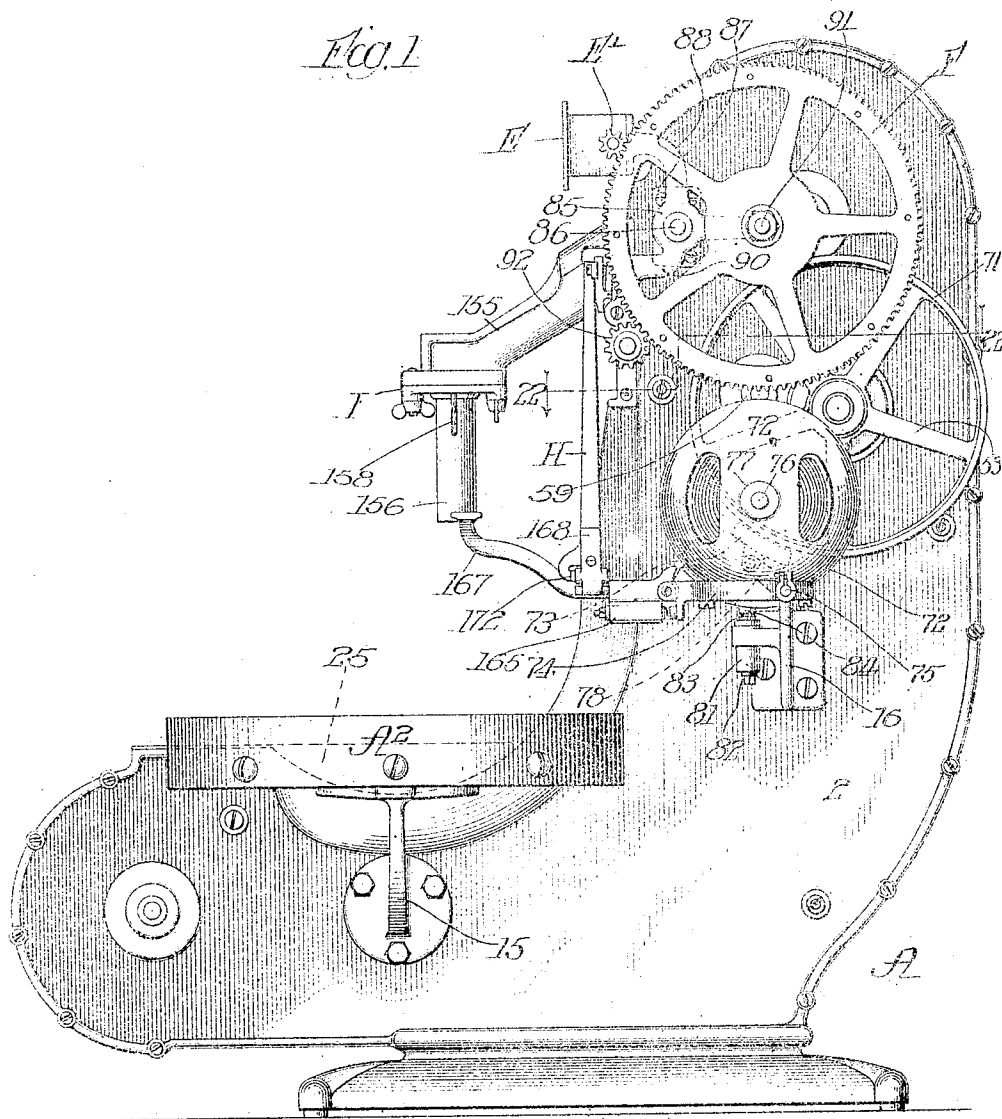


I. LARSEN.
COUNTING MACHINE.
APPLICATION FILED JUNE 9, 1909

1,039,761.

Patented Oct. 1, 1912.
11 SHEETS—SHEET 1.



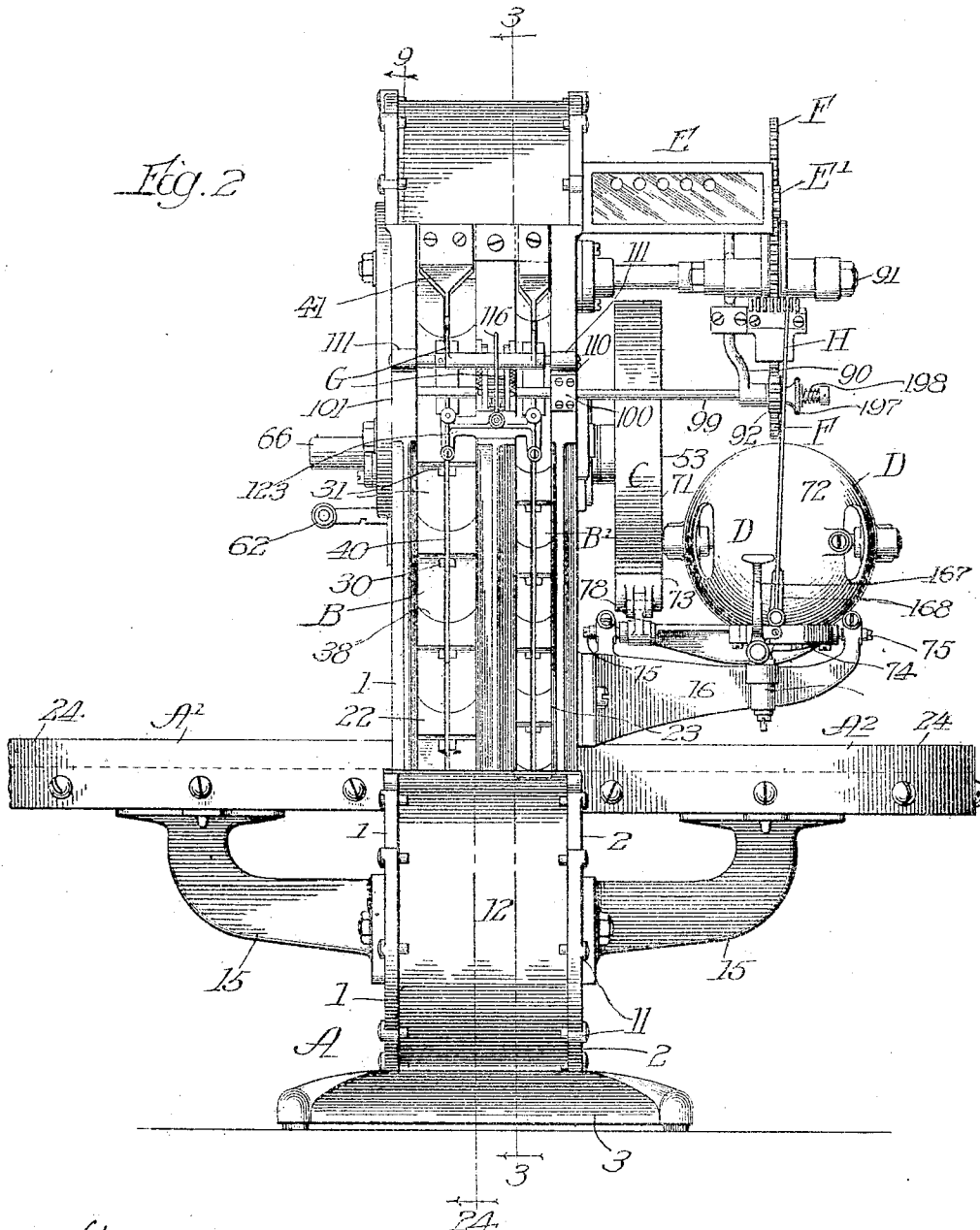
Witnesses.
H. G. Barnett
R. N. Meir

Inventor.
Ivert Larsen,
By J. D. Newforth, Sec., Christensen & Newforth, Attys.

1,039,761.

Patented Oct. 1, 1912.

11 SHEETS-SHEET 2.



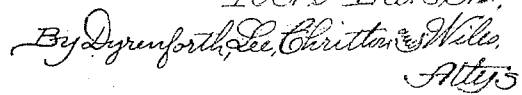
Witnesses:
S. G. Barnett
R. M. Meir

Inventor:
Ivert Larsen,
By J. J. Griffith, Lee, Chittenden & Wiles,
Attys.

