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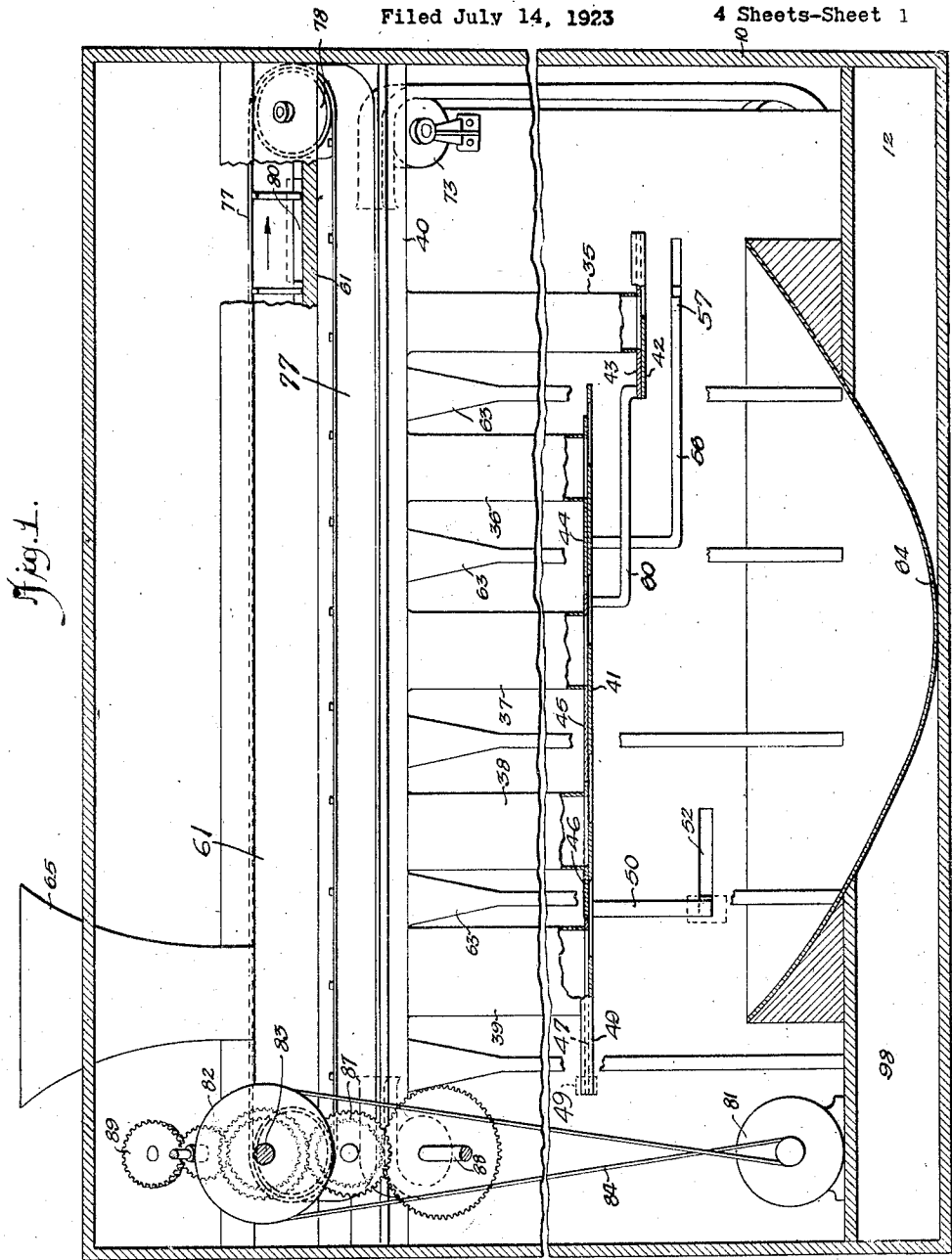
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F. J. BRYK

