

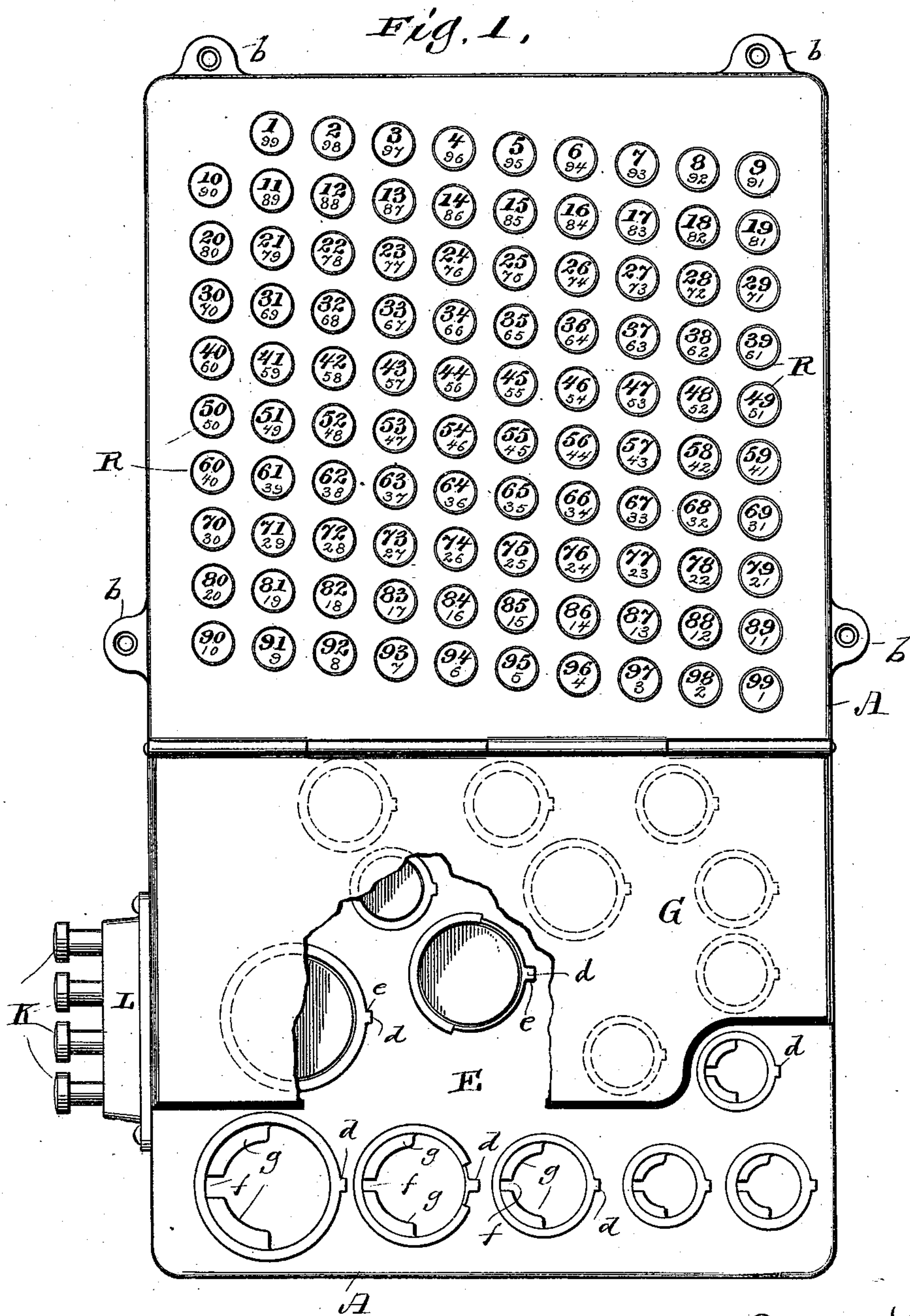
(No Model.)

5 Sheets—Sheet 1.

E. J. BRANDT.
COIN DELIVERY APPARATUS.

No. 542,328.

Patented July 9, 1895.



