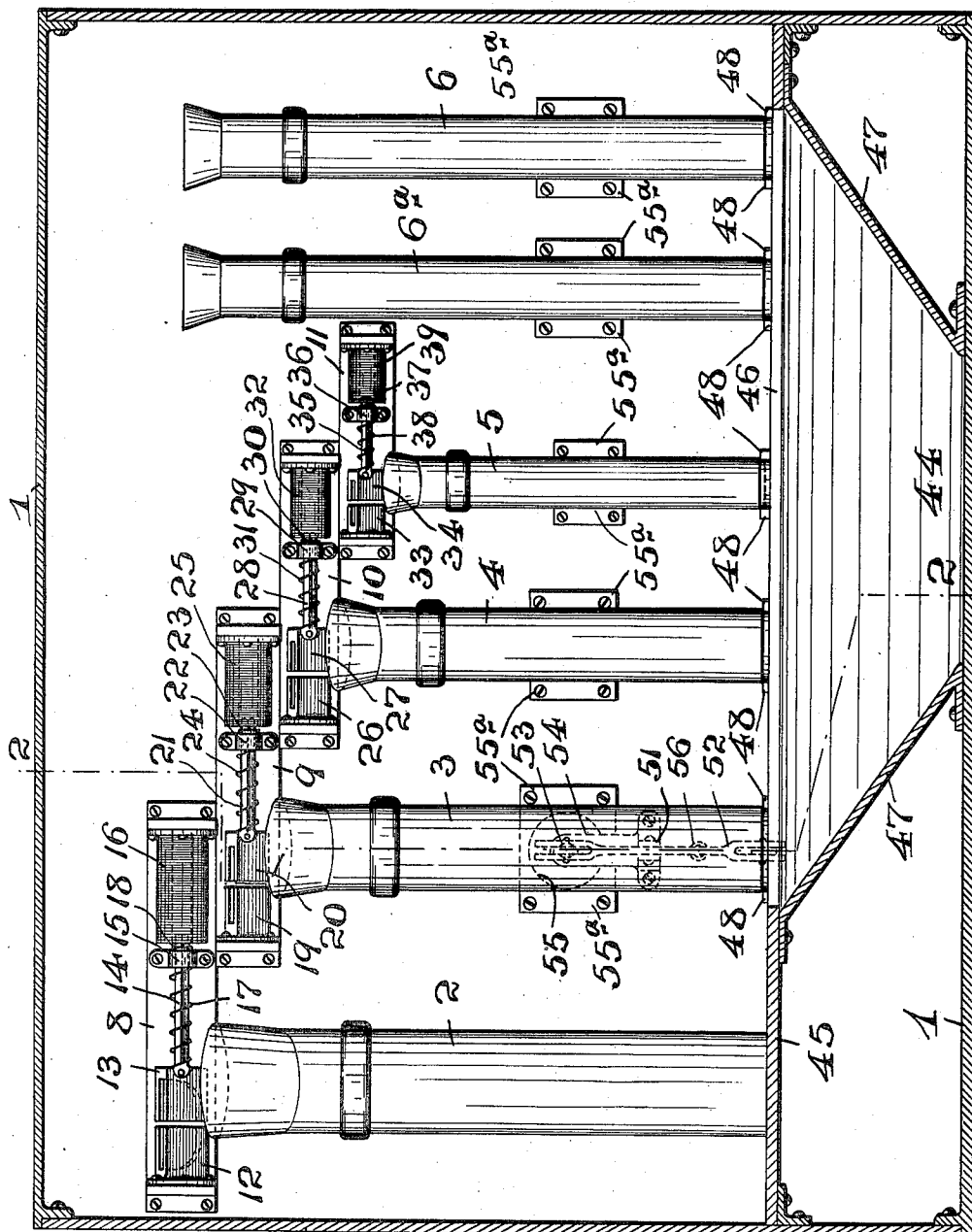


1,036,645.

3 SHEETS—SHEET 1.



**WITNESSES:**

WITNESSES:  
Fredk H. W. Chauntel.  
Harry E. Pfeiffer

**T**

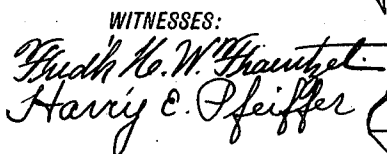
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ATTORNEYS

1,036,645.

