

No. 709,744.

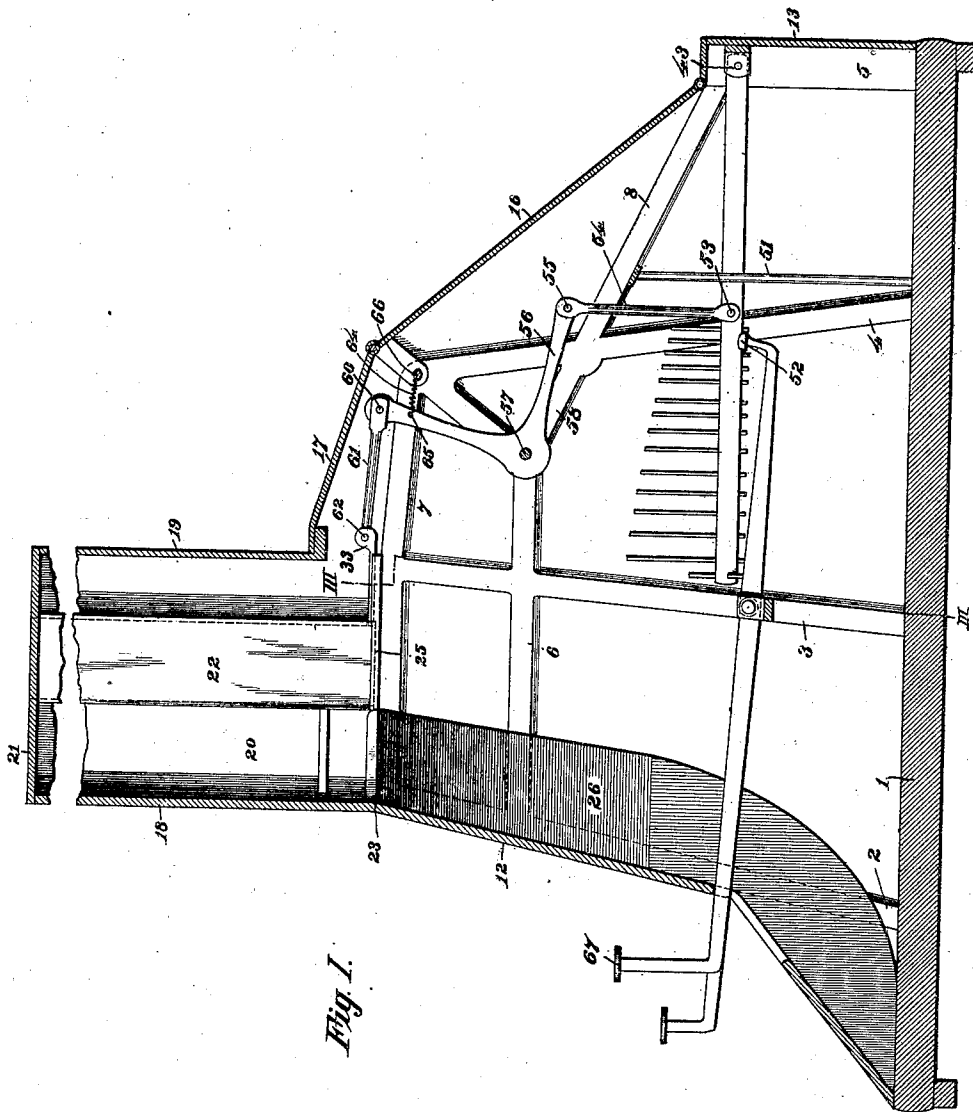
Patented Sept. 23, 1902.