Witnesses
Geo W. Lundy
H. E. Oliphant

Inventor
E. J. Brandt
By H. G. Underwood
Attorneys

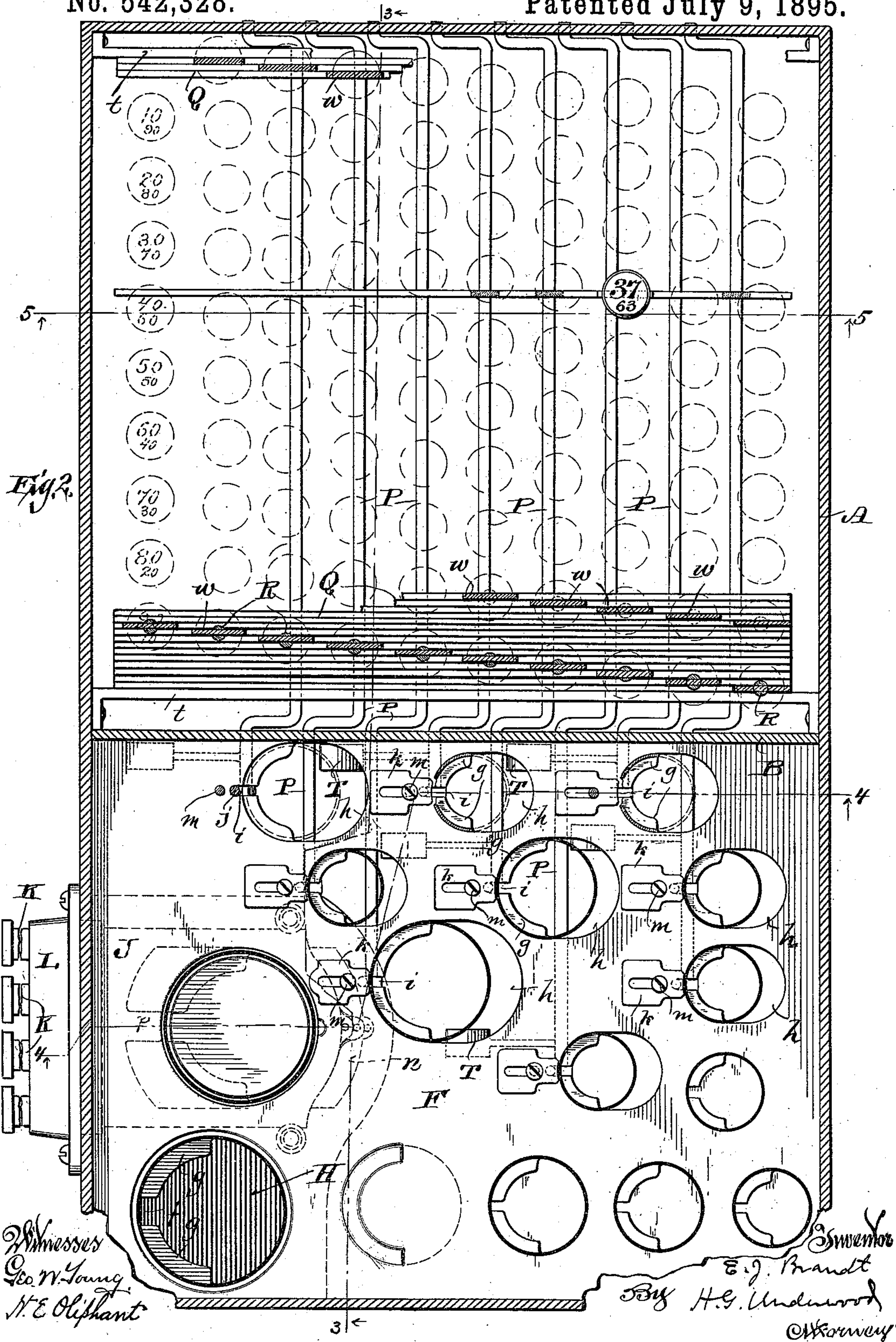
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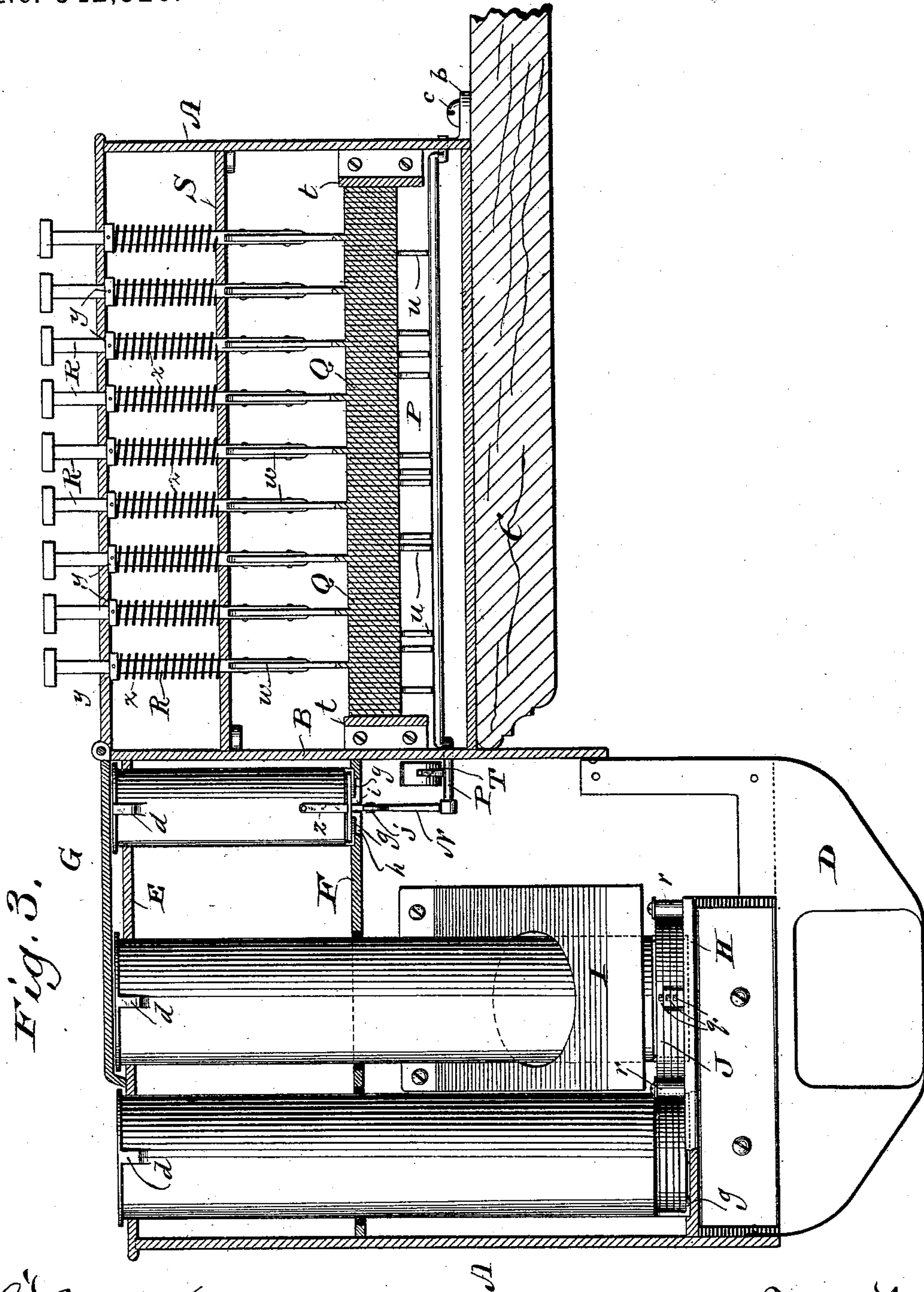
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5 Sheets—Sheet 3.

