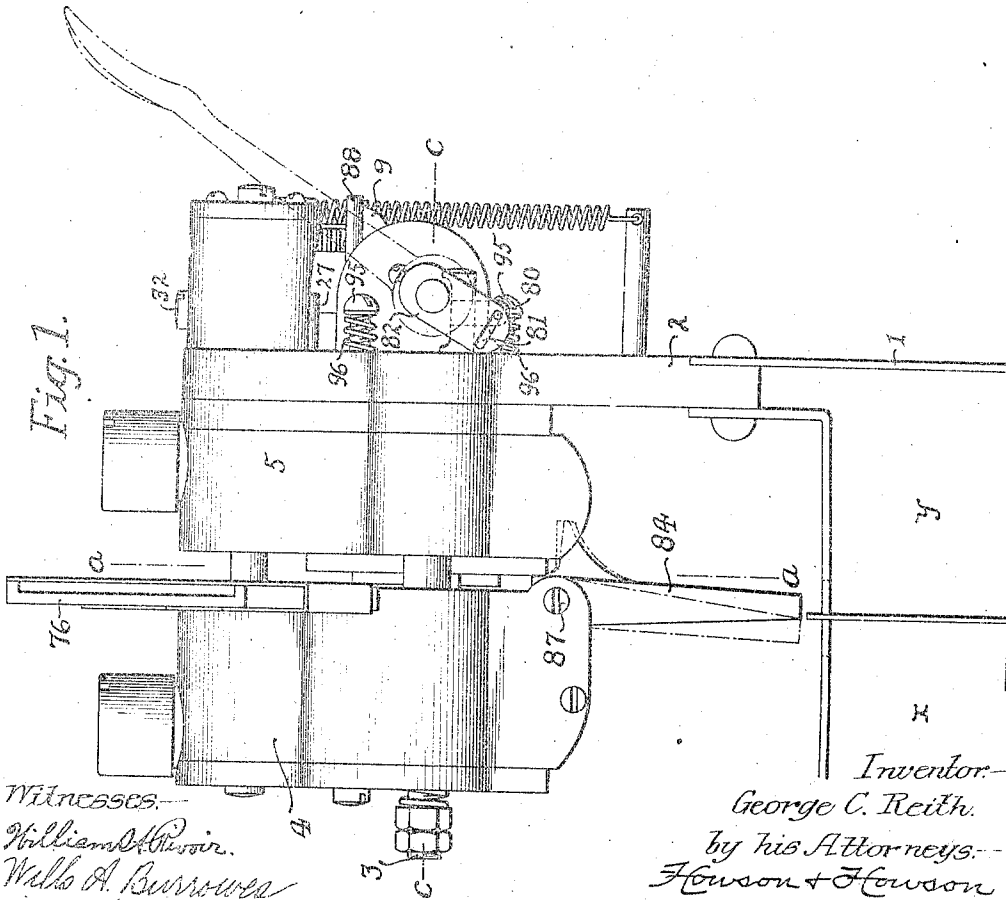
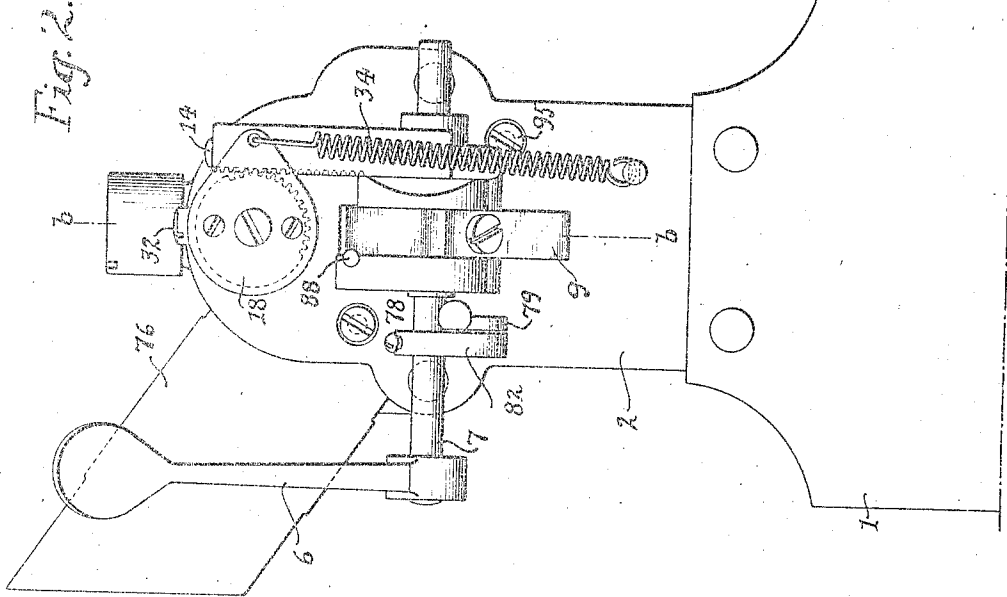


1,042,968.

G. C. REITH.
COIN SELECTOR.
APPLICATION FILED MAR. 11, 1911.

Patented Oct. 29, 1912.

7 SHEETS—SHEET 1.



G. C. REITH.
COIN SELECTOR.

APPLICATION FILED MAR. 11, 1911.

Patented Oct. 29, 1912.

7 SHEETS—SHEET 2.

1,042,968.

Fig. 4.

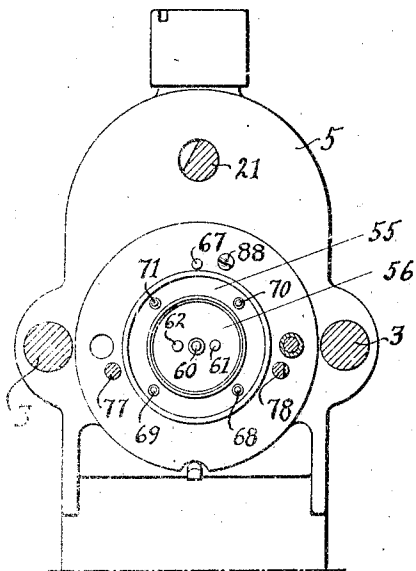


Fig. 3.

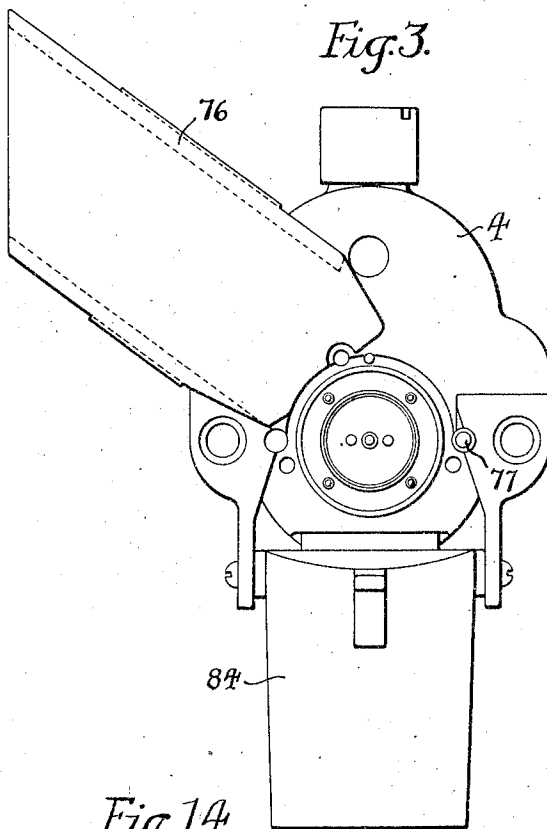


Fig. 13.

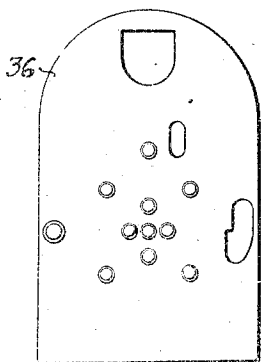


Fig. 14.

