

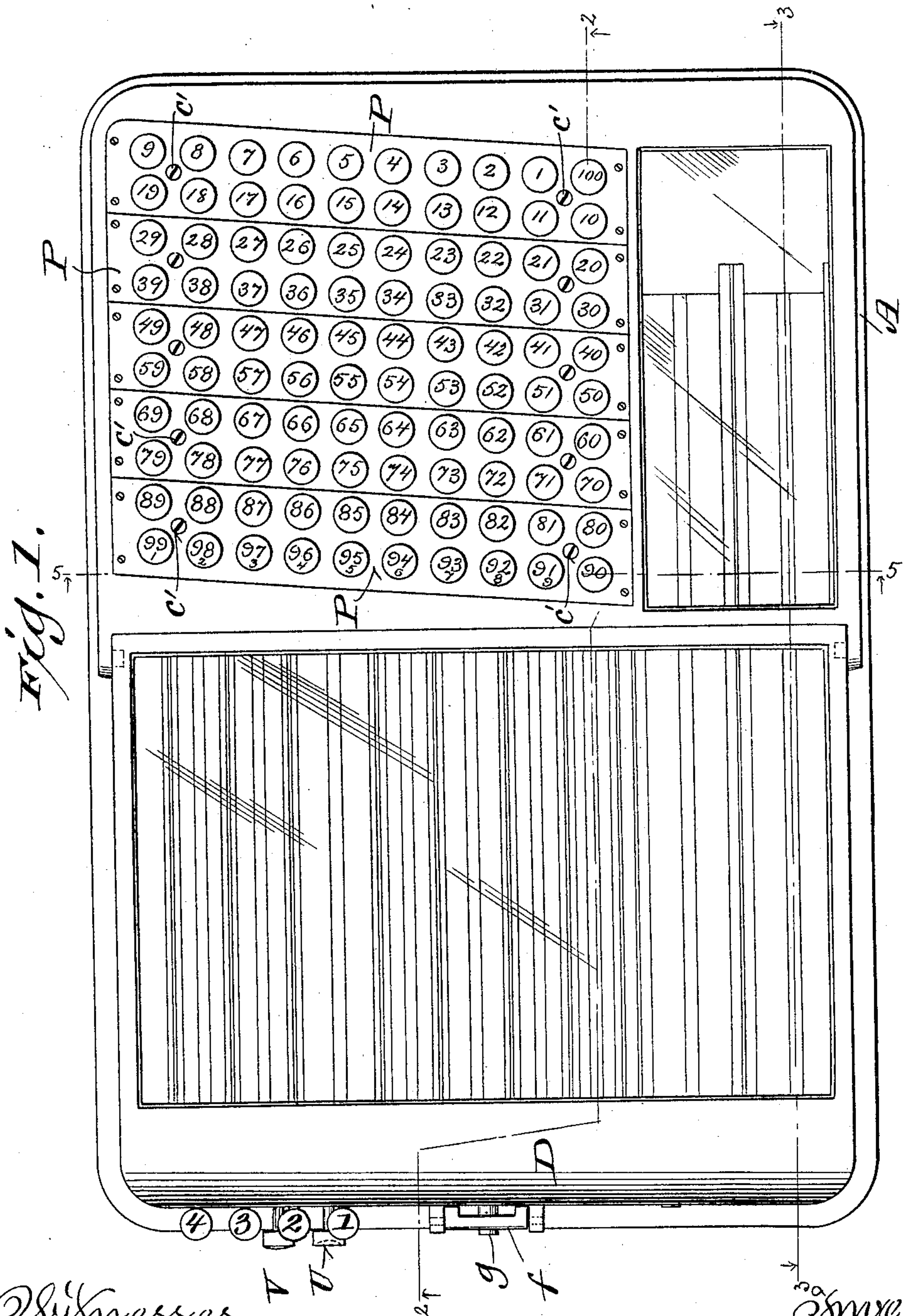
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8 Sheets—Sheet 1.

E. J. BRANDT.
COIN DELIVERY APPARATUS.

No. 604,600.

Patented May 24, 1898.



Witnesses.
Geo. W. Young.
N. E. Oliphant

By ^{for} Inventor
Edward J. Brandt
By H. G. Underwood
Attorney

(No Model.)

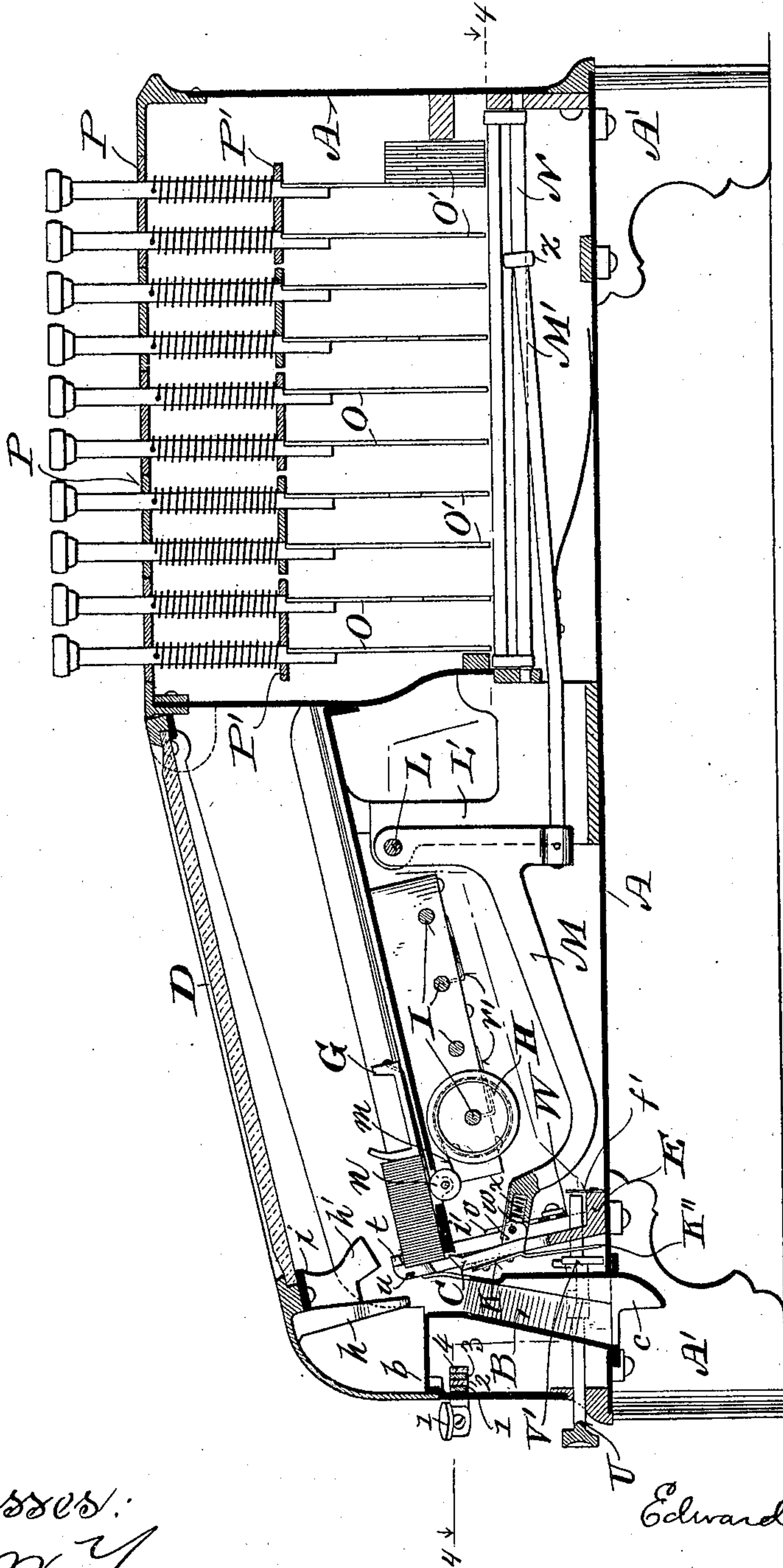
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Fig. 2.



