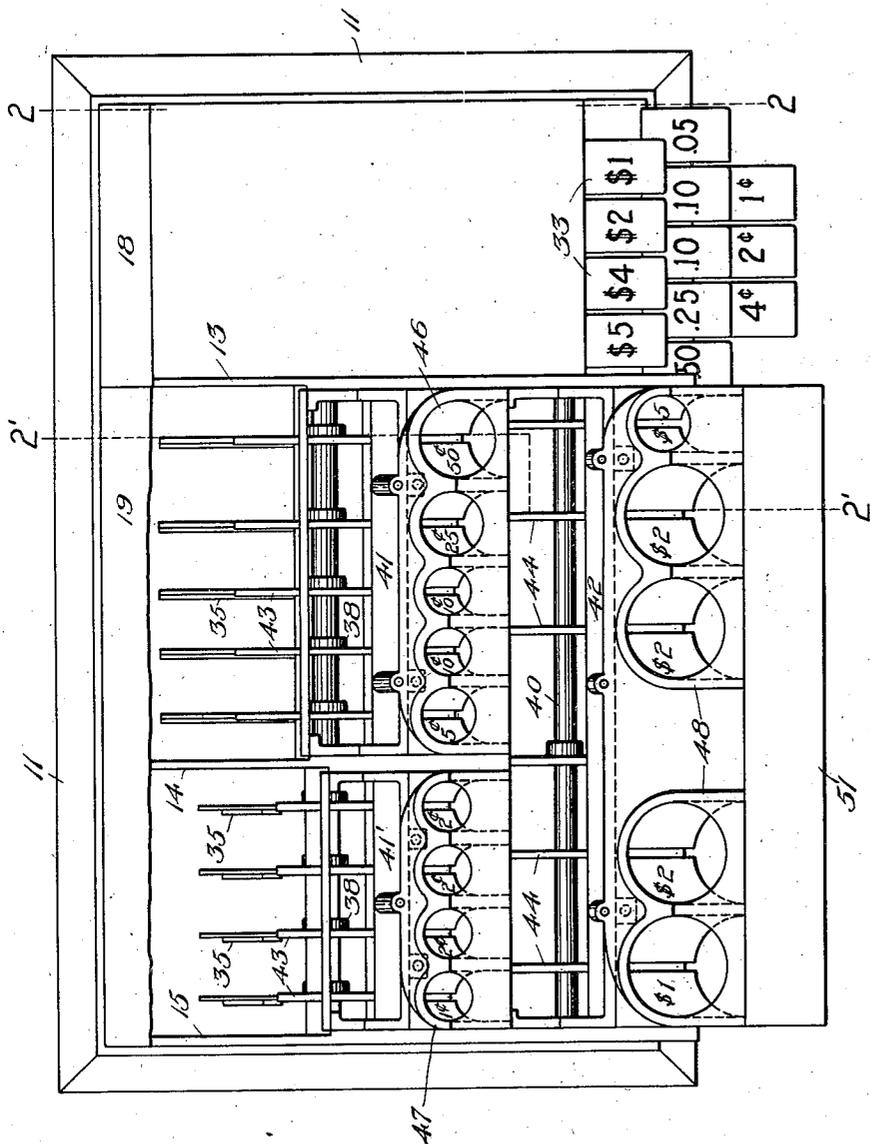


Fig. 1

Witnesses

Thomas Grant  
 Halbert Brown.