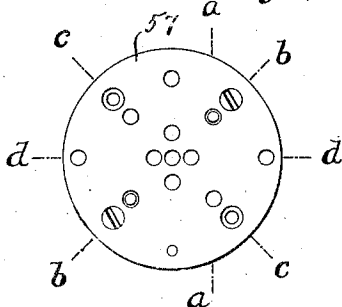


Fig. 15.

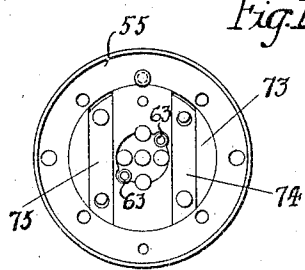


Fig. 16.

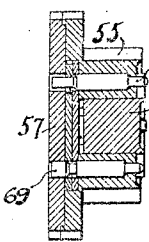


Fig. 17.

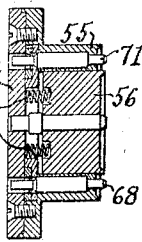


Fig. 18.

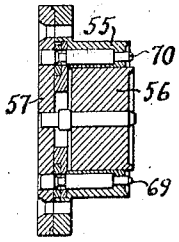
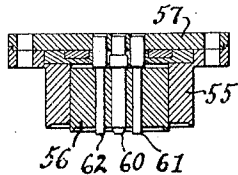


Fig. 19.



Witnesses—
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7 SHEETS-SHEET 3.

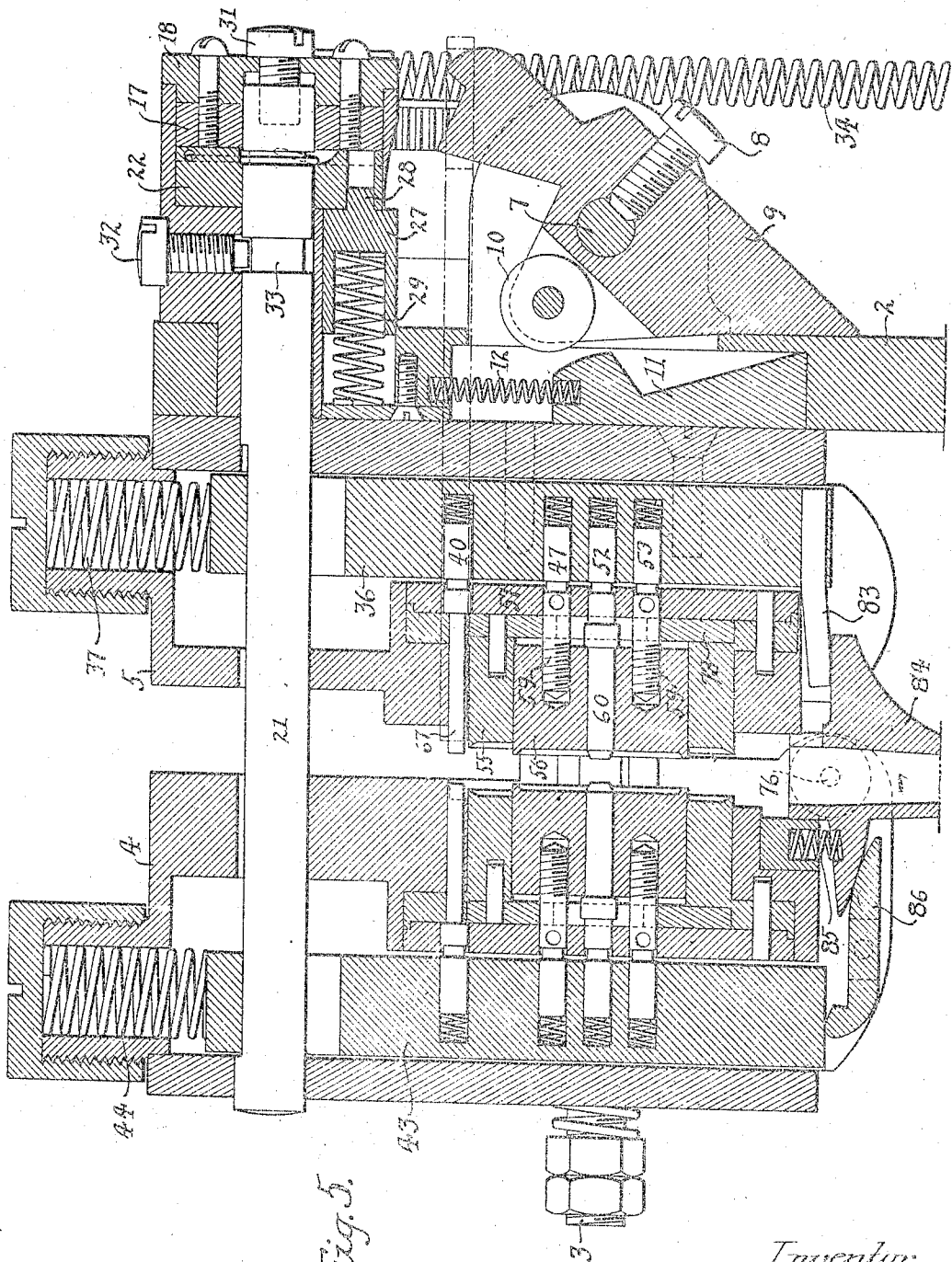


Fig. 5.

Witnesses:
William H. Brown.
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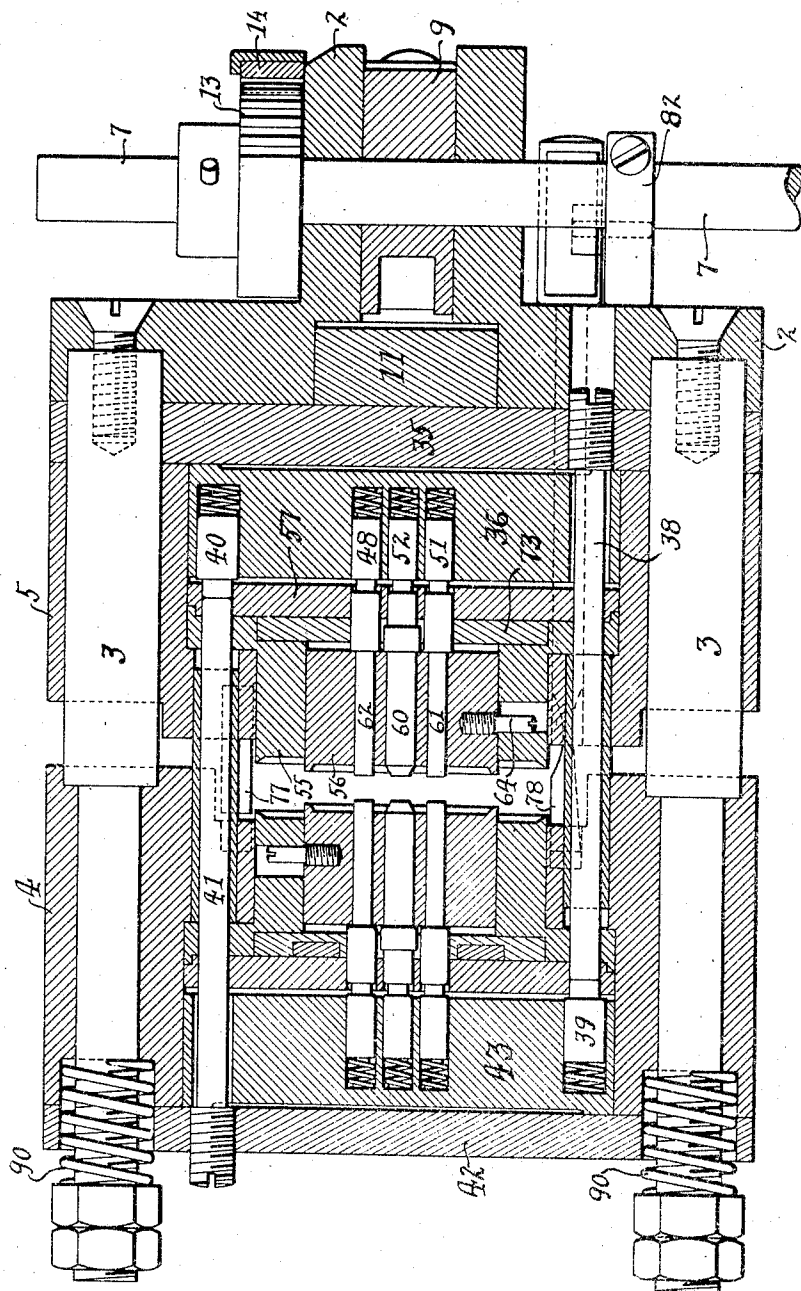
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1,042,968.