G. W. CASTLEN.  
MECHANICAL MONEY CHANGER.

(Application filed Dec. 21, 1900.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses:  
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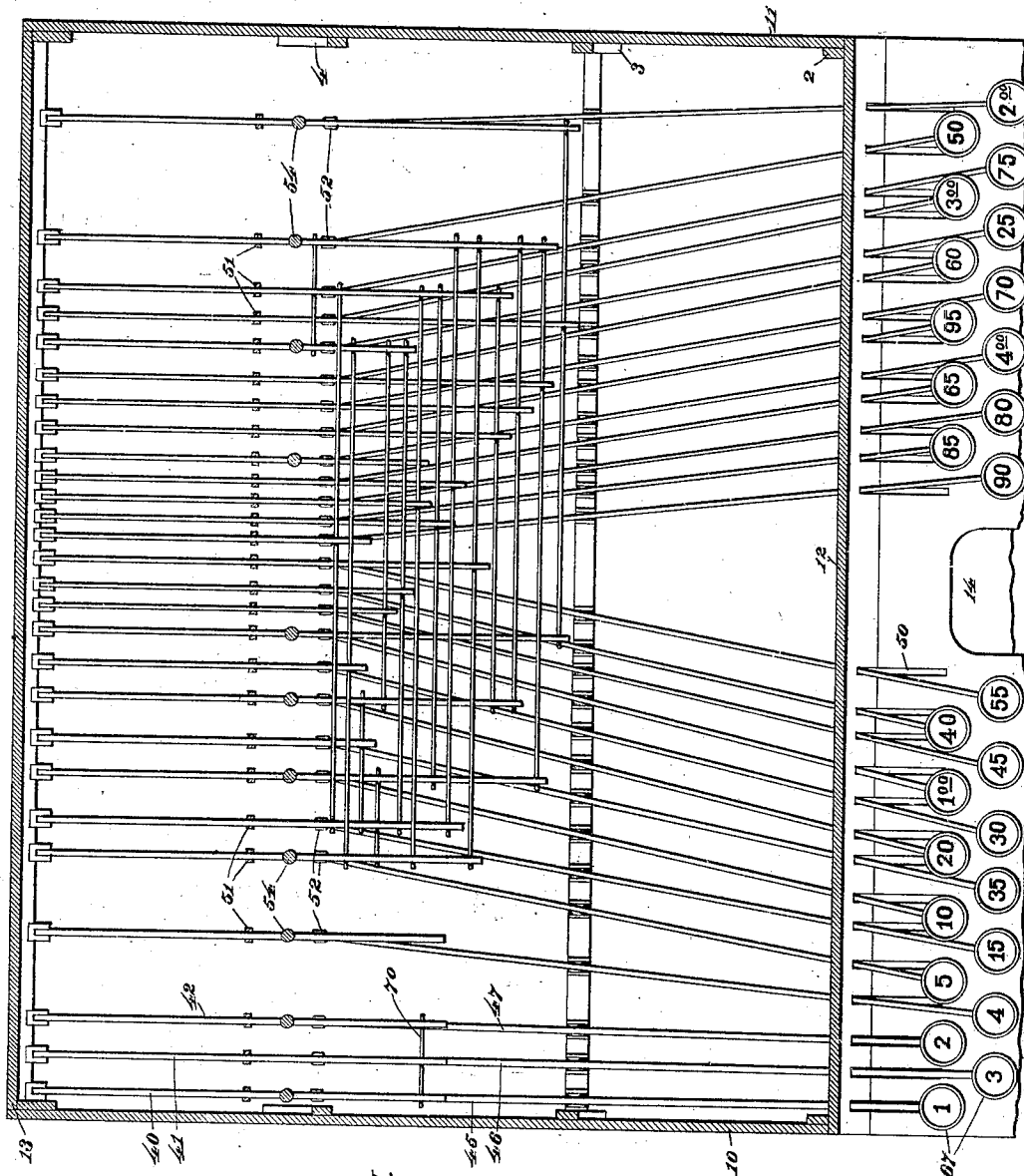


Fig. II.