APPLICATION FILED JUNE 9, 1909

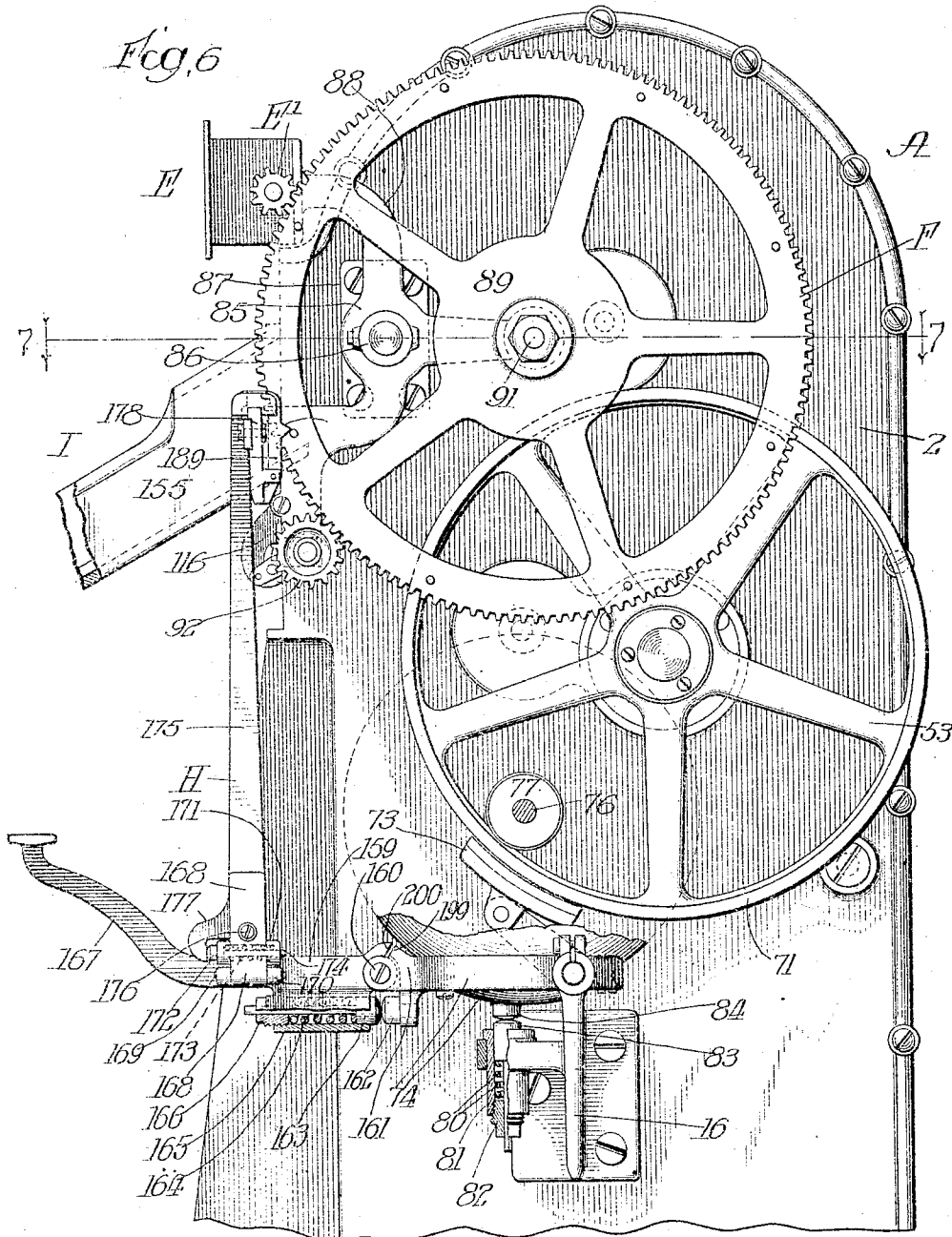
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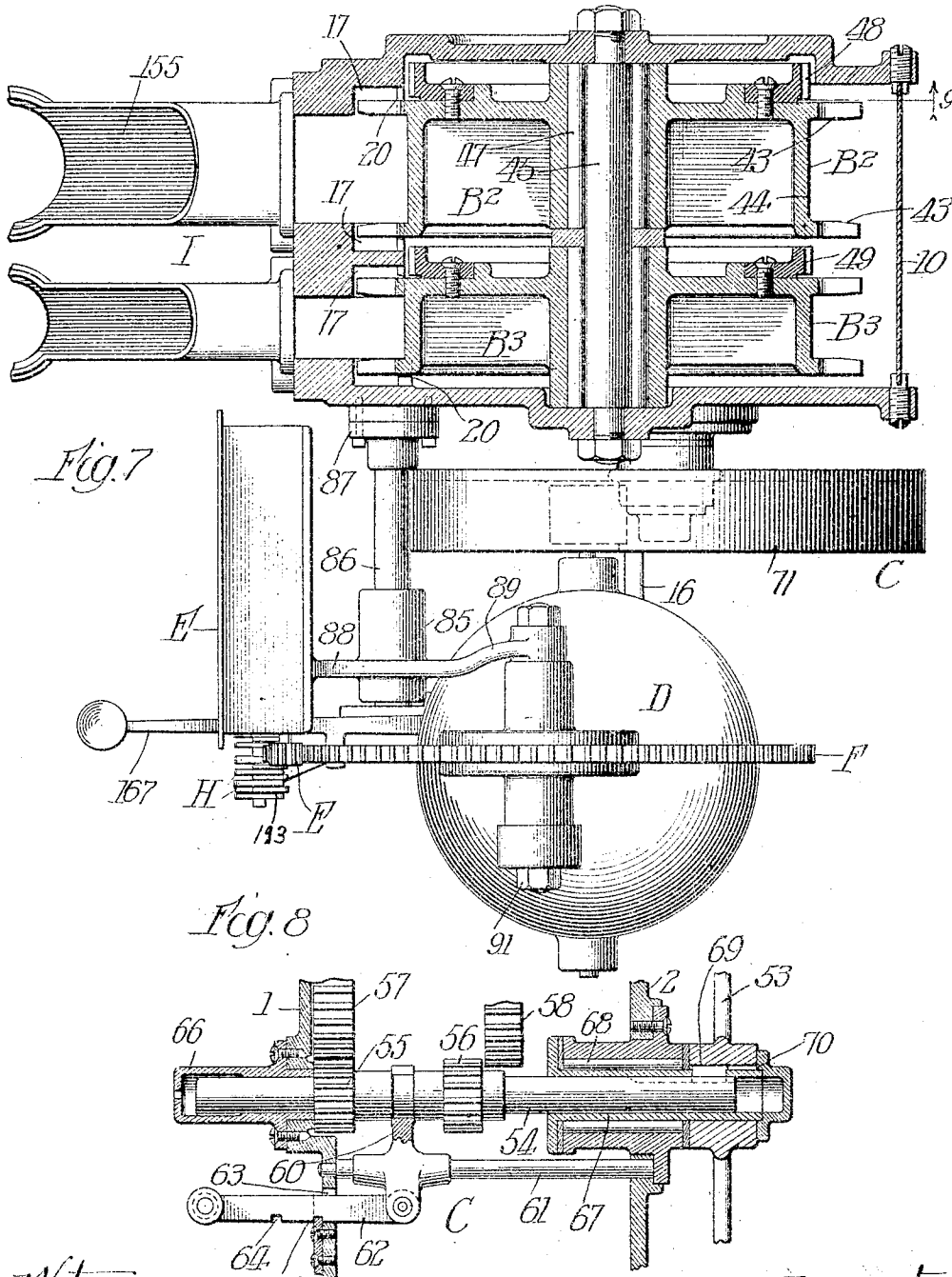
Inventor:
Ivert Larsen,
By Dyrenforth, Lee, Christian & Wells,
Atty. 57.

I. LARSEN.
COUNTING MACHINE.
APPLICATION FILED JUNE 9, 1909.

Patented Oct. 1, 1912.

11 SHEETS—SHEET 5.

1,039,761.



Witnesses: 65
St. G. Barnett
O. A. Mei.

Inventor
Ivert Larsen,
By J. D. Smith, L. C. Christensen, W. L. Allen,
Attys.

1,039,761.

11 SHEETS—SHEET 6.



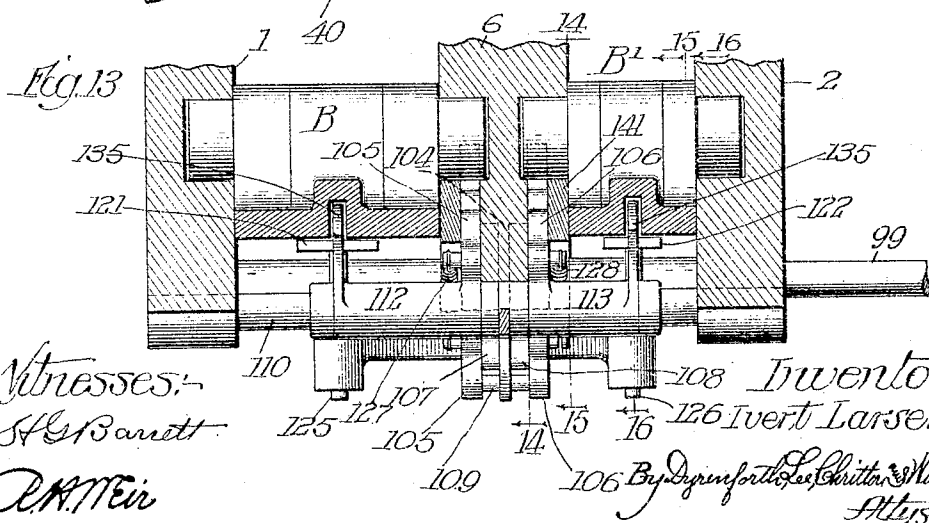
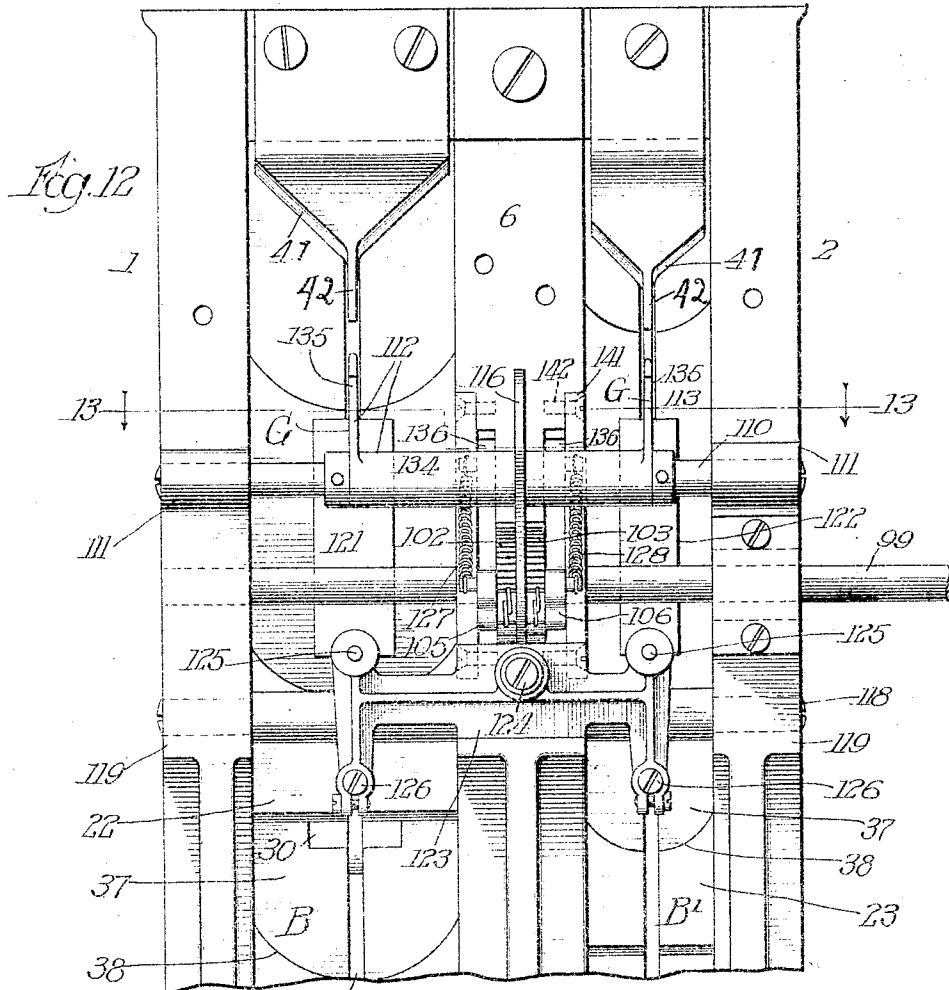
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Inventor:
Iver T. Larsen,
By Dymforth, Lee, Christen and Willes, Attys.

I. LARSEN.
COUNTING MACHINE.
APPLICATION FILED JUNE 9, 1909.

1,039,761.

Patented Oct. 1, 1912.

11 SHEETS—SHEET 7.



Witnesses:
S. G. Barrett
C. M. Meir

Inventor:
Ivert Larsen,
By *Byrd, Smith & Co., Attorneys*

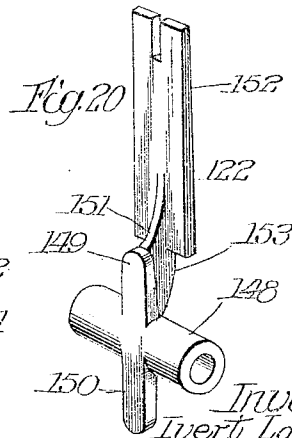
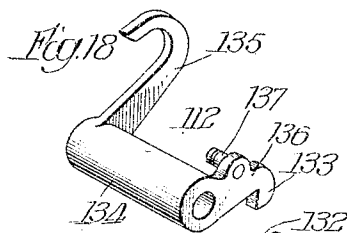
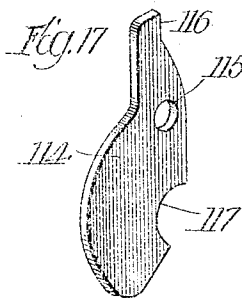
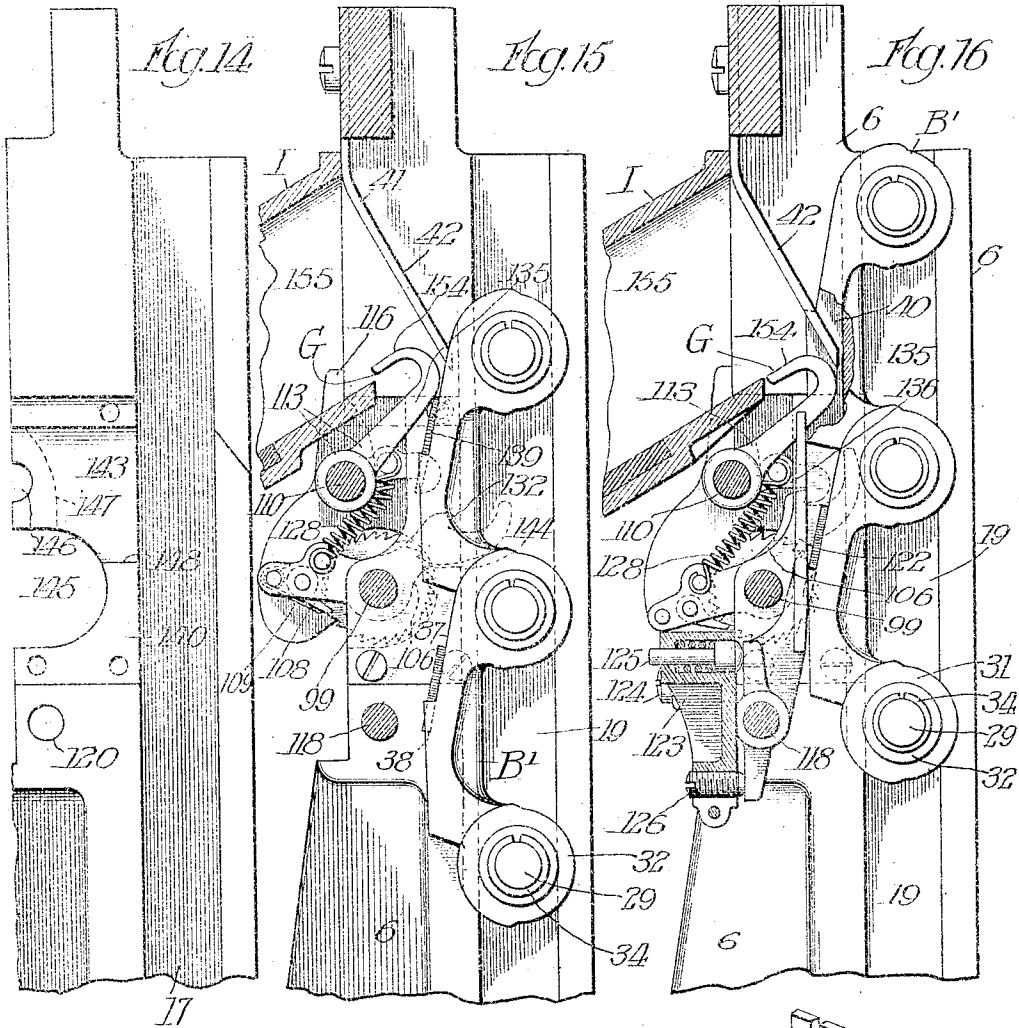
I. LARSEN.
COUNTING MACHINE.