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APPLICATION FILED MAR. 11, 1911.

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7 SHEETS—SHEET 4.

Fig. 6.



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1,042,968.

Patented Oct. 29, 1912.

7 SHEETS—SHEET 5.

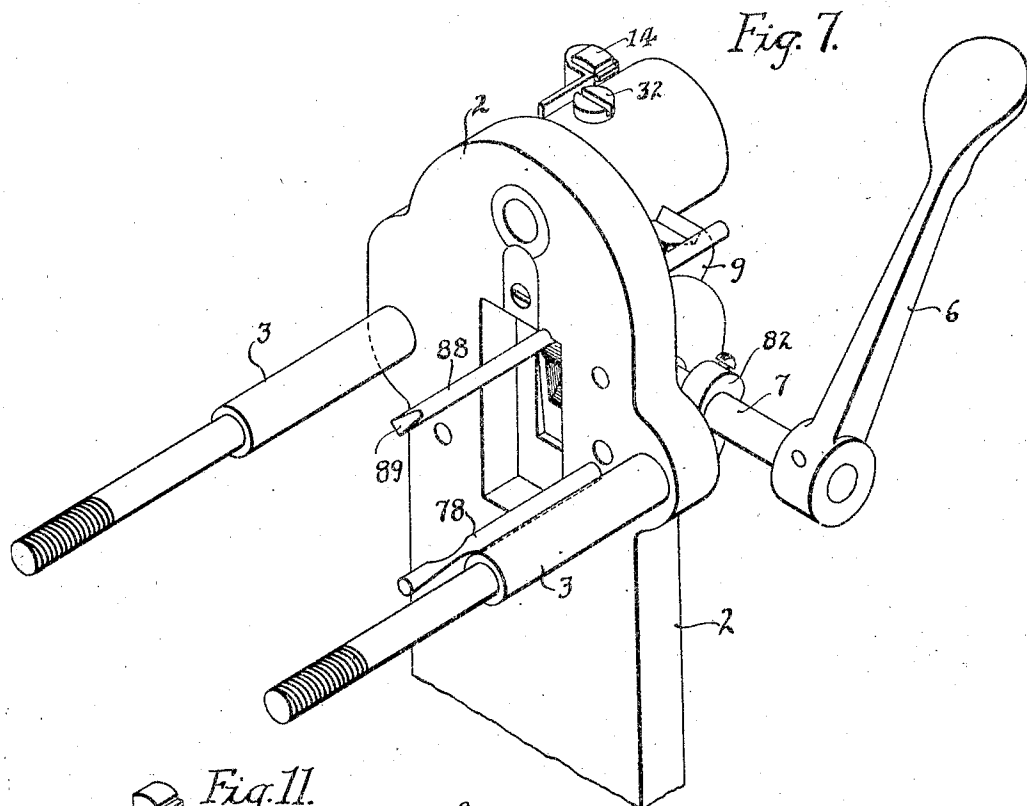


Fig. 7.

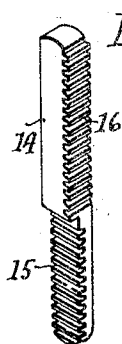


Fig. 11.

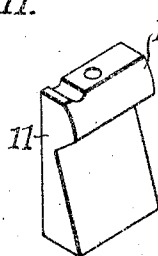


Fig. 10.

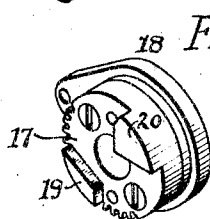


Fig. 9.

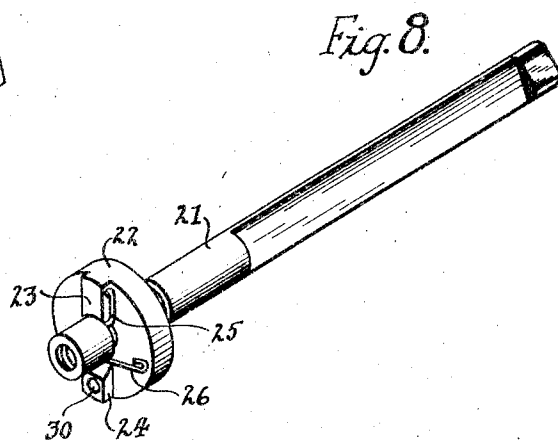


Fig. 8.

Witnesses—
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APPLICATION FILED MAR. 11, 1911.

1,042,968.

Patented Oct. 29, 1912.