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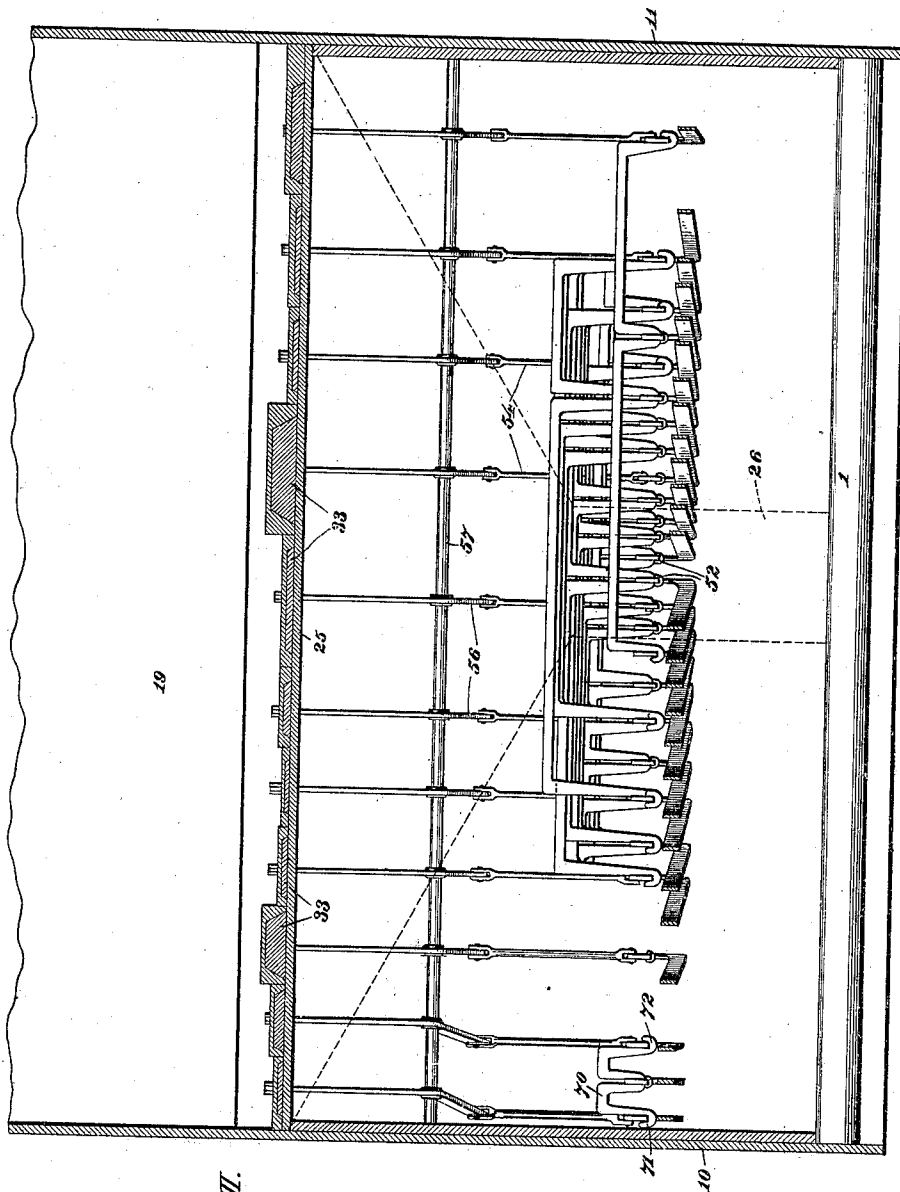


Fig. III.

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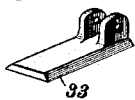
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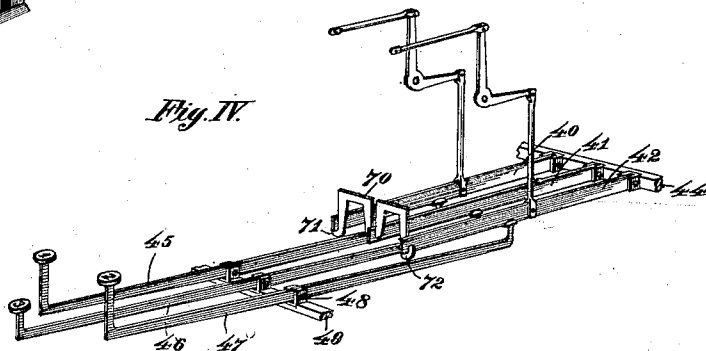
(No Model.)