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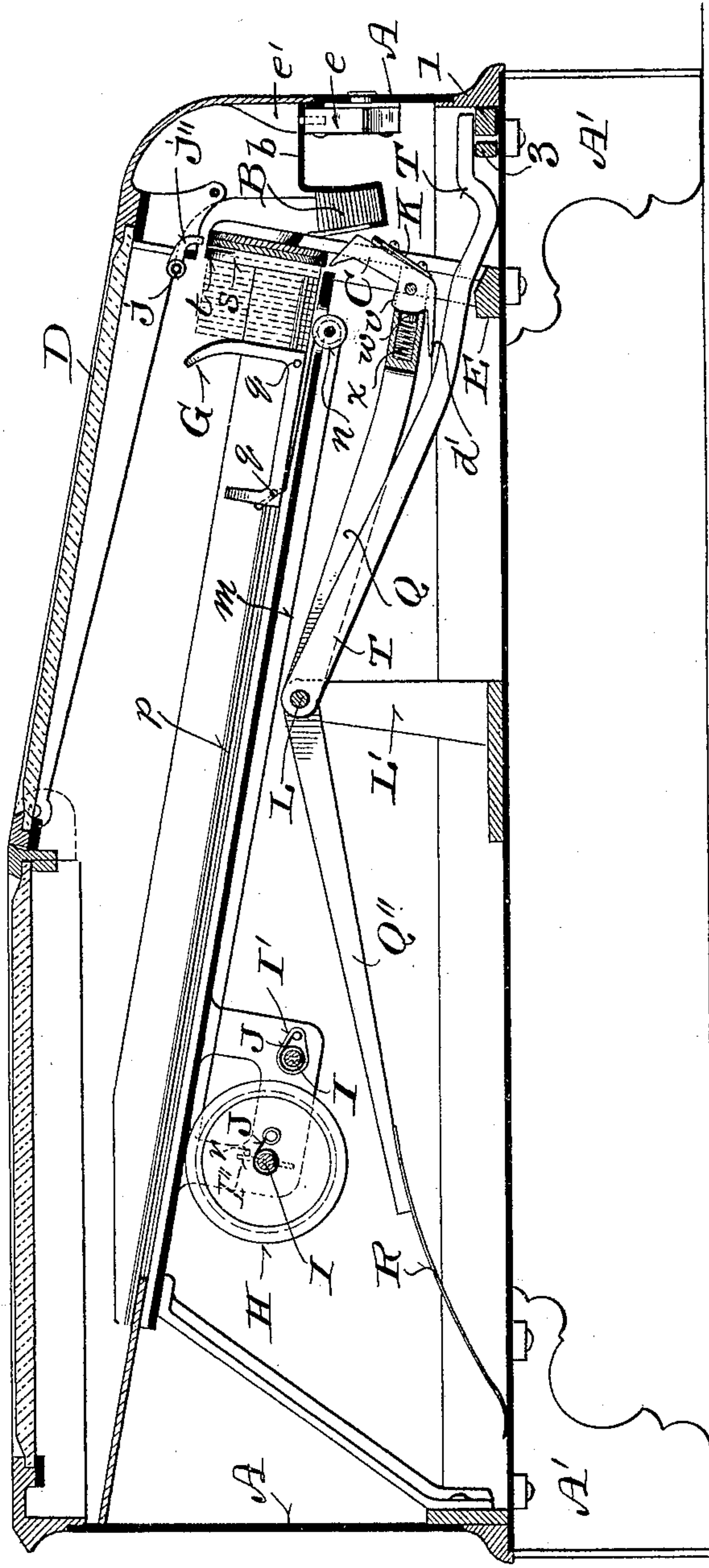
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Fig. 3.



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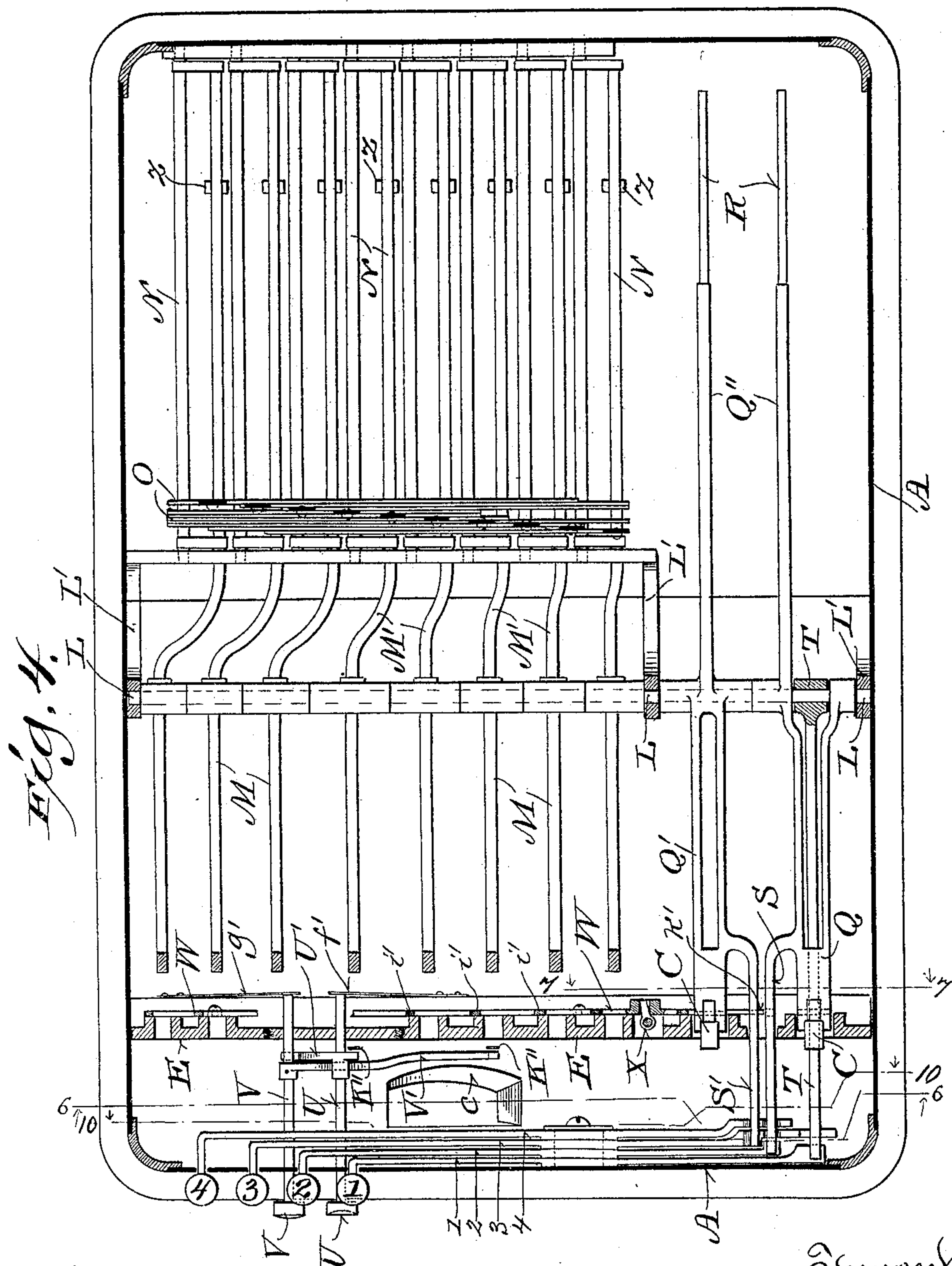
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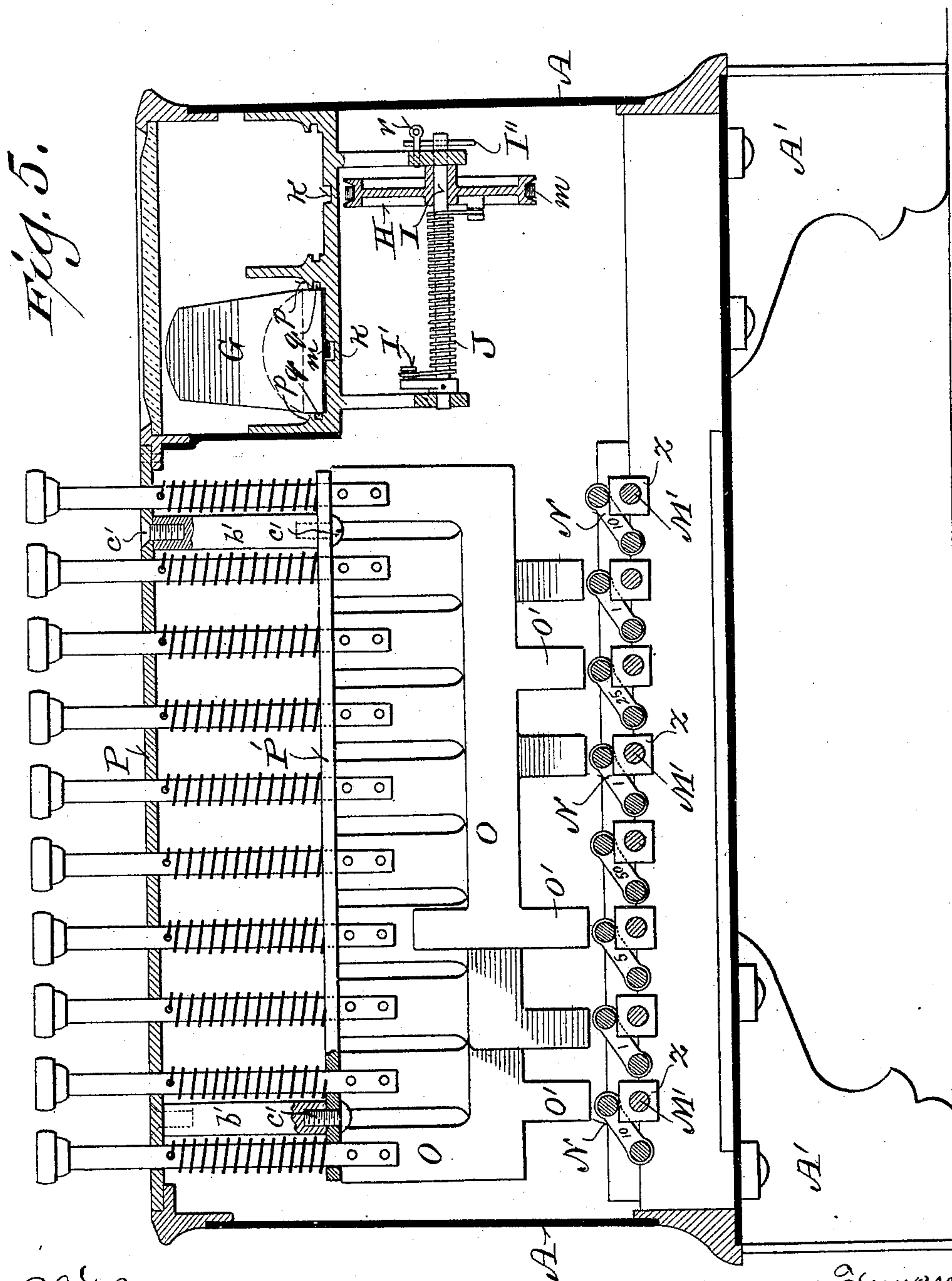
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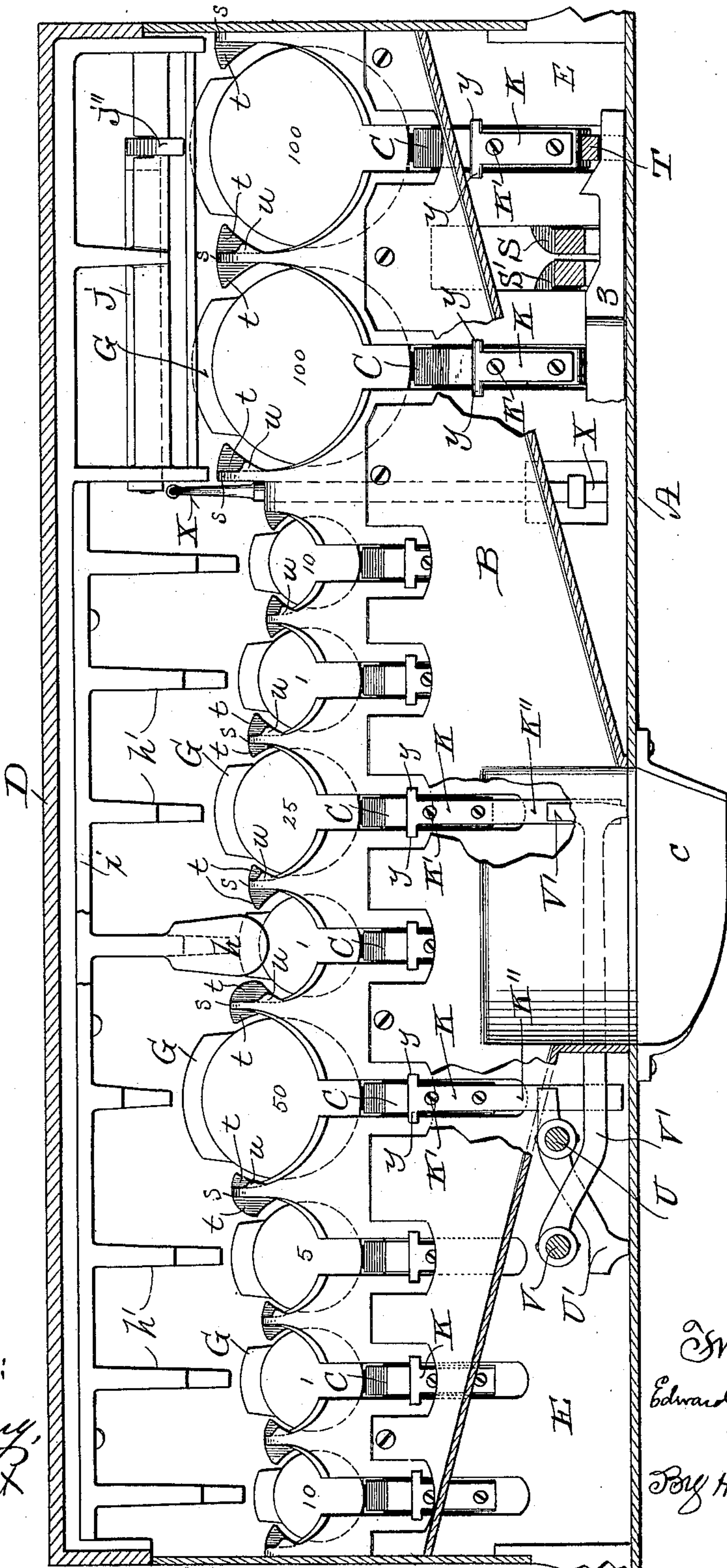
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Fig. 6.