7 SHEETS—SHEET 6.

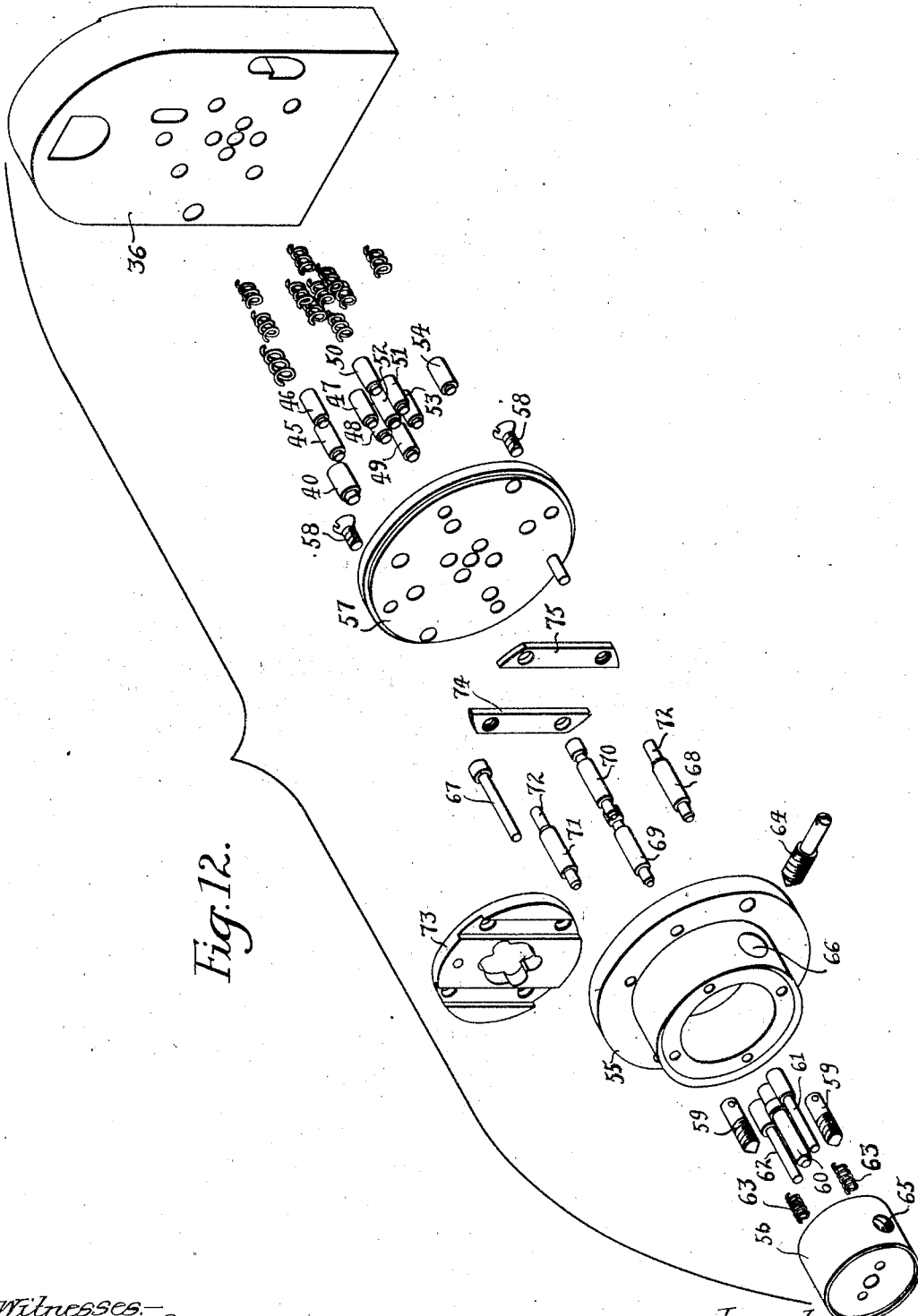


Fig. 12.

Witnesses—
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1,042,968.

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APPLICATION FILED MAR. 11, 1911.

Patented Oct. 29, 1912

7 SHEETS-SHEET 7.

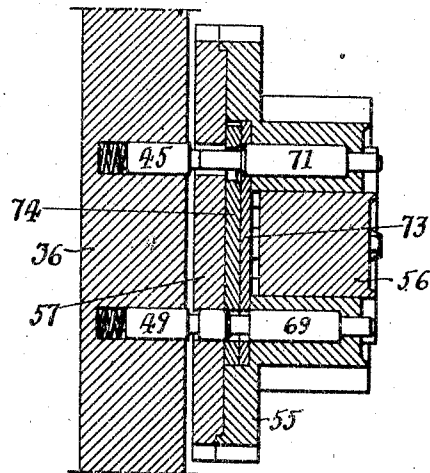


Fig. 20.

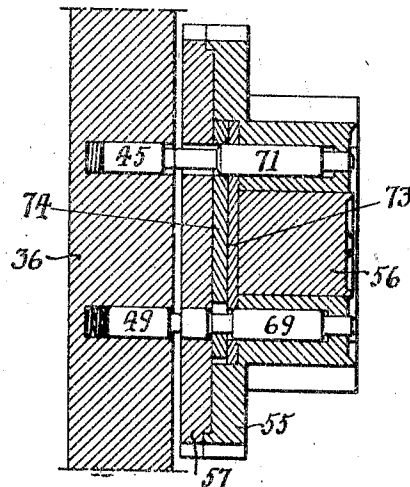


Fig. 21.

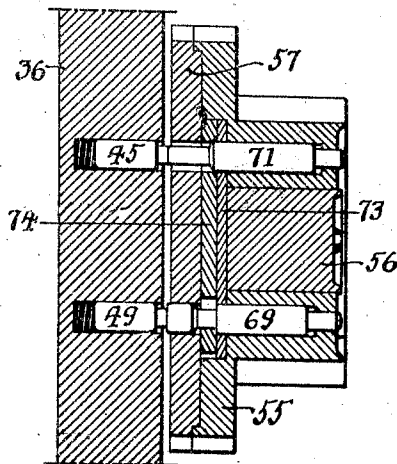


Fig. 22.

Witnesses-
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UNITED STATES PATENT OFFICE.

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COIN-SELECTOR.

1,042,968.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed March 11, 1911. Serial No. 613,722.

To all whom it may concern:

Be it known that I, GEORGE CRAWFORD REITH, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Coin-Selectors, of which the following is a specification.

One object of my invention is to so construct a coin selector of the general type shown in the patent to Reith and Flade, No. 973,302, granted October 18, 1910, as to render it capable of accepting coins widely varying as to certain dimensions, but which shall at the same time refuse to accept coins whose dimensions are intermediate of, as well as greater or less than, those of the coins which it is designed to accept. I also desire to provide improved mechanism for actuating the bodily movable portion of a coin selector of the above noted general type; the invention also contemplating novel means for lessening the amount of work necessary for operating the device.

Another object of my invention is to provide a coin selector so designed as to receive coins varying in thicknesses while having certain other characteristics in common but which shall discard coins having intermediate thicknesses lacking in the above noted common characteristics.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which;—

Figure 1, is a side elevation of a coin selector constructed according to the present invention; Fig. 2, is an end elevation of the machine shown in Fig. 1; Figs. 3 and 4 are sections taken on the line *a—*a**, Fig. 1, the first being viewed toward the rear of the machine and the other toward the front thereof; Fig. 5, is a central vertical section on the line *b—*b**, Fig. 2; Fig. 6, is a horizontal section on the line *c—*c**, Fig. 1; Fig. 7, is a perspective view of the front supporting plate of the machine and certain of its associated parts; Figs. 8, 9, 10, and 11 are perspective views of certain of the detail parts associated with the mechanism illustrated in Fig. 7; Fig. 12, is a detached perspective view of the various parts comprising one of the two sets of mechanism designed to operate on the faces of a coin; Fig. 13, is a front elevation of one of the slides; Fig. 14, is an elevation of the plate

one of whose faces coöperates with the slide shown in Fig. 13; Fig. 15, is an elevation of the casing closed by the plate shown in Fig. 14 and illustrating certain of the parts carried thereby; Figs. 16 to 19 inclusive are sections on the lines *a—*a**, *b—*b**, *c—*c**, and *d—*d**, Fig. 14, and Figs. 20 to 22 inclusive are fragmentary sections on a greatly enlarged scale and with certain of their parts considerably exaggerated as to their proportions, illustrating certain features of the construction and operation of my device.

In the above drawings 1 represents a supporting structure which in the present instance is shown as a portion of a box having two compartments *x* and *y* into which the good and bad coins respectively are to be delivered. Carried by this structure is a vertically extending fixed plate 2 having mounted in it a pair of horizontally projecting bolts 3 on which is yieldingly carried a casing 4 containing one of the two sets of coin controlled valve operating mechanism.

A second casing 5 containing a second similar set of mechanism is slidably mounted on the bolts 3 so as to be movable toward and from the casing 4, and for the purpose of causing such movement I provide an operating handle 6 mounted on a spindle 7 which is supported in suitable bearings formed in lugs projecting from the front face of the plate 2. Fixed to this spindle 7 by means of a set screw 8 is a cam 9 carrying an anti-friction roller 10 so placed as to be capable of engagement with one face of a vertically slidable block 11 guided in a suitable recess in the rear face of the plate 2, as shown in Fig. 7. The detail construction of said block is well illustrated in Fig. 10 from which it will be seen that it is flat on its rear face while its opposite face has at the top a curved projecting portion 11^a, below which is a relatively deep notch or recess. A spring 12 acts on the upper portion of this block 11 to insure its returning to its lower position after it has been moved therefrom.

