

No. 646,124.

Patented Mar. 27, 1900.

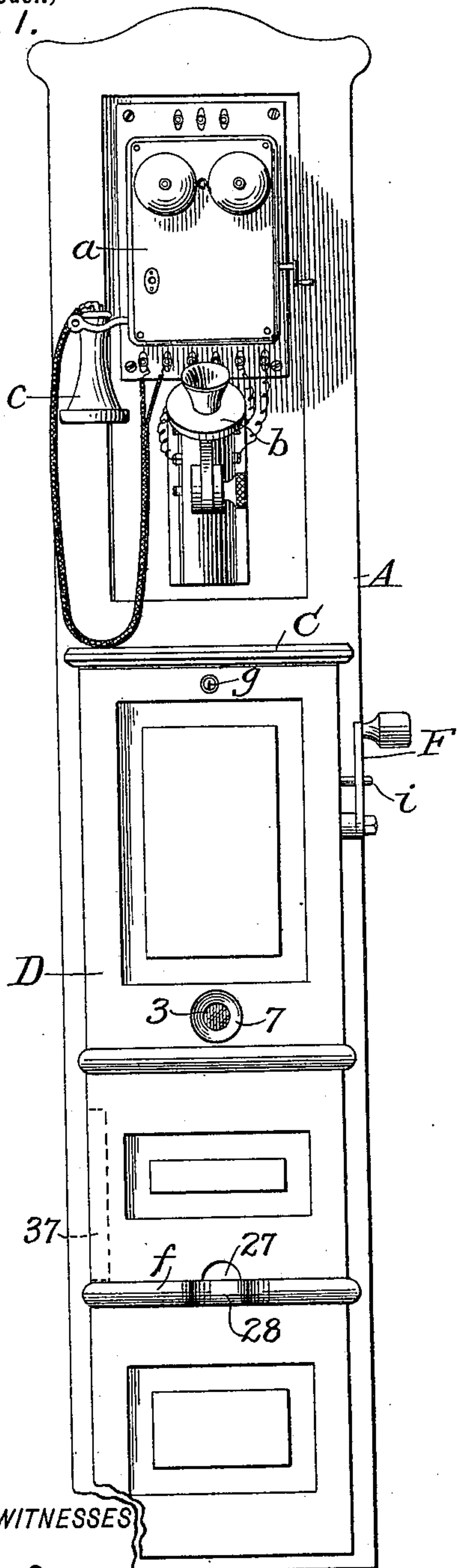
C. H. KRAFT.

COMBINED TELEPHONE AND VENDING MACHINE.

(Application filed Sept. 23, 1899.)

5 Sheets—Sheet 1.

(No Model.)
Fig. 1.