APPLICATION FILED JUNE 9, 1909.

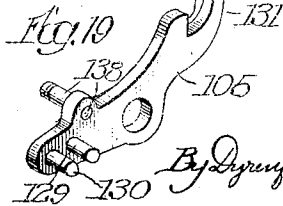
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Patented Oct. 1, 1912.

11 SHEETS—SHEET 8.



Witnesses:
S. G. Barnett
C. A. Weir

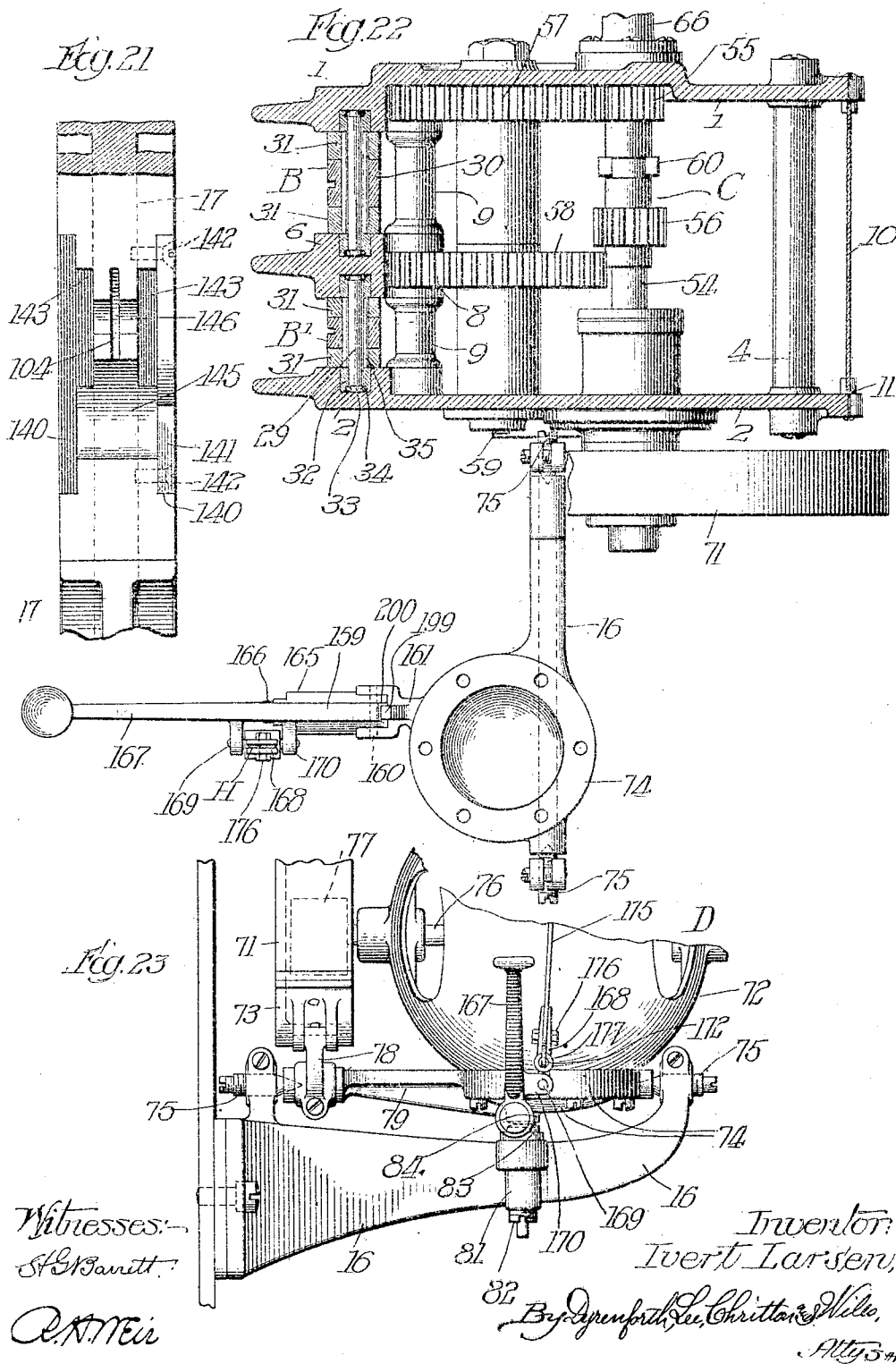


Inventor
Iver L. Larsen,
By Dymally, Lee, Christensen & Wiles,
Attys

APPLICATION FILED JUNE 9, 1909.

Patented Oct. 1, 1912.

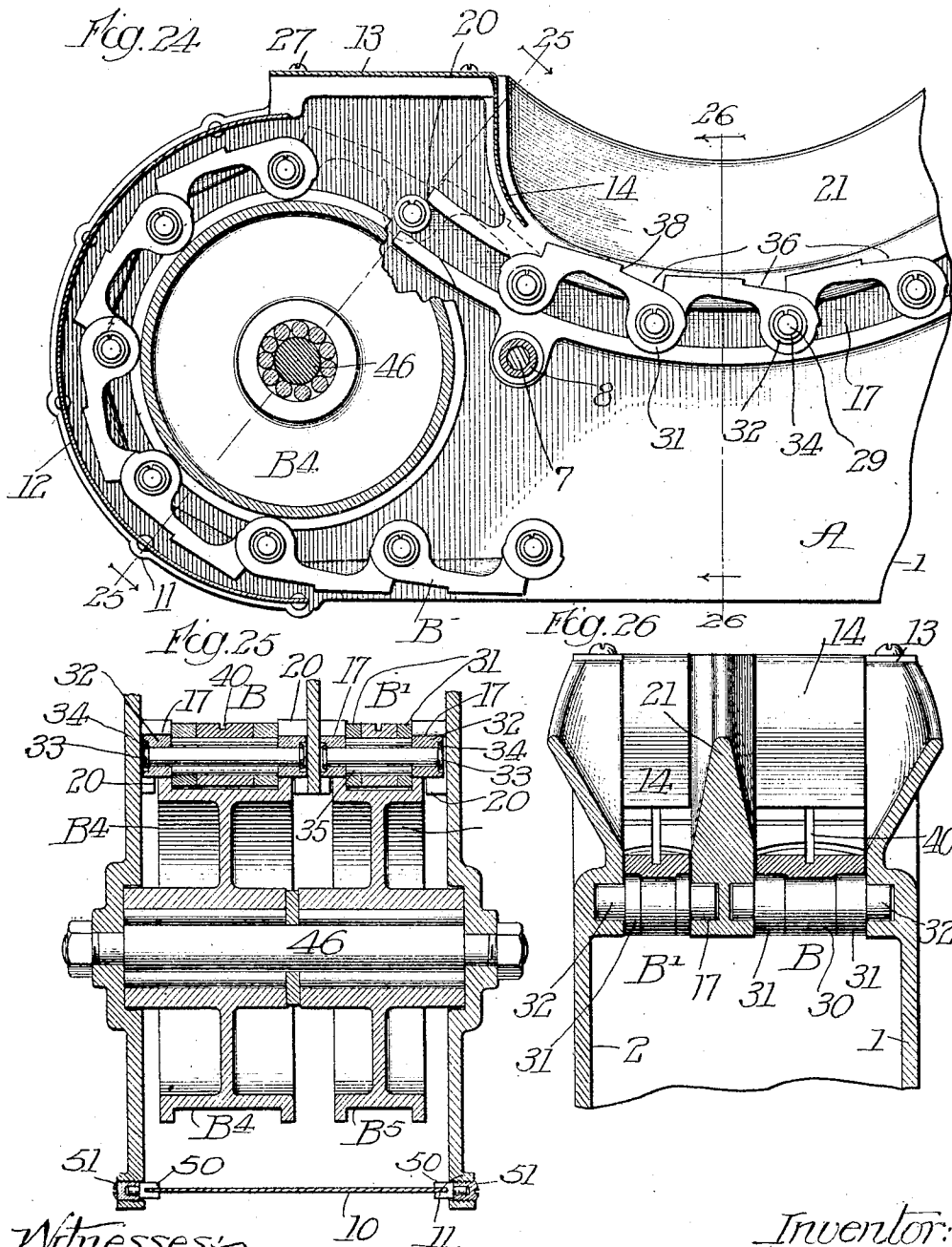
11 SHEETS—SHEET 9.



1,039,761.

Patented Oct. 1, 1912.

11 SHEETS—SHEET 10.



Witnesses:
J. G. Barnett
A. M. Meir

Inventor:
Iver L. Larsen,
By J. D. Gurnforth, Lee, Christman & Mills,
Attys

1,039,761.

Patented Oct. 1, 1912.