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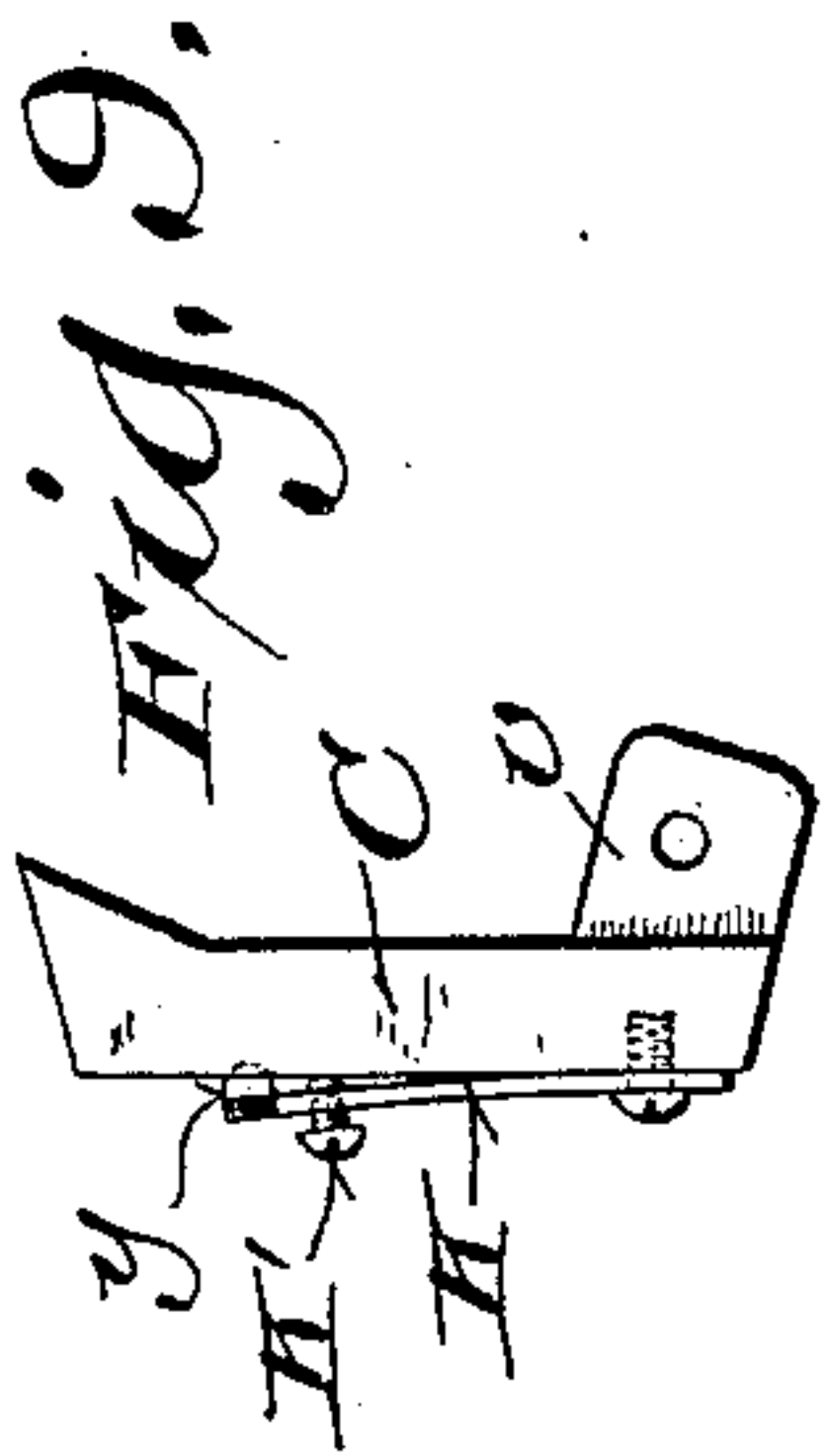


Fig. 7.