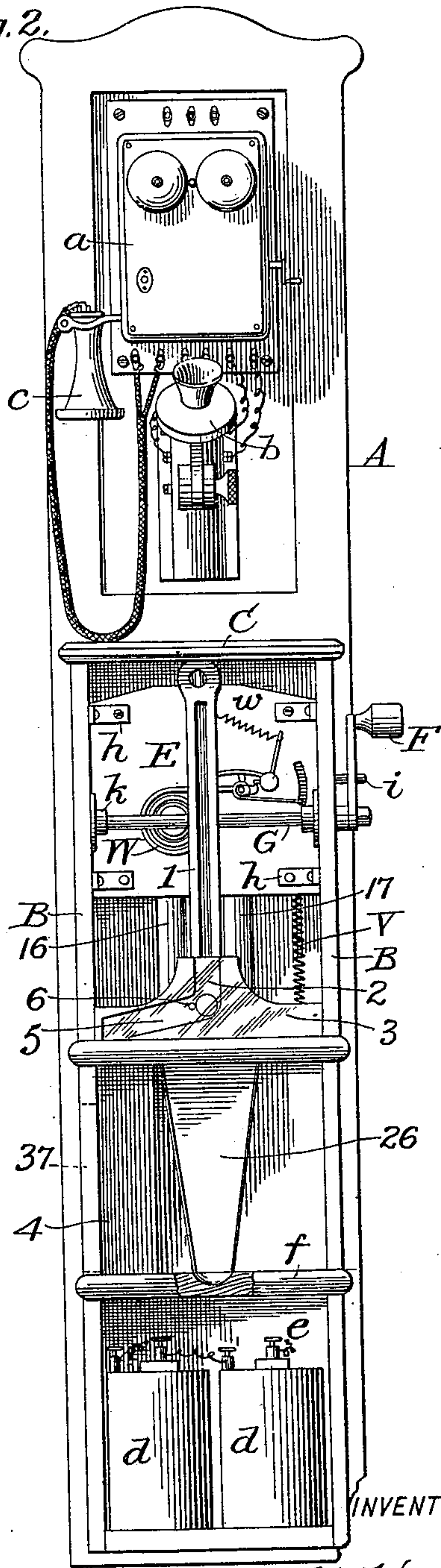


WITNESSES

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Fig. 2.