Inventor

Thomas Irving Potter

By Church & Church  
 his Attorneys

T. I. POTTER.  
 COIN DELIVERING MACHINE.  
 APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.

10 SHEETS—SHEET 2.

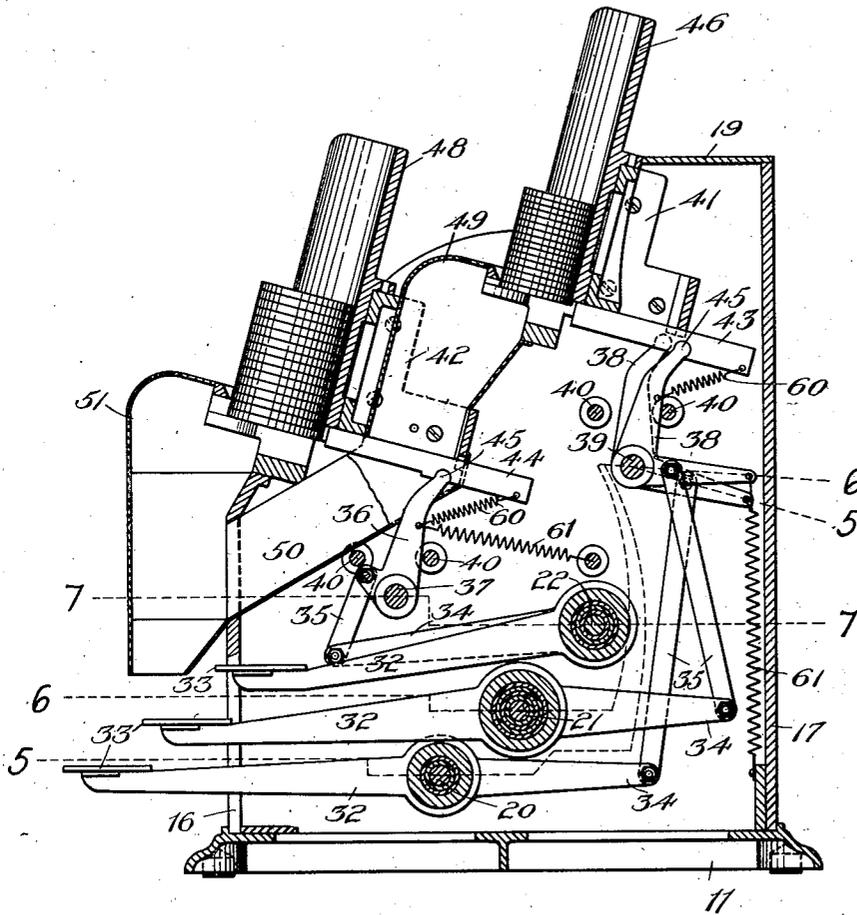


Fig. 2

Witnesses  
 Thomas Durant  
 Albert Brown

Inventor  
 Thomas Irving Potter  
 By Church & Church  
 his Attorneys

T. I. POTTER.  
COIN DELIVERING MACHINE.  
APPLICATION FILED AUG. 26, 1912.

Patented Jan. 1, 1918.  
10 SHEETS—SHEET 3.

1,252,021.

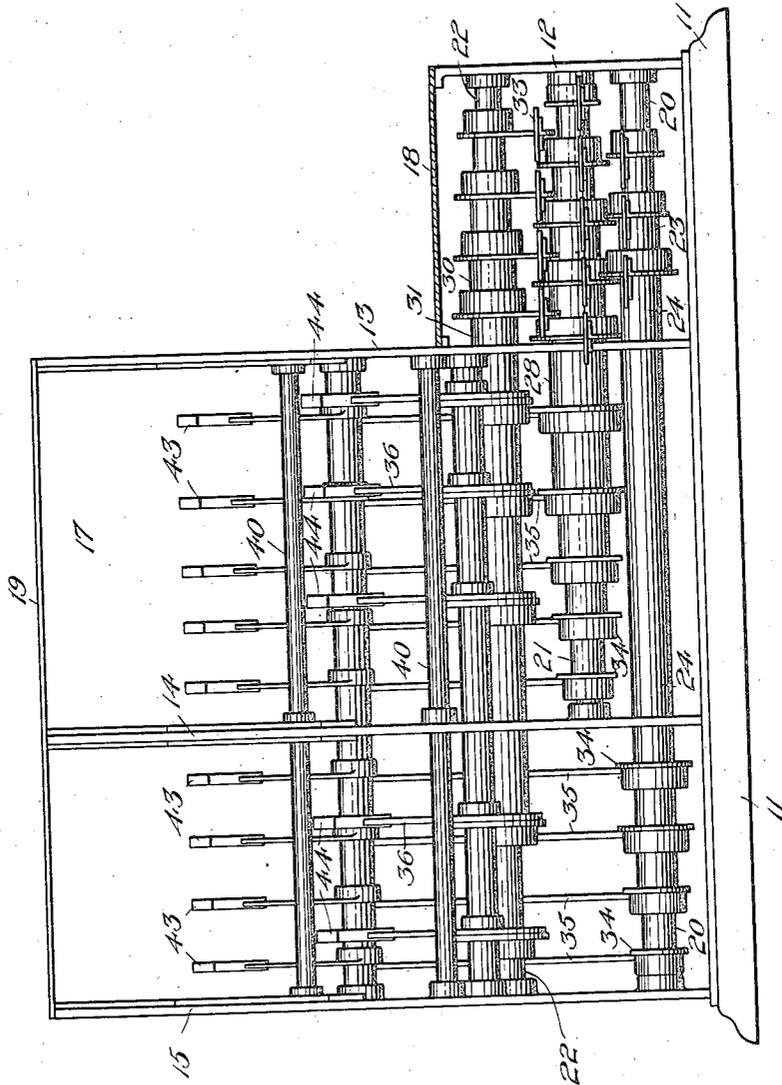


Fig. 3

Witnesses

Thomas Durant  
Halbot Brown.

Inventor  
Thomas Irving Potter

By Church & Church

his Attorneys

T. I. POTTER.  
 COIN DELIVERING MACHINE.  
 APPLICATION FILED AUG. 26, 1912.

Patented Jan. 1, 1918.  
 10 SHEETS—SHEET 4.

1,252,021.