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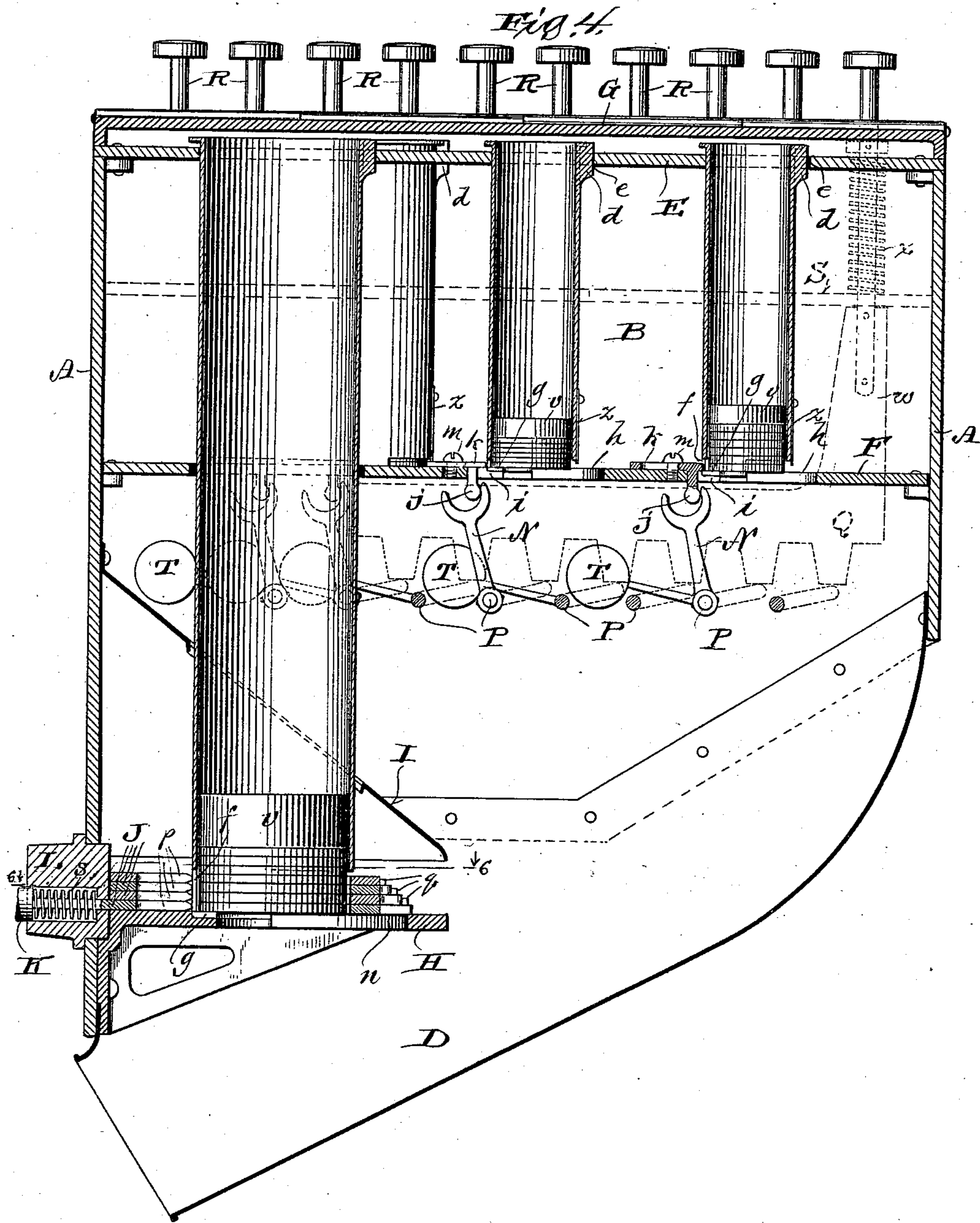
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(No Model.)

5 Sheets—Sheet 5.

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Fig. 5.