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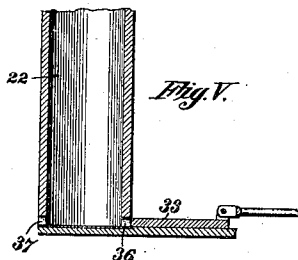
*Fig. IX.*



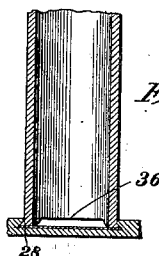
*Fig. IV.*



*Fig. VII.*

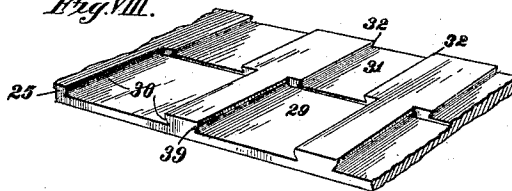


*Fig. V.*



*Fig. VI.*

*Fig. VIII.*



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# UNITED STATES PATENT OFFICE.

GEORGE WILLIAM CASTLEN, OF OWENSBORO, KENTUCKY.

## MECHANICAL MONEY-CHANGER.

SPECIFICATION forming part of Letters Patent No. 709,744, dated September 23, 1902.

Application filed December 21, 1900. Serial No. 40,665. (No model.)

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

Be it known that I, GEORGE WILLIAM CASTLEN, of Owensboro, in the county of Daviess and State of Kentucky, have invented certain  
5 new and useful Improvements in Mechanical Money-Changers, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce an  
10 improved machine adapted to hold in operative aggroupment coins of different denominations and to deliver therefrom through the manipulation of keys different sums of money made up by selection and manipulation of the  
15 proper key or keys.

In the accompanying drawings, Figure I is a vertical section of my machine complete, but broken away at the top and having one side of the case removed. Fig. II is a top  
20 plan view of the subject-matter of Fig. I, its internal mechanism being shown by a horizontal section taken above the keys. Fig. III is a section on the line III III of Fig. II. Fig. IV is a perspective view illustrating a group  
25 of keys and designed particularly to show the principle upon which one key may be made to operate a plurality of coin-selective mechanisms independently of the keys by which such mechanisms are individually actuated.  
30 Fig. V is a transverse section through the coin-box-assembling member, showing one box and plunger assembled therewith. Fig. VI is a section of Fig. V taken through the box at right angles to the view shown in Fig. V. Fig. VII is a detail view of a pair of pivot-  
35 sockets of preferred form employed for mounting various members of the coin-selective mechanisms. Fig. VIII is a perspective view of a portion of the coin-box-assembling member detached. Fig. IX is a perspective view  
40 of one of the coin-selective plungers detached.

Referring to the numerals on the drawings, 1 indicates the base, and 2, 3, 4, and 5 up-  
45 rights which, extending from the base and severally conjoined, as by cross-braces 6, 7, and 8, constitute a preferred form of end frame-piece. The members 1 to 8, inclusive, are preferably formed of a single metallic casting of suitable weight and having the con-  
50 tour illustrated to adapt them to the function of shaping the case to accommodate and afford

means of assembling the various parts of my machine.

The end frame-pieces above described are preferably covered with side pieces 10 and 11, 55 (see, for example, Fig. II,) and are united by front and back pieces 12 and 13, respectively. The front piece 12 is preferably of the shape clearly shown in Fig. I and is provided with a delivery-aperture 14, through which coin from 60 the machine is delivered. The back piece 13 preferably extends between and unites the uprights 5 of the frame-pieces and is supplemented by oblique plates 16 and 17, which are united to and close the spaces between the 65 end frame-pieces and above the operative mechanism of the machine. The plates 16 and 17 may be respectively hinged to the frame or case of the machine, so as to afford means of gaining access to the working mechanism 70 thereof.