3 SHEETS—SHEET 2.

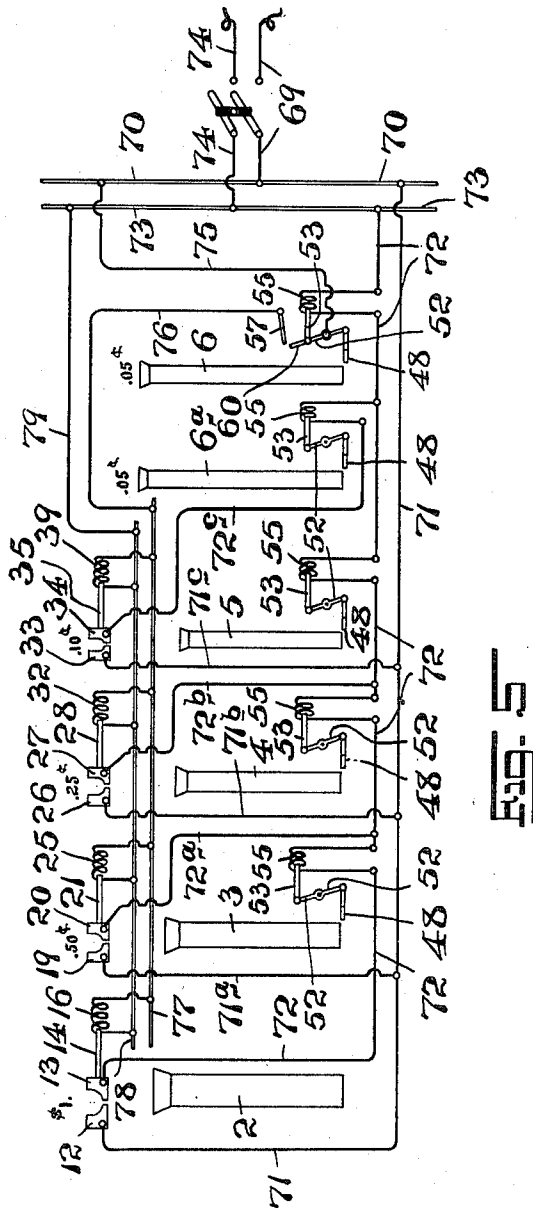


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1,036,645.

E. N. KLEINBAUM.  
CHANGE MAKING APPARATUS.  
APPLICATION FILED NOV. 1, 1911.

Patented Aug. 27, 1912.  
3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

ELIHU N. KLEINBAUM, OF BROOKLYN, NEW YORK.

## CHANGE-MAKING APPARATUS.

1,036,645.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed November 1, 1911. Serial No. 657,976.

*To all whom it may concern:*

Be it known that I, ELIHU N. KLEINBAUM, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Change-Making Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates, generally, to improvements in "change" making apparatus; and the present invention refers, more particularly, to a novel construction of mechanism adapted to receive a coin and thereupon deliver to the depositor its equivalent value in coins of a smaller denomination.

The present invention has for its principal object to provide a simple construction of automatic apparatus which renders possible the interchange of coins of small denomination for an equivalent coin of larger denomination.

To this end the apparatus comprises a coin receiving mechanism which operates upon the contact of a coin therewith to set in motion the desired coin-ejector devices which release from the apparatus a number of small coins equivalent in value to the coin deposited.

A further object of the present invention is to provide a simple construction of coin ejector devices adapted to deliver the "change" to the depositor.

A still further object of the invention is to provide a system of electrically operated devices for moving the said coin ejector devices, and also for releasing the deposited coin from the coin-receiving mechanism, together with a system of electrical connection between the same whereby a properly timed and selective operation of the coin ejector devices is accomplished.

Other objects of the present invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of my present invention.

With the various objects of the present invention in view, the said invention consists,

primarily, in the novel construction of "change" making apparatus hereinafter set forth; and, furthermore, this invention consists in the several novel arrangements and combinations of the various devices and parts as well as in the details of the construction thereof, all of which will be hereinafter more fully described in the following specification, and when finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a longitudinal section of a casing illustrating the interior arrangement of the coin-receiving mechanism, and the relative position of the coin-ejector devices being illustrated behind the stacker tubes, one of said coin-ejector devices being illustrated in dotted lines to more clearly indicate such arrangement. Fig. 2 is a detail transverse section taken on line 2—2 in said Fig. 1. Fig. 3 is a detail horizontal-section taken on line 3—3 in said Fig. 2. Fig. 4 is a detail transverse section illustrating the coin ejector device which is arranged back of the stacker tube of the coins of smallest denomination, showing the means whereby the electrical circuit is closed to operate the releasing movement of the coin receiving mechanism after all the smaller coins have been ejected, or in other words after the "change" has been delivered, and thereby deliver the deposited coin into its stacker tube. Fig. 5 is a diagrammatic view illustrating the novel arrangement of the electrical circuits and devices arranged in connection with said coin-receiving mechanism and said coin ejector devices.