CHANGE MAKING MACHINE

Filed July 14, 1923

4 Sheets-Sheet 1



WITNESSES  
*Frank J. Higgins*  
*E. W. Savage*

INVENTOR  
*FREDERICK J. BRYK*  
BY *Mumford*  
ATTORNEYS

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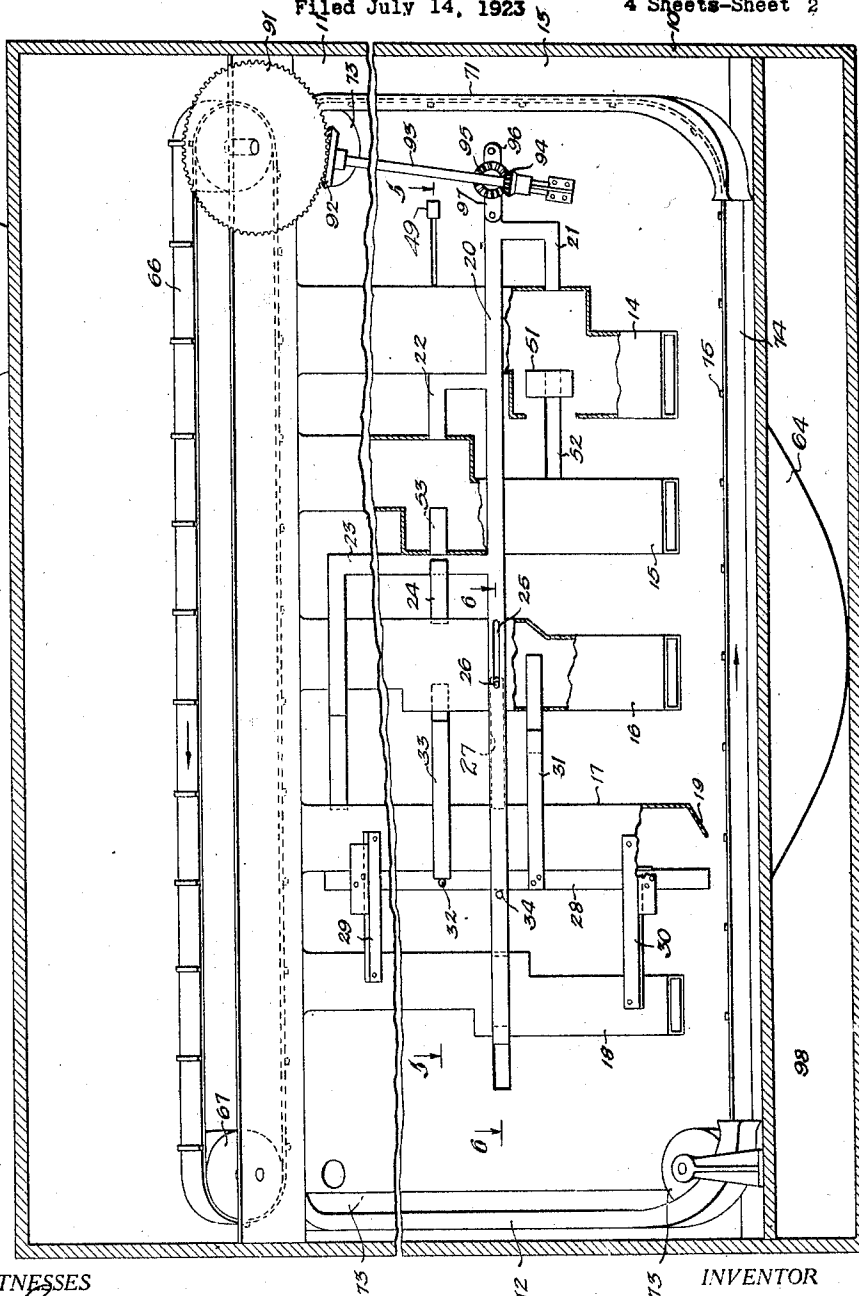
F. J. BRYK

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Fig. 2.