INVENTOR

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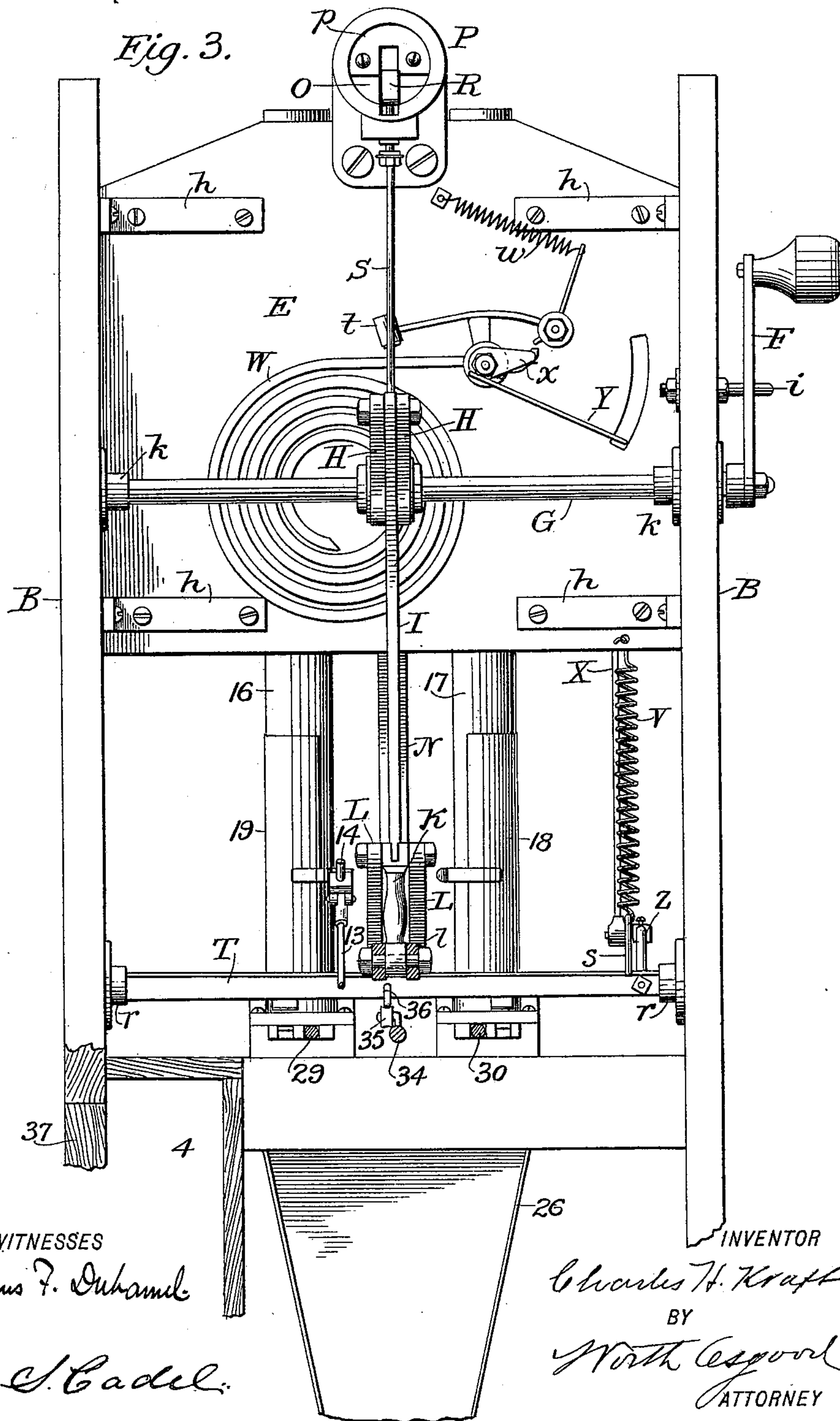
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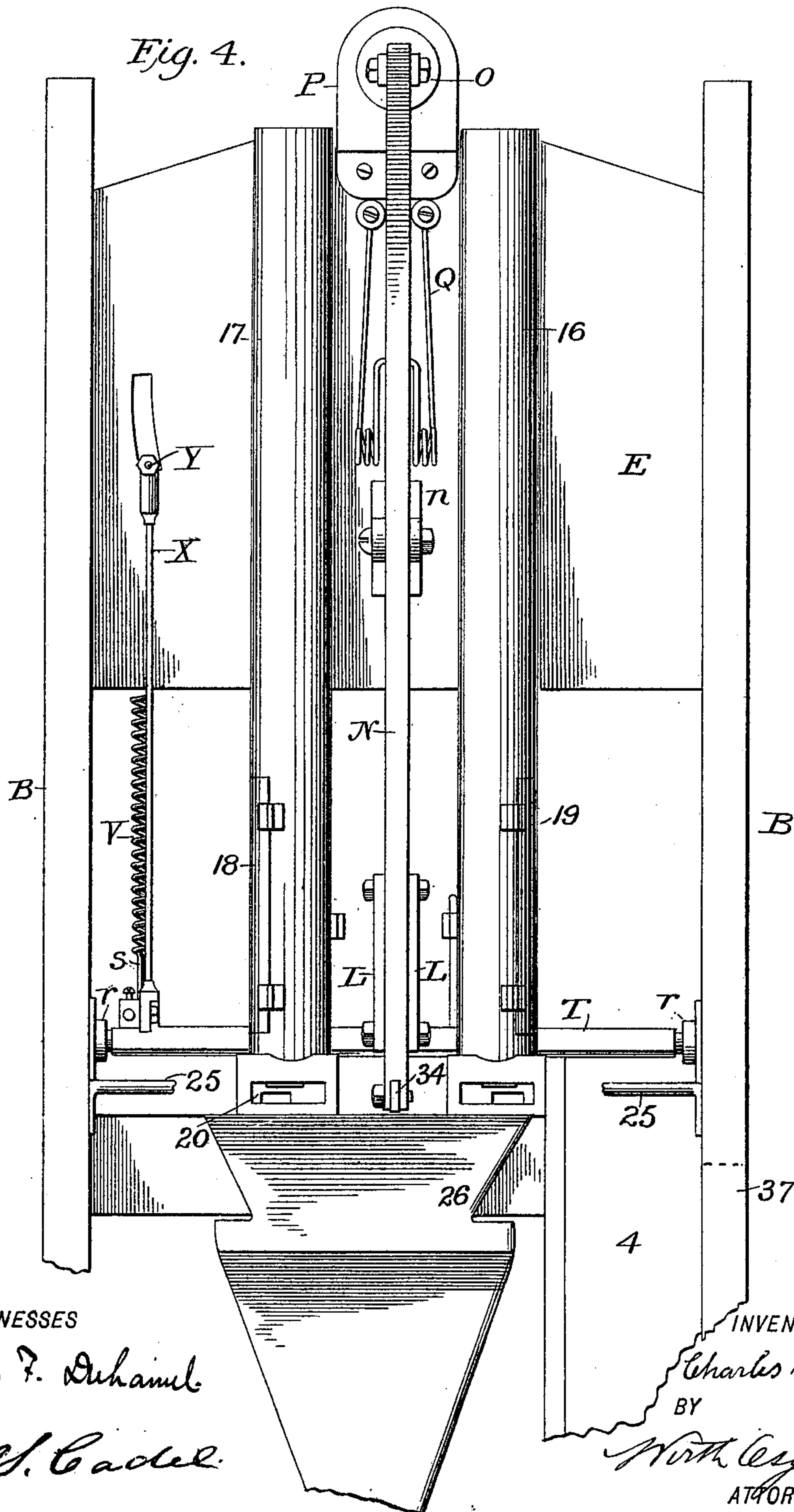
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5 Sheets—Sheet 3.