Similar characters of reference are employed in all of the herein-above described views to indicate corresponding parts.

Referring now to the said drawings the reference-character 1 indicates any suitable form of casing in which the novel construction of "change" making apparatus is arranged.

The reference-character 2 indicates a coin stacker tube adapted to receive coins of the dollar denomination, 3 indicates a coin stacker tube adapted to receive coins of the half dollar denomination, 4 indicates a stacker tube adapted to receive coins of the quarter dollar denomination, 5 indicates a stacker tube adapted to receive coins of the

ten-cent denomination, and 6 and 6<sup>a</sup> indicate stacker tubes adapted to receive coins of the five-cent denomination. The several stacker tubes may be supported in proper positions within said casing 1 by means of suitable supporting brackets 7, or in any other convenient or desirable manner.

Located above the stacker tubes 2, 3, 4 and 5 are the respective coin-receiving mechanisms for each stacker tube, the same being supported by their respective brackets 8, 9, 10 and 11. The said brackets 8, 9, 10 and 11 are preferably made of some suitable insulating material such as fiber insulating composition, vulcanite, porcelain, or the like, so that the said coin-receiving mechanisms and the several parts thereof are electrically insulated from each other in manner to permit of a proper system of wiring for electrically connecting the same together without danger of short circuits through the supporting means. Connected with said bracket 8 is a stationary coin-receiving member 12 and a movable coin receiving member 13, the same being separated from each other electrically, but normally cooperating to receive a coin and support the same in a bridging or straddling contact. The said movable coin receiving member is provided with a tail-piece 14, which extending rearwardly is slidably supported in a bearing member 15. Said tail-piece 14 is preferably of polygonal cross-section whereby the same is prevented from turning or twisting in said bearing member, while free to move longitudinally therethrough. Secured to said bracket 8 is a solenoid 16, the same acting upon said tail-piece 14, which serves as its armature, to retract the same when said solenoid is excited, thereby separating said coin receiving-members and allowing a coin held thereby to fall away therefrom and into the stacker tube 2. A coil-spring 17 is arranged in connection with said movable coin-receiving member 13 to return the same to its normal relation with said stationary coin receiving member 12, when the retractive influence of said solenoid is interrupted, said tail-piece 14 being further provided with a stop-portion 18, which engaging said bearing member 15 properly limits this return movement. Supported by said bracket 9 is a similar coin receiving mechanism constructed and arranged in the same manner as above described, the same comprising a stationary coin receiving member 19, a movable coin receiving member 20 having a tail-piece 21 slidably arranged in a bearing member 22, a stop-member 23, a coil spring 24, and a solenoid 25. Supported by said bracket 10 is another coin-receiving mechanism also constructed and arranged in the same manner as above described, the same comprising a stationary coin-receiving member 26, a movable coin-receiving mem-

ber 27 having a tail-piece 28 slidably arranged in a bearing member 29, a stop-member 30, a coil spring 31, and a solenoid 32. And similarly there is supported by said bracket 11 still another coin receiving mechanism constructed and arranged as above described, the same comprising a stationary coin receiving member 33, a movable coin receiving member 34 having a tail piece 35 slidably arranged in a bearing member 36, a stop-member 37, a coil-spring 38, and a solenoid 39.

The said casing 1 is provided with a removable front plate 40. Connected with said front plate 40 are chute-members 41 leading to each coin-receiving mechanism above described. Said chute-members 41 are provided in their undersides with openings 42 through which coins of less size than should be deposited in the said chute-members will fall, and will thereupon be conducted by return chutes 43, which may be connected with the chute-members 41, to the open delivery basin 44 arranged in the front of said casing 1.