WITNESSES

*Frank J. Higgins*  
*E. W. Savage*

INVENTOR

FREDERICK J. BRYK

BY *Munn & Co.*

ATTORNEYS

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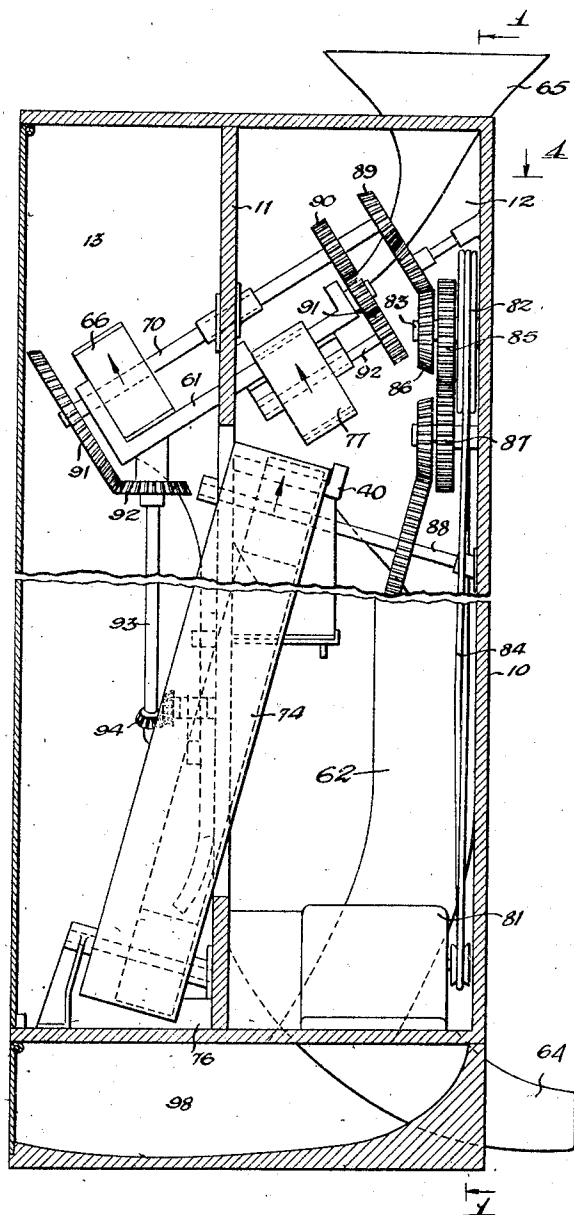
F. J. BRYK

CHANGE MAKING MACHINE

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4 Sheets-Sheet 3

Fig. 3.



WITNESSES

*Frank J. Faggiani*  
*C. W. Savage*

INVENTOR

FREDERICK J. BRYK

BY

*Mumford*

ATTORNEYS

Sept. 15, 1925.

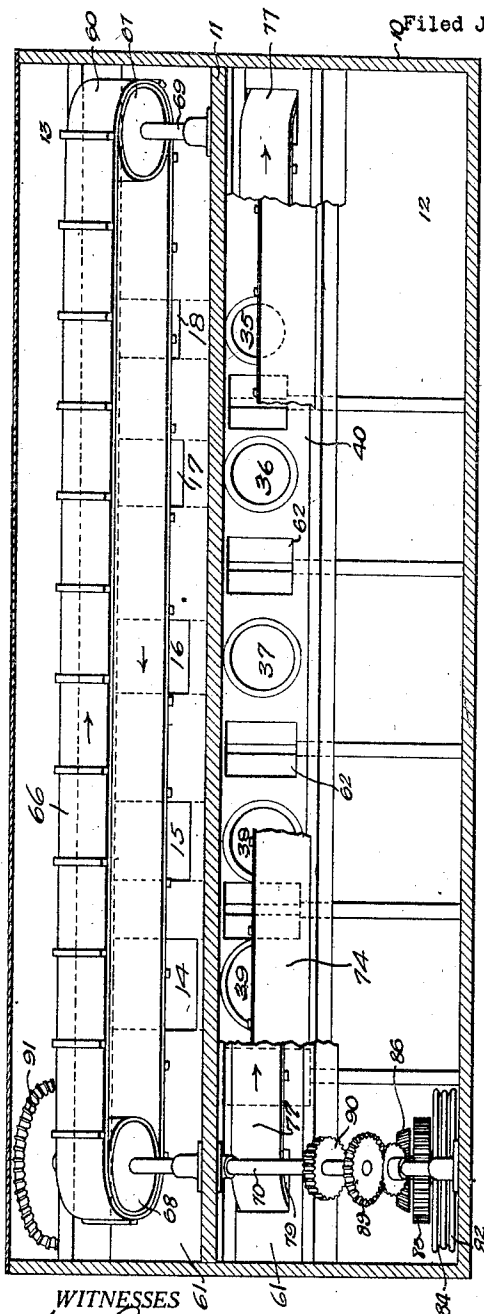
F. J. BRYK

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CHANGE MAKING MACHINE

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4 Sheets-Sheet 4



WITNESSES

*Frank J. Gagliardi*  
*E. W. Savage*

Fig. 5.