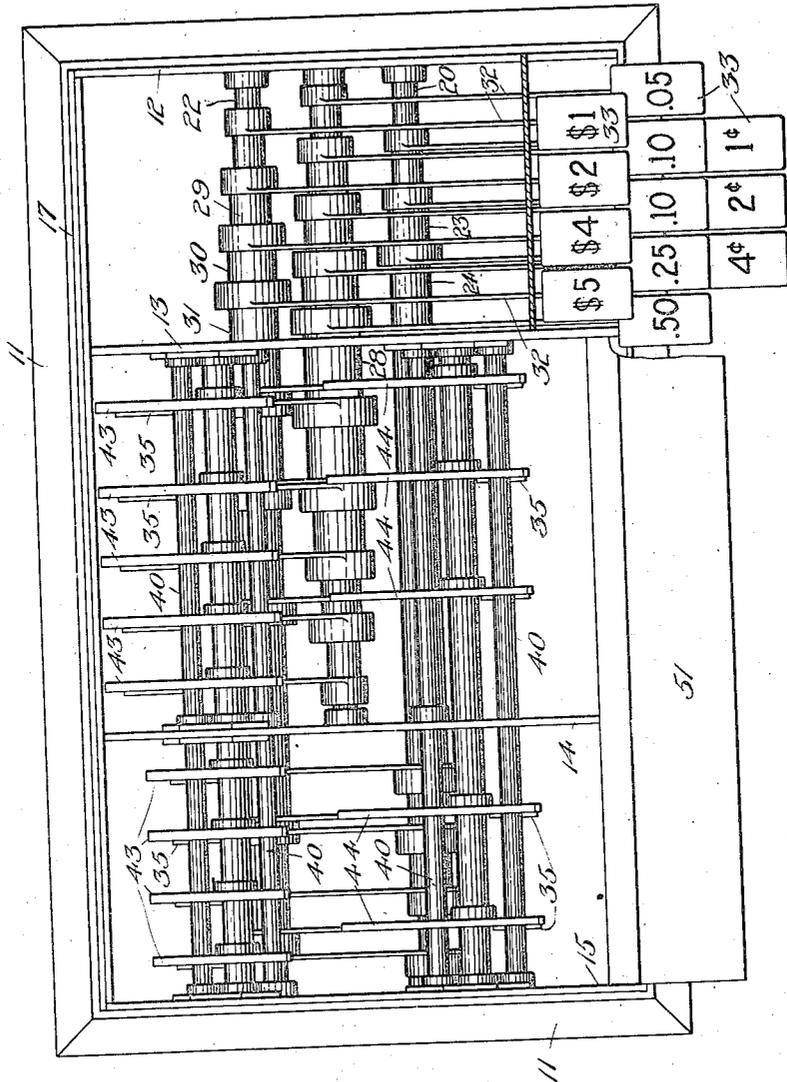


Fig. 4

Witnesses

Thomas Durant  
 Halbert Brown.

Inventor

Thomas Irving Potter

By Church & Church

his Attorneys

T. I. POTTER.  
 COIN DELIVERING MACHINE.  
 APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.  
 10 SHEETS—SHEET 5.

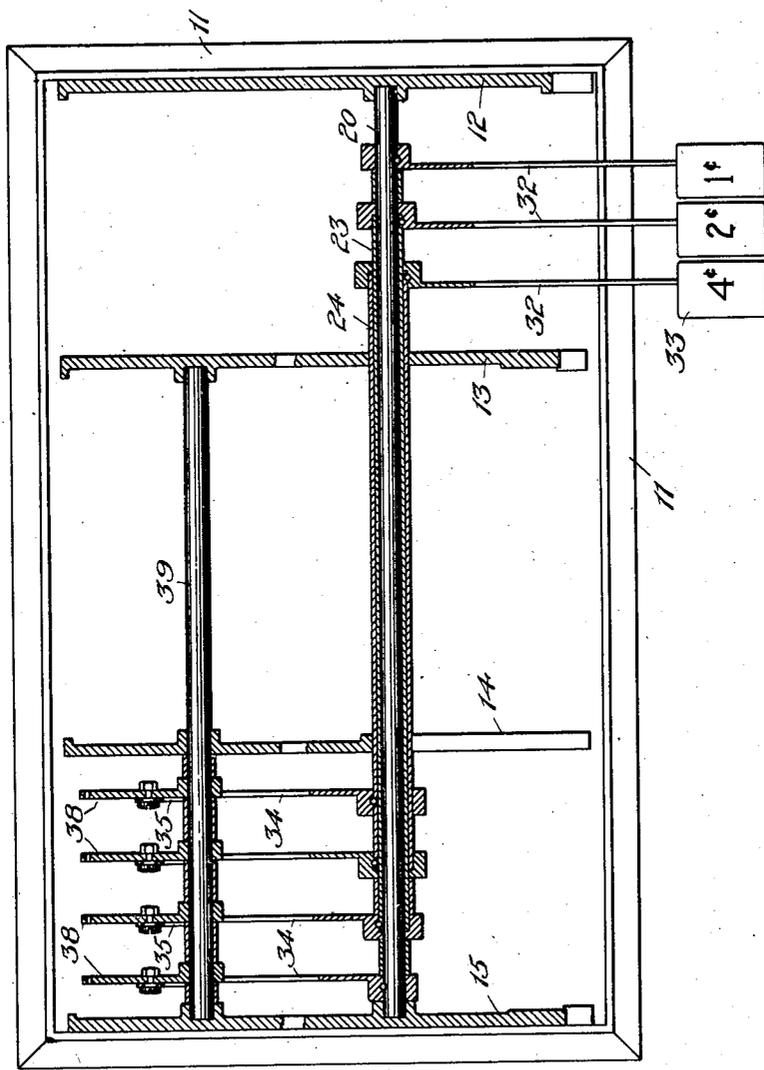


Fig. 5

Witnesses

Thomas Durant  
 Halbert Brown.