11 SHEETS—SHEET 11.

Fig. 27

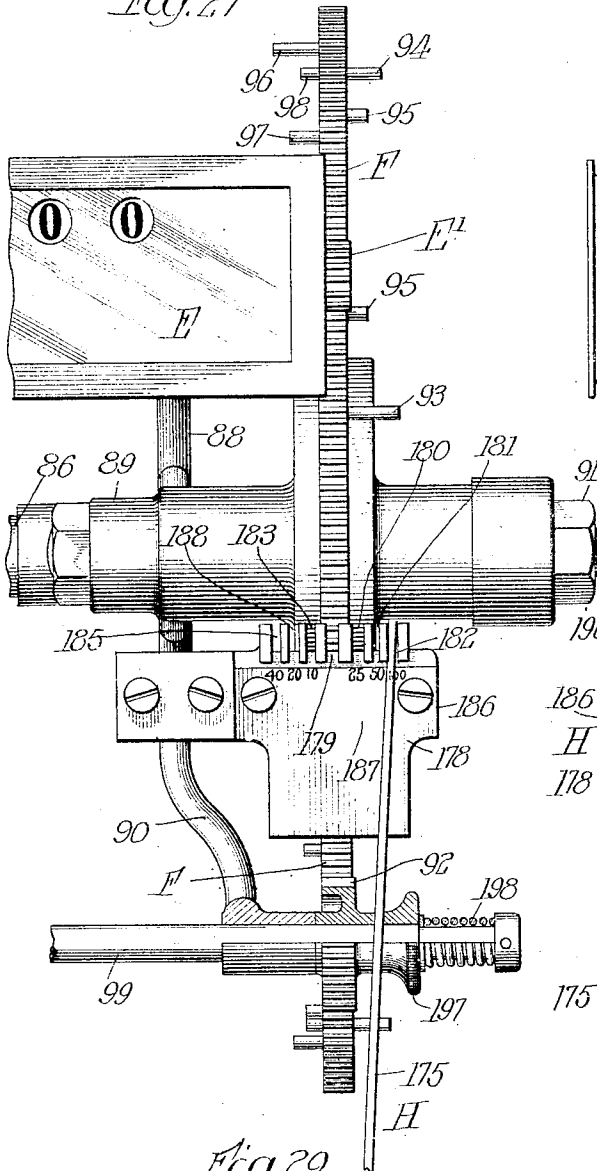


Fig. 28

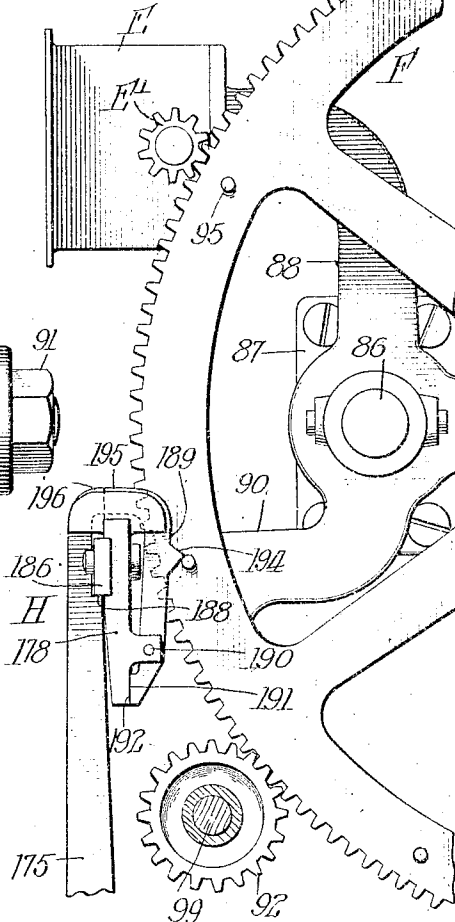


Fig. 29

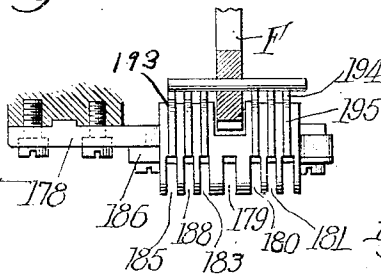
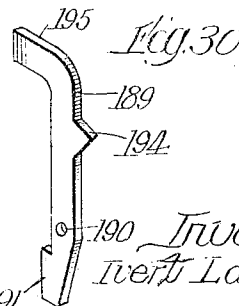


Fig. 30



Witnesses:

S. G. Barrett

C. A. Wein

Inventor:

Ivert Larsen,

By *Byrd, Smith & Co.,* Attorneys

UNITED STATES PATENT OFFICE.

IVERT LARSEN, OF CHICAGO, ILLINOIS.

COUNTING-MACHINE.

1,039,761.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed June 9, 1909. Serial No. 501,166.

To all whom it may concern:

Be it known that I, IVERT LARSEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Counting-Machines, of which the following is a specification.

My invention relates particularly to machines for use in counting coins, or the like; and my primary object is to provide a machine of the character indicated well adapted to the purpose of counting coins of different denominations, said machine being of durable construction, of high capacity and reliably accurate.

A further object is to provide improved means whereby the machine may be variously set for counting predetermined numbers of coins and will be automatically stopped when the number of coins for which the machine has been set is counted.

A further object is to provide improved means whereby a machine of the character indicated may have the power disconnected and a brake applied so as to effect instant stoppage of the machine.

Still another object is to provide a coin-carrier having coin pockets, or coin receptacles, which vary in size during the operation of the carrier, as the coins are carried to the register-actuating means, so that wedging of the coins in their pockets will be obviated and a proper distribution of the coins in the pockets of the carrier will be secured as the operation progresses.

Other important objects will appear from the description hereafter given.

It may be stated preliminarily that in the preferred construction of my invention there are employed a main frame in which are journaled wheels upon which is mounted a flexible coin-carrier, said frame being equipped with carrier-guides adapted to so direct the movement of the carrier as to contract the coin-pockets thereof at the place where the coins are deposited on the carrier and to expand the coin-pockets as they approach the register-actuating mechanism; gear mechanism through the medium of which the carrier is operated; a tiltably mounted motor and brake, said motor equipped with a friction-wheel, and said friction-wheel and brake being so related to a friction-wheel connected with the gear mechanism that when the motor is tilted in

one direction the power will be applied and when the motor is tilted in the opposite direction the power will be disconnected and the brake applied; a suitable counting or registering device; a master gear-wheel through the medium of which said counting device is actuated; coin-controlled actuating means for said gear-wheel including a shaft and a pinion meshing with said gear-wheel and ratchet mechanism through the medium of which said shaft is rotated, step-by-step, as the coins are carried in succession beneath or past the tripping device employed; and means controlling the position of said motor and brake equipped with a trip device actuated by pins carried by said master gear-wheel, according to the number of coins to be counted, the construction being such that when said last-named trip device is operated after the counting of a predetermined number of coins the motor will be automatically thrown to the non-operative position and the brake applied. It may also be observed at this point that said last-named trip device may be set at a neutral position so as not to be affected by the pins or studs carried by said master wheel, in which case the machine will continue to count indefinitely as long as coins are carried beneath or past said first-mentioned trip device.

In the construction illustrated, the flexible carrier takes the form of a chain having peculiarly constructed links, and each coin-pocket is formed by walls carried by two adjacent links, from which it will be understood that the pockets will be contracted where the chain is so guided as to form a concavity and the pockets will be expanded where the chain is so guided as to travel in substantially a straight line. In the preferred construction, I employ two or more carriers arranged side by side and equip the gear mechanism with gear-changing means, whereby either carrier may be operated, at will. In the illustration given, there are two carriers shown, one of which is adapted for counting dollars and half-dollars, and the other of which is adapted for counting the coins of smaller denominations.

My invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents a side elevational view of a coin-counting machine constructed in accordance with my invention; Fig. 2, a

front elevational view of the same with the coin-discharge chute, which appears in the upper left-hand portion of Fig. 1, removed; Fig. 3, a vertical sectional view taken approximately as indicated at line 3 of Fig. 2; Fig. 4, a fragmentary sectional view on an enlarged scale showing the construction of the carrier-links employed; Fig. 5, a sectional view taken as indicated at line 5 of Fig. 4; Fig. 6, a view on an enlarged scale of the upper portion of the machine, viewed as in Fig. 1, but with the motor shown brokenly; Fig. 7, a sectional view taken as indicated at line 7 of Fig. 6 and showing in detail the sprocket-wheels which actuate the carrier-chains; Fig. 8, a broken sectional view taken as indicated at line 8 on Fig. 3 and showing the gear-changing device employed; Fig. 9, a broken sectional view taken as indicated at line 9 of Figs. 2 and 7; Fig. 10, a broken view, partly in section, showing the construction at the rear upper portion of the main frame or casing of the machine; Fig. 11, a horizontal section taken as indicated at line 11 of Figs. 3 and 9; Fig. 12, a broken front elevational view showing the upper portion of the machine with the coin-discharge chute, coin-counter and external gear removed; Fig. 13, a broken horizontal sectional view taken as indicated at line 13 of Fig. 12, and showing the front upper portion of the main frame and the carrier-guides with which it is provided, the front portions of the carrier-chains being shown in section; Fig. 14, a broken side elevational view showing the upper portion of the central rib, or curved rail, which forms a part of the main frame, and which is provided with guides for the two carrier-chains which flank it; Fig. 15, a broken sectional view taken as indicated at line 15 of Fig. 13 and showing the same frame member shown in Fig. 14 and showing also one of the coin-tripped retaining-pawls and a ratchet-wheel actuating-lever co-acting therewith; Fig. 16, a similar section taken as indicated at line 16 of Fig. 13 and showing additional parts not shown in Fig. 15 and also showing said retaining-pawl lockingly engaging said ratchet-wheel actuating-lever; Fig. 17, a perspective view showing a retaining-plate which is fixedly secured to the central frame member shown in Fig. 14 and which serves to hold the ratchet-wheel actuating-pawls which flank said plate on the pawl-pivots carried by the ratchet-wheel actuating-levers; Fig. 18, a perspective view of one of the lever-retaining trip devices employed, viz., the one shown at the left-hand portion of Fig. 12; Fig. 19, a perspective view of the cooperating ratchet-wheel actuating-lever; Fig. 20, a perspective view of one of the yielding presser-plates employed for the coins to pass beneath on their way to the tripping-pawls; Fig. 21, a broken front view

of the central rib, or carrier-guide, of the main frame; Fig. 22, a sectional view taken as indicated at line 22 of Fig. 1 and showing the manner in which the side plates and central chain-guide of the main frame are spaced with relation to each other, and showing also the pivoted base for the motor; Fig. 23, a broken front elevational view showing the manner in which the motor is tiltably, or shiftably, supported; Fig. 24, a broken sectional view on an enlarged scale showing the lower portion of the construction shown in Fig. 3, the section being taken approximately as indicated at line 24 of Fig. 2; Fig. 25, a broken sectional view taken as indicated at line 25 of Fig. 24; Fig. 26, a broken sectional view taken as indicated at line 26 of Fig. 24; Fig. 27, a broken elevational view, partly in section, showing a portion of the coin-counting device, and the mechanism controlling the starting and stopping of the machine; Fig. 28, a broken side elevational view of the same; Fig. 29, a plan view of the bracket which carries the tripping-pawls of the starting and stopping mechanism, said view showing in section the master gear-wheel and one of the tripping-pins carried thereby; and Fig. 30, a perspective view of one of said tripping-pawls.

In the preferred construction, A represents the main frame of the machine which is equipped with tables, or hoppers, A¹, A², serving, respectively, to support the coins for the relatively large and relatively small carriers which are employed in the machine illustrated; B, B¹, flexible coin-carriers whose upper ends pass about sprocket-wheels B², B³, respectively, and whose lower ends pass about wheels B⁴ and B⁵, respectively; C, gear mechanism through the medium of which said sprocket-wheels and carriers are actuated; D, a shiftably mounted motor and brake adapted to apply either driving power or brake power to the machine through the medium of the gear mechanism, at will; E, a coin-counter, or register, equipped with an actuating pinion E¹; F, a master gear-wheel which serves to actuate the pinion E¹, and which, in turn, is actuated by coin-controlled mechanism; G, coin-controlled mechanism through the medium of which the master gear F is actuated; H, motor and brake controlling mechanism controlled through the medium of the master gear-wheel F; and I, coin-discharge chutes (one shown) through which the coins are discharged from the machine after they have passed beneath or past the trip devices, or retaining-pawls, of the ratchet-wheel actuating-levers of the mechanism G.

The main frame A may be of any suitable construction. Inasmuch as it is desirable to dispose the endless flexible carriers approximately in the shape of an S, so as to provide concavities at the points where the coins are

thrown upon the carriers and to provide approximately straight vertical paths for the upper front portions of the carriers at the points where the coins are carried beneath the coin-controlled counter-actuating mechanism, it is convenient to construct the frame of side-plates 1 and 2 of the curved form shown; a base 3 upon which said side-plates are rigidly mounted; transverse rear connecting bolts 4 joining said side-plates and equipped with spacing-sleeves 5, as shown in Figs. 9 and 11; a centrally disposed curved rail, or guide member, 6 located between the upper portions of the lower carrier-supporting wheels and the lower front portions of the upper carrier-supporting wheels and provided at the sides with guide-grooves which co-act with guide-grooves with which the side-plates 1 and 2 of the frame are provided, whereby the carriers will be positively guided in the desired course from the lower wheels to the upper wheels; transverse front bolts 7 connecting the side-plates 1 and 2 and the central rail 6, as shown in Fig. 22, said bolts passing through lugs 8 with which said central rail is equipped at its inner, or under, surface, and said center-rail being spaced with relation to the side-plates 1 and 2 by sleeves 9 on the bolts 7; a rear rim-plate 10 confined between the upper and rear marginal portions of the side plates 1 and 2, being secured thereto by attaching devices 11; a front rim-plate 12 secured by attaching devices 11 of the same character as those heretofore mentioned; a removable shield 13 surmounting the rear portions of the lower carrier-supporting wheels and provided with curved tongues 14 which depend into the spaces between the free edge portions of the side-plates 1 and 2 and the immediately located rail 6; lateral brackets 15 supported by the lower front portions of the side-plates 1 and 2 and carrying the tables, or hoppers, A¹, A²; and a fixed bracket 16 carried by the side-plate 2 and serving to support the tiltable bracket upon which the motor and brake are mounted.