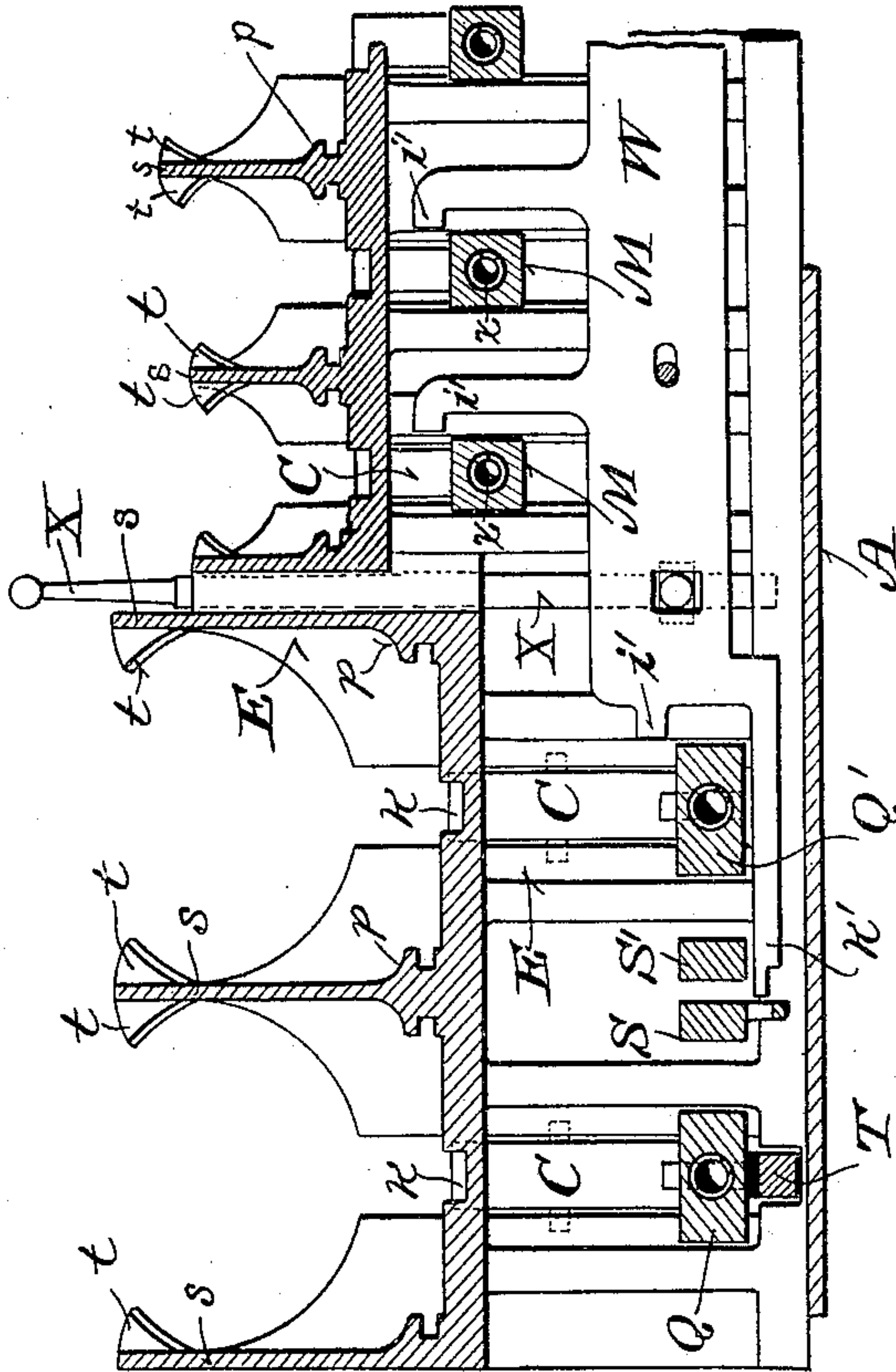
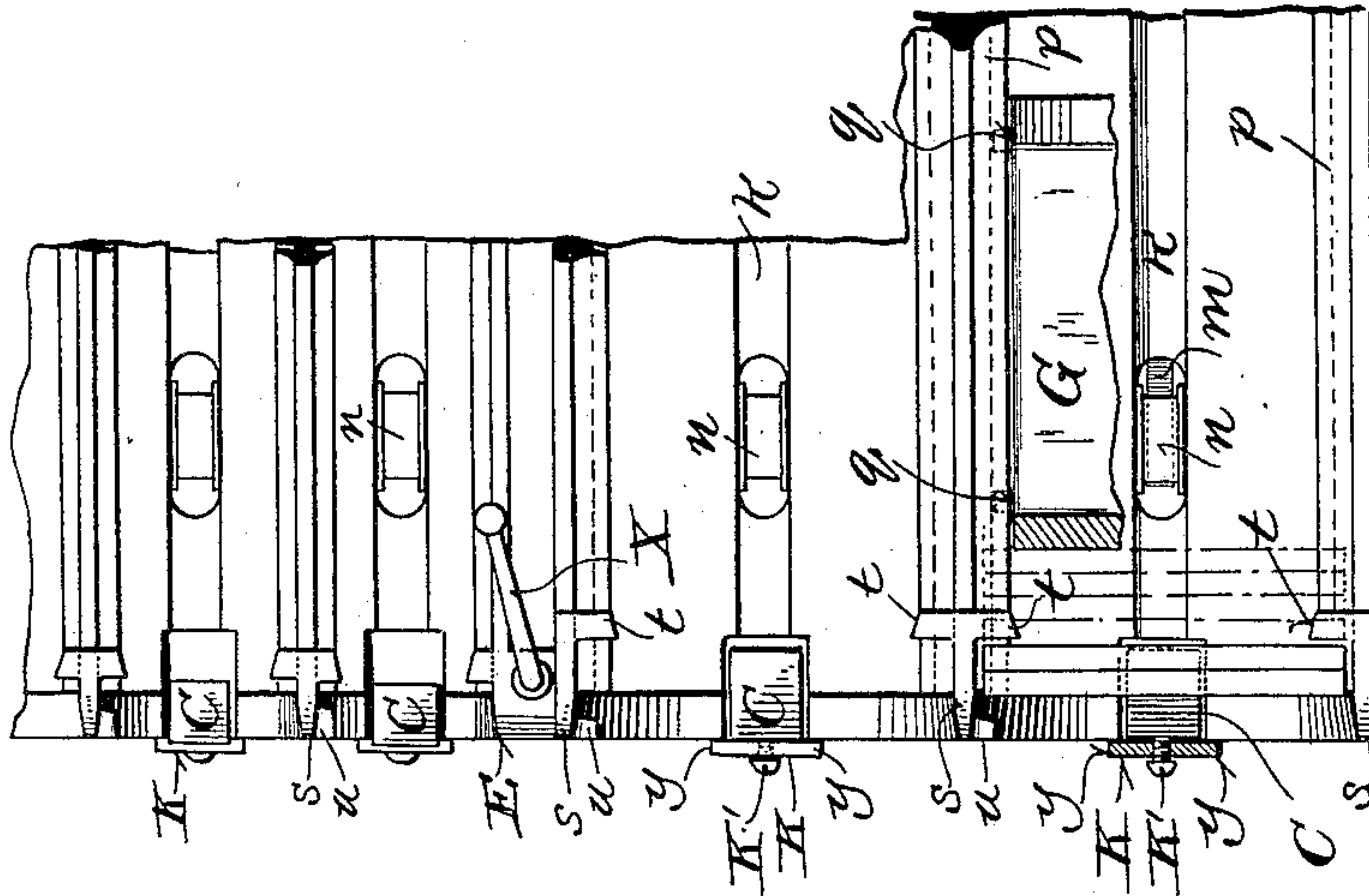


Fig. 8.