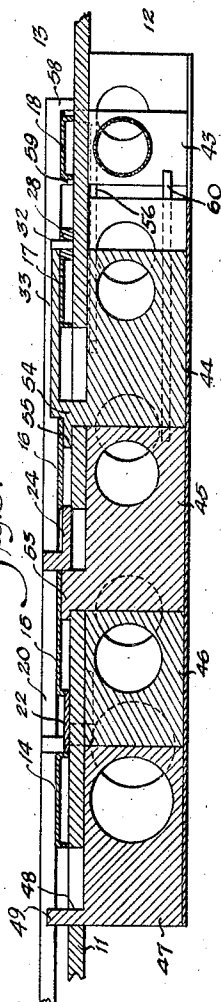
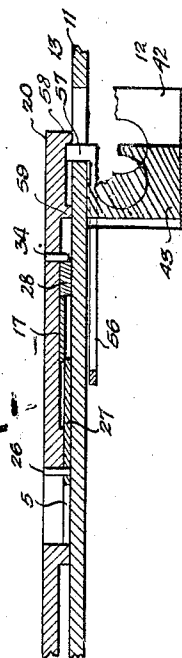


Fig. 6.



INVENTOR  
FREDERICK J. BRYK

BY *Mum & Co*

ATTORNEYS

## UNITED STATES PATENT OFFICE.

FREDERICK JOHN BRYK, OF JERSEY CITY, NEW JERSEY.

## CHANGE-MAKING MACHINE.

Application filed July 14, 1923. Serial No. 651,568.

*To all whom it may concern:*

Be it known that I, FREDERICK J. BRYK, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Change-Making Machines, of which the following is a full, clear, and exact description.

This invention relates to change-making machines primarily designed for receiving fares and the price of admission to theatres and the like.

The general object of the invention is the provision of a cheap, simple, efficient and durable change-making machine that is designed for receiving coins of different denominations and for returning change after a certain definite sum for which the machine has been designed has been deducted from the coin or coins inserted into the machine.

A further object of the invention is the provision of a change-making machine driven from a prime mover and actuated by the insertion of the coin or coins, thus eliminating the necessity of an operator performing any operations which might lead to inaccuracies in the return of change.

Another object of the invention is the provision of a change-making machine that will automatically deliver the coins inserted into the tubes from which the change for the various coins inserted is delivered.

These objects are accomplished by providing means for receiving and distributing coins and for utilizing the coins received for actuating change-delivering members so as to deliver the proper change after the predetermined sum has been deducted from the coin or coins received.

These and other objects of the invention will be more clearly understood from the following detailed description and accompanying drawings.

Figure 1 is a front elevation of the change-making machine as viewed from the front or customer's side after the wall of the casing has been removed;

Figure 2 is a rear elevation of the change-making machine with the cover removed, showing the construction of the device;

Figure 3 is an end elevation of the change-making machine after the end of the casing has been removed;

Figure 4 is a horizontal section along the line 4—4, Figure 3, showing a top plan view

of the change-making machine with portions cut away to show its construction;

Figure 5 is a horizontal section along the line 5—5, Figure 2;

Figure 6 is a horizontal section along the line 6—6, Figure 2, showing the operating members.

Referring to the above-mentioned drawings, the invention includes a casing 10, in which a vertical longitudinal partition 11 is mounted, dividing the casing into two chambers 12 and 13. For convenience in description the chambers 12 and 13 will be referred to as the front and rear chambers, respectively. In the front chambers 12 a plurality of coin tubes, from which the change for the coin inserted in the change-making machine is projected, are mounted. Located in the rear chamber 13 are a plurality of coin tubes for receiving the coins inserted into the change-making machine by the customer.