As will best be understood by reference to Figs. 3, 7, 9, 11 and 25, the side-plates 1 and 2 and the intermediate rail 6 are provided with guide-grooves 17 which extend from the upper rear portions of the lower carrier-wheels to the lower front portions of the upper carrier-wheels, being shaped to form concavities 18 in the rear of the front carrier wheels and to form substantially straight guide portions 19 which extend upward tangential to the front portions of the upper carrier-wheels. The lower front portions of the guides 17 are substantially tangential to the upper rear portions of the front carrier-wheels; and as will be understood from Figs. 7 and 25, the walls of the guides 17 are recessed as indicated at 20, to

accommodate the carrier-wheels, so that the carrier-chains will pass with the utmost smoothness of action from the lower sprocket-wheels to the guides and from the guides to the upper sprocket-wheels. As may be understood from Figs. 2, 3, 24 and 26, the portion of the frame, or casing, which corresponds with the concavity 18 of the carrier-guides, is open, exposing to view the concave and vertical portions of the carrier-chains. At these points, the side plates 1 and 2 are formed with beveled flanges, or ribs, 21, and the central rail 6 has a corresponding rib 21 which is double-beveled, as clearly appears from Figs. 11 and 26. Thus are provided two elongated open chambers, or hoppers, 22 and 23 with upward extensions or chutes leading to the coin-controlled counter-actuating mechanism; and the traveling carrier-chains form bottoms for the hoppers and chute-extensions thereof. Thus it will be understood that the coins may be dumped into the hoppers 22 and 23, and will be caught in the successive pockets of the traveling carriers and carried upward to the counter-actuating mechanism. The tables A¹ and A² virtually form extensions of the hoppers 22 and 23, respectively. Said tables are provided with rims, or flanges, 24, and the inner edges of the horizontal portions of the tables are beveled, as indicated at 25, so that coins dumped upon the tables may be readily shoved or brushed into the chambers 22 and 23, respectively. As has been indicated, the shield 13 is detachable, being secured to the bosses 26 on the front portions of the side-plates 1 and 2, as by means of screws 27. The tongues 14 form curved front walls for the hoppers, or chambers, 22 and 23, the carrier-chains passing beneath the lower ends of said tongues, as will be readily understood from Figs. 3 and 24.

Each of the flexible carriers B and B¹ preferably comprises an endless chain formed of links of the character illustrated, which will be understood in detail by reference to Figs. 2, 4, 5 and 25. Each carrier-chain is made up of links 28 and pintles, or pins, 29 connecting the links. Each link is formed at one end with a central eye 30 and at the opposite end with two aligned eyes 31 adapted to receive the eye 30 of the next link between them. The pins 29 project beyond the lateral edges of the links and are equipped with rollers 32 which are adapted to engage the sprocket-teeth of the carrier-supporting wheels and also the guide-grooves of the main frame, it being understood, by reference to Figs. 7, 22 and 25, that the pins 29 and rollers 32 project beyond the lateral surfaces of the sprocket-wheels, so as to simultaneously engage the sprocket-wheels and guides at the points where the guides become tangential to the

sprocket-wheels. The extremities of the pins 29 are provided with circumferential grooves 33 which receive spring-split rings 34 which serve to secure the rollers on the pins. The outer ends of the rollers are recessed or countersunk to accommodate the retainer-rings 34. The joints of the chain are preferably made antifrictional through out, roller-bearing pins 35 being confined between the pins and the eyes 30 and 31 of the links, as will be clearly understood from Fig. 25. Each link 28 has its outer, or coin-engaging surface provided with a recess 36 having, when the link occupies a vertical position, a slightly inclined bottom surface 37 and a lower shoulder 38 adapted to engage the lower edge of the coin. Each link has also, at or near its lower portion, a shoulder 39, and the shoulder 39 of one link forms, with the recess 36 of the next succeeding link, a coin-pocket. The coin-pocket is of variable size, as will be understood from consideration of the fact that the pivots of the links lie in a line somewhat removed from the pockets, and the links turn with relation to each other as the chain travels. Each link is provided on its outer surface with a longitudinal groove 40 adapted to receive the point of a stripper, or coin-ejector. There is a coin-ejector 41 corresponding with each coin-carrier, said coin-ejector being supported on the main frame and provided, as best shown in Figs. 15 and 16, with a downwardly and rearwardly extending finger, or narrow tongue, 42 which extends into the groove of the link passing beneath or behind the ejector. The coin-ejector is located immediately above the coin-actuating trip which controls the ratchet-actuating lever of the counter-actuating mechanism. It will be understood, of course, that there is a ratchet-actuating lever and controlling-trip therefor corresponding with each flexible coin-carrier.

As will best be understood from Figs. 3 and 7, each of the sprocket-wheels is provided with a double set of sprocket-teeth 43 which are separated by a rim 44. The rollers 32 engage the sprocket-teeth 43 and project beyond the same so as to engage the guides 17 at the tangential points, and the carrier-chains are accommodated between the double sets of teeth of the sprocket wheels. The carrier-wheels are supported on bolts 45 and 46 connecting the side-plates of the main frame. The wheels are anti-frictionally journaled on said bolts, roller-bearings 47 being employed, as shown in Fig. 7. The upper wheels, or sprocket-wheels, B² and B³, are provided, respectively, with gear-wheels 48 and 49, which, as shown, are rigidly secured to the sprocket-wheels by means of screws, but which may be formed integrally with the sprocket-wheels, if desired. It may be stated here

that the sprocket-wheels and carrier-chains are driven, at will, through the medium of the gears 48 and 49.

As a convenient means of detachably connecting the flexible sheet metal rim-plates 10 and 12 with the side-plates of the casing, or main frame, each attaching device 11 comprises (as shown in Fig. 11), a non-rotatable nipple, or pin, 50 having a slot which receives the adjacent edge portion of the rim-plate; and a short screw 51 which extends through or into the side-plate and is provided with a socket, or bore, in which the adjacent end of the pin 50 is swiveled. Thus, as the screws 51 are turned inward, the rim-plate will be clamped between the slotted pins 50.

Although not essential to my invention, I prefer to equip the inner surfaces of the side-plates 1 and 2 with inclined rear guides 52, as shown in Fig. 9, said guides serving to prevent objectional vibration of the hanging, or inoperative, portions of the carrier-chains.

The gear mechanism C, through the medium of which the flexible coin-carriers are actuated, one at a time, will be best understood by reference to Figs. 2, 3, 8 and 9. It comprises a friction-wheel 53 splined on a shiftable shaft 54 journaled in the side-plates 1 and 2 of the main frame, the wheel 53 being located adjacent the outer surface of the side-plate 2; pinions 55 and 56 fixedly secured on the shaft 54 and shiftable therewith; gears 57 and 58 meshing with the gears 48 and 49, respectively, and adapted to be engaged (one at a time) by the pinions 55 and 56, respectively; a bolt, or shaft, 59 on which the gears 57 and 58 are anti-frictionally journaled; a yoke, or member, 60 connected with and serving to shift the shaft 54, said member 60 being supported on a guide 61 connecting the side-plates 1 and 2 of the frame; and a link, or handle, 62 pivotally connected with the member 60 and extending through a slot 63 in the side-plate 1, said link 62 being provided at its lower edge with notches 64 and 65 adapted to lockingly engage the lower wall of the slot 63, thus securing the shaft 54 against accidental longitudinal movement. One end of the shaft 54 is slidable in a cap-piece, or bearing, 66 with which the frame-plate 1 is provided, and the other end is received in a sleeve 67 which is anti-frictionally journaled in the frame-plate 2, roller-bearings 68 being employed for the purpose. The shaft 54 is provided with a spline 69 received by a slot 70 with which the hub of the wheel 53 is provided, said spline, or projection, 69 extending through a slot in the sleeve 67. As will be understood from Figs. 1 and 2, the frictionally driven wheel 53 has a laterally projecting rim 71 the inner surface of which is adapted to be engaged by a fric-

tion-disk, or pinion, with which the motor is provided and the outer surface of which is adapted to be engaged by the brake device which is mounted on the tiltable bracket which carries the motor.

The motor and brake device D and the manner of mounting the same will be best understood by reference to Figs. 1, 2, 7, 22 and 23. The motor is designated 72, and the brake is designated 73. Both are supported on a tiltable bracket 74 which is mounted, by means of pivots 75, on the fixed bracket 16 carried by the frame-plate 2. The shaft 76 of the motor is equipped with a friction-disk 77 which may be thrown into engagement with the inner surface of the rim 71 of the wheel 53. The brake 73 is pivotally mounted on an arm 78 (see Figs. 1 and 23) which projects forwardly and upwardly from the axle portion 79 of the tiltable bracket 74. The motor is so mounted on the bracket that its shaft is located somewhat in advance of the pivot-points of the bracket 74, so that when the bracket 74 is swung downwardly, the friction-disk 77 will be brought into contact with the inner surface of the rim 71 of the wheel 53 and the brake 73 will be simultaneously withdrawn from the outer surface of said rim. Normally, the bracket 74 is yieldingly supported in such position as to maintain the friction-wheel 77 out of contact with the rim 71 and maintain the brake 73 in contact with said rim through the medium of a spring 80 of adjustable tension supported on the fixed bracket 16. The bracket 16 supports a barrel 81 (as shown in Fig. 6) in which the spring 80 is contained, the lower end of said barrel being fitted with a threaded plug 82 by means of which the desired adjustment is secured. On the upper end of the spring 80 rests a movable plug, or plunger, 83 whose upper end is rounded to afford a bearing upon which rests a rounded boss 84 with which the bracket 74 is equipped. The bracket 74 may have its front end depressed and maintained in a depressed position so as to keep the friction-disk 77 in driving contact with the rim 71 of the wheel 53 through the medium of the mechanism H, which mechanism will operate to maintain the motor in driving relation to the gear mechanism of the machine as long as desired and will then operate to automatically disconnect the driving power and apply the brake. Said mechanism H will be described in detail after the counter-actuating mechanism G shall have been described.

The counting, or registering, device E may be of any approved construction. The form illustrated is well known, and it is only necessary to state that the device registers one count each time its shaft is rotated through the space of one tooth of the pinion E.

The manner of mounting the master gear-wheel F will be understood by reference to Figs. 6 and 7. A bracket 85 is adjustably secured on a shaft, or bracket-arm, 86 carry by a bracket 87 attached to the side-plate 2 of the frame of the machine. The bracket 85 has arms 88, 89 and 90. The arm 88 carries the counting device E; the arm 89 carries the shaft 91 on which the wheel F is journaled; and the arm 90 carries the shaft for the pinion, 92 which serves to actuate the wheel F.

The master wheel F is shown provided with two hundred teeth, and is adapted to actuate the register E two hundred times at each revolution of the master wheel. On one side of the wheel F are provided two studs 93 of sufficient length and so arranged as to actuate the trip-bar of the mechanism H at each half-revolution of the wheel F. On the same side of the wheel F, at 90° from the studs 93 are two studs 94 of intermediate length and adapted to actuate the trip-bar of the mechanism H when the same is set in a different position. On the same side of the wheel F are provided four still shorter studs 95 which divide the quadrants of the wheel. Thus, it will be understood that the longest studs may be employed to trip the mechanism H at each half-revolution of the wheel; the longest studs and the two intermediate studs may be employed to trip the mechanism at each quarter-revolution of the wheel F; and the longest, the intermediate length and shortest studs may be employed to trip the mechanism H at each eighth-revolution of the wheel F. Thus, the device may be arranged for counting one hundred coins, fifty coins and twenty-five coins. On the opposite side of the wheel F are employed five long studs 96, providing for counting forty; five studs 97 of intermediate length, which, in connection with the studs 96, provide for counting twenty; and ten short studs 98, which, in connection with the long studs and studs of intermediate length, provide for counting ten. The manner in which the studs serve to trip the mechanism H and effect disconnection of the power and stoppage of the machine will be explained in detail presently.