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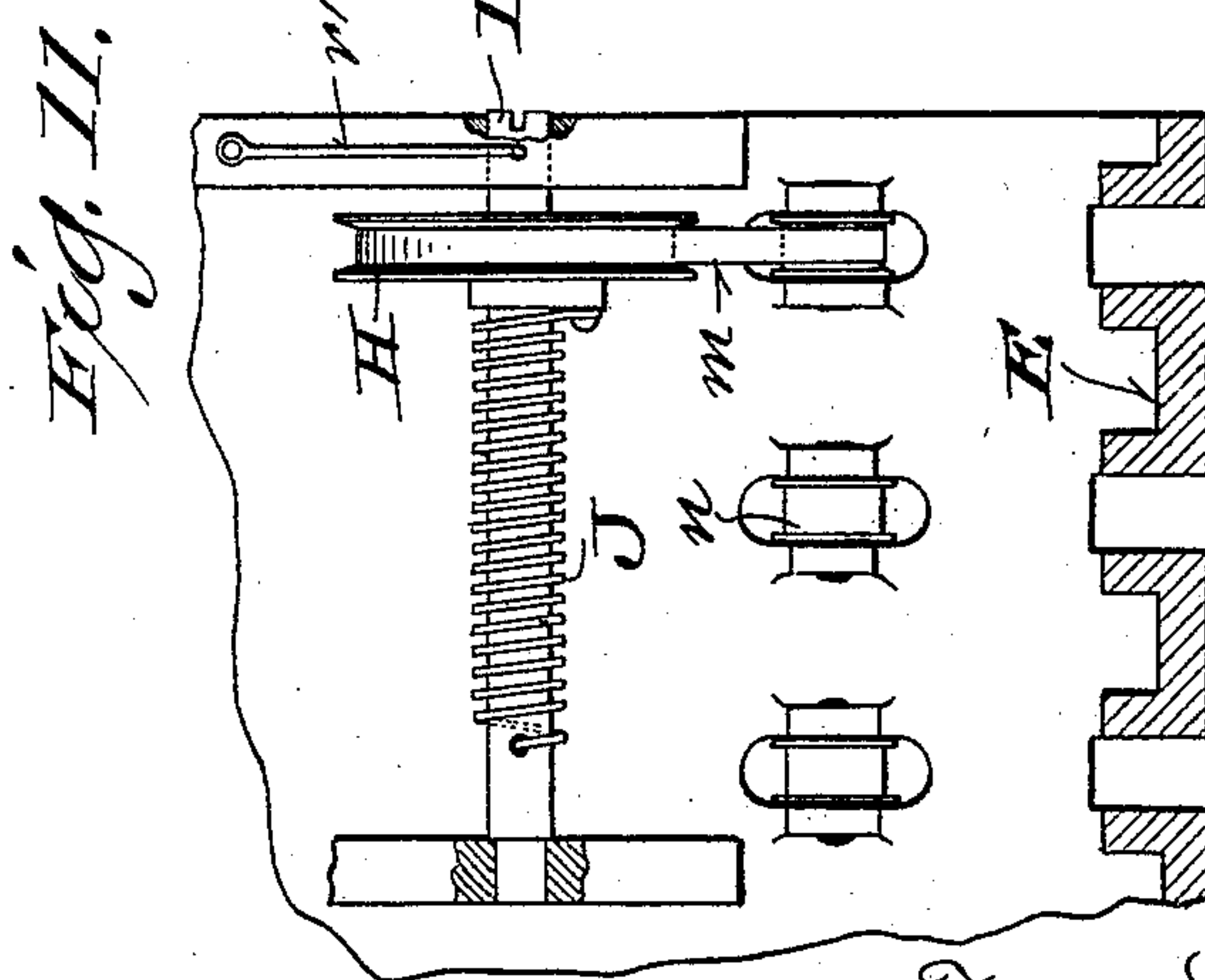
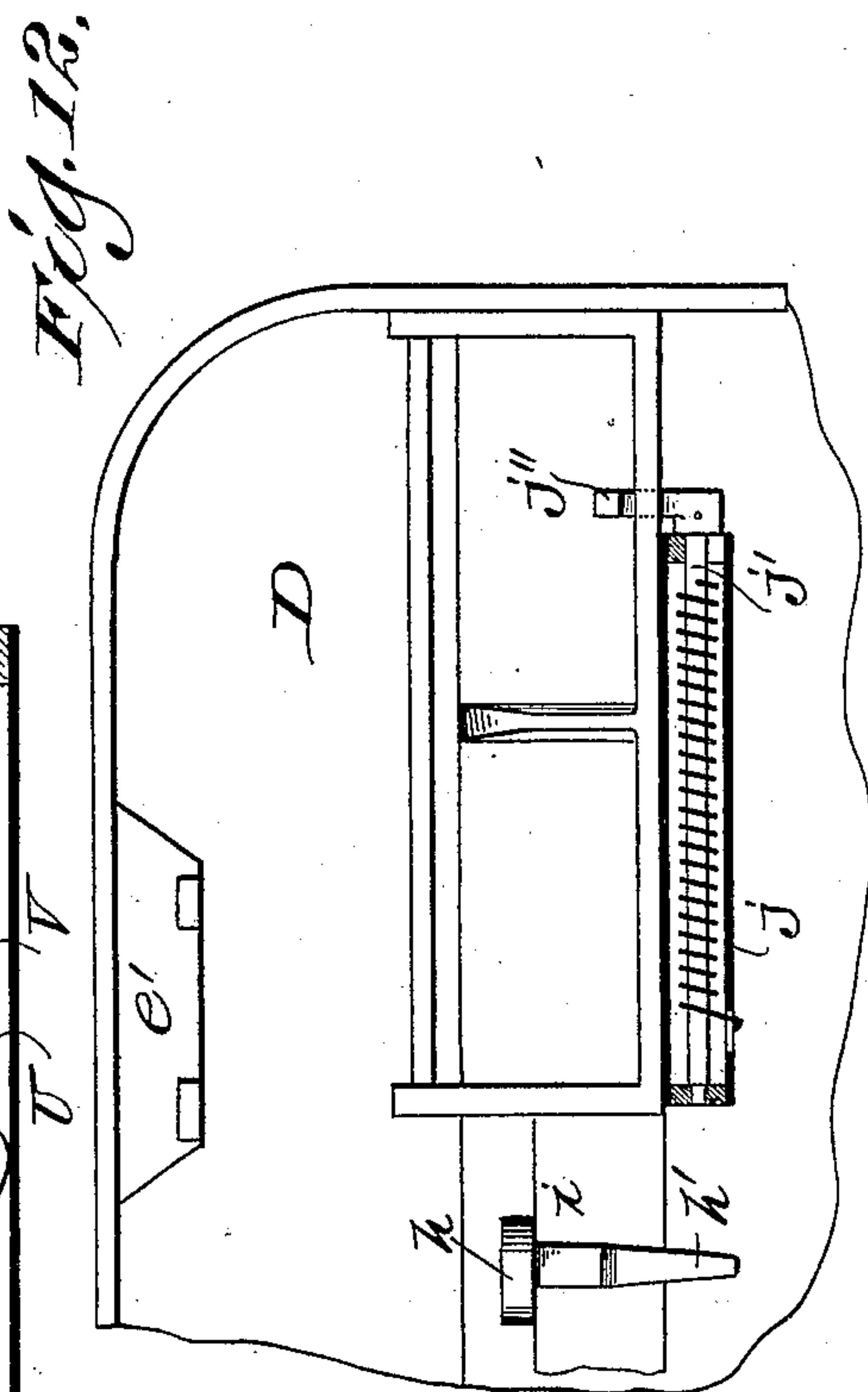
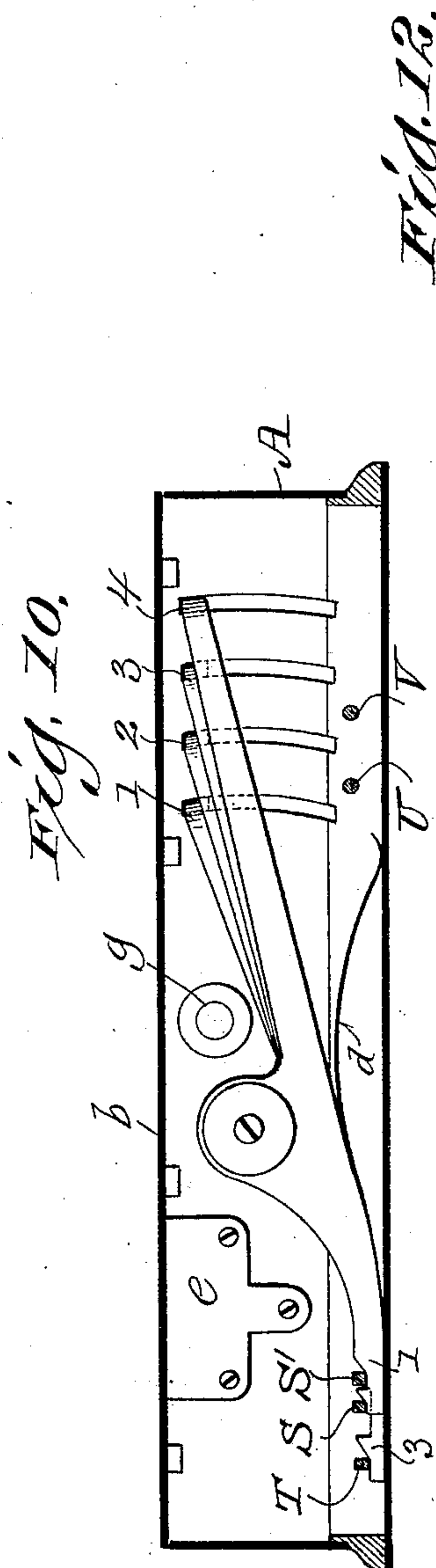
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UNITED STATES PATENT OFFICE.

EDWARD J. BRANDT, OF WATERTOWN, WISCONSIN.

COIN-DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 604,600, dated May 24, 1898.