The case is surmounted by a coin-box case, comprising front and back plates 18 and 19 and opposite end plates 20, one of which is shown in Fig. I, and is completed by a top 75 plate 21, so that the coin-box case may afford complete protection for the coin-boxes 22 inclosed therein. The front plate 18 of the coin-box case is separate from the front piece 12, as indicated at 23, and may be re- 80 movably secured in place by any suitable means. It may, for example, slide between the end pieces 20 or be hinged to the plate 12, the object being to permit access to the interior of the coin-box case for removing, 85 replenishing, and replacing the coin-boxes whenever required.

Between the coin-box case and the lower case I provide a coin-box-assembling member 25. (Illustrated in detail in Fig. VIII.) 90 This member preferably extends across the opposite cross-pieces 6 of the end frame-pieces, to which it is firmly secured. Its front edge, as clearly shown in Fig. I, is separated from the front plate 18 of the coin-box case 95 and communicates with the mouth of an upwardly-flared chute 26, which, extending from end to end of the machine in front of the coin-box-assembling member, as clearly shown in dotted lines in Fig. III and as indicated in 100 Fig. I, affords means for carrying and delivering coin from any of the boxes 22 to its

lower constricted end or delivery-aperture 14. It may be observed that the wall of the chute 26, in connection with the coin-box-assembling member 25, constitutes a secure inner partition between that portion of the case which contains the coins and that portion thereof which contains the operative mechanism of the machine.

The coin-box-assembling member 25 is so called because to it are adapted to be secured the individuals constituting the assemblage of coin-boxes 22. These boxes are of different sizes, having various inner diameters to accommodate all denominations of coins which the machine is designed to hold. The interior of the respective boxes is preferably cylindrical in shape to suit the shape of the coins which they respectively hold, and the exterior may be of like shape or may be rectangular in cross-section, if preferred. As a means of assembling the boxes with their assembling member 25 I prefer to provide upon each of the boxes 22, as illustrated clearly in Fig. VI, a rectangular externally-dovetailed foot 28, that is adapted to fit snugly within recesses 29, fitted to them, respectively, and provided with opposite dovetailed walls 30. A close fit between the boxes 28 and walls 30, respectively, may be relied upon to hold the boxes 28 in place, or, if preferred, other means of any ordinary kind for securing them may be employed.

Each of the recesses 29 is provided with a coaxial plunger-guideway 31, which, being defined between opposite dovetailed or undercut walls 32 in the box-assembling member 25, is adapted to accommodate, respectively, a plunger 33. (Compare Figs. I, V, VI, VIII, and IX.)

Each plunger 33 is of a thickness and width to accommodate the particular box 22 for which it is intended, its width and thickness being determined by the thickness and diameter of the coin which it is designed to push out from the bottom of the stack of coins contained within its box 22. For this reason each box 22 is provided on opposite sides with recesses 36 and 37, respectively. The recess 36 is designed to permit the play through it of its plunger 33 and the recess 37 to permit the egress from the box of the coin pushed out by the plunger. It is obvious that by making the plunger and recesses 36 and 37 of proper thickness the last of the stack of coins within the box may be readily displaced and ejected from the box without removing any other coin of the stack and that upon withdrawal of the plunger after it has been operated to eject a coin the next coin in order will drop into place in front of the plunger and itself be ready for ejection upon occasion of the next operation of the plunger. Instead of making the thickness of a plunger substantially equal to that of a coin it may be made equal to that of a determinate number of coins, so that at each movement of the plunger

a fixed number of coins will be ejected from the box 22 instead of a single coin. By this means a sum of money in excess of the value represented by any single coin may be delivered to the chute 26 through the operation of a single plunger or, as will hereinafter appear, through the manipulation of a single key by which each plunger is actuated.