Referring to Figure 2, a plurality of coin tubes 14 to 18, inclusive, are shown attached to the partition 11 and located in the chamber 13. These tubes retain the coins, inserted into the change-making machine, standing on edge. Each of the tubes 14 to 16, inclusive, and 18 has an offset formed therein which in conjunction with other members serves to support the coins in the tube. The tube 17 has an inturned projection 19 at its lower end which in conjunction with a vertical member serves to retain the coins in the tube until the operating members release them.

An operating rod 20 is slidably mounted on the partition 11 so that it may be reciprocated by any operating mechanism. Depending from the operating bar 20 is an L-shaped arm 21, the lower portion of which alines with an opening in the wall of the tube 14. Attached to the operating bar and extending upward is a second L-shaped arm 22, the upper portion of which alines with an opening in the wall of the tube 15. Located a short distance from the L-shaped arm 22 is a third L-shaped arm of greater size also attached to the operating bar 20. The upper portion of this last-mentioned L-shaped arm 23 alines with an opening in the tube 17. Fixed to the standing portion of the L-shaped arm 23 is a plate 24, the latter alining with an opening in the side of the tube 16. Cut in the operating bar 20 near

its center is a slot 25 for receiving a pin 26 carried by a sliding plate 27.

A vertical member 28 is slidably mounted for movement longitudinally of the casing on guides 29 and 30 attached to the tubes 17 and 18. This vertical member normally stands in a slot cut in the side of the tube 17, co-operating with the projection 19 to hold the coins in the tube. Attached to the vertical member near its center is a straight arm 31 which alines with an opening in the tube 16 and extends into the latter. Fixed to the vertical member 28 at a point above the arm 31 is a pin 32 which alines with a slidably mounted plate 33. This plate 33 is mounted for movement longitudinally of the casing and registers with an opening in the side of the tube 16. The vertical member 28 is retained in position in the slot in the tube 17 by means of a pin 34 fixed to the operating bar 20.

A platform 40 having a plurality of openings cut therein is mounted near the top of the chamber 12. Suspended from this platform and in alinement with the openings therein are a plurality of coin tubes 35 to 39, inclusive. Fixed in the casing below the tubes 35 to 39, inclusive, are plates 41 and 42. A plurality of openings are provided in these plates 41 and 42, one for each coin tube. The openings correspond in size with the coin tubes and are positioned out of alinement with the coin tubes. Slidably mounted on the plates 41 and 42 are a plurality of coin-delivering members 43 to 47, inclusive. The member 43 is positioned on the plate 42 while the members 44 to 47, inclusive, are located on the plate 41.

In constructing the coin-delivering members 43 to 47, inclusive, they are made slightly less in thickness than the thickness of the coin which they are to deliver. Each coin-delivering member has an opening formed therein for receiving the coin it is to deliver. One coin-delivering member is provided in conjunction with each of the coin tubes 35 to 39, inclusive, and are so located on the plates 41 and 42 that the openings register with the coin tubes. The coin-delivering member 47 which is associated with the 50-cent coin tube has a projection 48 formed on one side. This projection extends through a slot formed in the partition 11. Attached to this projection is an enlargement 49 which may be used for sliding it on the plate 41.

Located in line with the coin-delivering member 47 is a coin-delivering member 46. The opening in this coin-delivering member 46 is normally positioned in alinement with the coin tube 38 provided for holding the 25-cent coins. When the member 47 is so located that the opening in it alines with the coin tube 39 and the member 46 is positioned so that its opening alines with the

coin tube 38 then the member 46 abuts against the member 47. Attached to the coin-delivering member 46 is a depending L-shaped arm 50, the lower portion of which projects through a slot 52 in the partition 11. Mounted on the end of the portion of the arm 50 which projects through the slot 52 is a block 51 which alines with the lower portion of the L-shaped arm 21 carried by the operating bar 20.

The coin-delivering member 45 is associated with the coin tube 37 and the opening formed in it alines with this coin tube. When the coin-delivering members are in their normal position the member 45 abuts against the coin-delivering member 46. Formed on one side of the coin-delivering member 45 is a projection 53 which extends through a slot in the partition into the coin tube 15 and alines with the arm 22 carried by the operating bar 20.