Application filed July 26, 1897. Serial No. 645,967. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. BRANDT, a citizen of the United States, and a resident of Watertown, in the county of Jefferson and State of Wisconsin, have invented certain new and useful Improvements in Coin-Delivery Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to better that class of coin-delivery apparatus designed for use in banks, stores, and other places of business as a convenience in the paying out of small amounts or in making change; and it consists in certain peculiarities of construction and combination of parts hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a plan view of a partly-glazed-top coin-delivery apparatus embodying my improvements; Figs. 2 and 3, vertical longitudinal sectional views respectively indicated by lines 2 2 and 3 3 in the first figure; Fig. 4, a plan view, partly in horizontal section, on the plane indicated by line 4 4 in the second figure; Fig. 5, a transverse sectional view indicated by line 5 5 in the first figure; Figs. 6 and 7, similar views respectively indicated by lines 6 6 and 7 7 in the fourth figure; Fig. 8, a detail plan view of the discharge end of a series of coin-chutes and mechanism in connection therewith; Fig. 9, a side elevation of one of the spring-controlled pivotal coin-pushers embodied in the apparatus; Fig. 10, a transverse sectional view indicated by line 10 10 in the fourth figure; Fig. 11, a plan view of a coin-follower-controlling mechanism inverted, and Fig. 12 a similar view of a corner of the removable hinged top section of said apparatus.

Referring by letters and numerals to the drawings, A represents a rectangular casing embodying a series of preferably cast-metal sections held in assembly by screws or other suitable means, and the casing may be provided with corner-feet A', as herein shown, in order to stand at a predetermined elevation above a counter or other convenient support. A horizontal upper flange b of a chute B is made fast to the front plate of the casing, and this plate and chute may be removable together to expose other mechanism and per-

mit ready adjustment of the latter. The chute extends the full width of the machine and has inclination in opposite directions from a bottom outlet c toward the sides of said casing. The back wall of the chute is inclined in a rearward direction and has its upper edge provided with a series of vertical notches, whereby clearance is had for a corresponding series of vertically-reciprocative coin-pushers C, hereinafter more particularly set forth.

The front plate of the casing and the flanged front wall of the chute form a housing for a series of levers 1 2 3 4, that have a common fulcrum on said front plate, as best shown in Figs. 4 and 10, and a bow-spring d, made fast to each lever, has contact with the bottom of said casing, as is also shown in Fig. 10. Knob ends of the levers extend through vertically-disposed slots in the front plate of the casing, and said levers operate in conjunction with a coin-lifting mechanism, hereinafter particularly set forth.

In Fig. 3 one section e of a lock is shown secured in the aforesaid housing, and the other section e' of the lock is secured to a glazed and hinged portion D of the casing-top, the chute-flange b being slotted to permit coupling of said lock-sections. For temporarily securing the hinged portion D of the casing-top in closed position the same is provided with a pivotal latch f, engageable with a stud g, projecting from the front plate of the casing.

The notched upper edge of the rear wall of the chute B rests against a plate E, arranged transversely of the casing. This plate is provided with a series of vertical guide-slots engaged by the coin-pushers C, and these slots intersect a corresponding series of concave notches in the upper edge of said plate. The plate-notches are of variable dimensions in proportion to arbitrarily-selected coins of any currency, and the face of each notch is preferably beveled, so as to present a thin rear edge.

Cast with the frame of the hinged portion D of the casing-top are a series of depending fingers h, and a plate i, secured to said frame, has a series of depending angular fingers h' in rear of the ones aforesaid, these fingers h h' being in pairs central of concave notches

in plate E, above the latter, and serving to deflect lifted coin into the aforesaid chute.

Cast with the under portion of the aforesaid hinged frame at one corner of the same in line with the deflector-fingers above specified is a support for a horizontal barrel *j*, in which a spring-controlled stem *j'* of a finger *j''* is journaled, this construction and arrangement of parts being best illustrated in Fig. 12. The friction-finger is limited as to downward movement and comes to rest in a notch of the barrel-support, the function of this finger being hereinafter specified.

Supported in the casing to extend rearward from plate E are a series of inclined coin-chutes, each of which registers with a concave notch in said plate. The bottom of each chute, at its lower end, is a suitable predetermined distance below the plate-notch with which it registers. Therefore it will be understood that said plate constitutes a temporary stop for coins placed in said chute. Each chute has its bottom provided with a central longitudinal groove *k* for the engagement of a flexible strap *m*, connected at one end to a coin-follower G, this strap being extended from a spring-controlled drum H and run over a suitably-mounted pulley *n* through an aperture intersecting the longitudinal groove of said chute. Longitudinal grooves in side ribs *p* at the bottom of each chute constitute guides for lateral lugs *q* on the coin-follower occupying said chute. Each coin-follower is a metal block of any suitable design.

The apparatus herein illustrated is designed for the delivery of United States coin aggregating sums from one cent to five dollars. Two of the follower-engaged chutes are for dollar coin and the remainder of the chutes are for cent, five-cent, dime, quarter, and half-dollar coin, these latter chutes being of equal length less than the dollar-chutes, whereby space is obtained in the rear portion of the casing for a lever-actuating mechanism constituting part of said apparatus. In the present organization of the apparatus three chutes are provided for cents, two for dimes, one for five-cent coins, one for quarters, and one for half-dollars. In Fig. 6 the coins are indicated and indexed.

The coins are set in the chutes between the plate E and followers G and dislodged singly or in combinations by means of the pushers C, actuated by depression of the knob ends of levers 1 2 3 4, and a series of push-pins, the latter being surmounted by buttons on which amounts from one cent to one dollar, inclusive, are numerically indexed, as shown in Fig. 1. One hundred of the push-pins are shown, and the present apparatus is so organized that the depression of any one of ninety-nine of said pins will dislodge one or more coin equal in value to the difference between the amount indexed on the pin-button and one dollar, depression of the 100 push-pin operating to dislodge sufficient coin to make full change for one dollar. As hereinafter

set forth, provision is had for preventing discharge of quarter and half dollar coins in various combinations when change out of twenty-five, fifty, or seventy-five cents is wanted from the apparatus.

The drum H for the strap *m*, connected to each coin-follower G, is loose on a spindle I, journaled in stationary bearings depending from under sides of the chutes, and a spiral spring J on each spindle connects the latter with said drum. Tension of the spring J is finely adjusted by rotation of the spindle I, the latter being held against reverse movement after the adjustment is effected. In Fig. 5 one end of a spring J is shown connected to a crank I', fast on spindle I, the other end of said spring being fast to the hub of a loose drum H, and said spindle has a turning pin I'' extending transversely thereof. In this instance a stop-pin *r* is engaged with an aperture in a spindle-bearing to come in the reverse path of the turning pin I'', whereby the tension-adjustment of the corresponding spring J is maintained.

In Fig. 11 the spindle I is shown provided at one end with a screw-driver notch by which it is turned to adjust tension of the spring J, connected at its ends to loose drum H and said spindle, reverse movement of the latter being prevented by a spring latch-pin *r'*, arranged to have engagement with a recess in the aforesaid spindle through an aperture in a bearing for the same. The means for adjusting and maintaining spring tension on the drums H are varied solely as a matter of convenience, and it is within the scope of my invention to use any suitable means for attaining the desired result in the matter of adjustable spring tension on said drums.

When a follower is pushed back by the insertion of coins in an inclined chute, the unwinding of the attaching-strap from the corresponding drum will proportionately increase the tension of the controlling-spring and the latter, by expansion, keep said follower in snug forcible contact with said coins until all are dislodged from said chute. From the foregoing it will be understood that the pressure of a follower diminishes in proportion to the expulsion of coin from the chute in which it has its travel, this being a desirable feature of the apparatus, as it results in an even smooth tension the full length of said chute.

All the coins being exhausted from a chute, the follower in the latter will come in the path of the corresponding coin-pusher C and prevent vertical lift of the same. Consequently the lever mechanism involved with this coin-pusher cannot be operated until said chute is replenished. The failure of a lever mechanism to respond to the operator signals that a supply of coins in some one or more of the chutes is exhausted, and this is one of the valuable features of my apparatus, inasmuch as it prevents delivery of less than a predetermined value in coin incidental to an op-

eration of either lever 1 2 3 4 or any one of the several push-pins in the series previously mentioned.

Upward-projecting wall extensions *s* of the series of inclined chutes are provided at their lower ends with inwardly-extended under-curved ears *t*, each ear of a pair being of width approximating the thickness of a coin and set back far enough to permit one and in some instances two coins in a corresponding chute to pass into the path of a pusher. These ears operate to prevent lift of the next coin in the rear of the predetermined number in position to be dislodged by an operation of the corresponding pusher; but they offer no obstruction to the placing or removal of a column of coins grasped between a thumb and finger of a person filling or emptying the chutes.

In front of the coin, at the lower terminus of each chute, is a nose *u*, projecting inward from a chute-wall, and incidental to action of a pusher *C* and the pressure of a follower *G* the lifted coin is caused to skew as it clears the edge of the corresponding notch in plate *E*. Consequently said coin is automatically prevented from tipping forward and standing at a slant on said pusher should the latter be slowly lifted or retarded in its return to normal position. Therefore it is evident that the aforesaid coin will be automatically dislodged edgewise into the delivery-chute *B* as soon as it clears said plate-notch, the deflector-fingers *h h'*, above specified, aiding in the accomplishment of the above result, although it is not absolutely necessary that there be always a hinged cover portion for the casing provided with said deflector-fingers.