Inventor  
 Thomas Irving Potter

By Church & Church  
 his Attorneys

T. I. POTTER.  
 COIN DELIVERING MACHINE.  
 APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.

10 SHEETS—SHEET 6.

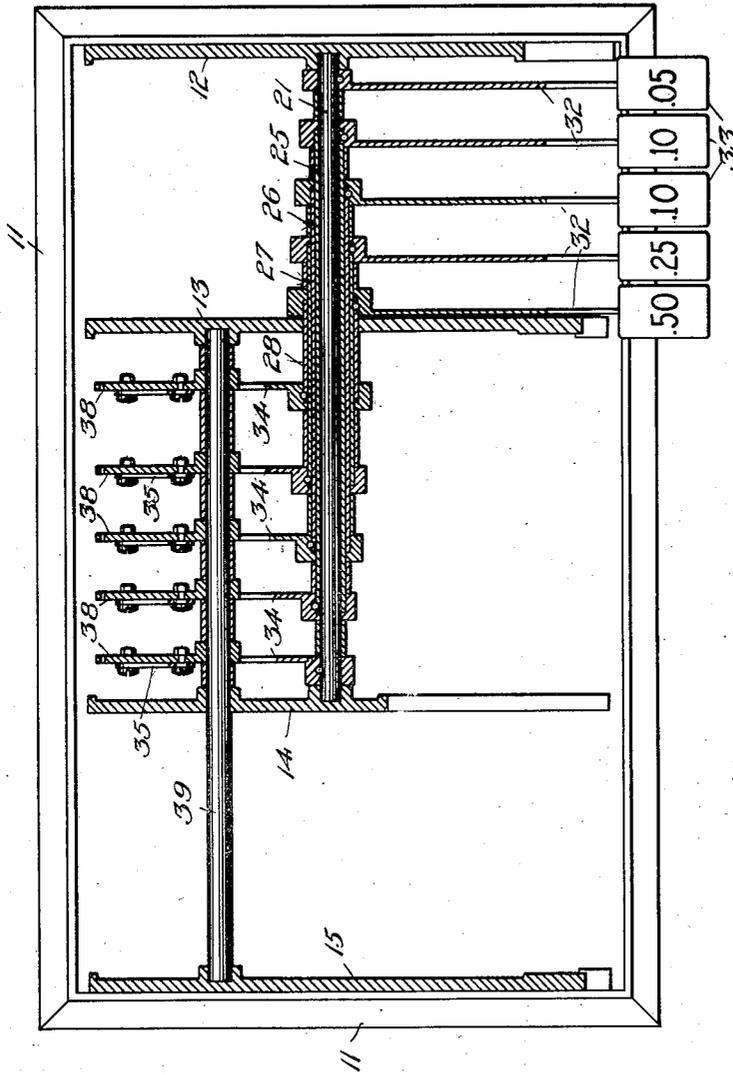


Fig. 6

Witnesses

Thomas Durant  
 Halbat Brown,

Inventor

Thomas Irving Potter

By Church & Church

his Attorneys

T. I. POTTER.  
COIN DELIVERING MACHINE.  
APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.

10 SHEETS—SHEET 7.

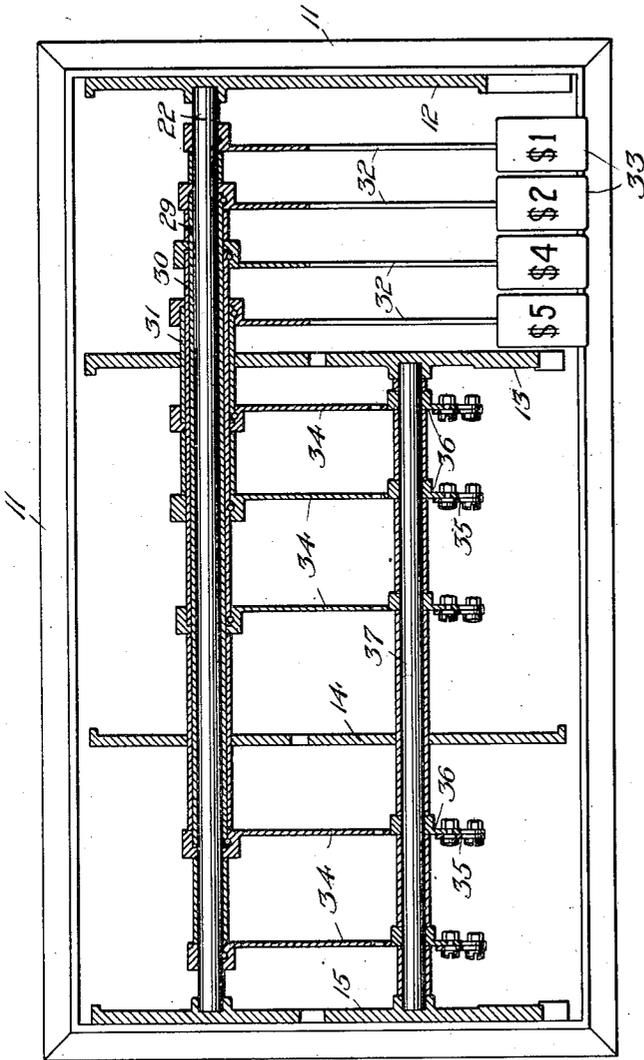


Fig. 7

Witnesses

Thomas Swant  
Albert Brown.