The coin-delivering member 44 is associated with the 1-cent coin tube 36 and the opening in it alines with this coin tube when the coin-delivering members are in normal position. A projection 54 formed integral with the coin-delivering member 44 extends through a slot in the partition 11 and carries the sliding plate 33. This projection 54 has formed thereon, a plate 55 which extends into the coin tube 16 and is positioned in alinement with the plate 24. Attached to the bottom of the coin-delivering member 44 is an arm 56 on the end of which is formed a projection 57. This projection 57 extends through a slot in the partition 11 and seats between inwardly extending projections 58 and 59 formed on the operating bar 20. These inwardly extending projections 58 and 59 move back and forth through a slot cut in the coin tube 18.

The coin-delivering member 43 is slidably mounted on the plate 42 and in normal position the coin opening formed therein alines with the coin tube 35 provided for carrying the 10-cent coins or dimes. This coin-delivering member 43 is connected by the rod 60 to the coin-delivering member 45 so that upon the operation of one the other is operated.

Positioned above the tubes 14 to 18, inclusive, is an inclined platform 61 extending longitudinally of the casing. Openings are formed in this platform, establishing communication with the tubes 14 to 18, inclusive. The openings in the platform are made the size of the coins of different denominations and serve to selectively distribute the coins to their proper tubes. The inclined platform 40 referred to before has a plurality of openings formed therein which register with the tubes 35 to 39, inclusive, serving to selectively distribute the coins to the proper tubes. Positioned to the left of each opening which registers with the tubes

35 to 39, inclusive, as viewed in Figure 4, are openings 62 for receiving coins after the tubes have become filled. Tubes 63 are suspended in alinement with these openings 62 and deliver the coins to a chamber 98 in the bottom of the casing 10.

A hopper 65 is mounted in the casing for delivering coins to the inclined platform 61. A belt 66 provided with a plurality of cleats on its outer face is carried by drums 67 and 68, fixed to shafts 69 and 70 journaled in the partition 11 of the casing. This belt 66 sweeps the lower edge of the inclined platform 61 and serves to move coins delivered on to the platform into the different openings therein. Mounted in the casing are a plurality of rollers 73 carrying a belt 74. As shown in Figure 3, the belt 74 passes from the chamber 13 into the chamber 12 and has provided on its inner face a plurality of cleats 75 for engaging the coins that are dropped on to it from the tubes 14 to 18, inclusive. A tube 71 is mounted in the end of the casing and the belt 74 passes through it. This tube serves to retain the coins in position on the belt so that they are carried upward and deposited on the platform 40. A tube 72 is mounted in the opposite end of the casing from the tube 71 and serves to retain coins that may have passed over the openings in the platform 40 in position on the belt. Extending parallel with the belt 74 along the bottom of the casing is a beam 76 which serves to retain the coins on the inclined run of the belt as it moves longitudinally of the casing.

As shown in Figure 1, the hopper 65 directs the coins on to the platform at the left hand side of the casing. In order to prevent the possibility of one coin riding on another and thus passing into the wrong coin tubes a belt 77 carried by rollers 78 and 79 is mounted to sweep the lower edge of the inclined platform 61 located in the chamber 12. The coins delivered to the platform by the hopper 65 are spread out by the belt 77 and carried to the opening 80 in the partition 11. The coins pass through this opening 80 to the lower edge of the platform 61 where they are picked up by the belt 66 and distributed to the coin tubes.

The operating mechanism of the change-making machine includes a motor 81 mounted in the casing 10. This motor drives a pulley 82 fixed to the shaft 83 journaled in the casing 10 through a belt 84. A gear 85 and a bevel gear 86 are fixed to the shaft 83. The gear 85 through a train of gears 87 drives a shaft 88 to which one of the rollers 73 is fixed, thus driving the belt 74. The bevel gear 86 through a train of gears 89 drives the shaft 70 to which the roller 68 is fixed. Through the operation of the roller 68 the belt 66 is driven. A gear 90 is fixed to the shaft 70 and operates a train

of gears 91 which drives a shaft 92 carrying the roller 79. This roller 79 drives the belt 77 which sweeps the platform 61. Fixed to the end of the shaft 70 is a bevel gear 91 meshing with a bevel gear 92 carried by a vertical shaft 93. A bevel gear 94 fixed to the lower end of the shaft 93 meshes with a bevel gear 95. Thus the bevel gear 95 is driven from the shaft 70. This bevel gear 95 is fixed to a crank shaft 96. A connecting rod 97 is loosely mounted on the crank shaft and pivotally connected to the end of the operating bar 20. By the operation of the crank shaft 96 through the bevel gear 95 the operating bar 20 is given a reciprocating motion.