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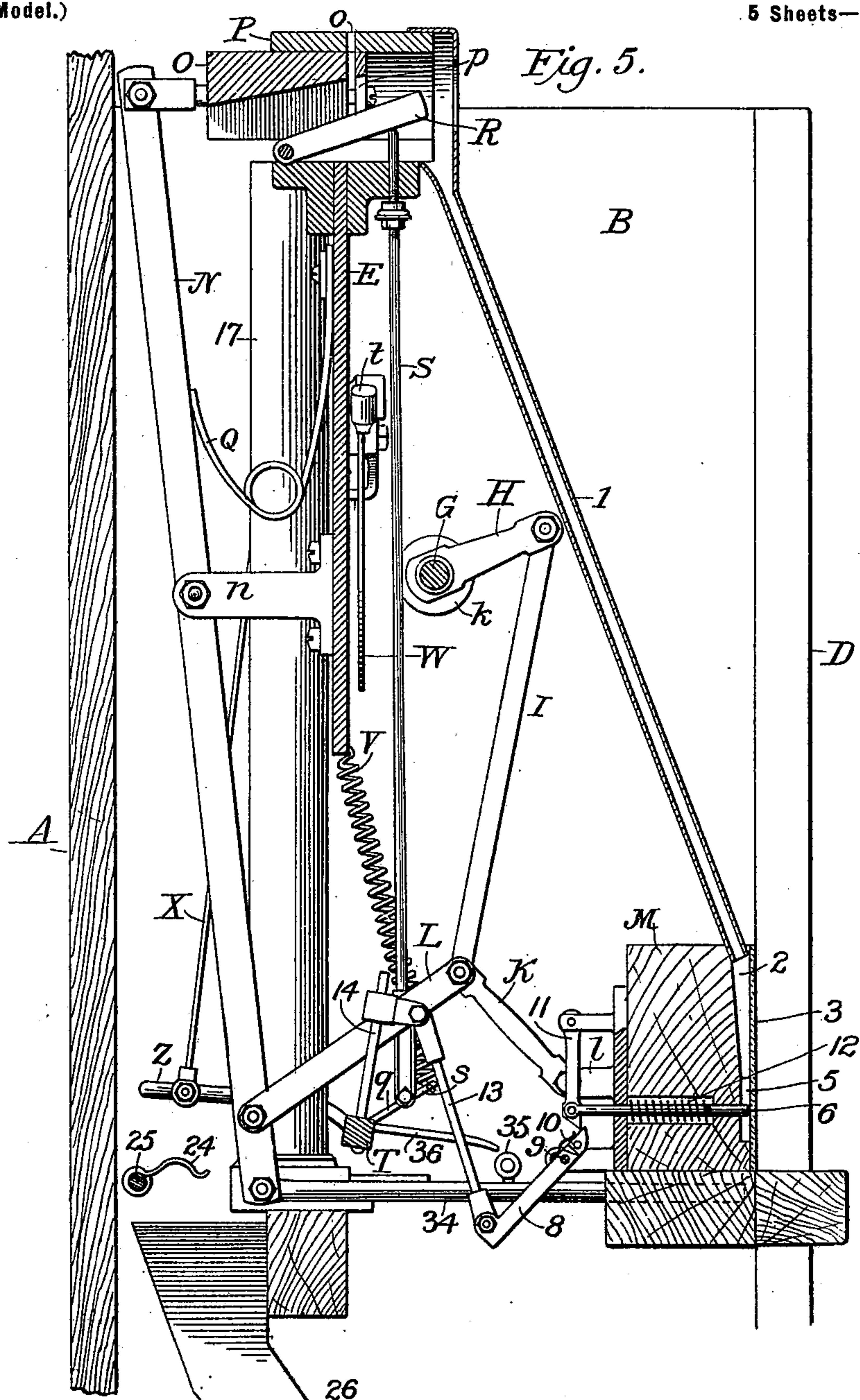
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(No Model.)

5 Sheets—Sheet 4.



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5 Sheets—Sheet 5.

Fig. 6.