In the accompanying drawings I have illustrated a preferred form of plunger-actuating mechanism, but without intending to limit myself to the structural details thereof. With respect to the keys by which such mechanism is manipulated two distinctive features present themselves. One is that a key is provided for independently actuating each individual plunger, and the other is that a key is provided for actuating a plurality of plungers simultaneously. In Figs. II and III a complete assemblage of plunger-actuating mechanisms, with their respective keys, is illustrated; but to simplify and contribute to the clearness of this description reference may be particularly made to Fig. IV of the drawings, in which the principle involved in the two features above referred to is clearly illustrated. Fig. IV relates more directly to the key mechanism, while the intermediate mechanism by which the movement of the key-actuated levers is imparted to a plunger is clearly shown in Fig. I of the drawings. Proceeding, accordingly, with particular reference to Figs. I and IV, it is specified that I provide a plurality of movable members, which may be designated as key-bars. Three of these key-bars, for the purpose of this explanation, are illustrated in Fig. IV and are indicated by the respective numerals 40, 41, and 42. These key-bars are pivotally mounted at one end in individual pivot-sockets 43, which may be assembled upon a bar 44, extending between the uprights 4 and 5 against the back piece 13 of the case. The free ends of the representative key-bars 40, 41, and 42 extend toward the front of the machine and are respectively engaged by keys 45, 46, and 47, respectively pivoted in pivot-sockets 48, assembled on a transverse bar 49, extending between and secured to the end frame-pieces and preferably to the uprights 3 thereof. Each of the keys works in a slot in the front piece 12, such as the slot 50 indicated in Fig. II. These slots afford means for preventing any lateral movement of the keys and compel them to move in a true line to and from their respective bars. The key-bars represented by the numerals 40 to 42, inclusive, also work between vertical guides 51, and their relations with the keys are thereby maintained in such manner as to make it practicable to employ a perfectly loose connection between the keys and the key-bars. I prefer to employ for this purpose upon the bent inner terminal of each key a saddle 52, which is adapted to engage its appropriate key-bar and by the depression of the key to actuate

it. Instead of the disconnected saddle any ordinary loose connection may be substituted, if preferred.

Each key-bar is pivoted, as indicated at 53, to an appropriate link 54, pivoted, as indicated at 55, to a bell-crank lever 56, which in connection with its several neighbors is pivotally mounted, as upon a bar 57, which is carried as to its opposite ends in brackets 58, projecting forwardly from the uprights 4. It is obvious that the bar 57 may be pivotally mounted in the brackets 58 or the levers 56 may be pivotally mounted upon a fixed bar. To the remaining arm of the lever 56 is pivotally secured, as indicated at 60, a link 61, which is pivoted, as indicated at 62, to its appropriate plunger 63. 64 indicates a spring secured at one end, as indicated at 65, to one arm of the bell-crank lever 56 and at the other, as indicated at 66, to a stationary part of the machine—as, for example, a rod coextensive with and parallel to the bar 57. The function of the spring 64 is to hold the key-bars in uniform alinement at a lower limit of movement in their respective pivot-sockets 43, and it is obvious that this function may be performed by a spring otherwise located than the spring 65 or by other means than springs—such, for instance, as by utilization of the force of gravity. Springs, however, are preferred, and the location illustrated is a convenient one to enable them to perform their functions.

Upon the end of each key I provide an index-disk 67, which being inscribed with the denomination of the coin which its plunger is adapted to eject affords means for determining which key is to be selected and also a finger-piece against which pressure may be applied for depressing the selected key.

As will appear from the table of keys illustrated in Fig. II of the drawings, some of the keys are adapted to eject a larger amount than is represented by any single coin. The keys marked "\$4," "\$3," and "\$2," respectively, are connected with plungers, which, as above specified, are of a thickness adapted to eject more than one coin at a time; but a key bearing an index of an amount not represented by one or a plurality of individual coins is adapted to eject a plurality of coins of different denominations through one manipulation. To accomplish this result, which is an important feature, I provide for different bars, in addition to the keys by which they are severally actuated, a connecting member, which without interfering with the individual operation of the key-bar by its separate key is adapted through the manipulation of a special key and key-bar to be actuated. It does not necessarily follow that every possible combination of individual key-bars should be provided with connecting members and special keys and key-bars, but only such combinations as are preferred. In Figs. II and III are illustrated certain combinations of key-bars and the appropriate keys and con-