The operation of this device is as follows: As described in the preceding paragraph, the belt 77 is driven from the motor 81. This belt, as viewed in Figures 1 and 4, travels clockwise, the upper run of the belt sweeping the platform 61 from left to right. The hopper 65 directs the coin onto the platform at the left end of the casing and these coins are moved along the platform to the opening 80 by the belt 77. The belt 66 is driven clockwise, as viewed in Figures 1 and 4, from the motor 81, the lower run of the belt sweeping the lower edge of the platform 61. Thus the platform 61 is swept from right to left by the lower run of the belt 66. The openings into the coin tubes 14 to 18, inclusive, are positioned from right to left in order of number. These coin tubes 14 to 18, inclusive, are provided for receiving the coins 10 cents, 1 cent, 5 cents, 25 cents and 50 cents, respectively. Thus coins delivered to the belt 66 through the opening 80 are moved over the openings into the tubes 14 to 18, inclusive, provided in the platform 61. By this means the coins are selectively delivered to the tubes 14 to 18, inclusive.

When the coins are dropped into the tubes 14 to 18, inclusive, they are engaged by some of the members provided in conjunction with the operating bar 20. Through these coins the operating bar 20 operates the various members through which the coin-delivering members 43 to 47, inclusive, are operated. After the coin-delivering members have been operated the coins are released and dropped on to the lower run of the belt 74. The operation of the coin-delivering members 43 to 47, inclusive, will be described in a subsequent paragraph.

After the coins have been used to operate the coin-delivering members 43 to 47, inclusive, they are permitted to pass out of the tubes 14 to 18, inclusive, on to the belt 74. This belt 74 delivers the coins to the right hand end of the platform 40 and then moves them along the platform, dropping them through the openings leading to the coin tubes 35 to 39, inclusive. The coin

tubes 35 to 39, inclusive, progressing from the right to the left as viewed in Figure 4, are located in the following order, the 10-cent tube first, then the 1-cent tube, 5-cent tube, 25-cent tube and 50-cent tube. If any of the tubes become filled then the coins are carried across the tube and dropped into one of the openings 62 and are conveyed to the chamber 98. The change for the coins dropped into the hopper 65 is delivered from the tubes 35 to 39, inclusive.

The particular machine shown and described has been constructed for deducting 9-cent fares from any coin or coins and returning the proper change. In order to more clearly explain the operation of the machine we will assume that it has been set in operation and a 50-cent coin dropped in the hopper and deposited in the tube 14 by the belts 77 and 66. The coin rests on the offset in the tube 14 where it is retained by the block 51. Referring to Figure 2, the operating bar moves forward, projecting the arm 21 into engagement with the coin, forcing it against the block 51, moving the latter to the left. This block 51 is connected to the coin delivering member 46 and as it is moved to the left the coin delivering member is also moved to the left, or as viewed in Figures 1 and 5 to the right. The coin-delivering member 46 abuts against the coin delivering member 45 which, in turn, abuts against the coin-delivering member 44, and the coin-delivering member 43 is rigidly connected to the coin-delivering member 45. Consequently, the coin-delivering members 43 to 46, inclusive, are moved to the right, carrying coins from the tubes 35 to 38, inclusive, into register with the openings provided in the plates 41 and 42. These coins drop through the openings in the plates 41 and 42 into a tray 64. Thus four coins are delivered from the tubes 35 to 38, inclusive. These coins are 10 cents, 1 cent, 5 cents and 25 cents, making a total of 41 cents.

If 25 cents is dropped into the tube 15 the arm 22, as shown in Figure 2, engages it, forcing it to the left into engagement with the projection 53. This forces the coin-delivering members 45, 44 and 43 to the right, as shown in Figure 5, delivering three coins, 5 cents, 1 cent and 10 cents, making a total of 16 cents, which is the change after deducting 9 cents from 25 cents.