In addition to the cam 9 the spindle 7 carries a toothed segment 13 designed to engage certain teeth 15 of a rack bar 14 slidably mounted so as to be movable in a suitably formed guide on the plate structure 2. The upper part of this same rack bar is provided with a second set of teeth 16 lying in

a plane substantially at right angles to the teeth 15 and so placed as to engage the teeth of a toothed wheel or segment 17. This latter is fixed to a plate 18 and has formed integral with it in the present instance, a pair of projecting lugs 19 and 20; there being a hole through it for the reception of the end part of a cam shaft 21. This shaft is rev-
 5 olubly mounted in the casting of which the plate 2 forms a part and projects rear-
 10 wardly for a purpose hereafter noted; there being fixed on its end adjacent the toothed segment 17 a disk 22 having a pair of facial projections 23 and 24. In addition there is
 15 a spiral or other suitable spring 25 mounted on the shaft 21 and having a projecting end 26 lying adjacent one face of the disk 22 so as to be capable of engagement by the pro-
 20 jection 19 of the toothed segment 17. In a suitable recess of the plate 2 is mounted a locking plunger 27 having an
 25 end 28 of reduced diameter pressed toward the disk 22 by a spring 29 and capable of entering an opening 30 in the projection 24 on the disk 22 so as to lock this latter with
 30 the cam shaft 21. The plunger 27 is so mounted that it is engaged by the upper portion of the cam 9 when the spindle 7 is sufficiently turned and is moved thereby
 35 rearwardly into its cavity so as to draw its reduced portion 28 out of the opening 30, thereby unlocking the disk 22 and leaving it free to be turned. A screw 21 threaded into
 40 the end of the slide-governing or cam shaft 21 holds the toothed segment 17 in position thereon so that it is free to turn, while a
 45 second screw 32 entering a suitably placed annular recess 33 on said shaft prevents longi-
 50 tudinal movement of this latter. A spring 34 is extended between a projecting portion of the plate 18 and some fixed part of the
 55 plate 2, thereby normally maintaining the toothed segment 17 and its associated parts in definite and predetermined positions. As shown in Fig. 7, the bolts 3 are pro-
 60 vided with enlarged portions adjacent the plate structure 2 upon which the casing 5 is designed to slide. This latter has rigidly
 65 fixed to it a front cover plate 35 serving to confine in place a vertically movable slide 36 which, as shown in Fig. 5 is normally
 70 pressed downward by means of a spring 37 and has near its upper portion an opening through which extends the cam shaft 21. Extending through one side of the slide
 75 36 is a somewhat elongated hole or slot for the reception of a pin 38 threaded into the cover plate 35 and extending through the
 80 various pieces carried by the casings 5 and 4. This pin terminates within the latter in position to cooperate with one end of a lock-
 85 ing tumbler 39, and the slide 36 has within it a spring pressed locking tumbler 40 whose rearwardly projecting end is designed to co-
 90 operate with a second pin 41 threaded into

the rear cover plate 42 of the casing 4; the arrangement in both cases being such that when the casings 4 and 5 have been moved to within a predetermined distance of each other, the two pins 38 and 41 will so far
 70 force the tumblers 39 and 40 into their recesses in the slide 36 and 43 as to no longer exercise any action which would prevent these latter being moved downwardly by
 75 their respective springs 37 and 44. The slide 36 is normally pressed toward the rear of the casting 5 not only by the spring acting on the tumbler 40, but also by reason of the action of a number of other springs re-
 80 spectively acting on locking tumblers 45 to 54, tending to cause them to project rearwardly. These various tumblers cooperate with a number of pins, shown in detail in Fig. 12, which are carried by a flanged ring
 85 55, a cylindrical block 56 within the same, and a cover plate 57 fitted to the front or flanged end of said ring; being held in position by screws 58. The block 56 has ad-
 90 justably threaded into its front face a pair of studs 59 which project through the plate 57 and cooperate with the two pins 47 and 53. Said block which is provided with a rear peripherally extending knife edge, has an axially extending opening for a pin 60
 95 which extends through the plate 57 and co-operates with the tumbler 52. On either side of this central pin are two pins 61 and 62 so placed as to respectively cooperate with the tumblers 48 and 51. As shown best in Fig. 17, this block 56 is normally forced
 100 forward by a pair of springs 63 but is prevented from moving rearwardly more than a predetermined distance by means of a stud 64 threaded into an opening 65 in its cylin-
 105 drical surface and projecting through an opening 66 in the side of the flanged ring 55;—the outer portion of this stud being reduced in diameter to permit of a slight relative movement of the same and hence of the cylinder to which it is attached. As is
 110 obvious this stud not only limits the longitudinal movement of the block but prevents its rotation.

Mounted in the casing 5 immediately above the opening into which the flanged
 115 ring 55 projects, is a pin 67 whose position is such that under operating conditions it comes into engagement with the rim of a coin. A locking tumbler 46 is so mounted as to cooperate with said pin.
 120

It is to be understood that the pins 61, 62, and 67 for example, are headed so as to be incapable of falling out of their cavities under the action of the springs which bear upon their cooperating locking tum-
 125 blers. In addition to these, I provide four pins 68, 69, 70, and 71 hereafter referred to more in detail, mounted in cavities extending through the main annular part of the flanged ring 55 and lying at substan-
 130

tially the same distance from the axis or center line of said part.

As clearly shown in Fig. 12, the pins 69 and 70, while being of the same construction, are different in form from the pins 68 and 71 though all four of them cooperate with four locking tumblers 45, 49, 50 and 54. The two pins 68 and 71 have each a relatively large diameter body portion tapered at an angle of about 45° to a small diameter end portion 72, while their opposite ends are abruptly reduced to a second small diameter portion. The pins 69 and 70 on the other hand, as best shown in Fig. 18, have central or body portions which while being abruptly reduced to small diameter parts at one end, are provided adjacent their rear ends with annular recesses. Each recess while having one of its walls substantially at right angles to the axial line of the pin, has its other wall tapered at about an angle of 45° , it being noted that the pin 68 is so mounted in the flanged ring as to be diametrically opposite the pin 71 to which it is similar.

As shown in Figs. 5 and 6, the ring 55 has its flanged face recessed for the reception of a plate 73 and as illustrated in Fig. 15, this latter has two vertical slideways in which are mounted a pair of elongated steel plates 74 and 75 so placed that the pins 69 and 71 pass through opposite ends of the plate 74 while the pins 68 and 70 pass through the ends of the plate 74. Said plates are free to slide for a limited distance in their supporting plate 73 and their function is to prevent, under predetermined conditions, such a rearward movement of certain of the pins as will move their cooperating tumblers into the positions which would release the slide 36. With this idea in view, the plate 74 has a uniformly cylindrical hole in its lower portion of exactly the same diameter as the body portion of the pin 69. The other hole in this plate, however, is counter sunk as shown, for the reception of the pin 71, so that when said pin is sufficiently moved, its beveled surface may cooperate with the countersunk surface of said hole to move the plate 74 upwardly. Similarly, while the upper hole of the plate 75 is of exactly the same diameter as the body of the pin 70 and is of uniform bore throughout, the lower hole in said plate is beveled and counterbored so that when the pin 68 is properly moved, it likewise may cause vertical movement of said plate by reason of the action of its beveled surface. It is obvious that as long as any portion of the cylindrical body of the pin 69 lies within the lower hole of the plate 74, the pin 71 cannot be moved longitudinally beyond a certain point, since said plate lies in the way and the pin 69 locks it against the movement which would bring its hole in

line with said pin 71. If, however, the pin 69 be moved to bring its tapered surface or its reduced diameter portion into the plane of the plate, then the latter may be raised by the pin 71 which may then be moved longitudinally to its full extent.

Aside from the fact that the holes in the plate 75 are reversed in their positions, this latter exercises a similar locking action on one of its pins, for as long as the cylindrical body portion of the pin 70 lies within the upper hole of said plate 75, the pin 68 cannot move to the rear but a relatively short distance which, as in the case of the pin 71, is not sufficient to bring its cooperating tumbler to the position necessary to release the slide 36.

Inasmuch as the mechanism contained within the casing 4 and its associated parts is practically identical with that hitherto described as contained within the casing 5, it will not be referred to in detail, except that it may be noted that its various pins and tumblers, etc., are so proportioned as to release the slide 43 only when there is presented to said pins a certain one of the two faces of a standard coin.

Similarly the mechanism of the casing 5 is so set and arranged as to cause the tumblers to be moved to their releasing positions only when the same face of a standard coin is presented to them as that which releases the slide locking mechanism of the casing 4.