Each of the coin-pushers *C* is substantially similar to the one shown by Fig. 9 as consisting of a bevel-top finger having an angular rear lug *v* at its lower end in pivotal connection with an end of a lever against a plunger *w*, opposing a spiral spring *x* under tension in a socket in said end of the lever, this connection being illustrated in Fig. 2. A spring-plate *K* is made fast to the lower end of each coin-pusher in front of the latter, and lateral ears *y* at the free end of the spring-plate bear against the front of the slotted and notched plate *E* stationary in the casing. A set-screw *K'*, adjustable in each spring-plate *K* against the coin-pusher in connection therewith, operates to effect pivotal adjustment of the pusher and thus regulate the projection of its point into a vertical slot of plate *E*, the corresponding spring *x* operating by expansion to hold said pusher up to its work.

All the coin-pusher levers are hung on a rod *L*, supported by standards *L'* in the casing, and the levers *M* for pushers operative on coins of less value than one dollar have spring-supported crank-rod extensions *M'*, provided with rear heads *z* in opposition to rockers *N*, herein shown as individually comprising a pair of parallel rods in rigid link connection, one rod in each pair being mount-

ed in suitable bearings within said casing. In Fig. 5 these rockers are indexed to correspond with the coin arrangement shown in Fig. 6.

The rockers are actuated by feet *O'* of a series of plates *O*, set edgewise in the casing and connected to the push-pins above specified, these push-pins being spring-controlled and vertically reciprocative, as best shown in Fig. 5. It is preferable to have the push-pins in series of twenty, guided by a pair of parallel horizontal plates *P P'*, spaced apart by vertical stems *b'*, held in place by screws *c'*, as is also shown in Fig. 5, the upper plate in each pair constituting a top section of the casing.

By this construction and arrangement of parts the assembly of the apparatus is facilitated and provision is had for ready change of combinations in the coin-delivery system. Depression of any push-pin causes the foot or feet *O'* of a corresponding plate *O* to operate an equivalent number of rockers *N*, thus tilting a like number of levers *M*, having coin-pushers *C* in connection therewith. The levers *Q Q'*, carrying pushers *C* for dollar coins, have rear rod extensions *Q''*, connected by bow-springs *R* with the bottom of the casing. The lever *Q* has a forward finger *S* and the lever *Q'* a similar finger *S'*, as clearly illustrated in Fig. 4. The rear end of lever *Q'* is in the form of a yoke, and loose on fulcrum-rod *L*, between the ends of the yoke, is a tripper *T*, that is lifted by either of the levers 1 3 in the series above described. Lever 2 of said series lifts on finger *S* of lever *Q* and lever 4 lifts on the fingers *S S'* of both levers. The tripper *T* operates upon a foot *d'* of the coin-pusher in connection with lever *Q* and tilts said pusher outward to clear the inner one of two coins against which it would otherwise operate. Therefore it will be understood that when lever 1 is operated one dollar will be dislodged by the coin-pusher in connection with lever *Q*, that has upward lift with said tripper. If lever 2 be operated, the tripper will remain idle and two dollars will be dislodged by lift of lever *Q*. If lever 3 be operated, the tripper *T* will be brought into action. Therefore lift of lever *Q* will dislodge one dollar simultaneous with the dislodgment of two dollars incidental to lift of lever *Q'*, and if lever 4 be operated said tripper will remain idle, the coin-pushers of the then lifted levers *Q Q'* operating to dislodge two dollars each. The finger *j''* of spring-controlled stem *j'* operates to resist frictional lift of the coin immediately in rear of the one pushed up incidental to lift of trip *T* with lever *Q*; but this resistance is overcome when the coin-pusher of said lever operates upon both of said coins.

Each of the spring-plates *K*, in connection with the pushers *C* for quarter and half dollar coins, is shown as having a tail extension *K''* in opposition to a lateral arm of a horizontal push-pin reciprocative in guide-aper-

tures formed in the front plate of the casing and the plate E aforesaid.

The horizontal push-pins U V are best shown in Fig. 4, and suitably-arranged flat springs f' g' , opposing inward movement of said pins, operate to automatically return the same to normal position. The lateral arm U' of push-pin U operates against the tail extension of the spring-plate in connection with the pusher for half-dollar coins and trips said pusher out of working position when said pin is moved inward. The lateral arm V' of push-pin V has contact with the front of arm U' of pin U and operates against the tail extension of the spring-plate in connection with the pusher for quarter-dollar coins. Consequently inward movement of said pin V will operate to bring the quarter and half dollar coin pushers simultaneously out of working position. By means of the push-pin mechanism latterly described coins to the value of fifty or seventy-five cents may be retained in the apparatus as part of one dollar when making change for the difference between a sale and an amount more than ten cents and less than one dollar given in payment. In other words, if a sale to the amount of thirteen cents be made and a quarter given by the buyer the push-pin V will be operated to cause retention of seventy-five cents in the apparatus when push-pin 13 is depressed. Therefore the change delivered from chute B into the hand of the operator will be the difference between the remaining quarter of one dollar and the amount of sale. If there be a sale amounting to thirty-seven cents and one-half dollar given in payment, operation of push-pins U and 37 will give the correct change from the apparatus. If a sale amounts to sixty-one cents and seventy-five cents be paid by the buyer, operation of push-pins V and 61 will result in the delivery of the correct change.

From the foregoing it will be seen that when the apparatus is schemed on a predetermined unit of any currency provision may be had for facilitating computation of change out of certain payments less than the unit, it being possible to indefinitely multiply the system of push-pins U V and the mechanism in connection therewith.

The buttons shown on the outer ends of push-pins U V are of preferably contrasting face, one being concave and the other convex, whereby the operator may readily determine either of said pins by touch, and these buttons may be otherwise distinguished from each other.

According to the scheme herein particularly set forth, if one dime be given in payment of a sale amounting to less than ten cents the push-pin corresponding to the difference between this sale and one dollar is operated to obtain the correct change from the apparatus.

As a matter of convenience the row of push-pins 91 to 99, inclusive, are reversely numbered 1 to 9 to facilitate making change between

one dime and a less number of cents. Should one dollar be given on a sale amounting to ten cents, an operation of push-pin 90 will give the correct change.

To prevent operation of levers 1 2 3 4 M Q Q', a lock for the same is provided, and, as clearly shown in Figs. 4 and 7, this lock may consist of a longitudinally-reciprocative transverse plate W, controlled by a vertical crank-rod X in connection therewith, this plate being provided with stop-lugs z' , arranged to be brought over all of the aforesaid levers except the one Q, the finger S of the latter lever being provided with an eye for the engagement of a prong extension k' of the reciprocative plate.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A coin-delivery apparatus comprising a suitable casing, a series of inclined coin-chutes in the casing, a notched plate at the lower ends of the chutes constituting a temporary stop for the coin, a coin-follower in each of said chutes, suitably-arranged permanently-located spring-controlled drums in flexible strap connection with the coin-followers, and pusher mechanism operative to lift coin from the chutes into register with notches of the aforesaid plate, these notches being of such contour and dimension as will permit escape of the lifted coin.

2. A coin-delivery apparatus comprising a suitable casing, a series of inclined coin-chutes in the casing, a notched plate at the lower ends of the chutes constituting a temporary stop for the coin, a coin-follower in each of said chutes, suitably-arranged permanently-located spring-controlled drums in flexible strap connection with the coin-followers, a pusher mechanism operative to lift coin from the chutes into register with notches of the aforesaid plate, and deflectors for the lifted coin, said notches being of such contour and dimensions as will permit escape of said lifted coin.

3. A coin-delivery apparatus comprising a suitable casing, a series of inclined coin-chutes in the casing, a suitably-notched plate at the lower ends of the chutes constituting a temporary coin-stop, a coin-follower in each of said chutes, suitably-arranged permanently-located spring-controlled drums in flexible strap connection with the coin-followers, a series of lever-controlled pushers operative to eject coin from the aforesaid chutes, and lever-actuating mechanism comprising a series of rockers and a series of reciprocative edgewise plates having feet operative on the rockers.

4. A coin-delivery apparatus comprising a suitable casing, a series of inclined coin-chutes in the casing, a suitably-notched plate at the lower ends of the chutes constituting a temporary coin-stop, a delivery-chute in front of the plate, a coin-follower in each of said chutes, suitably-arranged permanently-lo-

cated spring-controlled drums in flexible strap connection with the coin-followers, a series of lever-controlled pushers operative to eject coin from the aforesaid chutes, and lever-actuating mechanism comprising a series of rockers and a series of reciprocative edgewise plates having feet operative on the rockers.

5. A coin-delivery apparatus comprising a suitable casing, a series of inclined coin-chutes in the casing, a suitably-notched plate at the lower ends of the chutes, constituting a temporary coin-stop, a coin-follower in each of said chutes, suitably-arranged permanently-located spring-controlled drums in flexible strap connection with the coin-followers, a series of lever-controlled pushers operative to eject coin from certain of the chutes, lever-actuating mechanism comprising a series of rockers and a series of reciprocative edgewise plates having feet operative on the rockers, other lever-controlled pushers operative to eject coin from the remaining chutes of the series, and a multiple lever-and-trip mechanism operative in conjunction with the latter pushers.