The coin-controlled counter-actuating mechanism G will be best understood by reference to Figs. 2, and 12 to 20 inclusive. It comprises a shaft 99 which serves to actuate the master gear-wheel F through the medium of the pinion 92, said shaft having one extremity journaled in the bracket-arm 90, its intermediate and other end portion journaled in bearings 100 and 101 with which the frame-plates 1 and 2 are provided; ratchet-wheels 102, 103 secured on the shaft 99 and separated by a space or groove 104, said ratchet-wheels being formed integral with each other and with the shaft, if de-

sired, and having the groove, or space, 104 between their peripheral portions to accommodate the pawl-retaining plate shown in Fig. 17; ratchet-actuating levers 105 and 106
 5 pivoted on the shaft 99 and equipped, respectively, with pawls 107 and 108 which are held in engagement with the ratchet-wheels by springs 109; a shaft, or bolt, 110 supported in bearings 111 with which the
 10 front edges of the side-plates 1 and 2 are equipped toward their upper ends; a pair of coin-actuated trip-levers 112, 113 pivoted on the shaft 110 and serving normally to hold the pawl-actuating levers out of engagement
 15 with the rollers of the flexible carriers, which rollers serve to actuate the pawl-actuating levers in the counting operation; a division-plate 114 having a perforation 115 through which the shaft 110 extends and having an
 20 upward extension 116 which bears against the front surface of the rail 6 above the shaft 110, said division-plate 114 having a concavity 117 to accommodate the shaft 99, said plate serving as a retainer to hold the pawls
 25 and springs therefor carried by the ratchet-actuating levers on the studs upon which they are mounted; a shaft, or bolt, 118 located beneath the shaft 99 and carried by bearings 119 with which the front edges of
 30 the side-plates 1 and 2 are provided, said shaft extending also through a perforation 120 with which the intermediate rail 6 is provided; coin-pressers 121 and 122 pivoted on the shaft, or bolt, 118 and beneath or be-
 35 hind which the coins are carried by the carriers as the coins approach the coin-actuated trip members; a yoke, or bracket, 123 fixedly secured, by a screw 124, to the rail 6 in front of the shaft 118, said bracket hav-
 40 ing arms projecting at both sides of the rail, each arm carrying a spring-held plunger 125 and an adjustable stop 126; and springs 127 and 128 connecting the ratchet-actuating levers and the coin-actuated trip members.
 45 Each ratchet-actuating lever is equipped near its front end with a stud 129 serving as a mounting for the pawl carried by the lever, and with a stud 130 serving as a mounting for the spring for said pawl. The
 50 studs 129 and 130 of the two ratchet-actuating levers extend toward each other, and the division-plate 114 is located between the ends of said studs, thereby serving as a means for retaining the pawls and springs
 55 against dislodgment. Each of said ratchet-actuating levers has a rearwardly extending arm provided with a curved surface 131 adapted, when the trip is released, to engage a roller of the corresponding flexible carrier.
 60 Each of said levers is further provided with a tooth 132 adapted to engage a tooth 133 carried by the corresponding coin-actuated trip member, as will be readily understood from Figs. 15, 16, 18 and 19. Each of said coin-actuated trip members is approxi-

mately in the form of a bell-crank lever, having a pivotal portion 134, a long arm 135 and a short arm 136. The short arm carries the tooth 133 and is equipped with a stud 137, which, in connection with a stud 138 carried by the ratchet-actuating lever, serves as a means for connecting the spring 127 or 128, as the case may be. By refer-
 70 ence to Fig. 16, it will be noted that the short arm 136, as well as the long arm 135, of the coin-actuated trip member is located in the rear of the shaft 99. The long arms 135 of the trip members normally extend into the grooves 40 of the endless coin-carriers, as shown in Fig. 16, being located immediately beneath the strippers, or coin-deflectors, 42. When the trip member is engaged by a coin 139, as shown in Fig. 15, the short arm of the trip member is released from engagement with the tooth 132 of the ratchet-actuating lever, thereby permitting
 75 the ratchet-actuating lever to be thrown to the position shown in Fig. 15 with the curved rear extremity of the lever in position to be engaged by a roller of the carrier-chain, the pawl carried by the lever being carried, during such movement, into engage-
 80 ment with a fresh tooth of the ratchet-wheel, so that as the carrier-chain moves the ratchet-actuating lever will serve to advance the ratchet-wheel through the space of one tooth, which will, in turn, turn the shaft 99 and the pinion 92 through the space of one tooth, the motion being transmitted to the pinion E of the counting device E through the medium of the master gear F.
 85

As will be understood by reference to Figs. 12 to 15 inclusive, and Fig. 21, the central rail 6 is provided with lateral recesses 140 which receive plates 141 which are se-
 90 cured in place by screws 142; and said central rail is also provided with deeper recesses 143 through which the rear arms of the pawl-actuating levers 105 and 106 may be projected to extend into the path of the rollers of the carrier-chains. The lower
 95 walls 144 of the slots, or recesses, 143 form shoulders affording stops for the ratchet-actuating levers when they are released from the trip members. The front portion of the rail 6 is cut away, or recessed, as indicated at 145 to accommodate the ratchet-wheels. Above the recesses 143 is a recess 146 for the shaft 110 and a recess 147 for the upper
 100 portion of the division, or retainer, plate 114.

Each of the yieldingly-held presser-members 121 and 122 is provided with a hub-portion 148 which is pivoted on the shaft 118 and carries arms 149 and 150 (see Fig. 20) adapted to be engaged, respectively, by the yieldingly-held plunger 125 and the set-screw, or adjustable stop, 126. From the arm 149 extends a curved rib 151 which carries a plate, or bar, 152. The rib 151 has a curved rear surface 153 beneath or behind
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which the coin passes in gaining a position in the rear of the plate 152. It will be understood that the plate 152 will yield or swing forwardly somewhat, according to necessity, as the various sized coins pass beneath or behind the plate. Thus, the presser members 121 and 122 will serve to insure the coins being properly seated in the coin-pockets of the carriers as the coins are carried beneath or past the arms 135 of the coin-actuated trip members. The arms 135 of the coin-actuated trip members have their extremities curved forwardly and downwardly, as indicated at 154, thus adapting them, in connection with the strippers 42, to discharge the coins into the discharge-chutes I. Each of said discharge-chutes has, as shown in Fig. 3, a downwardly and forwardly extending chute-portion 155 and a depending vertical chute-portion 156. The bottom of the chute-section 155 may be equipped with a leather inlay 157, adapted to deaden the noise of and prevent undue wear upon the coins. I have shown the chute-section 156 equipped with hooks 158 which may serve to support bags (not shown) adapted to receive the coins.

The mechanism H which serves to automatically disconnect the motor from the gear mechanism of the machine and apply the brake, at will, comprises (see Figs. 6 and 23) an arm 159 which is connected by a pivot 160 with a forward extension 161 of the tiltable bracket 74 upon which the motor and brake are mounted; a stop 162 carried by said extension 161 and located beneath the pivot 160; a yielding stop, or plunger, 163, which, with a spring 164, is contained in a barrel 165 with which the arm 159 is equipped, said barrel being fitted with a screw-plug 166 through the medium of which the tension of the spring 164 may be adjusted; a key 167 projecting forwardly from and rigidly carried by the arm 159 and through the medium of which the bracket 74 may be swung downwardly to swing the motor to the operative position; a knuckle, or pivot member, 168 supported on a pivot 169 carried by lateral ears 170 with which the arm 159 is equipped, said knuckle member 168 carrying a barrel 171 equipped with a plunger 172, a spring 173, and an adjusting-screw 174; a throw-out lever 175 supported on a pivot 176 (see Figs. 6 and 23) carried by the knuckle-member 168, said lever 175 being equipped in front of its pivot with an arm, or bearing, 177 adapted to engage the spring-held plunger 172; a latch-plate 178 (Figs. 27 and 28) carried by the bracket-arm 90 and located adjacent the periphery of the master wheel F, said plate 178 being provided with a central notch 179 and with notches 180, 181 and 182 flanking said central notch on one side, and with notches 183, 184 and 185 flanking said cen-

tral notch on the other side, a fixed latch-member 186 carried by the bracket 178 and having a slightly curved lower wall 187 adapted to be engaged by a shoulder 188 with which the latch-lever 175 is equipped near its upper end, the curvature of said shoulder 187 being such as to permit the latch-lever to engage it when the upper end of the latch-lever occupies any one of the above enumerated notches; and a series of triggers, or latch-releasing members, 189 corresponding with each of the several notches enumerated except the notch 179, each member 189 being supported on a pivot 190 carried by the bracket 178, and the lower end of said member 189 having a shoulder 191 adapted to engage a shoulder 192 with which the bracket 178 is provided, thereby limiting the rearward swing of the upper ends of the members 189. The form of each trigger 189 is clearly shown in Fig. 30. As appears from Fig. 29, the bracket 178 is recessed centrally on its rear side to accommodate the master gear-wheel F, and is also provided with a series of recesses 193 for the latch-members 189, there being a recess 193 located opposite each of the first-mentioned notches, except the notch 179. Each trigger 189 is provided with a cam-projection 194 adapted to be engaged by a stud, or certain of the studs, carried by the master wheel F. Each trigger has a forwardly projecting upper end 195 which enters the corresponding notch 193 and is adapted to engage the rearwardly turned extremity 196 of the latch-lever 175. It will now be understood that the upper end of the latch-lever 175 may enter any one of the notches 179 to 185 inclusive, while the shoulder 188 of said lever engages the shoulder 187. When the latch-lever 175 occupies the central notch 179, the machine will continue to operate for an indefinite period, and the counting operation will continue as long as coins are carried by the coin-carriers beneath or past the coin controlled counter-actuating mechanism. When the latch-lever 175 occupies any of the other notches which are adapted to receive it, the operation of the machine will be automatically stopped when a predetermined number of coins shall have been counted, the number of coins counted depending upon the notch occupied by the latch-lever 75 and hence upon the number of latch-releasing studs carried by the master wheel F which are adapted to engage the corresponding latch-releasing member in one revolution of said master wheel.

As has been indicated, the pinion, 92 through the medium of which the master wheel F is actuated is splined on the shaft 99. Said pinion is equipped with a knob 197 by means of which the pinion may be thrown out of gear. A spring 198 serves normally to hold the pinion in gear with the

gear-wheel F. This will be understood clearly by reference to Fig. 27.

The operation of the machine may be succinctly stated as follows: The coins to be counted, according to their denomination, are dumped upon the table A¹ or A², as the case may be, and fall or are shoved into the corresponding hopper, or open chamber, 22 or 23. In the illustration given, the coin-carrier B which forms the traveling bottom for the hopper, or open chamber, 22 is adapted to carry dollars and half-dollars; and the flexible carrier B¹ which forms the traveling bottom for the hopper, or open chamber, 23 is adapted to carry coins of smaller denominations. Through the medium of the member 62, the shaft 54 may be shifted to throw either one of the flexible carriers in gear, according to desire. When it is desired to allow the machine to operate indefinitely, the operator depresses the key 167 and places the upper end of the latch-lever 175 in engagement with the central notch 179 of the stationary latch-bracket 178. To permit this action, the latch-lever 175 may be swung in a vertical forwardly extending plane about the pivot 176, and may be swung in a transverse plane about the pivot carried by the ears 170. It will be noted that the plunger 172 will serve to yieldingly maintain the latch-lever 175 in the operative position in any one of the notches adapted to receive it. That is, said plunger 172 will serve to prevent the latch-lever 175 from swinging on the pivot 176, and it will be noted also that the plunger 163 will serve to maintain the arm 159 yieldingly in the position shown in Fig. 6, so that the weight of the key 167 and the latch-lever 175 will not depress the arm 159. It may be stated that the forward extension 161 of the tilting bracket 74 is provided with a stop 199 adapted to engage a stop 200 carried by the pivoted arm 159, thereby to limit the upward swing of the arm 159 with relation to the extension 161 when the latch-lever 175 is not in engagement with the latch-bracket. When the latch-lever 175 occupies the operative position, however, with the friction-disk of the motor in driving engagement, the spring 164 yields, thus allowing the shoulders 199 and 200 to separate, as shown in Fig. 6.