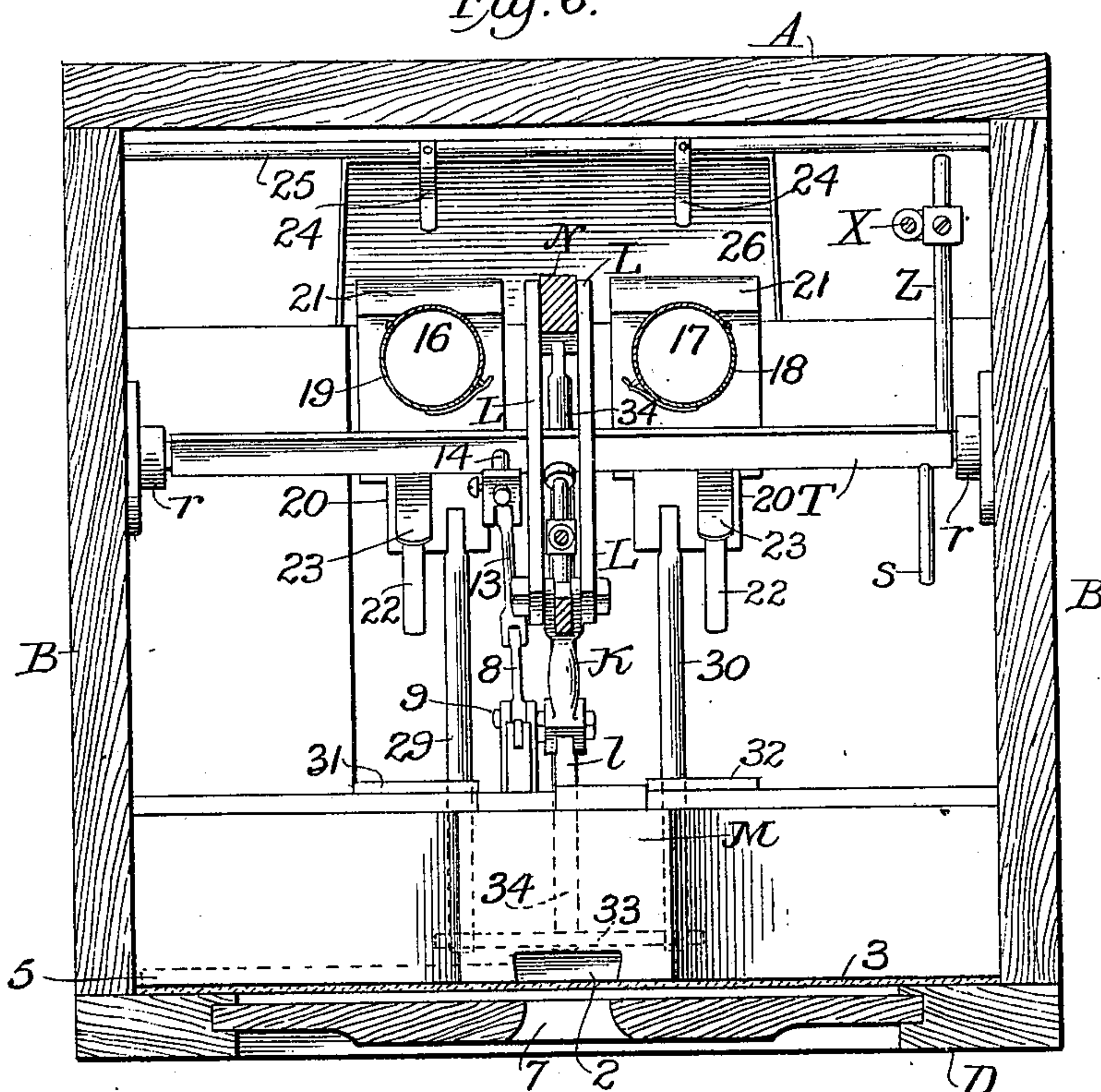


Fig. 7.