The reference-character 45 indicates a coin supporting table over which the several stacker tubes are registered. The said coin supporting table 45 is provided with a suitable opening or hatch 46 located in front of the stacker tubes 3, 4, 5, 6 and 6<sup>a</sup>, the same giving access to the delivery basin 44. Guide-walls or chutes 47 extend downwardly from the marginal edges of said opening or hatch 46 into said delivery basin 44, whereby the coins ejected from said stacker tubes 3, 4, 5, 6 and 6<sup>a</sup> are properly guided into said delivery basin 44. The said stacker tubes 3, 4, 5, 6 and 6<sup>a</sup> are supported above said coin supporting table 45 in such a manner as to leave a space or opening between the end of the stacker tubes and said supporting table of a width slightly greater than the thickness of the coin contained in said stacker tube, with the exception that in the case of the stacker tube 5 which contains ten-cent pieces such space is slightly greater than the thickness of two coins. By means of such an arrangement the bottom coins in said stacker tubes may be pushed away and ejected into the delivery basin 44 by means of the coin ejecting devices arranged in connection with each stacker tube 3, 4, 5, 6 and 6<sup>a</sup>. The stacker tube 2 is not provided with a coin ejecting device, since the same is adapted to receive the coin of largest denomination, and of course such coins are therefore not ejected therefrom in making "change". Arranged to operate in connection with said stacker tubes 3, 4, 5, 6 and 6<sup>a</sup>, are coin ejecting devices, each comprising an ejector-member 48 formed with a semi-circular forked end of a size adapted to correspond to the diameter of the coins contained in said stacker tubes. This forked end registers with the bottom

of said stacker tubes, the same lying in the space between the end of said stacker tube and said coin supporting table, in a manner so as to surround the rear edge portion of the bottom coin. Said ejector-member 48 thus formed and arranged is provided with a rearwardly extending tail-piece 49 which is slidably supported in a bracket-bearing 50 secured to a portion of said coin supporting table. Pivotally fulcrumed in connection with a supporting bracket 51, which is preferably secured to a suitable portion of the casing 1, is an ejector lever 52, the lower end of which is pivotally connected with the free end of said tail-piece 49 of said ejector-member 48. The opposite end of said ejector lever 52 is pivotally connected with the outer end of an armature-piece 53, which is slidably supported in a bearing piece 54 connected with said supporting bracket 51. Secured upon a suitable portion of the casing 1, is a base-plate or mounting 55<sup>a</sup> adapted to support a solenoid 55 which operates in connection with said armature piece 53, in a manner to be subsequently described. Said base-plate or mounting 55<sup>a</sup> is preferably made of some suitable insulating material, such as fiber, porcelain, vulcanite or the like. Connected with said ejector lever 52 is a coil-spring 56 adapted to retract to their normal initial position the several parts of said coin ejector device after the same have been operated. It will of course be understood that the thickness of the ejector-member 48 operating in connection with said stacker tube 5, is sufficient to engage two of the ten cent coins contained therein, and therefore to eject two of said coins at one movement.

Referring now more particularly to Fig. 4 of the accompanying drawings there is illustrated therein a coin ejector device operating in connection with the stacker tube 6 which contains five-cent coins, and in this case the coin of smallest denomination, and furthermore the last coin to be ejected in the "change" making operation. This coin ejector device contains the same elements and parts above described, but in addition thereto, there is a circuit closing mechanism operating in conjunction therewith in such a manner that after the five-cent coin has been ejected an electrical circuit will be closed, thereby exciting the solenoids 16, 25, 32 and 39 to operate the movable coin receiving members 13, 20, 27 and 34 to release any coin which may have been deposited in any of the coin-receiving mechanisms to be "changed." This circuit closing mechanism comprises a contact-arm 57, which is pivotally mounted on a fulcrum-block 58 secured to a base-plate or mounting 59, the latter being made of some suitable insulating material supported in proper position upon a portion of the casing 1. The said ejector lever 52 is provided at its upper end with an

extension arm 60, carrying thereon a contact-pin 61. One wire of the electrical circuit is connected with said bracket 51, which is, in this case, insulated by means of an insulating member 62 from electrical contact with said casing 1, hence, the current passes from said bracket 51 into said extension arm 60 and the contact-pin 61, which is normally separated from electrical contact with said contact-arm 57, through which and its fulcrum block 58 the current passes back into a wire conductor when a proper contact is made. Said contact-arm 57 is supported by the following mechanism; a bracket piece 63 mounted on said base-plate or mounting 59 extends above said contact arm 57, and pivotally connected with the free end of said bracket-piece is a swinging arm 64 carrying at its free end a supporting-pin 65 which normally engages the free end of said contact-arm 57 in a supporting relation. Pivotal mounted upon said bracket-piece 63 is a trip-lever 66, the upper end of which is connected with said swinging-arm 64 by means of a connecting link 67. Connected with said trip-lever 66 is a retractor spring 68, the same being adapted to retract the several parts to their normal initial positions after operation.