As best shown in Fig. 8, the cam shaft 21 is cut away where it passes through the slides 36 and 43 so that when in one position, these latter may drop to their extreme lower positions but will thereafter be raised by the cam action of this shaft when the latter is turned under the action of the mechanism previously described.

Mounted on the casing 4 is a coin chute 76 so placed as to direct a coin to be tested into a position between it and the casing 5, where it is supported in the proper position partly by means of a stud 77 projecting rearwardly from one side of the casing 5 and partly by an elongated rod 78 which extends through a suitable slot in the slide 36 and openings in the cover plate 35, the plate structure 2 and the casing 5, so as to project to the rear of the flanged ring 55.

As shown in Fig. 7, the rear end of this rod 78 is cut away so as to render it more or less flexible and its front end is provided with a downwardly projecting arm 79 having a pin 80 extending into a slot 81 in an arm 82 fixed to the operating shaft 7. The arrangement and proportioning of these parts in such that the operating handle 6 may be moved back almost to the limits of its possible movement before the pin 80 is operatively engaged and thereafter the final rearward movement of said handle moves the rod 78 toward the front of the machine

so as to disengage the coin which may have been supported by it.

The slide 36 has at its lower end a laterally projecting arm 83 engaging a projection from a coin directing valve 84 which is normally pressed into engagement with said projection by means of a spring 85. On the opposite side of this valve is a second arm engaged by one arm of a lever 86 whose second arm extends under the slide 43 so as to be actuated thereby. The valve 84 is mounted directly under the space between the two casings 4 and 5 so as to receive a coin falling from said space and is mounted on trunnion screws 87 in the well known manner. When in its normal position said valve is so placed as to deliver a coin into the bad coin compartment *y* of the receptacle beneath it and when deflected, as by a downward movement of either of the slides 36 or 43, it delivers into the compartment *x* which is reserved for good or standard coins.

In order to prevent more than one coin being acted on by the mechanism above described there is provided a longitudinally movable rod 88 made wedge shaped at its rear end as indicated at 89 and at its forward end engaged by the cam 9 on the operating shaft 7. As a result the first movement of said shaft and cam occurring when the handle 6 is operated, moves to the rear this rod 88 and interposes its wedge shaped end between a coin which may be supported between the two casings 4 and 5 upon the members 77 and 78, and a second coin which may have been introduced into the coin chute 76. Inasmuch as this rod continues in its projected position under the outlet of the coin chute until the operating handle with its attached parts returns to the normal position, there is no possibility of a second coin being allowed to pass downwardly into position between the two casings 4 and 5 and their associated parts until the coin first inserted has been allowed to fall through the valve and out of the machine.

In order to prevent breakage or strain to any of the parts in the event of the introduction into the machine of coins of improper size and denomination, the springs 90 are mounted on the bolts 3 between the holding nuts on the ends thereon and the casing 4.

With the above described arrangement of parts if a standard coin of proper denomination and nationality be introduced into the coin chute 78, it will roll down said chute and finally come to rest upon the two rods 77 and 78 between the casings 4 and 5. The rearward movement of the operating handle 6, through the shaft 7, will then turn the cam 9 so as to bring the roller 10 carried thereby into engagement with the

projecting curved surface 11^a of the sliding block 11. This is therefore moved bodily to the rear and forces with it the cover plate 35 and the casing 5 attached thereto with their associated parts. At the same time the rod 88 is projected immediately above the coin supported as above noted so as to prevent any additional coins interfering with the proper operation of the machine, and the turning of the shaft 7 through the toothed segment 13 also moves upwardly the rack 14 through the teeth 15. The second set of teeth 16 on said rack, being in engagement with the teeth of the segment 17, turn this and the plate 18 against the action of the spring 34, but there is no immediate action of the cam shaft 21 since, in spite of the tension put upon the spring 25 by reason of the engagement of the projection 19 with the end 26 thereof, said shaft is held from revolving by reason of the locking end 28 of the plunger 27 being projected into the hole 30 of the disk 32.

If it be assumed that the two sets of mechanism carried by the casings 4 and 5 are both adjusted to release their slides when the "head" of a standard coin is presented to them and if it be further assumed that the coin be so introduced into the machine that its head side is turned toward the casing 5, then the various pins 60, 61, 62, 68, 69, 70, 71, and 67 will all be brought into engagement with various parts of said part of the coin as the said casing is moved toward the same, as will also the knife edges of the cylindrical block 56 and of the flanged ring 55. As a result, these pins will force their various tumblers toward the slide 36, as will also the two pins 59 carried by the block 56 and the pin 41 carried by the casting 4, with the result that under the conditions noted, the plane of engagement of the various tumblers with their cooperating pins will fall between the plane of the rear face of the slide 36 and that of the front face of the plate 73. Said slide is thus unsupported except by the cam shaft 21 and as the operating handle 6 is moved to its extreme rear position, the upper end of the cam 9 finally comes into engagement with the plunger 27, moving this to the rear against the action of the spring 29. When the reduced end 28 of this plunger finally releases the disk 22, this latter instantly turns under the action of the spring 25 and also turns the cam shaft 21 into such position that its flat or cut away part is uppermost, thereby leaving the slide 36 altogether unsupported so that it is immediately forced down under the combined action of gravity and of the spring 37. At the same time the valve 84 is turned on its supporting pivots or trunnions by reason of the fact that its projecting portion is engaged by the arm 83 of said slide, so that the out-

let of said valve is directed toward the opening into the compartment α within the base.

Just before the completion of the rearward movement of the operating handle 6 the roller 10 passes below the highest part of the curved portion 11^a of the block 11 and the casing 5, which has previously been moved toward the casing 4 and its associated parts as far as was permitted by the coin, is thus left free to return to its original position under the combined action of the various springs associated with it. At the same time the last rearward movement of the operating handle, through the operating shaft 7 and the arm 82, moves forwardly the rod 78 through the pin 80 and the arm 79, thereby leaving the coin unsupported and causing it to be guided by the coin chute in its fall into the compartment α .

Under the conditions assumed the second slide 43 is not released or unlocked since the "tail" face of the coin was presented to the pins which govern the tumblers cooperating with said slide.

The release of the operating handle permits the operating shaft and the cam 9, with their associated parts, to return to their normal positions and in so doing the roller 10 first raises the block 11 to the upper portion of its guideway against the action of the spring 12 and thereafter disengaging it, permits it to return to the normal position shown in Fig. 5.

While I have above roughly described the cycle of operation occurring when a standard coin is introduced in a definite position into the machine, I will now proceed to describe more in detail the operation of certain parts of the device upon which in a large measure depends its accuracy and certainty of operation in separating certain predetermined standard coins from other standard coins of different nationalities but of the same or similar dimensions except in most minute particulars.

In Figs. 20 to 22 inclusive, I have shown on a greatly enlarged scale the parts to which I have reference and in order that the features referred to may be perceptible, I have to some extent exaggerated certain of their proportions, for it is to be understood that the dimensions upon whose difference depends the acceptance or rejection of a coin by my machine are measured in one-thousandths of an inch. In the particular figures I have illustrated on an enlarged scale the parts shown by the section $\alpha-\alpha$, Fig. 14, and in designing the instrument, it is to be understood that the pin 71 in the case of a certain instrument, is so made as to be two-thousandths of an inch longer than the pin 69 immediately under it and also passing through the same vertically movable plate 74, so that under the action

of the spring behind the tumbler 45 it projects by the above noted amount beyond the plane which includes the adjacent end of the pin 69 and likewise beyond the knife edge of the cylindrical block 56 which normally is in the same plane as said second pin.