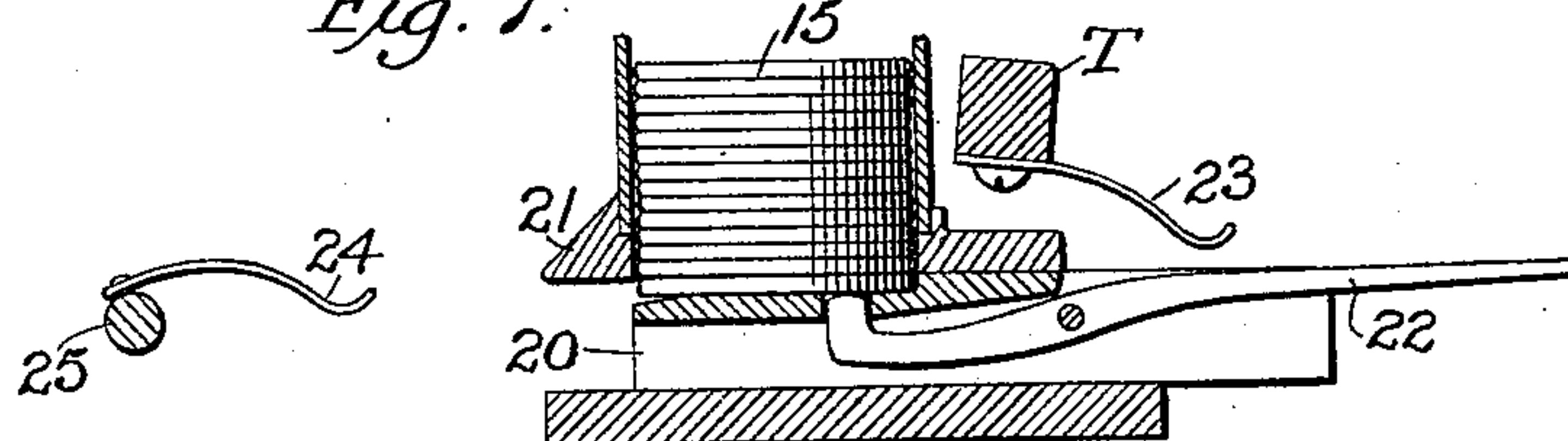
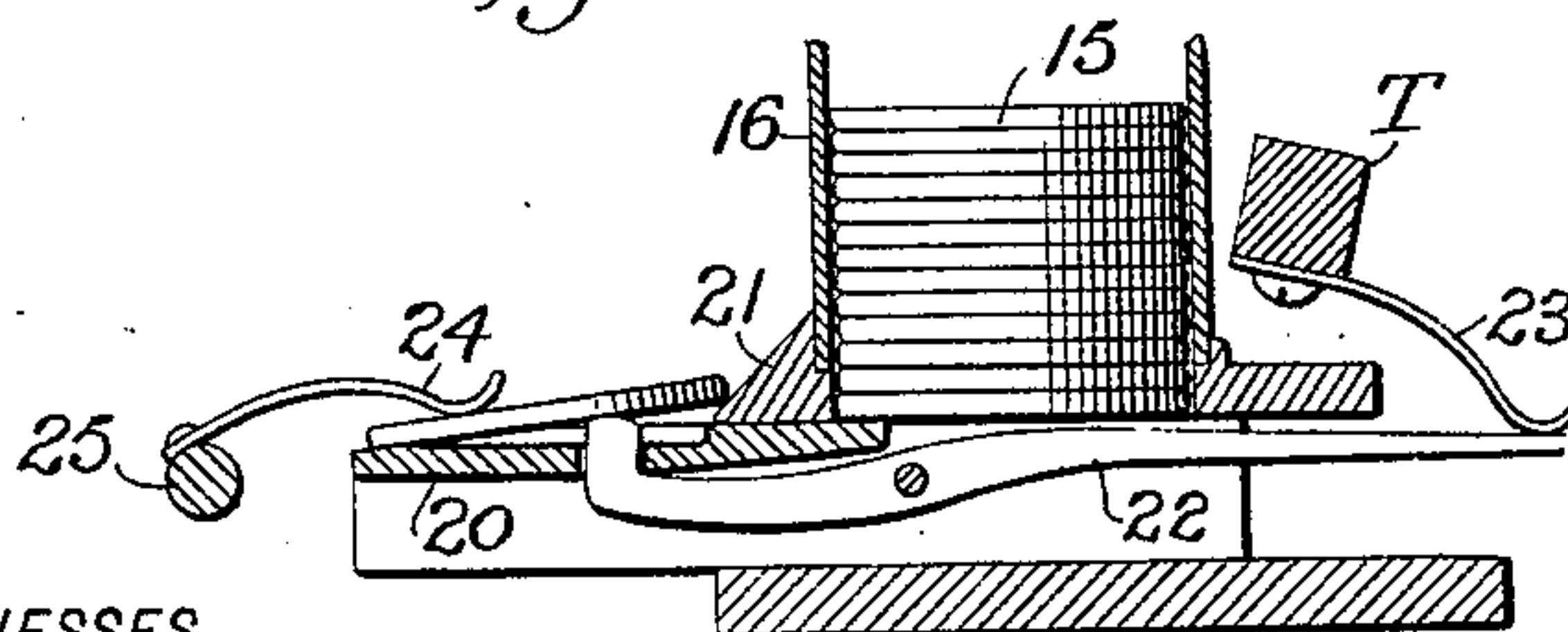