Inventor

Thomas Irving Potter

By Church & Church

his Attorneys

T. I. POTTER.  
COIN DELIVERING MACHINE.  
APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.  
10 SHEETS—SHEET 8.

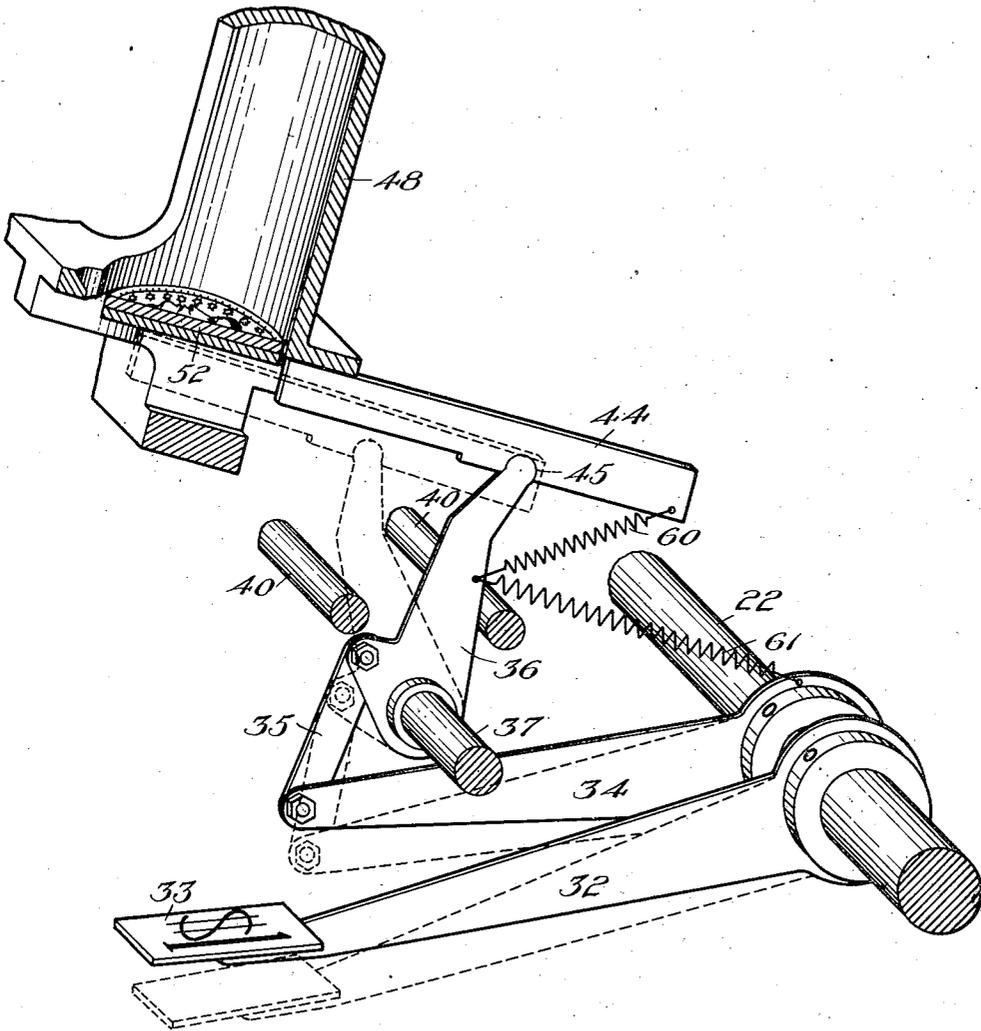


Fig. 8

Witnesses

Thomas Grant  
Halbert Brown

Inventor

Thomas Irving Potter  
By Church & Church  
his Attorneys

T. I. POTTER.  
COIN DELIVERING MACHINE.  
APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.  
10 SHEETS—SHEET 9.

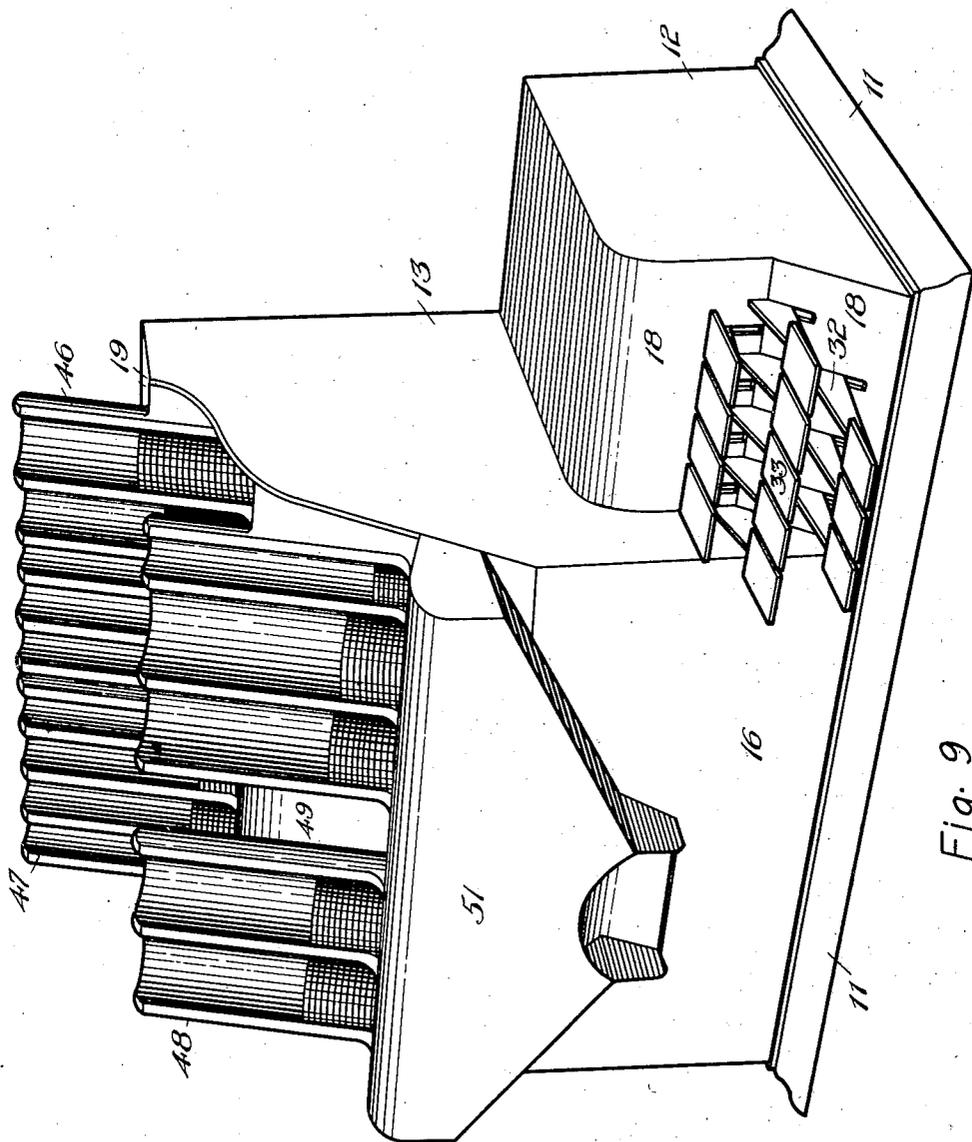


Fig. 9

Witnesses  
Thomas Duant  
Halbert Brown.