The operation of the above described circuit closing device is accomplished as follows:—When the ejector device for the five-cent coin is operated the ejector lever carrying the extension arm 60 is oscillated toward the trip-lever 66 by the action of the solenoid 55, and in so operating said extension arm engages said trip-lever oscillating the same so that the movement thereof is transmitted through said link connection 67 to said swinging arm 64, thereby moving the same outwardly and carrying the supporting pin 65 away from its supporting relation to said contact-arm 57, whereupon the latter drops upon the contact-pin 61 closing the circuit and operating the solenoids 16, 25, 32 and 39 to release any coin which may have been deposited in the coin receiving mechanisms. It will be observed that said contact-arm is not permitted to drop until the ejector lever has operated the ejector-member to completely eject the last coin, so that the coin deposited in the coin-receiving mechanism is not removed from its circuit closing connection therewith until the circuit closed by the coin has excited the solenoids operating the coin ejector devices and therefore caused ejection of the whole amount of the "change." As the coin is released from the coin receiving mechanism, however, the circuit operating the ejector device is broken and the action of the respective solenoids 55 ceases thereupon permitting the coil-springs 56 to retract the ejector devices to their normal initial positions. As the ejector lever carrying said extension arm 60 is

retracted, said extension arm swings outwardly and traveling over an arc the contact-pin 61 lifts the contact-arm 57, and the coil-spring 68 operates to reverse the movement of said trip-lever 66, connecting link 67 and swinging-arm 64, whereupon the supporting pin 65 is again swung under the contact-arm 57 in supporting relation thereto, and all the parts are thereupon returned to their normal initial positions.

Referring now more particularly to Fig. 5 of the drawings there is illustrated therein in diagrammatic form the electrical circuits connecting the various above described mechanisms and devices, whereby the same are caused to coöperate in performing their several functions in making "change." The current coming from the source of potential passes through the wire 69 into the bus-bar 70 and thence into the wire conductor 71 which is connected with the stationary coin receiving member 12, bridging through a coin the current passes into said movable coin receiving member 13, and thence through the wire conductor 72 to a bus-bar 73, and thence to the return wire 74 to the source of potential. The solenoids 55, connected with the ejector devices operating in connection with the stacker tubes 3, 4, 5 and 6, are all connected in series with the said wire conductor 72. Now assume that a coin of the dollar denomination is deposited in said coin receiving mechanism so as to bridge the respective stationary and movable coin receiving members 12 and 13, the circuit above described is thereupon closed, and the several solenoids 55 are excited so that the same operate to attract the armatures 53, and thereby oscillate the ejector levers 52 and ejector-members 48 connecting with said stacker tubes 3, 4, 5 and 6, whereupon a half-dollar coin, a twenty-five cent coin, two ten-cent coins and a five-cent coin are ejected into the delivery basin of the mechanism. After the five-cent coin has been ejected the circuit closing mechanism above described as connected with one of the five-cent ejector devices operates to close a coin releasing circuit, whereby the circuit is completed as follows; the current passing from the bus-bar 70 through the wire-conductor 75 to the ejector lever 52 and its extension 60 into the contact-arm 57, and thence through the wire conductor 76 to the bus-bar 77, to which are connected in series the solenoids 16, 25, 32 and 39, returning through the bus-bar 78, and wire conductor 79 to the bus-bar 73, and thence back to the source of potential. Upon the closing of this circuit the said solenoids 16, 25, 32 and 39 are excited and therefore operate to draw back the movable coin receiving members which no longer affording support to a coin allow the coin to fall away from the stationary coin receiving members