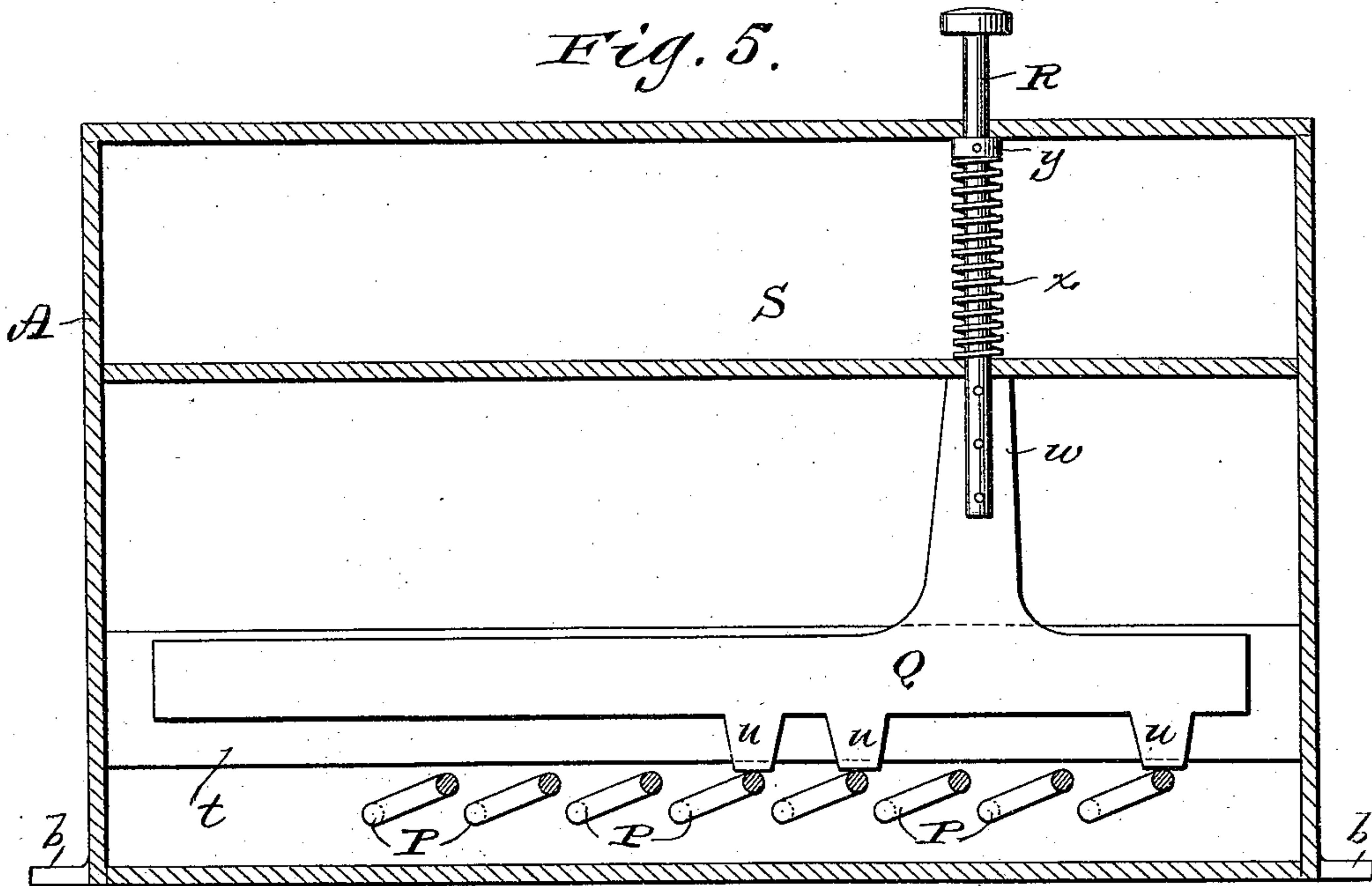
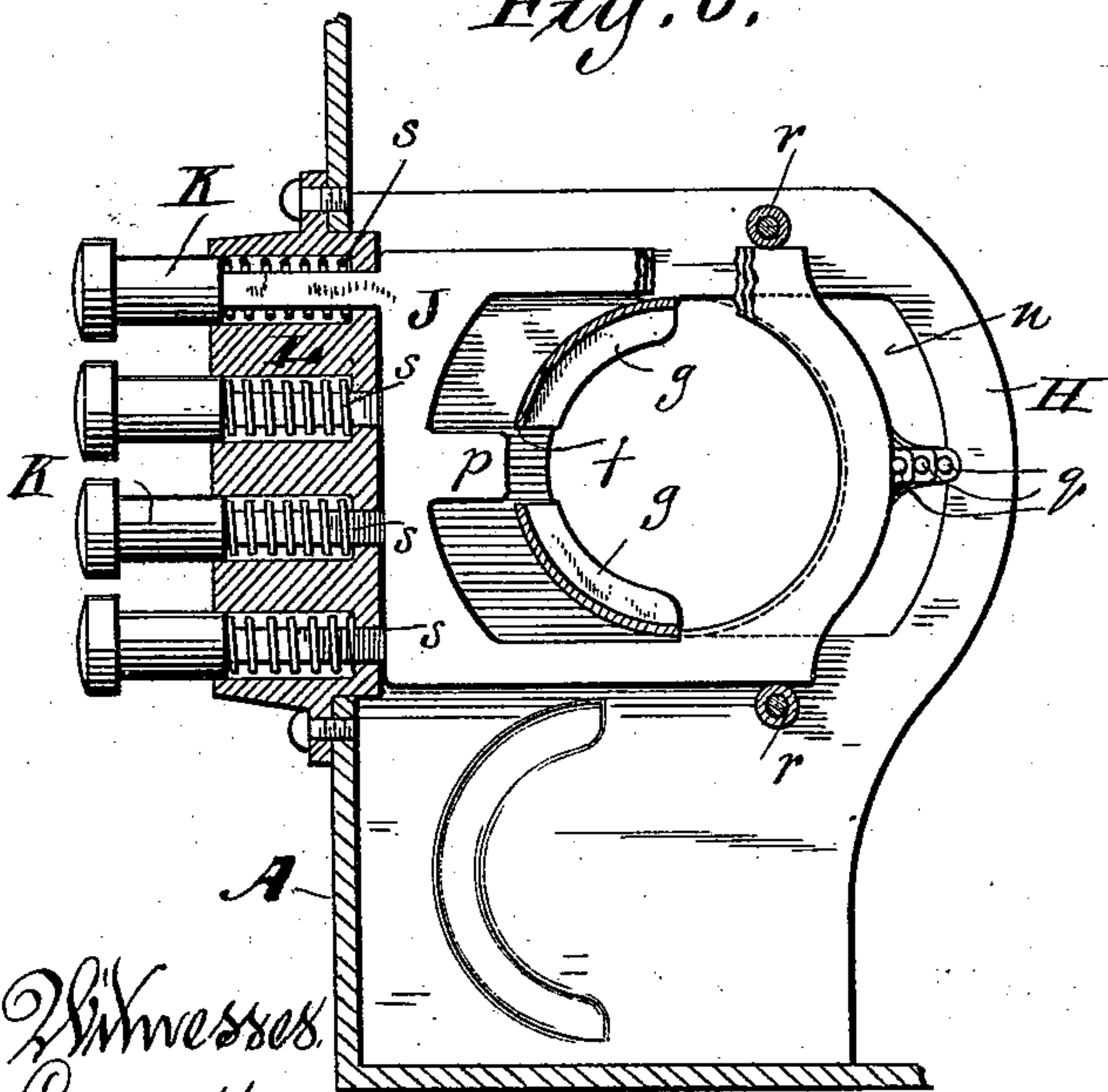