The vertically movable plate 74 is normally in its lower position and the pin 69 is of such proportions that a portion of its body enters the lower hole of said plate so as to ordinarily lock it in such position. The pin 71 is of such length and the parts are so arranged that as long as the locking plate is in this position said pin cannot be pushed back sufficiently to bring the plane of contact between its end and the tumbler 45 into the space between the plate 57 and the slide 36. In other words in order to release the slide 36 it is necessary, in addition to moving back the pin 71 a certain predetermined distance; that the pin 69 be also moved back not only far enough to release the locking slide 74, but also for a distance sufficient to bring the plane of contact of its end with the tumbler 49, into the space between the plate 57 and the slide 36. For example, if a coin be presented to these two pins which is of the dimensions and nationality the instrument is designed to receive, its central head will project two-thousandths of an inch beyond the surface of what is known as its "root" and the pins 71 and 69 are so placed that while one of them engages this raised head, the other will necessarily engage the depressed root portion adjacent thereto. It may be noted in passing that the design of the machine is such that the other pins 70 and 68 will likewise engage one with the root portion and the other with the head portion of the standard coin.

If the first of the two possible conditions be considered, viz:—that in which the raised head portion engages the pin 71 while the root portion is engaged by the pin 69, it is obvious that under working conditions the head and said pin 71 will first contact with each other. As the coin continues to move toward the slide 36, this pin is moved longitudinally four-thousandths of an inch before the end of the pin 69 actually comes in contact with the root surface of the coin. If, as in the case assumed, the root is two-thousandths of an inch below the level of the surface of the head, then the body of the pin 69 is moved out of the lower hole in the slide 74 just as the beveled portion of the pin 71 engages the beveled portion of the upper hole in said plate, so that the latter is unlocked and both pins are free to be moved longitudinally to the rear sufficiently to free the slide 36 as above described, when the coin finally comes to rest against the knife edge of the flanged ring 55. The various

parts then occupy the positions shown in Fig. 21.

If, however, the root portion of the coin should be opposite the pin 71 and the head part be in line with the pin 69, then with the above described proportioning and dimensions, both pins would simultaneously be engaged by said coin, and it is obvious that the pin 69 would be well out of the plate 74, thus freeing the same, before the pin 71 was so far pushed in as to have any interference with its movement.

Under these circumstances the various parts would occupy the positions shown in Fig. 22 when the coin had been pushed to the maximum extent toward the flanged sleeve 55. If, however, the difference in level between the head and root of the coin is more or less than two-thousandths of an inch, the tumblers 45 and 49 would not be moved under any conditions to their released positions since the engagement of the head with the pin 71 would either fail to move it sufficiently to the rear, or would tend to so move it before the pin 69 unlocked the plate 74, with the result that said tumblers 45 and 49 could not be moved to the positions necessary to unlock the slide 36.

Under another condition the pin 69 might be moved to unlock the plate 74, but unless the above noted parts of the coin were proportioned as above noted, the pin 71 would not be moved far enough to properly actuate the tumbler 45. In one case for which my invention was particularly adapted, the machine was designed to accept any one of three issues of standard coins, whose thickness however, differed very widely, although the distance from the root to the head was substantially the same in each instance as were also certain other dimensions of parts engaged by the others of the pins shown in the drawings.

It was necessary, however, that the machine should not accept standard coins of another nationality whose thickness was intermediate those of the different issues of standard coins, and this end was attained by the use of the above described selective mechanism;—it having been found that these coins of other nationalities differed from the standard coins as to the distance between the levels of their heads and roots.

By providing means whereby the various slides are positively supported by the cam shaft 21 until all of the pins have moved their tumblers into what will be slide releasing positions if the coin is an acceptable standard, I am enabled to employ springs of much lighter tension than hitherto, without in any way interfering with the certainty of operation of the machine.

It will, moreover, be seen that as a consequence of this construction, much less force is required than hitherto for the oper-

ation of the handle 6. As tending to assist in producing this desirable result, I have provided the peculiar cam construction shown in Fig. 1 at 9 and have employed the roller 10 for transmitting movement from this cam to the slide member 11.

As is well understood by those acquainted with machines of the class to which my invention belongs, those other pins whose operation has not been described in detail are so placed as to engage the various parts of the coins presented to the machine and are designed to so cooperate with their tumblers as to move these to their slide releasing positions only when a predetermined face of certain standard coins is engaged.

As clearly shown in Figs. 20 to 22 as well as in others of the drawings, each of the two slides 36 and 43 is spaced an appreciable distance away from the adjacent face of the plate 57, thus making provision for a certain amount of variation in the dimensions of the coins acted upon; the machine thus being capable of accepting standard coins which have been worn to a certain extent and also standard coins which vary in their dimensions owing to the fact that they belong to different issues. With this allowance for variation in dimensions it was found, however, that coins of other nationalities would be received as long as their dimensions were within the predetermined limits, but with the peculiar mechanism including the pins 68, 69, 70 and 71 and their associated parts it was found possible to make a machine so that it would refuse this objectionable class of coins.

As is obvious upon the release of the operating handle 6, the casing 4 with its attached parts is drawn back to the normal position shown in the figures by means of springs 96 acting between the plate structure 2 and the heads of screws 95 which pass through said structure and enter the front plate attached to said casing.

I claim:—

1. In a coin selector the combination of a movable member; a locking element normally preventing movement of said member; with a plurality of coin engaging elements connected to control the movement of said locking member to a releasing position.

2. In a coin selector the combination of a movable member; a plurality of locking elements normally preventing movement of said member; with a plurality of coin engaging elements coacting with said locking elements; and means for causing one of said coin engaging elements to lock the other in a predetermined position.

3. The combination in a coin selector of coin directing means including a movable member; a locking element normally preventing movement of said member; two coin engaging elements for controlling the actual

tion of said locking element; and means for operatively connecting said coin engaging elements.

4. The combination in a coin selector of
5 coin directing means including a movable member; a locking element for said member; a plurality of coin engaging elements controlling the operation of said locking element; and a locking device connecting said
10 coin engaging elements whereby one of said elements is capable of preventing movement of the other under predetermined conditions.

5. The combination in a coin selector of coin directing means including a movable
15 member; a locking element for said member; a plurality of coin engaging elements for controlling the operation of said locking element; and means normally locking one of said coin engaging elements from operative movement until the other element has
20 been moved to a predetermined extent.

6. The combination in a coin selector of coin directing means including a movable member; a locking element normally preventing movement of said member; a plurality of coin engaging elements for controlling the actuation of said locking element; and a member connecting said coin
25 engaging elements, said member being normally held from movement by one of the elements and thereby preventing movement of the other element.

7. The combination in a coin selector of coin directing means including a movable
35 member; a locking element therefor; two movable coin engaging elements of which one is placed to actuate the locking element; and means for connecting said coin engaging elements; said connecting means consisting of a member formed to prevent operative movement of one of the coin engaging
40 elements until after the other coin engaging element has been moved a predetermined distance.

8. The combination in a coin selector of coin directing means including a movable member; two locking elements for said member; two coin engaging elements operatively connected to said locking elements; and
50 means for preventing one of the coin engaging elements from moving its locking element to a releasing position until the other coin engaging element has been moved to a predetermined extent.

9. The combination in a coin selector of coin directing means including a movable member; a locking tumbler for said member; two movable coin engaging pins of which one is operative on said tumbler; and
60 a member connecting said pins for preventing one of them moving the tumbler to a releasing position under the action of a coin until the other has been moved to a predetermined extent.

65 10. The combination in a coin selector of a

coin directing device including a movable member; two locking tumblers therefor; coin engaging pins for actuating said tumblers; and a member connecting said pins for preventing movement of one of them
70 until the other has been moved to a predetermined extent.

11. The combination in a coin selector of coin directing means including a movable member; a tumbler normally preventing
75 movement of said member; a supporting structure having coin engaging members of which one is placed to be operative on said tumbler; a longitudinally movable bar connecting said coin engaging members; one of
80 said members having a portion normally preventing movement of the bar but capable of being released therefrom, and the other member being normally prevented from operative movement by said bar.

12. The combination in a coin selector of coin directing means including a movable member; a locking element for said member; coin engaging pins having portions of different diameters; and a bar connecting
90 said pins having openings for the reception of the large diameter portions of the pins; said bar being normally held in position by one of the pins for preventing operative movement of the other.