and into their proper stacker tube. Now since the dollar coin was contained in the coin-receiving mechanism the same is released and falls into the stacker tube 2, thereupon breaking the circuit operating the solenoids 55 as above described, and permitting the retraction of the several ejector devices to their normal initial positions. Now assume that it is desired to "change" a half dollar coin, the same is deposited in the coin-receiving mechanism so as to bridge the stationary coin receiving member 19 and the movable coin-receiving member 20, the ejector device operating circuit is thereupon closed through the branch wire conductor 71<sup>a</sup> connecting with the wire conductor 71, and the branch-wire conductor 72<sup>a</sup> connecting with the wire conductor 72, in such a manner as to cut out of the circuit the ejector device for the half dollar coins. Upon the closing of this circuit by the half-dollar coin the solenoids 55 of the ejector devices connected with said stacker tubes 4, 5, and 6 are excited so as to operate the ejector devices to deliver into said delivery basin a twenty-five cent coin, two ten-cent coins, and a five-cent coin. The releasing of the half dollar coin from said coin-receiving mechanism after this ejection of the "change" is accomplished through the coin-releasing circuit and operating means in the manner above described. If it is desired to "change" a twenty-five cent coin the same is deposited in the coin receiving mechanism so as to bridge the stationary coin-receiving member 26 and the movable coin-receiving member 27, the ejector device operating circuit is thereupon closed through the branch wire conductor 71<sup>b</sup> connecting with the wire conductor 71, and the branch wire conductor 72<sup>b</sup> connecting with the wire conductor 72, in such a manner as to cut out of the circuit the ejector devices for both the twenty-five cent and fifty cent coins. Upon the closing of the circuit by the twenty-five cent coin the solenoids of the ejector-devices connected with said stacker tubes 5 and 6 are excited so as to operate their respective ejector devices to deliver into said delivery basin two ten cent coins and a five-cent coin. The releasing of the twenty-five cent coin from said coin-receiving mechanism after this ejection of the "change" is accomplished through the coin releasing circuit and operating means in the manner above described. When it is desired to "change" a ten-cent coin the same is deposited in the coin receiving mechanism so as to bridge the stationary coin receiving member 33 and the movable coin receiving-member 34, the ejector device operating circuit is thereupon closed through the branch wire conductor 71<sup>c</sup> connecting with the wire conductor 71, and the branch wire conductor 72<sup>c</sup> which connects with the solenoid operating the ejector de-

vice connected with the auxiliary stacker tube 6<sup>a</sup> which also contains five-cent coins and then connecting with the wire conductor 72, in such a manner as to cut out of the circuit the ejector devices for the half dollar coins, twenty-five cent coins and ten-cent coins, but including in the circuit the ejector device connected with the five-cent coin stacker tube 6. Upon the closing of the circuit by the ten-cent coin the solenoids of the ejector devices connected with both five-cent coin stacker-tubes 6<sup>a</sup> and 6 are excited so as to operate their respective ejector devices to deliver into said delivery basin two five-cent coins, one from each stacker tube 6<sup>a</sup> and 6. The releasing of the ten-cent coin from its coin-receiving mechanism after this ejection of the "change" is accomplished through the coin releasing circuit and operating means in the manner above described.

It will be apparent from the above description and an inspection of the accompanying drawings, that the present invention provides an exceedingly simple and efficient construction of "change" making apparatus.

Although the apparatus has been described as constructed to "change" coins of United States denomination, not including pennies, it will be apparent that the same may be easily adapted to include pennies without departing from the principles of the present invention, and also that the machine may be adapted to "change" all of the larger denomination of coins, or any one denomination, or selected number of denominations. It will also be apparent that the apparatus may be equally well adapted to the "changing" of foreign coins without departing from the scope of the present invention.

I am aware that changes may be made in the various arrangements and combinations of the several devices and parts and in the features of my present invention without departing from the scope thereof, as described in the foregoing specification, and as defined in the claims appended thereto. Hence, I do not limit my invention to the exact arrangements and combinations of the various devices and parts as herein set forth, and as illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the said parts.

I claim:—

1. In an apparatus of the kind described, a plurality of stacker tubes for coins of different denominations, electrically operated coin ejector devices operating in connection with said stacker tubes of all coins but that of the largest denomination, an electrical circuit for exciting and operating said coin ejector devices, coin receiving mechanisms

connected in series in said electrical circuit whereby the contact of a coin with any one of said coin receiving mechanisms closes said electrical circuit to automatically operate the coin ejectors of such stacker tubes as contain coins of less denomination than the coin so closing the circuit, said coin receiving mechanisms being arranged in conjunction with said stacker tubes of all coins but that of the smallest denomination so that when released the deposited coin will drop into the stacker tube for coins of its denomination, and means for releasing the coin from its circuit closing contact with said coin receiving mechanism subsequent to the operation of said ejector devices of the coins of the smallest denomination, comprising electrically operated releasing means connected with each coin-receiving mechanism, a second electrical circuit for exciting and operating said releasing means, and means connected with said ejector devices of the coins of smallest denomination for closing said second electrical circuit after the operation of said ejector devices.