6. A coin-delivery apparatus comprising a series of inclined coin-chutes, a suitably-notched plate at the lower ends of the chutes constituting a temporary coin-stop, an automatic pressure-exerting coin-follower in each of said chutes, a series of lever-controlled pushers operative to eject coin from the aforesaid chutes, lever-actuating mechanism comprising a series of rockers and a series of reciprocative edgewise plates having feet operative on the rockers, and a longitudinally-reciprocative crank-controlled plate provided with stop-lugs arranged to be brought in position to pusher-levers.

7. A coin-delivery apparatus comprising a series of inclined coin-chutes, a suitably-notched plate at the lower ends of the chutes constituting a temporary coin-stop, an automatic pressure-exerting coin-follower in each of said chutes, a series of lever-controlled coin-pushers operative to eject coin from certain of the chutes, lever-actuating mechanism comprising a series of rockers and a series of reciprocative edgewise plates having feet operative on the rockers, other lever-controlled pushers operative to eject coin from the remaining chutes of the series, a multiple lever-and-trip mechanism operative in conjunction with the latter pushers, and a longitudinally-reciprocative crank-controlled lock-plate for all the pusher-levers.

8. A coin-delivery apparatus comprising a series of inclined coin-chutes, a suitably notched and slotted plate at the lower ends of the chutes constituting a temporary coin-stop, an automatic pressure-exerting coin-follower in each of said chutes, a series of adjustable lever-controlled pivotal coin-pushers engaging the plate-slots, and suitable mechanism for operating single levers and combinations of levers.

9. A coin-delivery apparatus comprising a series of inclined coin-chutes, a suitably notched and slotted plate at the lower ends of the chutes constituting a temporary coin-stop, an automatic pressure-exerting coin-follower in each of said chutes, a system of levers, coin-pushers having pivotal spring-controlled connection with the levers and engaged with the plate-slots, a spring-plate secured at one end to each coin-pusher and provided with lateral ears opposing the plate aforesaid, a set-screw adjustable in the spring-plate to bear against the corresponding coin-pusher, and suitable mechanism for operating single levers and combinations of levers.

10. A coin-delivery apparatus comprising a series of inclined coin-chutes, a suitably notched and slotted plate at the lower ends of the chutes constituting a temporary coin-stop, an automatic pressure-exerting coin-follower in each of said chutes, a series of lever-controlled pivotally-adjustable coin-pushers engaging the plate-slots, suitable mechanism for operating single levers and combinations of levers, and a longitudinally-reciprocative crank-controlled lock-plate for said levers.

11. A coin-delivery apparatus comprising a series of inclined chutes, a temporary coin-stop at the lower ends of the chutes, an automatic power-exerting coin-follower in each of said chutes, a series of lever-controlled coin-pushers, suitable mechanism for operating single levers and combinations of levers, and other suitable mechanism operative to throw one or more coin-pushers of a combination out of working position.

12. A coin-delivery apparatus comprising a series of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, an automatic power-exerting coin-follower in each of said chutes, a series of spring-controlled pivotally-adjustable coin-pushers, suitable mechanism for operating single coin-pushers and combinations of the same, and other suitable mechanism operative in conjunction with certain of said coin-pushers to throw the same out of working position.

13. A coin-delivery apparatus comprising a series of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, an automatic power-exerting coin-follower in each of said chutes, a series of spring-controlled pivotal coin-pushers, suitable mechanism for operating single coin-pushers and combinations of the same, and spring-controlled push-pins operative in conjunction with certain of said coin-pushers to throw the same out of working position.

14. A coin-delivery apparatus comprising a series of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, chute-engaging coin-followers, flexible straps connected to the coin-followers and trained on pulleys through apertures in the chute-bottoms, spindles journaled in bearings under said chutes, loose drums on the spindles

in connection with the straps, spiral springs on said spindles connecting the latter with said drums, and suitable means for dislodging coin from the lower ends of the aforesaid chutes.

15. A coin-delivery apparatus comprising a series of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, chute-engaging coin-followers, spindles journaled in bearings under the chutes, loose drums on the spindles in flexible strap connection with the coin-followers, spiral springs on the spindles connecting the latter with said drums, stops for retaining said spindles in rotary adjusted position to vary spring tension, and suitable means for dislodging coin from the lower ends of the aforesaid chutes.

16. A coin-delivery apparatus comprising a series of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, chute-engaging power-exerting coin-followers, a fulcrum-rod, a series of levers supported on the rod and provided with rear crank-rod extensions, a series of rockers operative on the said lever extensions, reciprocative edgewise plates having feet operative on the rockers, and pushers having pivotal spring-controlled connection with forward ends of the levers under coin in the lower ends of the aforesaid chutes.

17. A coin-delivery apparatus comprising a series of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, chute-engaging power-exerting coin-followers, a series of levers having a common fulcrum, crank-rods extended rearward from certain of the levers, rockers operative on the crank-rods, reciprocative edgewise plates having feet operative on the rockers, the remainder of the levers provided with spring-controlled rear rod extensions, a pusher having spring-controlled pivotal connection with each lever under coin in the lower ends of the aforesaid chutes, a coin-pusher trip device on the fulcrum-rod, and a system of multiple levers operative in conjunction with the trip and those of the aforesaid levers provided with spring-controlled rod extensions, the working faces of the pushers in connection with the latter levers being of width approximating the thickness of a plurality of coin.

18. A coin-delivery apparatus comprising a pair of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, chute-engaging power-exerting coin-followers, levers carrying spring-controlled pivotal pushers each of which opposes two coins at the lower end of a chute, a tripper operative to bring one of the pushers out of opposition to the innermost coin normally in line therewith, and a series of four tilt-levers operative in conjunction with the tripper and aforesaid levers to effect an ejection of one, two, three or four coins from the aforesaid chutes.

19. A coin-delivery apparatus comprising a pair of inclined coin-chutes, a temporary coin-stop at the lower end of each chute, chute-

engaging power-exerting coin-followers, a pair of levers carrying spring-controlled pivotal pushers arranged to oppose two coins at the lower end of a chute, a tripper operative to bring one of these pushers out of opposition to the innermost coin normally in line therewith, a tilt-lever operative to actuate the tripper and that one of the pusher-levers carrying the tripped coin-pusher, a second tilt-lever operative to actuate said pusher-lever independent of the tripper, a third tilt-lever operative to actuate said tripper and both pusher-levers, and a fourth tilt-lever operative to actuate both pusher-levers independent of the tripper.

20. A coin-delivery apparatus comprising a suitable casing, a series of inclined chutes in the casing, a temporary coin-stop, at the lower end of each chute, chute-engaging power-exerting coin-followers, a system of levers carrying pushers operative to eject coin from said chutes, a series of lever-actuating rockers, edgewise plates having feet operative on the rockers, spring-controlled push-pins connected to the plates in successive series, and a pair of suitably spaced and connected horizontal guide-plates for each series of pins, the upper guide-plate in each pair constituting a top section of said casing.

21. A coin-delivery apparatus comprising a series of inclined chutes, a temporary coin-stop at the lower end of each chute, chute-engaging power-exerting coin-followers, ejector mechanisms operative on single coin and combinations of coins, and stop-ears extending inward from walls of each chute in opposition to the coin next in rear of a predetermined number in position to be acted upon by ejector mechanism.

22. A coin-delivery apparatus comprising a series of inclined chutes, a temporary coin-stop at the lower end of each chute, chute-engaging power-exerting coin-followers, ejector mechanisms operative on single coin and combinations of coins, and chute-wall noses arranged to oppose foremost coin of each column and skew the same as it clears the temporary stop incidental to action of ejector mechanism.

23. A coin-delivery apparatus comprising a series of inclined chutes, a temporary coin-stop at the lower end of each chute, chute-engaging power-exerting coin-followers, ejector mechanisms operative on single coin and combinations of coins, stop-ears extending inward from chute-walls in opposition to the coin next in rear of a predetermined number in position to be acted upon by ejector mechanism, and chute-wall noses arranged to oppose foremost coin of each column and skew the same as it clears the temporary stop incidental to action of ejector mechanism.

24. A coin-delivery apparatus comprising an inclined coin-chute, a temporary coin-stop at the lower end of the chute, a chute-engaging power-exerting coin-follower, a pivotal pusher in normal opposition to two coins in

the lower end of the chute, a tripper operative to bring the pusher out of opposition to the innermost coin normally in line therewith, a spring-controlled finger arranged to resist
5 frictional lift of the latter coin, suitable mechanism for effecting joint action of the tripper and pusher, and other suitable mechanism for actuating the pusher independent of the tripper.

In testimony that I claim the foregoing I do have hereunto set my hand, at Watertown, in the county of Jefferson and State of Wisconsin, in the presence of two witnesses.

EDWARD J. BRANDT.

Witnesses:

JESSE STONE,
ROBT. DENT.