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES H. KRAFT, OF SALT LAKE CITY, UTAH.

COMBINED TELEPHONE AND VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 646,124, dated March 27, 1900.

Application filed September 23, 1899. Serial No. 731,418. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. KRAFT, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and useful Combined Telephone and Vending-Machine, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon.

My improvements relate to so-named "coin-controlled" or "coin-operated" machines, wherein the deposit of a coin is necessary to enable the machine to perform its offices; and the principal object of my invention is to provide or produce a machine or apparatus wherein an automatic vending or delivering device having a telephone-transmitter and alarm therefor is rendered operative by the deposit of a coin and remains inoperative without such deposit.

Subordinate objects are the provision of simple, effective, and reliable means for compelling the coin to do its required work in the machine, to insure against fraud on the part of the would-be operator and in turn against failure of the machine to render its service, and to promote economies and conveniences in telephonic communications and in trade and transportation or whatever may be dealt in through the medium of the machine.

To accomplish these objects and to secure other and further advantages in the matters of construction, operation, and use, my improvements involve certain novel and useful arrangements or combinations of parts and particularities of invention, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, I have shown a form of machine or apparatus constructed and arranged for operation in accordance with my invention and involving the principles thereof.

Of the drawings, Figure 1 is a front elevation of the machine as it appears when exposed for public use, and Fig. 2 is a corresponding elevation, with the front of the casing or box removed, showing the general relative arrangement and location of some of the principal elements employed. Fig. 3 is

a front elevation and partial vertical section of a portion on a larger scale than previous figures, showing the interior mechanism more in detail. Fig. 4 is a rear elevation corresponding with Fig. 3, but showing certain parts not therein appearing. Fig. 5 is a vertical view, partly in section and partly in elevation, on a plane at right angles with the face of the machine and corresponding with Figs. 3 and 4. Fig. 6 is a horizontal section and plan view on a plane through the inspection-opening. Fig. 7 is a detail view, in vertical section and elevation, illustrating one of the delivering-plungers and immediate adjuncts, the plunger being in position at one extremity of its travel; and Fig. 8 is a similar view, but showing this plunger at the opposite extremity of its travel and one of the articles held ready to be dropped into the delivery-chute.

In all the figures like letters and numerals of reference wherever they occur indicate corresponding parts.

A is a substantial main or back board or plate on or in connection with which the several parts are mounted. This board is intended to be secured to a wall or other object, and its upper part is by preference selected to sustain the telephone, as represented in Figs. 1 and 2, wherein *a* represents the box, *b* the transmitter or mouthpiece, and *c* the receiver, the box and transmitter being mounted on the face of the back board. The telephone-batteries, as *d d*, find convenient lodgment in a lower compartment *e*, separated from the machinery by a plate *f*, which serves also as a plate on which the articles delivered by the machine are exposed for removal by the customer. The electric conductors, except as shown, are most conveniently led along the rear of the back board.

B B are the sides of the casing which incloses the delivering mechanism, the same being applied upon the back board and supplied with a top C, through which the coin is introduced to the coin-receiving plunger.

D is the front board, which is intended to be removable only by authorized persons, being supplied with any suitable form of lock, for which the keyhole is indicated at *g*.

Between the sides B B and well removed from the back board extends a plate E, pref-

erably of metal, the same being secured to the said sides in a substantial manner, as by use of angle-pieces, (represented at *h h*.) This plate serves as an anchorage or mounting for various parts, as will hereinafter appear, and any vibration produced in the plate will be communicated through the side pieces to the back board and thence to the telephone-transmitter.