2. In an apparatus of the kind described, a plurality of stacker tubes for coins of different denominations, electrically operated coin ejector devices operating in connection with said stacker tubes of all coins but that of the largest denomination, each coin ejector device comprising an ejector-member slidably arranged at the bottom opening of said stacker tubes, a pivotally mounted ejector lever connected at one end to said ejector-member, a slidably mounted armature piece connected with the opposite end of said ejector lever, a solenoid adapted to attract said armature piece when excited, and a retractor spring connected with said ejector lever, an electrical circuit for exciting said solenoids to operate said coin ejector devices, coin receiving mechanism connected in series in said electrical circuit whereby the contact of a coin with any one of said coin-receiving mechanisms closes said electrical circuit to automatically operate said coin ejector devices of such stacker tubes as contain coins of less denomination than the coin so closing the circuit, said coin receiving mechanisms being arranged in conjunction with said stacker tubes of all coins but that of the smallest denomination so that when released the deposited coin will drop into the stacker tube for coins of its denomination, and means for releasing the coin from its circuit closing contact with said coin-receiving mechanism subsequent to the operation of said ejector devices of the coins of smallest denomination, comprising electrically operated releasing means connected with each coin receiving mechanism, a second electrical circuit for exciting and operating said releasing means, and means connected with said ejector devices of the coins of smallest



denomination for closing said second electrical circuit after the operation of said ejector devices.

3. In an apparatus of the kind described, a plurality of stacker tubes for coins of different denominations, coin ejector devices operating in connection with said stacker tubes of all coins but that of the largest denomination, solenoids for operating said coin ejector devices, an electrical circuit for exciting said solenoids, coin receiving mechanisms connected in series with said electrical circuit whereby the contact of a coin with any one of said coin receiving mechanisms closes said electrical circuit to excite such of said solenoids as operate the coin ejectors of stacker tubes containing coins of less denomination than the coin so closing the circuit, said coin receiving mechanisms being arranged in conjunction with the mouth of said stacker tubes of all coins but that of the smallest denomination so that when released the deposited coin will drop into the stacker tube for coins of its denomination, each coin receiving mechanism comprising a stationary coin receiving member, and a movable coin receiving member electrically separated from said stationary coin receiving member, but adapted to conjointly receive and support a coin in bridging electrical contact therewith, and automatically operated means for moving said movable coin-receiving member away from said stationary coin receiving member to release the coin so conjointly held and thereby break said electrical circuit subsequent to the operation of said ejector devices of the coins of smallest denomination.

4. In an apparatus of the kind described, a plurality of stacker tubes for coins of different denominations, coin ejector devices operating in connection with said stacker tubes of all coins but that of the largest denomination, solenoids for operating said coin ejector devices, an electrical circuit for exciting said solenoids, coin receiving mechanisms connected in series with said electrical circuit whereby the contact of a coin with any one of said coin-receiving mechanisms closes said electrical circuit to excite such of said solenoids as operate the coin ejectors of stacker tubes containing coins of less denomination than the coin so closing the circuit, said coin-receiving mechanisms being arranged in conjunction with the mouth of said stacker tubes of all coins but that of the smallest denomination so that when released the deposited coin will drop into the stacker tube for coins of its denomination, each coin receiving mechanism comprising a stationary coin receiving member, and a movable coin-receiving member electrically separated from said stationary coin receiving member, but adapted to conjointly receive and support a coin in bridging electrical contact

therewith, and means for moving said movable coin receiving member away from said stationary coin-receiving member to release the coin so conjointly held and thereby break said electrical circuit subsequent to the operation of said ejector devices, comprising a tail-piece connected with each movable coin receiving member, a solenoid, said tail-piece serving as the armature of said solenoid, a retractor spring connected with each movable coin receiving member, a second electrical circuit in which said solenoids are connected in series, and means connected with said ejector devices of coins of the smallest denomination for closing said second electrical circuit after the operation of said ejector devices.