necting members for producing coöperation; but these several combinations may be clearly understood from the illustration of one group afforded in Fig. IV and of which a description will suffice as an explanation of the other combinations shown in Figs. II and III or of any similar combinations which might be devised. In said Fig. IV, 46 indicates a special key corresponding to the keys previously described and in like manner operatively connected with a special key-bar 41. The key-bar 41, which is representative of its class, is not connected to a single plunger, and therefore is not in connection with a link 54, but is provided with a connecting member 70, which, as by means of terminal stirrups 71 and 72, for example, operatively connects it—that is, the lever 41—with individual key-bars 40 and 42. (Illustrated in Fig. IV.) Normally the bars 40 and 42 rest in their respective stirrups 71 and 72, from which they may be at any time independently raised by their respective keys 45 and 47. If, however, it be desired to secure a sum of money from the machine equal to that which will be discharged by the manipulation of the two keys 45 and 47, it is not necessary to depress the keys 45 and 47, but by depression of the key 46 both plungers connected with the bars 40 and 42 may be actuated.

It is obvious from the foregoing that various combinations to be operated by special keys may be provided and by that means the making of change in large amounts may be facilitated.

It may be specified that the connecting member 70 is illustrated as being upwardly arched. This form is adapted to permit the operation of different keys without disturbing any of the key-bars other than those intended to be operated. The necessity of this feature will be obvious from a comparative consideration of Figs. I to III, inclusive.

The operation of my machine is thought to be sufficiently apparent from the explanation of the operation of the several parts as above set forth and that no further explanation need be given than that in practice the operator having determined the amount of change required and the denominations of the coins in which it is to be made makes selection from the table of keys or keyboard, illustrated in Fig. II. Upon depressing the selected key or keys the required amount in desired denominations will be delivered through the chute 26 at the delivery-aperture 14.

What I claim is—

1. In a money-changer the combination with a key operatively connected with a key-bar, said key-bar being pivoted at one end, of a connecting member provided with stirrups adapted to engage said key-bar near its opposite end and to actuate said key-bar independently of the operation of said key.

2. In a money-changer the combination with a key operatively connected with a key-bar, said key-bar being pivoted at one end,

of a connecting member provided with stirrups adapted to engage said key-bar near its opposite end and to actuate said key-bar independently of the operation of said key, and  
5 a special key in operative connection with said connecting member.

3. In a money-changer, coin-selective mechanism, comprising the combination with a plurality of key-bars, pivoted at one end, respectively, and a connecting member adapted to  
10 to operatively engage said key-bars near their free ends, respectively, of plungers, bell-crank levers linked to the plungers and key-bars, respectively, and keys operatively con-  
15 nected with the key-bars.

4. In a money-changer, coin-selective mechanism comprising the combination with a plurality of plungers, and a plurality of key-bars operatively connected with the plungers,  
20 respectively, of a connecting member provided with stirrups in which a plurality of key-bars work, and a special key-bar and key for actuating said connecting member, substantially as set forth.

25 5. In a money-changer, coin-selective mechanism comprising the combination with a case, of a key-bar terminally pivoted thereto, and plunger operatively connected therewith,

a key operatively connected, by a loose connection, with the key-bar, and means for preventing lateral movement of the keys and key-bar, respectively, whereby during their respective movements, they are held in true  
operative relations.

6. As a part of a money-changer, a coin-box-assembling member provided with a coin-box recess, and a coaxial plunger-guideway.

7. In a money-changer the combination with a case provided with means for containing coins of different denominations, of coin-selective mechanism comprising key-bars, plungers operatively connected with the key-bars, keys operatively connected with the key-bars, connecting members adapted to engage a plurality of said key-bars and to actuate them independently of the operation of their keys, said connecting member being provided with stirrups, and keys and key-bars adapted to actuate said connecting members, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

GEORGE WILLIAM CASTLEN.

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