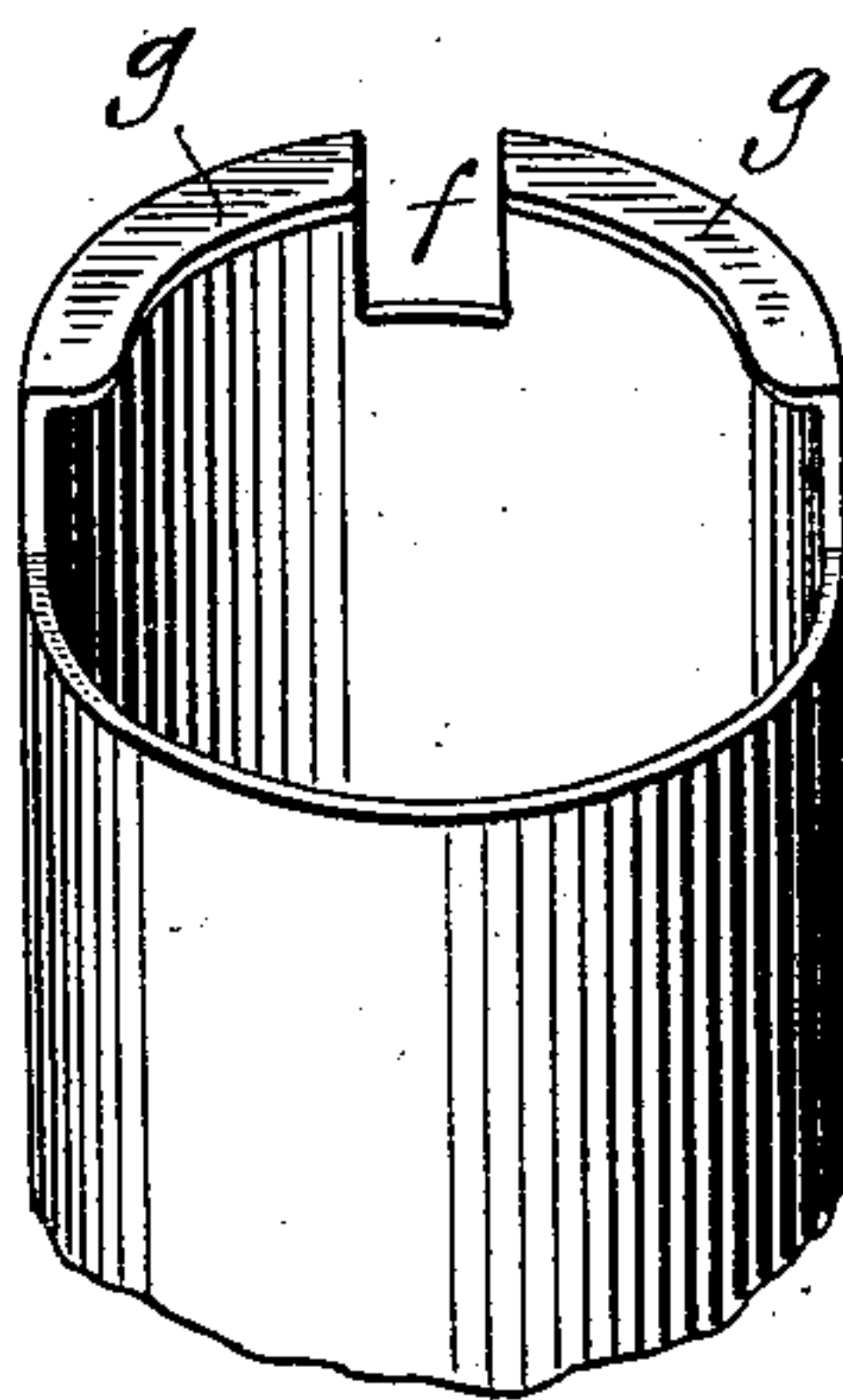