Inventor  
Thomas Irving Potter  
By Church & Church  
his Attorneys

T. I. POTTER.  
 COIN DELIVERING MACHINE.  
 APPLICATION FILED AUG. 26, 1912.

1,252,021.

Patented Jan. 1, 1918.  
 10 SHEETS—SHEET 10.

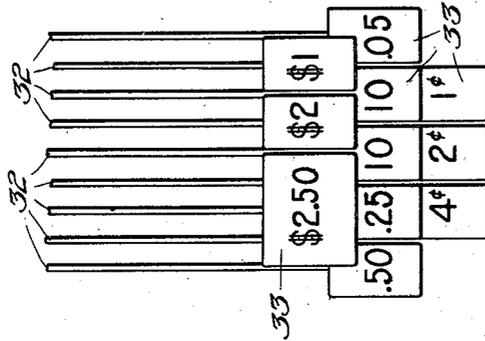


Fig. 11

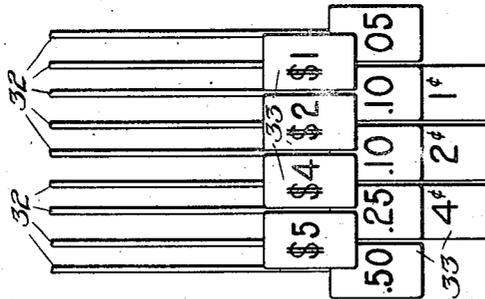


Fig. 10

Witnesses

Thomas Durant  
 Halbert Brown

Inventor

Thomas Irving Potter

By Church & Church  
 his Attorneys

# UNITED STATES PATENT OFFICE.

THOMAS IRVING POTTER, OF PORTLAND, OREGON, ASSIGNOR TO COIN MACHINE MANUFACTURING COMPANY, OF PORTLAND, OREGON, A CORPORATION OF OREGON.

## COIN-DELIVERING MACHINE.

1,252,021.

Specification of Letters Patent.

Patented Jan. 1, 1918.

Application filed August 26, 1912. Serial No. 717,058.

### *To all whom it may concern:*

Be it known that I, THOMAS IRVING POTTER, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Coin-Delivering Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to coin delivering machines and has for its objects to provide an exceedingly simple and compact machine with which different sums of money may be paid rapidly and accurately by the manipulation of suitable keys, the keys themselves being preferably utilized to actuate the ejecting mechanism, whereby the employment of separate operating mechanism, such as an operating lever may be avoided. Another object of the invention is to so group the coin holders or receptacles and the operating keys that the lateral dimensions of the machine may be reduced and at the same time the capacity increased to such an extent that coins of all denominations may be handled and delivery made of a large aggregate sum or of any fractional part of the same.

Referring to the accompanying drawings—

Figure 1 is a top plan view of a machine embodying the present improvements, a portion of the top plate and rear coin chute being removed;

Fig. 2 is a sectional side elevation, the upper portion of the view being taken substantially on the line 2'-2' of Fig. 1, and the lower portion on the line 2-2 of Fig. 1 so as to show the key levers, shafts and ejecting mechanism operated thereby;

Fig. 3 is a front elevation showing the levers, shafts and ejecting mechanism mounted in the frame of the machine, but omitting the cover plates and coin holders;

Fig. 4 is a top plan view of the parts shown in Fig. 3;

Fig. 5 is a sectional plan view taken substantially on the broken line 5-5 of Fig. 2 to illustrate one group of keys, its shaft and the ejecting mechanism operated thereby;

Fig. 6 is a similar view on substantially the dotted lines 6-6 of Fig. 2 and illustrat-

ing another group of keys and parts operated thereby;

Fig. 7 is a similar view taken substantially on the line 7-7 of Fig. 2 to illustrate the third group of keys and parts operated thereby;

Fig. 8 is a perspective view with parts in section showing the relative positions and movement of the parts operated by one key of the group;

Fig. 9 is a perspective view of the entire machine;

Fig. 10 is a plan view of the keyboard arranged as shown in Fig. 4; and

Fig. 11 is a similar view showing a modification of the keyboard, whereby coins of different denominations may be delivered.

Like letters of reference in the several figures indicate the same parts.

In accordance with the present invention and in order to reduce as far as practicable the lateral dimensions of the machine and at the same time increase its capacity for rapidly delivering a gross sum or fractional parts thereof, a grouping and banking arrangement of the coin holders or receptacles and of the manipulating keys is resorted to; thus, referring to Fig. 9, it will be seen that the coin holders or receptacles 46, 47, and 48, are arranged in groups and banked rows, one row being in front of and at a lower level than the other row. The operating keys 33 are arranged in similar banks and rows, there being in the machine illustrated three rows of flat keys 33, the rows being arranged at different levels and one in front of the other. The keys have flat surfaces for the operator's fingers, in this respect corresponding closely in form and appearance to the keys of a piano keyboard. This arrangement and form permits of the simultaneous operation of two keys with one finger and of any combination of one or more keys with the fingers and thumb of one hand. It secures a speed of operation far in excess of any keyboard now in use. The order of arrangement of the keys for ejecting from the various coin stacks is such as to facilitate this rapid and simultaneous operation, the arrangement being of the lowest denomination at one end and progressing to the highest at the other end. The arrangement is such that combinations may be made for paying any amount up to the full capacity

of the machine. Each key is mounted on the forwardly projecting end of a lever 32, and each row of keys preferably corresponds to a group of coin holders or receptacles.