5. In an apparatus of the kind described, a plurality of stacker tubes for coins of different denominations, coin ejector devices operating in connection with said stacker tubes of all coins but that of the largest denomination, each coin ejector device comprising an ejector member slidably arranged at the bottom opening of said stacker tubes, a pivotally mounted ejector-lever connected at one end to said ejector-member, a slidably mounted armature piece connected with the opposite end of said ejector-lever, a solenoid adapted to attract said armature piece when excited, and a retractor spring connected with said ejector lever, an electrical circuit for exciting said solenoids to operate said coin ejector devices, coin-receiving mechanisms connected in series in said electrical circuit whereby the contact of a coin with any one of said coin receiving mechanisms closes said electrical circuit to operate said coin ejector devices of such stacker tubes as contain coins of less denomination than the coin so closing the circuit, said coin receiving mechanisms being arranged in conjunction with the mouth of said stacker tubes of all coins but that of the smallest denomination so that when released the deposited coin will drop into the stacker tube for coins of its denomination, each coin receiving mechanism comprising a stationary coin receiving member, and a movable coin receiving member electrically separated from said stationary coin receiving member but adapted to conjointly receive and support a coin in bridging electrical contact therewith, means for releasing a coin from said coin receiving mechanisms comprising a tail-piece connected with each movable coin receiving member, a solenoid, said tail-piece serving as the armature of said solenoid, a retractor spring connected with each movable coin receiving member, a second electrical circuit in which said solenoids are connected in series, and means for closing said second electrical circuit after the operation of the ejector devices of coins of the smallest denomination.

6. In an apparatus of the kind described,

a plurality of stacker tubes for coins of different denominations, coin ejector devices operating in connection with said stacker tubes of all coins but that of the largest denomination, each coin ejector device comprising an ejector member slidably arranged at the bottom opening of said stacker tubes, a pivotally mounted ejector lever connected at one end to said ejector member, a slidably mounted armature piece connected with the opposite end of said ejector lever, a solenoid adapted to attract said armature piece when excited, and a retractor spring connected with said ejector lever, an electrical circuit for exciting said solenoids to operate said coin ejector devices, coin receiving mechanisms connected in series in said electrical circuit whereby the contact of a coin with any one of said coin receiving mechanisms closes said electrical circuit to operate said coin ejector devices of such stacker tubes as contain coins of less denomination than the coin so closing the circuit, said coin receiving mechanisms being arranged in conjunction with the mouth of said stacker tubes of all coins but that of the smallest denomination so that when released the deposited coin will drop into the stacker tube for coins of its denomination, each coin receiving mechanism comprising a stationary coin receiving member, and a movable coin receiving member electrically separated from said stationary coin receiving member but adapted to conjointly receive and support a coin in bridging electrical contact therewith, a tail piece connected with each movable coin receiving member, a solenoid, said tail piece serving as the armature of said solenoid, a retractor spring connected with each movable coin receiving member, a second electrical circuit in which said solenoids are connected in series, a circuit closing mechanism connected with said second electrical circuit and operated by the ejector device of the coin of smallest denomination to close said second electrical circuit subsequent to the ejection of the coins by said ejector devices, and thereby excite said sole-

noids to move said movable coin releasing members and release the deposited coin.

7. In an apparatus of the kind described the combination with a coin closed electrical circuit of coin ejector devices operated thereby, coin receiving mechanisms connected in said coin closed electrical circuit, means for releasing the coin from said coin receiving mechanisms, a secondary electrical circuit for operating said coin releasing means, and a circuit closing mechanism connected with said secondary electrical circuit and operated by one of said coin ejector devices of the smallest denomination subsequent to the ejection of coins comprising "change."

8. In an apparatus of the kind described the combination with a coin closed electrical circuit of coin ejector devices operated thereby, coin-receiving mechanisms connected in said coin closed electrical circuit, means for releasing the coin from said coin receiving mechanisms, a secondary electrical circuit for operating said coin releasing means, and a circuit closing mechanism connected with said secondary electrical circuit and operated by one of said coin ejector devices subsequent to the ejection of coins comprising "change," said circuit closing means comprising a pivotally mounted contact-arm, a swinging-arm provided with a supporting-pin engaging said contact-arm to support the same, a trip-lever, a link-connection between said trip-lever and said swinging arm, a retractor-spring connected with said trip-lever, a contact-pin carried by an ejector device, and means carried by an ejector-device for engaging said trip lever to oscillate the same and said swinging arm to allow said contact-arm to fall into contact with said contact-pin and thereupon close said secondary circuit.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 11th day of October, 1911.

ELIHU N. KLEINBAUM.

Witnesses:

GEORGE D. RICHARDS,  
MAYBELLE McADOO.