Fig. 6.



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Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD J. BRANDT, OF WATERTOWN, WISCONSIN.

COIN-DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 542,328, dated July 9, 1895.

Application filed July 14, 1894. Serial No. 517,518. (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 in the 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 facilitate paying out money or making change in banks, stores, and other places of business, the same consisting in a simple, economical, and positively-operating apparatus embodying certain peculiarities of construction and combination of parts hereinafter specifically set forth with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a plan view of an apparatus constructed according to my invention and partly broken away; Fig. 2, a horizontal section of the apparatus, parts of the same being broken away and other parts removed; Figs. 3, 4, and 5, vertical transverse sections, respectively, taken on lines 3 3, 4 4, and 5 5 of the preceding figure; Fig. 6, a horizontal section on line 6 6 of the fourth figure, and Fig. 7 a perspective view of a portion of a coin-tube inverted.

Referring by letter to the drawings, A represents a casing made from any suitable material, preferably metal, and divided by a vertical partition B into two compartments. In practice that portion of the casing in rear of the partition B rests on a counter, shelf, or other suitable support C, and may be provided with ears *b* having openings therein for screws *c* that serve to hold said casing rigid on the support. The remainder of the casing overhangs the support and has its bottom in the form of a chute D, as is clearly illustrated in Figs. 3 and 4.

The top E of the forward compartment of the casing is provided with a series of openings for the passage of a corresponding series of removable vertical tubes, each of the latter being properly centered by means of a rib *d* at its upper end engaging a slot *e* radiating from the adjacent opening. The lower end of each tube is cut away for about one-half of its circumference, and the remainder of said end of the tube is provided with a verti-

cal notch *f*, flanked on opposite sides by in-turned flanges *g*, this detail in the matter of said tube being clearly illustrated in Fig. 7. The majority of the tubes are of the same length and seat upon a plate F in the casing, this plate being provided with an opening *h* of suitable area adjacent to each of as many of said tubes as are herein shown under a cover G, hinged to the top of the casing, but which may be omitted without any departure from my invention.

Communicating with each opening *h* in the plate is a slot *i*, that serves as a guide for a lug *j*, depending from a slide *k*, one end of the slide being registered with the adjacent tube-notch and of such proportions as to reciprocate in the same. The slides *k* herein shown are longitudinally slotted and work freely on guide-screws *m* set in the plate F above specified, this construction and arrangement of parts being clearly illustrated in Figs. 2 and 4. The remainder of the tubes extend through the plate F and rest upon a bracket H, extending in from the front wall of the casing, as shown in Figs. 3 and 4, one of the latter tubes being under the hinged cover G of the casing. It is also to be observed that one of the longer tubes passes through a deflector I, that inclines toward the chute above specified.

Each tube corresponds in diameter to that of a coin of certain denomination in any currency for which the apparatus may be schemed, and all of the tubes under the cover G are the ones from which coins are delivered to the operator by means hereinafter specified, the remaining tubes being for the reception of reserve coin and kept in readiness as substitutes for the former tubes that become emptied of coin from time to time.

While I have made provision for extra tubes to be kept filled with coins, this provision is not absolutely necessary, as no appreciable time is required to fill any of the tubes with coin of the proper denomination.

The longer tube herein shown under the hinged cover G communicates with an opening *n* in the bracket H, and coin in this tube is discharged into the chute through said opening by one or more slides in the form of open plates J, each of which has a nose *p*, that registers with and reciprocates freely in the

tube-notch. It being desirable to discharge a variable number of coins from the long tube communicating with the opening in bracket H, I provide a series of the slides J, arranged
 5 one above the other, all but the upper one in the series being provided at its inner end with a vertical lug *q*, abutted by the succeeding slide in successive order in a direction from said bracket, as is clearly shown in Figs.
 10 4 and 6. As a matter of preference, I arrange antifriction-rollers *r* to impinge against the longitudinal edges of said slides, these rollers being shown in Figs. 3 and 6.

Each of the slides J is provided with a push-rod K, that works in a block L set in the casing, and a spiral spring *s* is arranged on each push-rod between a shouldered portion thereof and the inner end of a corresponding recess in said block, the latter being in one piece
 20 with the casing, or otherwise, as may be found preferable in practice.

From the peculiar construction and arrangement of the slides J it will be readily understood that the inward movement of the lower
 25 one will operate to dislodge a single coin from the adjacent tube, but if any one of the succeeding slides be operated there is a movement of itself and all below it to thereby dislodge a corresponding number of coins from
 30 said tube, the vertical notch and cut-away lower portion of the latter being scaled in proportion to the number of slide-noses and the number of coins it may be desirable to deliver at a single operation.

I find it convenient to provide the outer ends of the push-rods K with buttons, and these buttons may be indexed to show the number of pieces of coin that will be delivered incidental to pressure of any one of the series.
 35

The noses *p* of the slides J are preferably beveled in order to compensate for uneven thickness of opposing coins due to abrasion and thereby prevent more than a predetermined number being delivered to the chute.
 40

In practice the operator holds his left hand at the mouth of the chute and operates the push-rods K with the thumb of that hand, and as I have shown four such rods it will be apparent that coins to the number of one to four,
 50 inclusive, may be delivered by pressing in a single push-rod, the spiral spring *s* operating to automatically return any and all the push-bars and relative slides to normal position. The former slides *k* are preferably operated
 55 by means of forked levers N, fast on rocking crank-rods P, that have their bearing in the partition B and rear wall of the casing, the forked ends of said levers operating as knockers against the lugs *j*, depending from said
 60 slides, whereby the latter are suddenly impinged against coin in their path to more readily dislodge the same than would be possible by direct leverage.