13. The combination in a coin selector of coin directing means; and a device for controlling the operation thereof, the same consisting of two coin engaging members of which one projects beyond the other; means
100 connecting said two members and normally locked from movement by said other member although placed to be released by a predetermined movement thereof; said connecting means having a portion placed to prevent movement of the first coin engaging member until released by the second member.

14. The combination in a coin selector of coin directing means including a movable member; a locking element normally preventing movement of said member; a coin engaging element actuating said locking element; a second locking element operative on the coin engaging element; and means for
110 actuating the second locking element.

15. The combination in a coin selector of coin directing means including a movable member; a locking element normally preventing movement thereof; a second locking element for preventing actuation of the first
120 locking element; and independent means for actuating said locking elements.

16. The combination in a coin selector of coin directing means including a movable member; a locking element normally preventing movement thereof; a second locking element for preventing actuation of the first locking element; and independent coin-engaging elements for actuating said locking
125 elements.

17. A coin selector including selective mechanism adjusted to receive coins, certain of whose dimensions vary within predetermined limits, while refusing coins whose dimensions fail to be included between said limits; with mechanism for preventing the acceptance of certain coins whose dimensions lie within said predetermined limits.

18. The combination in a coin selector of coin directing mechanism including a movable member; coin controlled locking mechanism for said member adjusted to release the latter when the coin presented to the mechanism is of dimensions lying within certain predetermined limits; and means for preventing release of said member by certain coins whose dimensions lie within said limits but which otherwise differ from the coins which the machine is designed to receive.

19. The combination in a coin selector of coin directing means including a movable slide; a locking tumbler therefor; a structure cooperating with said tumbler to normally prevent movement of the slide; said structure being spaced away from the slide to permit the unlocking of the same when the tumbler is in any of several positions; coin engaging means for actuating the tumbler; and means including a coin engaging member for preventing release of the tumbler under predetermined conditions.

20. The combination in a coin selector of coin directing means including a movable slide; a locking tumbler therefor; a structure cooperating with said tumbler to normally prevent movement of the slide; said structure being spaced away from the slide to permit the unlocking of the same when the tumbler is in any of several positions; coin engaging means for actuating the tumbler; a movable locking bar normally preventing operation of the said coin engaging means; and a coin engaging member normally locking the bar from movement.

21. The combination in a coin selector of a supporting structure; coin directing means including a movable member; a plurality of locking tumblers for said movable member; two coin engaging members placed to cooperate with said tumblers for moving them to their releasing positions; with a bar connecting said coin engaging members, and formed to lock one of them from operative movement until the other has been moved a predetermined distance.

22. The combination in a coin selector of a supporting structure; a movable member; locking tumblers for said member; coin engaging members of which one is mounted to extend beyond the end of the other; said members being mounted to cooperate with the locking tumblers; with a longitudinally movable bar extending between said coin engaging members and cooperating therewith

to prevent operative movement of one of them until the other has been moved a predetermined distance.

23. The combination in a coin selector of a supporting structure; coin directing means including a movable member; a plurality of locking tumblers for said movable member; two coin engaging members placed to cooperate with said tumblers for moving them to their releasing positions; with a bar connecting said coin engaging members and formed to lock one of them from operative movement until the other has been moved a predetermined distance; said movable member being spaced away from the supporting structure to permit of its release by the locking tumblers by coins whose dimensions vary within predetermined limits.

24. The combination in a coin selector of a supporting structure; a movable structure; locking tumblers therefor; longitudinally movable pins cooperating with said tumblers to move them to releasing positions; one of said pins having an inclined surface and the other pin having a portion of reduced diameter; with a longitudinally movable bar provided with openings for the reception of said pins, said openings being placed so that the edges of one of them will prevent movement of the pin passing through it except when the small diameter portion of the other pin lies within its opening in the bar.

25. A tumbler actuating device for a coin selector consisting of a supporting structure; two longitudinally movable coin engaging pins mounted to be longitudinally movable therein; with a bar mounted to slide in a line at right angles to the lines of movement of said pins and having openings for the reception of the same, said openings being spaced apart and formed to prevent movement of one of the pins beyond a predetermined point until the other has moved to a predetermined extent.

26. A tumbler actuating device for coin selectors consisting of a supporting structure; two pins longitudinally movable therein each having portions of different diameters; with a longitudinally movable bar mounted to slide in a direction at right angles to the lines of movement of the pins, said bar having openings for the reception of the pins and being formed to prevent movement of one of them until the other has moved a predetermined distance.

27. The combination in a coin selector of coin directing means including a movable member; a plurality of sets of locking elements normally preventing movement thereof; a locking device for the elements of each of said sets for preventing actuation thereof under predetermined conditions; and independent coin engaging elements for actuating the locking elements of each set.

28. The combination in a coin selector of

a movable member; two sets of locking elements normally preventing movement thereof; two sets of coin engaging members for controlling the actuation of said elements; and means for connecting the members of each set to insure a predetermined movement of one of them before the other can be moved to an unlocked position.

29. The combination in a coin selector of a movable member; locking elements for normally preventing movement of said member; two pairs of coin engaging members mounted to cooperate with said elements and all mounted upon the circumference of the same circle; one member of each pair projecting beyond the other; with means for connecting the members of each pair to prevent operative movement of one of them until the other has been moved a predetermined distance.

30. The combination in a coin selector of a movable member; locking elements therefor; two pairs of coin engaging elements for actuating said locking elements, one coin engaging element of each pair projecting beyond the other; with means for connecting the elements of each pair to prevent movement of one of the same until the other has moved a predetermined distance.

31. The combination in a coin selector of a movable member; locking elements therefor; two pairs of coin engaging elements for actuating said locking elements, one coin engaging element of each pair projecting beyond the other; with means for connecting the elements of each pair to prevent movement of one of the same until the other has moved a predetermined distance; the members of each pair being mounted so that the long members are diametrically opposite each other.

32. The combination in a coin selector of a movable member having locking tumblers; a supporting structure mounted adjacent thereto and having slideways; longitudinally movable bars in said slideways having openings; coin actuated pins mounted in the supporting structure and extending through the openings of said bars to cause actuation of the locking tumblers; said bars having their openings formed to prevent movement of one pin until the other has moved a predetermined distance.

33. The combination in a coin selector of coin directing means including a movable member; a plurality of coin controlled devices for normally locking said member against movement; and a device for preventing movement of said member until all of said devices have been actuated.

34. The combination in a coin selector of coin directing means including a movable slide; a series of locking tumblers normally preventing movement of said slide; coin engaging pins for actuating said tumblers; a member formed to positively support the slide until after all of the locking tumblers have been actuated and means for actuating said member.

35. The combination in a coin selector of a movable slide; a series of locking tumblers normally preventing movement of the slide; coin actuated members for operating the tumblers; a rotatable bar having a portion engaging the slide; and means for presenting a coin to the coin actuated members, the same including a device for turning the slide supporting bar to release the slide after such presentation of the coin.

36. The combination in a coin selector of a movable member; coin actuated locking means normally preventing movement of said member; a rotatable member for normally preventing movement of said movable member; means for presenting a coin to said apparatus; mechanism actuated from said means for turning said rotatable member, the same including a locking device for preventing turning of the member until the coin actuated locking means has been operated; and means for releasing said locking device.

37. The combination in a coin selector of a movable member; a coin controlled locking device normally preventing movement of said member; a rotatable shaft normally preventing movement of the member; means for presenting a coin to the apparatus; a rotatable element actuated from said means and operatively connected to the rotatable shaft; with a locking device released by said operating means for holding the shaft from movement until the coin has been presented to the apparatus.

38. The combination in a coin selector of a substantially fixed structure; a second structure movable toward and from the same; a slidable block engaging said movable structure; a rotatable shaft having a cam; means for turning the shaft; and a roller on the cam placed to engage the block to move it and said movable structure.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE CRAWFORD REITH.

Witnesses:

EBEN F. THOMPSON,
MARY G. McAVOY.