When two 5-cent coins are delivered into the tube 16 they rest on the arm 31 and the plate 24 is projected against the top coin, forcing it against the plate 55 integral with the plate 33. The plate 55 is integral with the projection 54 carried by the coin-delivering member 44. Consequently the coin-delivering member 44 is moved to the right, delivering a cent from the coin tube 36.

When a 10-cent coin is delivered into the

coin tube 18 it seats between the projections 59 on the operating rod and 57 on the arm 56, as shown in Figure 6. When the operating bar 20 moves to the right, as viewed in Figures 5 and 6, the coin is forced against the projection 57, driving it to the right. The projection 57 is connected through the arm 56 to the coin-delivering member 44, and as it moves to the right it draws the coin-delivering member to the right drawing a coin into register with the opening in plate 41 through which it drops into the tray 64.

If one nickel and four one-cent coins are dropped into the tubes 16 and 17, respectively, the following operation takes place: The 5-cent coin seats between a projection on the operating bar and the end of the plate 27 while the top coin in the tube 17 alines with the plate 27. As the operating bar moves to the left as viewed in Figure 2, or to the right, as viewed in Figures 5 and 6, the top coin in tube 16 is forced against the vertical member 28, forcing it to the right, projecting it out of the slot in the side of the tube 17. This releases the coins from the tube 17 and the 5-cent coin drops from between the projections. When nine 1-cent coins are delivered into the tube 17 the arm 23 engages the top coin and forces it against the vertical member 28, moving the latter out of the slot in the tube 17, releasing the nine coins. The vertical member 28 is returned to its normal position on the back stroke of the operating bar 20 through the pin 34.

The coin-delivering members 43 to 47, inclusive, are returned to their normal positions on the back stroke of the operating bar 20. This operating bar engages the plate 33 through the pin 34, vertical member 28 and pin 32. The coin-delivering member 44 pushes the coin-delivering members 45 to 47, inclusive, back to their normal positions as it is returned to its normal position on the back stroke of the operating bar 20. The coin-delivering member 43 being connected directly to the coin-delivering member 45 is drawn back to its normal position when the coin-delivering member 45 is returned to its normal position. When the coin-delivering members are returned to their normal positions the bottom coin in each tube drops into the opening provided in each coin-delivering member to receive it.

If the customer delivers to the individual in charge of the change-making machine a dollar bill then the machine has to be manually operated. This is accomplished by pushing the enlargement 49, as viewed in Figure 1, to the right. The forcing of the enlargement 49 to the right moves all the coin-delivering members 43 to 47, inclusive, to the right, delivering a coin from each tube. This makes the total of 91 cents change delivered.



To grasp the enlargement 49 it is necessary to remove a portion of the casing as it is undesirable to have any member operating this enlargement outside of the casing where it might be tampered with by unauthorized persons.

It will be readily seen from the foregoing description that by constructing the machine with the arms and sliding plates mounted in different positions that it would be adapted for deducting any fare from the coins inserted.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention I do not limit myself strictly to the exact details herein illustrated since manifestly the same can be considerably varied without departing from the spirit of the invention as defined in the appended claims.

#### Claims.

1. In a change-making machine including a plurality of coin receiving tubes and a plurality of coin delivering tubes, means for selectively distributing to the tubes the coins inserted into the change-making machine, comprising a platform, means for distributing the coins in line on said platform, a second platform having a plurality of openings formed therein registering with the differ-

ent coin receiving tubes for receiving the coins from said first platform, means for moving the coins along said second platform to selectively distribute them into the coin receiving tubes, a third platform having a plurality of coin openings therein registering with the coin delivering tubes, and means for receiving the coins from the coin receiving tubes and delivering them to said third platform and distributing them to the coin openings in the platform.

2. In a change-making machine including a plurality of coin receiving and coin delivering tubes, means for selectively distributing the coins to the tubes, comprising a slide for the coins having coin openings therein which register with the coin receiving tubes, said coin openings being located in order of size, means for delivering the coins to the slide, and means for moving the coins along the slide from the end having the smallest opening to selectively distribute them to the coin receiving tubes, a second slide having coin openings therein registering with the coin delivering tubes, and means for conveying the coins from the coin receiving tubes to said second slide and moving them along the same to selectively distribute them to the coin delivering tubes.

FREDERICK JOHN BRYK.