In the rear compartment of the casing, between suitable guides *t*, (see Fig. 3.) I arrange a series of loose transverse bars Q, made from any suitable material, these bars being

laid edgewise side by side in successive order and provided with feet *u*, that rest upon predetermined crank-rods P, above specified.
 70 Each of the bars Q has one foot or a plurality of feet *u*, and a downward movement of any bar will consequently cause one or more of the crank-rods to rock, thereby actuating a corresponding number of the levers N to operate a like number of the slides *k*, each of
 75 the latter pushing the bottom coin in the adjacent tube clear of the supporting-flanges *g* above specified. Each coin dislodged from a tube by means of a slide *k* drops through the
 80 adjacent opening *h* in the plate F and comes to the hand of the operator at the mouth of the chute that forms the bottom of the forward compartment of the casing.

In each of the tubes that feed to the chute
 85 I prefer to surmount the coin with a disk *v*, of any suitable material, this disk being of greater thickness than the depth of the cut-away lower portion of said tube and acting as a stop to prevent movement of the adjacent
 90 slide, thereby signaling to the operator that the aforesaid tube is empty, or nearly so, if in case of the longer tube above specified there should remain fewer coins than would correspond with any number of the multiple
 95 slides more than one.

Each bar Q is operated by a spring-controlled push-rod R, herein shown as working loose in the top of the casing, and a plate S, supported therein, it being preferable to provide the bar with a fin *w* for bolt or rivet connection with said push-rod. The spiral springs *x* on the push-rods R operate to automatically return the latter to normal position, the movement being limited by stop-collars *y*
 100 on said rods abutting the casing-top, and the crank-rods P are automatically returned to normal position by means of weighted arms T, secured thereto, the levers N operating on their reverse throw to return the slides *k* to their original position. The weighted arms T may be sufficiently heavy to insure a return of the push-rods R in case the springs *x* are omitted or in case any of said springs become broken, and as various means may be devised
 105 to accomplish the automatic reverse movement of said push-rods and crank-rods I do not limit myself to the showing herein made.

Each of the push-rods R is surmounted by a button indexed to show the value of a coin
 120 or coins that may be delivered to the operator when said rod is actuated, said operator employing the hand not engaged at the mouth of the chute. The buttons may also be indexed to show the difference between the coin
 125 or coins possible to deliver and an arbitrarily-selected value, the latter indexes being less prominent than the others, as shown in Fig. 1.

The apparatus herein shown is schemed to deliver to the operator any amount of coin in various denominations from one cent to four dollars and ninety-nine cents, inclusive, of United States money.
 130

Of those tubes that are shown beneath the

hinged cover G the longer one is a receptacle for silver dollars, and it has been explained how one, two, three, or four of these coins can be discharged into the delivery-chute by the operation of a single one of the push-rods K, and the other tubes under said hinged cover are receptacles for current coins of smaller denominations than one dollar. Of the latter tubes I employ one for half-dollars, one for quarter-dollars, two for dimes, one for nickels, and four for cents, whereby I provide for the delivery of coin from the value of one cent to ninety-nine cents, inclusive.

From the foregoing it will be understood that if, for instance, push-rod R, indexed for thirty-seven cents, be operated, one-quarter of a dollar, one dime, and two cents will be delivered at the same time. The slides for the discharge of said cents being actuated by two levers N on the same crank-rod, it only requires that the bar Q connected to said push-rod have three feet in order that the four coins above enumerated may be discharged from as many tubes at the same instant.

The dollar push-rod being operated by the thumb of one hand, and the fraction-of-a-dollar push-rod by a finger of the other hand, any desired amount in dollars and fractions of one dollar, within the arbitrary limits above specified, may be delivered at the same instant.

As a matter of convenience, the push-rods R are arranged in rows of ten each, except that the first row is one less than ten, and thus the button indexing any possible amount from one to ninety-nine cents, inclusive, can be readily found by an unpracticed operator, said preferable arrangement of the buttons being illustrated in Fig. 1.

It will be noticed that each row of buttons on the push-rods R is at an angle to a horizontal line, this being a result due to the thickness of the bars Q and the position of the rod-connecting fins thereon.

In order that the operation of the above-described apparatus may be better understood, it is to be observed that the depression of the first push-rod in the series joined to the bars Q will operate the mechanism necessary to actuate the slide *k* relative to one of the cent-tubes, the second of these push-rods operates mechanism controlling the slides relative to two of the cent-tubes, the third push-rod operates mechanism controlling slides relative to three of the cent-tubes, and the fourth push-rod operates the mechanism controlling the slides relative to all four of said cent-tubes. The operation of the fifth push-rod will result in the delivery of one nickel and one cent, the tenth push-rod one dime, the fourteenth push-rod one dime and four cents, and so on through the series, the feet on the bars Q being in position so as to operate various crank-rods and deliver a coin of one denomination or coins of various denominations going to make up a total amount. For another exam-

ple, the bar attached to the ninety-ninth push-bar in the cent series has feet opposed to the crank-rods relative to the slides that operate to push a single coin from each of those tubes containing half - dollars, quarter - dollars, dimes, and cents. Consequently an operation of said push-rod will result in the delivery of eight coins, aggregating ninety-nine cents.

Every possible combination in the arbitrarily-selected limits is provided for and the delivery of any desired amount of money within these limits may be instantly effected. It never being necessary to operate more than two push-rods, one for the delivery of one or more dollars, and the other for the delivery of a fractional part of a dollar, both may be operated at the same time, as previously explained. The employment of the apparatus herein set forth not only saves time, but prevents error in the paying out of coin money to any amount within predetermined limits.