With the latch-lever 175 engaging the central notch 179 of the latch-bracket, the machine will operate indefinitely, since there is no latch-releasing member, or trigger, corresponding with the notch 179. It may be noted that when the key 167 is depressed, thereby tilting the motor forwardly, the brake 73 is carried out of engagement with the rim of the friction-wheel 53 and the friction-disk 77 of the motor shaft is simultaneously thrown into engagement with the rim

of the friction-wheel 53. Thus, motion is transmitted through the gear mechanism C to either the coin-carrier B or the coin-carrier B¹, according to the position of the gear-changing handle 62.

Assuming the coin-carrier B¹ to be in operation, the coins will be caught in the coin-pockets 36 of the carrier at the concave portion of the operative part of the carrier, and the coins will be carried upwardly back of the yielding coin-presser 122 and past the coin-released latch-member 113. As the coin passes beneath or back of the arm 135, it raises the latch-lever 113, thereby releasing the carrier-actuated, ratchet-actuating lever 106 and permitting the rear end thereof to fall into the path of a roller of the carrier-chain. As the carrier-chain continues to move, the ratchet-actuating lever 106 is swung back to its original position thereby actuating the pawl 103, and through the medium thereof, the shaft 99 through which the motion is transmitted to the pinion 92, master gear F and counting device E. At each movement of the shaft 99, one count is registered. When the carrier-chain returns the ratchet-actuating lever 106 to its normal position, the latch-lever 113 is again in position to engage and lock the ratchet-actuating lever out of the path of the rollers of the carrier-chain. In the meantime, the coin has been engaged by the stripper 42 and thrown over the latch-member 113 into the chute-section 155 of the discharge-chute.

When desired, the latch-lever 175 may be set so that the machine will operate to count a predetermined number of coins and will then be automatically stopped. Thus, when the latch-lever is set in the notch 182, as shown in Fig. 27, the machine will operate to count one hundred coins and will then be automatically stopped. This is because the master gear is provided with two hundred teeth and with two long studs 93 at opposite ends of a diameter, so that the trigger 189 corresponding with the notch 182 will be actuated at each half-revolution of the master gear. The trigger corresponding with the notch 181 will be operated by the studs 93 and 94 at each quarter-revolution of the master gear, so that if the latch-lever 175 is set in the notch 181, the machine will operate to count fifty coins. The trigger corresponding with the notch 180 is actuated by the studs 93, 94 and 95 eight times during one revolution of the master gear, so that when the latch-lever 175 occupies the notch 180, the machine will operate to count twenty-five coins. Similarly, when the latch-lever 175 occupies the notch 183, the machine will operate to count ten coins; when the latch-lever occupies the notch 184, the machine will operate to count twenty coins; and when the latch-lever occupies

the notch 185, the machine will operate to count forty coins. When desired, the pinion 92 may be shifted through the medium of the knob 197, thus freeing the master gear F, so that the same may be set at a zero or starting point.

It is noteworthy that each carrier-chain is positively guided during the operative portion of its travel from the lower supporting wheel to the upper supporting wheel through the medium of the front guides disposed between the upper rear portions of the lower wheel and the lower front portion of the upper wheel, the end portions of said guides being substantially tangential to the wheels, and the rollers of the carrier-chain simultaneously engaging the wheels and the end portions of the guides as the chain passes from the lower wheel to the guides and from the guides to the upper wheel. Thus, the machine provides for the utmost smoothness and certainty of operation of the carrier-chains. Attention may again be called here to the fact that the pockets 36 of the carrier-chains are contracted at the concave portion of the carrier-chain and that as the operative portion of the carrier-chain moves upwardly, the carrier-chain straightens, the links swinging somewhat with relation to each other in such a manner as to open or expand the pockets 36. Thus, the individual coin-pockets of the carrier are contracted at the point where the coins are dumped in a heap on the carrier-chain and expanded as the carrier-chain travels, carrying the coins in succession to the coin-controlled counter-actuating mechanism, this principle of operation serving effectually to prevent wedging of the coins in the coin-pockets. This is regarded as a feature of very great importance, contributing, as it does, to an extent which can be appreciated only by those who have had practical experience with coin-counting machines, to the practical and successful operation of the machine.

The feature of arranging flexible endless coin-carriers side by side in substantially parallel relation contributes to the handiness of the machine; and, as will be readily understood, any desired number of coin-carriers may be thus associated together, and provision made for actuating each independently, or all together, as desired. While it is economical construction to employ two flexible coin-carriers having coin-pockets of different size, one carrier adapted to handle coins of the larger denominations and the other adapted to handle coins of the smaller denominations, it will be readily appreciated that, if desired, a coin-carrier may be provided for each coin denomination.

The foregoing detailed description has been given for clearness of understanding

only. Hence, no undue limitation should be understood therefrom, but the appended claims should be construed as broadly as permissible in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, a coin-carrier having coin-pockets of automatically varying size, the bottoms of said pockets being inclined to prevent the accidental dislodgment of the coins therefrom.

2. In a machine of the character set forth, a flexible coin-carrier, having coin-carrying pockets and a groove intersecting the same, in combination with a counting-device, coin-controlled actuating means therefor having a member projecting into the said groove, and a rigidly carried deflector located above said member and adapted to dislodge the coins from the pockets after they have passed said member.

3. In a machine of the character set forth, a flexible coin-carrier having coin pockets of automatically varying size, the body of said pockets being inclined to prevent the accidental dislodgment of the coins therefrom.

4. In a machine of the character set forth, the combination of an endless coin-carrier equipped with coin-pockets, and means for guiding a portion of said carrier through a concave path with the pockets presented at the concavity and then through a relatively straight path.

5. In a machine of the character set forth, a flexible coin-carrier provided at its outer surface with coin-pockets, and means for moving a portion thereof through a concave path with the pockets presented at the concavity.

6. In a machine of the character set forth, an endless, flexible coin-carrier with external coin-pockets, means for moving the same, and means for maintaining, as the carrier travels, a concave section in the carrier at one point with the pockets in the concavity and a substantially straight section thereabove.

7. In a machine of the character set forth, a flexible, link-constructed coin-carrier provided with coin-pockets and having its several coin-pockets formed partially in each of two connected links.

8. In a machine of the character set forth, a flexible, link-constructed coin-carrier, coin-pockets formed in said links, each coin-pocket comprising a recess in the advance portion of one link and a wall at the rear end of the preceding link, the pivots of the links lying in a plane at the inner side of said coin-pockets.

9. In a machine of the character set forth, a flexible, link-constructed coin-carrier hav-

ing coin-pockets formed in said links, each coin-pocket comprising a recess in the advance portion of one link with a sloping bottom wall and a shallow shoulder at the rear end thereof and a shoulder near the rear end of the preceding link.

10. In a machine of the character set forth, a flexible coin-carrier having coin-carrying pockets and adapted to travel during a portion of its traverse in a concave plane, and a groove intersecting the same, in combination with a coin-deflector projecting into said groove.

11. In a machine of the character set forth, a flexible coin-carrier having coin-carrying pockets and adapted to travel during a portion of its traverse in a concave plane, and a groove intersecting the same, in combination with a counting device and coin-controlled actuating means therefor having a member projecting into said groove.

12. In a machine of the character set forth, a link-constructed coin-carrier with its several pockets formed in two adjacent links and a groove intersecting said pockets, said coin-carrier being adapted to travel during a portion of its traverse in a concave plane.

13. In a machine of the character set forth, a link-constructed flexible carrier having coin-pockets and a groove intersecting the same, in combination with a counter, coin-controlled actuating mechanism therefor having a coin-actuated member extending into said groove, and a coin-deflector above said coin-actuated member.

14. In a machine of the character set forth, a flexible link-constructed endless coin-carrier having coin-pockets and laterally projecting rollers, in combination with means for mounting said carrier comprising a frame having guides through which said rollers are adapted to pass.

15. In a machine of the character set forth, a flexible, endless, link-constructed coin-carrier having coin-pockets and laterally projecting guide-members, in combination with a sprocket-wheel having a double set of teeth engaged by said laterally projecting guide-members, and a frame supporting said wheels and having guides receiving said laterally projecting guide-members.

16. In a machine of the character set forth, the combination of a frame, wheels journaled therein, a flexible coin-carrier provided with coin-pockets and having lateral projections, curved guides carried by said frame and having extremities substantially tangential to one wheel and straight portions substantially tangential to the other wheel.

17. In a machine of the character set forth, the combination with an endless, flexi-

ble carrier, of a frame having carrier-guides with concavities at their lower end portions.

18. In a machine of the character set forth, the combination of a pair of endless flexible coin-carriers arranged side by side, wheels supporting said carriers, lateral projections on said carriers, an intermediate guide-rail provided at its sides with guides receiving the adjacent projections of said carriers, and guides at the opposite sides of said carriers receiving the projections thereat.

19. In a machine of the character set forth, the combination of a pair of frame-plates provided at the inner sides of their front portions with carrier-guides, an intermediate guide-rail provided at its sides with guides, lower and upper carrier-supporting wheels, and a pair of flexible, endless coin-carriers mounted on said wheels and having portions engaging said guides.

20. In a machine of the character set forth, the combination of a pair of plates equipped with carrier-guides, an intermediate guide-rail equipped with carrier-guides, bolts connecting said side-plates and the rear or inner portion of said intermediate guide-rail, said bolts equipped with means for spacing the intermediate rail, carrier-supporting wheels, and flexible coin-carriers mounted on said wheels provided with coin-pockets and equipped with lateral projections engaging said guides.

21. In a machine of the character set forth, the combination of a base, a pair of side-plate supported thereon and equipped at their lower ends with forward projections, curved carrier-guides carried by said plates, an intermediate carrier-guide, carrier-supporting wheels journaled at the upper ends and the forward ends of said plates, and flexible coin-carriers mounted on said wheels and having projections engaging said guides.

22. In a machine of the character set forth, the combination of a frame equipped with a curved coin-chute open at the curved portion and equipped with a guide, and a flexible coin-carrier provided with individual coin-pockets and forming a movable bottom for said chute, and lateral projections on said coin-carrier engaging said guides.

23. In a machine of the character set forth, the combination of a frame equipped with a chute having a concave lower portion and a substantially straight upper portion with flanking guides curved at their lower portions and substantially straight at their upper portions, and a flexible coin-carrier provided with coin-pockets and equipped with lateral studs engaging said guides.

24. In a machine of the character set

forth, the combination of a flexible coin-carrier provided with coin-pockets, gear mechanism serving to actuate said coin-carrier, a counting device, carrier-actuated counter-actuating mechanism having a member adapted for actuation by said carrier, and a coin-released latching-member normally holding said last above-mentioned member in the inoperative position.

25. In a machine of the character set forth, the combination of a coin-carrier, links provided with pockets, each several pocket having its walls formed partially in each of two adjacent links, gear mechanism serving to actuate said coin-carrier, a counting device, and coin-controlled counter-actuating mechanism.

26. In a machine of the character set forth, the combination of an endless, flexible carrier provided with coin-pockets, gear mechanism serving to actuate said carrier, a tiltably mounted motor and brake co-acting with said gear mechanism, a counter, and coin-controlled counter-actuating mechanism.

27. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism serving to actuate the same, a counter, coin-controlled counter-actuating mechanism, a tiltably mounted motor and brake co-acting with said gear mechanism, a throwout-lever controlling the position of said motor and brake, and means timed to move with the counter-actuating mechanism and serving to actuate said throwout-lever.

28. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism serving to actuate the same, said gear mechanism equipped with a wheel provided with a friction-rim, a counter, coin-controlled counter-actuating mechanism, a tiltably mounted motor and brake, said motor having a friction-disk located on one side of said wheel-rim and said brake being located on the opposite side of said wheel-rim, and means timed to move with the counter-actuating mechanism and serving to control the position of said motor and brake.

29. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism serving to actuate the same, a counter, coin-controlled counter-actuating mechanism, a motor, means for controlling the driving connection of the motor equipped with a throwout-lever adapted to be set in different positions, and means actuated through the medium of the counter-actuating mechanism and adapted to throw said lever out after the machine has operated for varying periods, according to the position in which said throwout-lever is set.

30. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism serving to actuate the same, a

counter, coin-controlled counter-actuating mechanism, a tiltably mounted motor, a trip-lever controlling the position of said motor, said trip-lever adapted to swing in two planes, means whereby said trip-lever may be set in different positions to maintain the driving connection of the motor, and means actuated through the medium of said counter-actuating mechanism and adapted to throw said trip-lever after different periods of operation of the counter, according to the position in which the trip-lever is preparatorily set.

31. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism through the medium of which the same is actuated, a counter, counter-actuating mechanism, a motor, controlling means for the motor, including a trip-lever, means whereby said trip-lever may be set in different positions, trip-members adapted to actuate said trip-lever, and a master wheel equipped with lateral projections of different lengths adapted to actuate said trip-members different numbers of times, whereby the trip-lever will be thrown out after varying counts have been effected, according to the position in which the trip-lever is preparatorily set.

32. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism for actuating the same, a motor, a counter, coin-controlled counter-actuating mechanism, motor-controlling means equipped with a trip-lever shiftable in two directions, a stationary member equipped with means for holding said trip-lever in different positions, according to the count desired, a master gear actuated through the medium of said counter-actuating mechanism and equipped on both sides with lateral studs of varying length, and a series of trip-members co-acting with said trip-lever and actuated by the studs in whose path they are severally placed.

33. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism for actuating the same, a pivoted motor-bracket, a motor supported thereon and adapted, when said bracket is in one position, to actuate said gear mechanism, a counter, counter-actuating mechanism, a series of trip-members, means actuated through the medium of said counter-actuating mechanism for actuating said trip-members varying numbers of times, a trip-lever co-acting with said trip-members, jointed connections between said trip-lever and said motor-bracket, and tension means between said trip-lever and said motor-bracket.

34. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism for actuating the same, a tiltably

mounted bracket, a motor and brake mounted thereon and co-acting with said gear mechanism, a spring normally maintaining said bracket in position to disconnect the motor and apply the brake, a trip-lever having jointed connection with said bracket, and means for applying tension so as to impart longitudinal thrust to the trip-lever, trip-members adapted to co-act with said trip-lever, a counter, coin-controlled counter-actuating mechanism, and means operated through the medium of said counter-actuating mechanism and serving to actuate said trip-members a different number of times.

35. In a machine of the character set forth, the combination of a coin-carrier, gear mechanism for actuating the same, a motor-bracket, a motor mounted thereon, an arm pivotally connected with said motor-bracket, tension means between the motor-bracket and said arm, a knuckle-member swiveled on said arm, a trip-lever pivoted on said knuckle-member, tension means for the trip-lever carried by said knuckle-member, a series of trip-members adapted to co-act with said trip-lever, a counter, coin-controlled counter-actuating mechanism, and means actuated through the medium of the counter-actuating mechanism and serving to actuate said trip-members.

36. In a machine of the character set forth, the combination of a coin-carrier, a tiltably mounted motor-bracket, a motor mounted thereon and serving to actuate the coin-carrier, an arm pivotally connected with said motor-bracket, tension means between said motor bracket and said arm, tension means serving to tilt the motor-bracket in position to disconnect the motor, a key connected with said arm, a latch-lever connected with said arm, trip-members adapted to co-act with said latch-lever, and means for actuating said trip-members actuated through the medium of said counter-actuating mechanism.

37. In a machine of the character set forth, the combination of a coin-carrier, a tiltably mounted motor-support, a motor mounted thereon, a latch-lever having yielding jointed connection with said motor-support, a latch-bracket provided with a series of notches adapted to receive said trip-lever, a series of trip-members adapted to co-act with said trip-lever, a counter, coin-controlled counter-actuating mechanism, and a master gear actuated through the medium of said counter-actuating mechanism and equipped with a series of lateral studs of different lengths adapted to actuate the respective trip-members lying in their paths.

38. In a machine of the character set forth, the combination of a casing having an open front portion, a flexible coin-carrier equipped with coin-pockets adapted to be presented in succession at said opening, a

shaft extending across said opening and equipped with a ratchet, coin-controlled ratchet-actuating means, a counter, and counter-actuating means actuated by said shaft.

39. In a machine of the character set forth, the combination of a casing having a front portion formed with a chute, a flexible coin-carrier having coin-pockets lying at the bottom of said chute, a shaft extending across said chute and equipped with a ratchet-wheel, a carrier-actuated member serving to actuate said shaft through the medium of said ratchet-wheel, and a coin-released latch-member serving normally to hold the carrier-actuated member out of engagement with the carrier.

40. In a machine of the character set forth, the combination of a casing having a chute at its front portion, a coin-carrier having coin-pockets presented at said chute, a shaft extending across said chute and equipped with a ratchet, a carrier-actuated ratchet-actuating lever, a second shaft, a coin-released latch-member pivoted thereon and engaging said ratchet-actuating lever, a counter, and counter-actuating means actuated by said first-named shaft.

41. In a machine of the character set forth, the combination of a casing, a flexible coin-carrier therein, gear mechanism serving to actuate said coin-carrier, including a friction-wheel located at one side of the casing, a tiltably mounted motor and brake co-acting with said wheel, means for controlling the position of said motor and brake with relation to said wheel, a counter located at the same side of the casing as said motor, a shaft projecting from said casing and geared to said counter, and coin-controlled mechanism for actuating said shaft.

42. In a machine of the character set forth, the combination of a frame, a coin-carrier formed of links pivoted together and having coin-pockets therein mounted on said frame, a motor mounted at one side of said frame and serving to actuate said coin-carrier, a counter supported at the same side of said frame, coin-controlled counter-actuating mechanism having a shaft projecting from the same side of said frame as said counter, a master gear geared to said shaft, a counter, and motor-controlling means controlled by said master gear.

43. In a machine of the character set forth, the combination of a frame, carrier-supporting wheels mounted at the upper and lower portions of said frame, a flexible carrier mounted on said wheels, gear mechanism serving to actuate said carrier, including a friction-wheel having an axis parallel with the axes of said first-named wheels, a motor-bracket having an axis parallel with the axes of said wheels, a motor mounted on said bracket and equipped with a friction-

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wheel co-acting with said first-named friction-wheel, means for controlling the position of said motor-bracket, a counter, and coin-controlled counter-acting mechanism.

5 44. In a machine of the character set forth, the combination of a casing, a flexible coin-carrier therein provided with coin-pockets, gear mechanism for actuating said carrier, including a friction-wheel located
10 at one side of said casing, a fixed bracket projecting from the same side of said casing, a motor-bracket pivotally mounted on said first-named bracket on an axis parallel with the axis of said wheel, a motor mounted
15 on said motor-bracket and having a friction-wheel co-acting with said first-named friction-wheel, means for controlling the position of said motor-bracket, a counter, and coin-controlled counter-actuating mechanism;
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45. In a machine of the character set forth, the combination of a coin-carrier having coin-pockets adapted to travel in an endless path, a counter, counter-actuating
25 mechanism having a carrier-actuated member, and a coin-released latch controlling said carrier-actuated member.

46. In a machine of the character set forth, the combination of a frame having
30 a chute at its front portion, and a flexible coin-carrier having a portion forming the bottom wall of said chute, said flexible coin-carrier composed of links with each of its several coin-pockets having walls on two
35 adjacent links.

47. In a machine of the character set forth, the combination of a pair of side-plates equipped with carrier-guides, a central rail equipped with carrier-guides, said
40 side-plates forming chutes, flexible coin-carriers having portions moving in said guides and forming bottoms for said chutes, and tables flanking said chutes.

48. In a machine of the character set forth, the combination of a plurality of flexible carriers, equipped with coin-pockets,
45 means for moving said carriers in substantially parallel endless paths and for a portion of their traverse through a concave path, gear mechanism for said carriers, a coin counter, and actuating mechanism for said counter having a coin-controlled-controlling member corresponding with each
50 coin-carrier.

49. In a machine of the character set forth, the combination of a plurality of flexible carriers moving in substantially parallel endless paths, and gear mechanism
55 with means for changing the same to operate any desired one of said carriers.

50. In a machine of the character set forth, the combination of a coin-carrier provided with pockets moving in an endless
60 path, said coin-carrier having a groove ex-

tending through said pockets, a coin deflector extending into said groove, a counter, coin-controlled counter-actuating mechanism having a coin-controlled member extending into said groove, and a discharge
70 chute having a receiving portion located between said coin-controlled member and said coin-deflector.

51. In a machine of the character set forth, a casing comprising side-plates and
75 an intermediate rail, the front portions of said side-plates and said intermediate rail affording a chute, and a rim-plate interposed between the upper and rear portions of said side-plates.
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52. In a machine of the character set forth, a casing comprising side-plates and an intermediate rail, the front portions of said side-plates and said intermediate rail affording a chute, a rim-plate interposed
85 between the upper and rear portions of said side-plates, slotted pins engaging the edge portion of said rim-plate, and screws connected with said side-plates and rotatable on said pins.
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53. In a machine of the character set forth, the combination of a frame having a forwardly extending lower portion and a curved chute, wheels journaled in the upper and lower front portion of said frame, a
95 flexible carrier mounted on said wheels, the front portion of said carrier hanging in the form of a loop affording a bottom for said chute, and a guard-plate above said lower front wheel having a tongue depending into
100 said chute.

54. In a machine of the character set forth, the combination with a pair of endless flexible coin-carriers, of a transverse counter-actuating shaft located in front of
105 the same and equipped with ratchet-wheels, pawl-actuating levers flanking said ratchet-wheels and equipped with pawls co-acting with the ratchet-wheels, said pawls located on adjacent sides of said levers, and a re-
110 tainer-plate located between said pawls.

55. In a machine of the character set forth, the combination of a frame comprising side-plates and an intermediate rail, said rail provided with carrier-guides and the
115 front portions of said side-plates provided with carrier-guides, flexible coin-carriers movable in said guides, a transverse counter-actuating shaft journaled in said side-plates in front of said guides, ratchet-wheels on
120 said shaft, ratchet-actuating levers journaled on said shaft, pins projecting toward each other from said levers, pawls mounted on said pins, and a pawl-retaining plate supported by said central rail and extending be-
125 tween said pawls.

56. In a machine of the character set forth, the combination of a frame provided with suitable guides, and a flexible coin-carrier comprising links and pins connecting
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said links, said pins having projecting ends provided with peripheral grooves, guide-rollers mounted on said projecting ends, and split-ring retainers received by said grooves and maintaining said guide-rollers in place.

57. In a machine of the character set forth, the combination of a coin chute having means for receiving coins in bulk, a coin-carrying device forming the bottom of said chute and having coin-pockets adapted to travel in an endless path, a counter, counter-operating mechanism adapted to be driven by said coin-carrying device and normally operatively disconnected therefrom, and means controlled by a coin in one of said pockets for operatively connecting said counter-operating mechanism and said coin-carrying device, whereby said counter-actu-

ating mechanism will be actuated solely through the medium of said coin-carrying device.

58. A coin chute, a coin-carrying device forming the bottom of said chute and having coin-pockets adapted to travel in an endless path, a counter, counter-operating mechanism equipped with an actuating member adapted to be moved by said coin-carrying device, and retaining means for said member adapted to be tripped by coins carried in said pockets, thereby to permit said member to move into position to be actuated by said coin-carrying device.

IVERT LARSEN.

In presence of—

RALPH SCHAEFER,
JOHN WILSON.