5 The groups and banks of coin holders are preferably located at the left hand side of the machine and the keys at the right hand side of the machine; thus, the operator may manipulate the keys with the fingers of the  
10 right hand and receive the ejected coins in the left hand which is held beneath the central bottom discharge opening of a chute 51 which conducts the coins from all of the receptacles to the single point of delivery. In  
15 carrying out the scheme of this arrangement the mechanism is mounted on a base 11 from which frame plates 12, 13, 14 and 15, project upwardly and are suitably connected by shafts to be presently referred to. The  
20 frame plates 12, 13, 14, 15 not only support the operating mechanism, but serve as the supports for front and rear cover plates 16 and 17 and top cover plates 18 and 19, by which the operating parts of the machine  
25 are inclosed and protected.

Mounted in suitable bearings in the plates 12, 15, referred to, are shafts 20, 21, and 22, each shaft being formed by a central shaft member and a plurality of sleeves surrounding the same or telescoped together and constituting in effect a group of shaft members, each of which is capable of independent angular movement about a common axis. The  
30 key levers 32 of each group of keys are connected respectively with one of the members of each shaft; thus, referring to Fig. 5, it will be seen that the key levers 32 are connected with the shaft 20 and sleeves 23 and 24, respectively, while in Fig. 6 the key  
40 levers are connected respectively with the shaft 21 and sleeves 25, 26 and 27, while in Fig. 7, the key levers are connected with the shaft 22 and sleeves or shaft members 29, 30 and 31, respectively.

45 At the opposite ends of the shaft from the key levers the shaft members are provided with operating arms; thus, the members 20, 23 and 24 carry operating arms 34, the shaft member 24 having two operating  
50 arms 34 thereon, as shown in Fig. 5, for a purpose to be presently explained. In Figs. 7 and 6 it will be seen that corresponding arms 34 are connected with the shaft members 22, 29, 30, and 31, and 21, 25, 26, 27 and  
55 28. The arms 34 secured to shaft members 22, 29, 30 and 31 project forwardly, while the arms 34 connected with the members of the other two shafts project rearwardly. All of the arms 34 are connected with upwardly  
60 extending links 35, and the latter are jointed to the short arms of bell crank levers pivotally mounted on the shafts 37 and 39, the arrangement being such that upon the depression of any key its shaft member will be  
65 oscillated and the bell crank lever with

which its operating arm is connected will be turned on its axis in a direction to cause its upwardly projecting longer arm to swing toward the front of the machine. The said upwardly projecting arms of the bell crank levers 36 and 38 constitute devices which directly engage and operate the ejectors, thus, the connection between the keys and the ejectors is practically a direct connection involving but few parts, and those parts of such construction that the leverage of the key levers 32 may be utilized to the best advantage so as to secure the requisite throw of the ejectors with a minimum key movement.

By reference to Figs. 1 and 2 it will be seen that there is secured to the plates 13, 14 and 15, transversely extending supporting members 41, 41' and 42, which carry the coin holders or receptacles 46, 47, and 48, and said holders and supporting members 41, 41' and 42 are slotted on the under side to form guideways for the ejectors 43 and 44. Said ejectors are in the form of bars adapted to slide in their guideways toward and from the front of the machine and in their forward movements to intersect the bottom of the coin holders, engage the rear edges of coins in said holders and advance the same until released from the supporting portion of the holders, when they drop down through the chute to the point of delivery. Each ejector bar 43 and 44 is provided with a bearing for the rounded upper end or head 45 of one of the bell crank levers 36 or 38, whereby the bars will be reciprocated when the bell crank levers are oscillated.

In the preferred construction the ejector bars are mounted on the ends of the bell crank levers so as to be capable of a pivotal or oscillatory movement thereon, and springs 60 are provided which hold the forward ends of the bars up against their guiding surfaces, but at the same time permit said forward ends to be depressed by the weight of the stack of coins in the holder. Inasmuch as very light springs may be employed there is but slight frictional resistance during the return movement. The operation of the mechanism will be readily understood from an inspection of Fig. 8, wherein it will be seen that the spring 60 connects the rear end of the ejector bar 44 with the bell crank lever 36, at a point below the end of the lever and consequently said spring tends to hold the forward end of the bar up in its channel and in position to engage the lowermost coin in the holder 48. Assuming that the ejector bar has been advanced to the position shown in dotted lines by the depression of the key 33, and that the coin has been discharged, the remaining coins in the holder will depress the forward end of the ejector bar to the position shown in dotted lines, and the only resistance to the

return of the bar to normal position is that due to the slight friction caused by the spring 60, holding the forward end of the ejector bar up against the bottom coin. This construction permits the parts to operate very freely and consequently very light springs, such as 61 may be provided for returning the parts to normal position ready for another operation.

The coins discharged from the upper bank or groups 46 and 47 of the coin holders drop into a chute 49 which has a bottom extension 50 communicating with the chute 51 into which the coins from the lower or front group or row are directly discharged and the chute 51 is provided with a converging bottom portion and a central delivery opening, as shown in Fig. 9 beneath which a suitable tray may be placed, or as in the preferred construction, the operator may place his hand for the reception of the coins.

The movements of the operating bell crank levers 36 and 38 are limited in both directions by stops formed preferably by rods 40 mounted in the plates 13, 14 and 15 between which rods said bell cranks are oscillated in the operation of the machine.