As a guard against possibility of two coins being pushed out of any one of the shorter tubes, I provide each of the latter with a spring-stop *z* adjacent to its cut-away portion and opposed to the exposed coin. This spring-stop also operates to push down said lowest coin when the latter is dislodged from the inturned supporting-flanges of its relative tube.

While I have shown the slides *k* operating as means for ejecting coins from certain of the tubes, it is possible to employ other means for obtaining the same result, and the mechanism herein shown for operating the slides may be considerably varied without departure from my invention.

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

1. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and having the remainder of this end provided with a longitudinal notch and inturned flanges flanking the notch, a series of coin-ejectors in register with the tube-notches, and suitable means for effecting the reciprocation of single ejectors or combinations of ejectors by a single mechanical impulse.

2. A coin delivery apparatus embodying a coin receptacle in the form of a tube partially cut away at one end for a depth equal to the thickness of a plurality of a certain denomination of coin and the remainder of this end provided with a longitudinal notch and inturned flanges flanking the same, a series of slides one upon the other and provided with noses in register with the tube-notch, and suitable means for effecting an independent reciprocation of the first slide as well as a simultaneous reciprocation of this first slide and one or more of the others in the same series by a single mechanical impulse.

3. A coin delivery apparatus embodying a series of coin receptacles each in the form of

a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, the cut away portion of the majority of the tubes being of sufficient depth to clear single coins of various denominations, and the cut away portion of the remainder of the tubes being of a depth equal to a plurality of the coins contained therein, a series of coin-ejectors in register with the slots in the majority of said tubes, suitable means for effecting a reciprocation of single ejectors or combinations of ejectors by a single mechanical impulse, a series of slides one upon another and provided with noses in register with the notch in any remaining tube, and other suitable means for effecting an independent reciprocation of the first of these slides as well as a simultaneous reciprocation of this first slide and one or more of the others in the series by a single mechanical impulse.

4. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch and inturned flanges flanking the same, a yielding stop guarding the cut-away portion of the tube, a coin-ejector in register with the tube notch, and suitable means for reciprocating the ejector.

5. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, coin-ejectors in register with the tube-notches, crank-rods provided with levers controlling the ejectors, loose bars having feet opposing the crank-rods, and suitable means for actuating each bar, there being one or more feet on any bar proportionate to the number of crank-rods it is desirable to operate by a single impulse.

6. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, coin-ejectors in register with the tube-notches, crank-rods provided with levers controlling the ejectors, weighted arms on the crank-rods loose bars having feet opposing the crank-rods, and suitable means for actuating each bar, the number of feet on any bar being proportionate to the number of crank-rods it is desirable to operate by a single impulse.

7. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, coin-ejectors in register with the tube-notches, crank-rods provided with levers controlling the ejectors, loose bars having feet opposing the crank-rods, and a spring-controlled push-rod connected to each bar, the number of feet

on any bar being proportionate to the number of crank-rods it is desirable to operate by means of a single push-rod.

8. A coin delivery apparatus embodying a series of coin receptacles each in the form of a tube partially cut away at one end and having the remainder of this end provided with a longitudinal notch and inturned flanges flanking the notch, a series of coin-ejectors in register with the notches, means for effecting a reciprocation of single ejectors or combination of ejectors by a single mechanical impulse, and disks of greater thickness than the depth of the cut away portions of the tubes arranged in the latter to follow the coin and operate as stops against movement of the ejectors when any of said tubes are emptied.

9. A coin delivery apparatus embodying a coin receptacle in the form of a tube cut away at one end to a depth sufficient to clear a number of coins contained therein and having the remainder of this end provided with a longitudinal notch flanked by inturned flanges, a series of slides one upon another and provided with noses in register with the tube-notch, a lug projecting upward from each of a majority of the slides in the path of the succeeding slide, and a spring-controlled push-rod extended outward from each slide.

10. A coin delivery apparatus embodying a coin receptacle in the form of a tube cut away at one end to a depth sufficient to clear a number of coins contained therein and having the remainder of this end provided with a longitudinal notch flanked by inturned flanges, a series of slides one upon another and provided with noses in register with the tube-notch, anti-friction rollers opposing edges of the slides, and suitable means for effecting an independent reciprocation of the first of the latter slides as well as a simultaneous reciprocation of this first slide and one or more in the series by a single mechanical impulse.

11. A coin delivery apparatus embodying a casing divided into front and rear compartments, the front compartment being of greater depth than the rear and having a chute-like bottom an apertured plate in the front compartment, coin tubes supported on the plate adjacent to the apertures therein and held against rotation, each tube having a portion of its lower end cut away and the remainder of this end provided with a longitudinal notch flanked by inturned flanges, slides on said plate in register with the notches, crank-rods provided with levers controlling the slides, bars provided with feet opposing the crank-rods, indexed push-rods connected to the bars and extended through the top of the casing, an apertured bracket in the front compartment of said casing, another coin tube supported on the bracket adjacent to the aperture therein, the lower end of the latter tube being similar to those aforesaid, but having the depth of its cut away portion equal to the thickness of a plurality of coins of certain de-

nomination, slides one upon another on the bracket in register with the notch in the latter tube, push-rods extended through the casing from each of the latter slides, and suitable means for imparting the motion of any of these latter slides above the lower one to all of its predecessors.

In testimony that I claim the foregoing I

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:

F. W. GAMM,

JOHN G. CONWAY.