Each group of keys, it will be noted, is connected with the shaft members of a single shaft, and said members are connected with the ejecting mechanism for a group of coin holders; thus, with three shafts each composed of a plurality of shaft members movable angularly about the same axis and carried by the same bearings in the frame of the machine, it becomes possible to provide for ejecting a large number of coins and combinations of coins so as to permit of the delivery of practically any fractional value within the capacity of the machine, but in order to deliver change with certain specified coins therein, it is sometimes desirable to have one key operate two ejectors; for example, in Fig. 5 one key operates two ejectors, each of which will deliver two pennies, and the group of coin holders controlled by the mechanism of Fig. 5 will therefore be adapted to hold pennies exclusively, three of the coin holders being adapted to eject two pennies each, and one to eject a single penny at each operation. The group of keys illustrated in Fig. 6 is adapted to effect the delivery of fifty-cent pieces, twenty-five cent pieces, ten cent pieces and nickels, there being five keys, two of which, however, will deliver ten cent pieces or dimes. The coin holders are therefore arranged one to hold nickels, two to hold dimes, one to hold twenty-five cent pieces and one fifty-cent pieces.

The group of keys illustrated in Fig. 7, four in number, are adapted to control the delivery of five dollar pieces, four dollars, two dollars and one dollar, respectively, and the coin holders are, therefore, correspond-

ingly arranged, the four dollar key being connected with two ejectors, each adapted to discharge two one dollar coins, and the two dollar key being connected with one ejector adapted to discharge two one dollar coins.

Obviously, while the arrangement of the keys preferred is shown in Fig. 10, other arrangements are within the scope of the invention, and as shown in Fig. 11 an arrangement is provided, which, instead of delivering five dollars and four dollars, a single key is provided for delivering two dollars and fifty cents, which key is connected with two key levers which will effect the operation of the proper ejectors for ejecting and delivering this amount.

It will be understood that any of the ejectors may be arranged to discharge one, two or more coins at each operation, for to accomplish this result it is only necessary to drop the bottom or supporting surface of the holders down to a point where the desired number of coins at the bottom of the stack will be in position for the ejector to cooperate therewith. This construction is a common one in the art and for it no claim is made herein.

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 coin delivering machine, the combination with coin ejecting mechanism and keys controlling the operation of the same, of a series of coin holders from which the coins are ejected, arranged in parallelism in banks, one bank in a plane in rear of the plane of the other bank, and with the front bank at a lower level than the rear bank, and a chute having a branch extending down from the upper rear bank of holders forwardly under the central portion of the front lower bank of holders, and a branch extending down in front of the front bank of holders for conducting the coins ejected from the several holders to a single point of delivery.

2. In a coin delivering machine, the combination with a series of groups of coin holders arranged in parallel banks or rows one behind the other, a series of parallel shafts, an ejector for each holder and operating connections intermediate each ejector and one of the shafts, of a series of keys arranged in parallel rows or banks and lever arms carried by the shafts and on which said keys are mounted.

3. In a coin delivering machine, the combination with a series of groups of coin holders arranged in parallel rows, and a series of keys arranged in parallel rows, of a series of parallel shafts, one for each group of holders and each formed of a plurality of angularly movable concentric members one for each holder of its group, an ejector for

each holder, and connections intermediate each ejector and one of the shaft members and intermediate each shaft member and one of the keys.

5 4. In a coin delivering machine, the combination with a series of groups of coin holders and a series of groups of keys, of a series of parallel shafts one for each group of holders and keys, each shaft comprising  
10 concentric shaft members, one concentric shaft member for each key of the group, an ejector for each holder, and connections intermediate the respective concentric shaft members and ejectors, substantially as described.

15 5. In a coin delivering machine, the combination with a series of groups of coin holders, a series of groups of keys, and ejectors for discharging coins from the holders, of a series of parallel shafts, one for each group of keys and holders, each shaft comprising  
20 a plurality of concentric members, connections intermediate the ejectors and one end of the respective shaft members, and independent key supporting levers carried by the opposite ends of said shaft members.

25 6. In a coin delivering machine, the combination with a plurality of coin holders, ejectors for discharging coins successively  
30 from said holders, a shaft composed of concentric members of different length, lever and link connections intermediate the ejectors and one end of the respective shaft members, key levers mounted directly on  
35 the opposite ends of the shaft members, and keys for actuating said levers.

40 7. In a coin delivering machine, the combination with parallel rows of coin holders, ejectors for discharging coins successively from said holders, and finger keys, of parallel shafts each comprising concentric shaft members of different length, lever arms connected with the shaft members at one end, ejector actuating bell crank levers,  
45 links connecting said bell crank lever

arms, and key supporting levers mounted directly on the opposite ends of the shaft members from the ejector actuating lever arms.

5 8. In a coin delivering machine, the combination with the base plate, parallel plates projecting upwardly therefrom, a plurality of parallel shafts journaled in said upwardly projecting plates, and each comprising a plurality of concentric members of different length, of a series of coin holders located respectively in proximity to the ends of the respective shaft members, ejectors, one for each coin holder, lever arms and link operating connections intermediate  
60 each ejector and one of the shaft members, lever arms mounted respectively on the opposite ends of the shaft members, and finger keys carried by said last mentioned lever arms.

65 9. In a coin delivering machine, the combination with coin holders having ejector guideways intersecting their lower ends and reciprocating ejectors working in said guideways and movable downwardly with respect to their line of reciprocation, whereby they may be depressed by the weight of coins above them, of upwardly extending oscillatory actuating supports on which the ejectors are pivotally mounted on axes intermediate  
70 the ends of the ejectors, springs connecting the supports and rear ends of the ejectors, whereby the forward ends are held up in operative position, key levers and connections intermediate said key levers and ejector actuating supports, whereby said ejectors may be reciprocated to discharge coins in succession from the holders, and the return of said ejectors to normal position is facilitated.

THOMAS IRVING POTTER.

Witnesses:

E. V. REARDON,  
M. C. GILL.