10 F is the hand-crank, which the customer utilizes to operate the machine after the coin of required size has been properly deposited. In the form shown this crank is to be turned down toward the front of the machine far enough to effect the sounding of the bell and the subsequent delivery of the goods or tokens, its further down turning having no effect and its back turning being prevented by any suitable stop, as at *i*, and the arrangement is such, as will hereinafter be made plain, that if too small a coin or no coin be inserted the movement of the crank will neither effect the ringing of the bell, as is necessary before telephonic communication can be given, nor the delivery of any article from or by the machine.

G is the main operating-shaft, with which crank F is connected, the same extending across the machine and journaled in suitable boxes, as at *k k*, attached to the sides B. Secured at about the central part of this shaft are the short crank-arms H H, (one or both of which may be employed,) the same being coupled at their outer ends with a connecting rod or bar I, reaching down to a toggle, of which the outer end of one member moves on a stationary axis and the outer end of the other member is connected with the lever which effects the initial travel of the coin in the machine. The anchored member of the toggle is represented at K and the other member as composed of two parts L L, the latter embracing the above-named lever; but this particular formation is not essential and may be varied within the usual limits. The stationary axis for the anchored member is mounted in a step *l*, secured upon a substantial cross-piece M in the front portion of the compartment. N is the lever referred to above, the same being pivoted near its middle part in a stationary bracket *n*, fixed upon the back of plate E. The toggle member or members L connect with this lever near its lower end, and the coin-carrying plunger O is coupled with the upper end of the lever, so that movements of the lever will cause the plunger to reciprocate back and forth within its casing. Casing P for plunger O is rigidly mounted upon plate E and is supplied with a slit *o* of proper dimensions to admit of the introduction of the coin of required size. When the apparatus is set to receive the coin, the face proper of plunger O registers with the rear plane of slit *o*, and the coin is received between this face and a guard-plate *p*, applied to or on the face and separated therefrom by a distance corresponding with the thickness

of the coin. This is the most convenient way of making the coin-receiving opening of the plunger; but it might be otherwise fashioned. When the coin is in place in the plunger, it must move therewith in a vertical position, as will be apparent. 70

A sufficiently-powerful spring Q bears upon lever N at its free end and is anchored at the other end upon stationary plate E. The purpose of this spring is to hold lever N, and through it plunger O, in normal position, always ready to admit the coin, and to return the parts to this position after they have been moved by crank F and connections, the stop *i* being set so that the spring cannot move the parts too far back. 80

Within casing P is a hinged tongue R, over which the plunger O travels, the latter being suitably recessed, as indicated, to permit such movement. The coin when received by the plunger rests upon this tongue, which is held normally elevated at its outer end. Movement of the plunger without the coin would not disturb this tongue, and with a coin of insufficient diameter the tongue would not be disturbed to a sufficient extent to effect the operation of parts for the purposes of the machine. With a coin of too-great diameter of course the plunger could not be moved. As the plunger is forced forward the coin is carried between the upper inner surface of casing P and the top of the tongue, depressing the latter until carried past its extremity, when the coin drops into the chute provided for receiving it. The movement of the tongue is relied upon to effect the desired operation of certain parts of the machine. It (the tongue) bears upon the upper end of a rod S, which passes through the lower part of casing P and reaches down to its coupling, with an arm *q*, applied upon a rock-shaft T, suitably journaled, as in boxes *r r*, on sides B. 100

A spring V of sufficient power connects an arm *s* on rock-shaft T with stationary plate E and operates to hold the shaft in proper normal position, so that rod S and tongue R will remain elevated and other parts remain out of working position until the proper coin is introduced and the crank turned. 115

W represents an alarm-gong which may be in the form of a coil, as shown, or in any other suitable form. It is mounted upon the plate E, the latter being anchored to the sides B, as before explained, and it is of sufficient power so that it will communicate its vibrations through the plate E to the sides and back and so that its sound may be distinctly communicated to the telephone-receiver *b* for transmission over the lines and so that it can also be heard in and throughout the station wherein the apparatus may be located for use. The mechanism is so arranged that the alarm will not be sounded until the proper coin has been properly deposited in and received by the apparatus. The hammer *t* is elevated against the action of its spring, as *w*, by pawl *x*, which contacts with a pin connected with 130

the hammer, and this pawl is operated from rock-shaft T through the intervention of a rod X, extending from an arm Z on said shaft up back of plate E and having a branch Y reaching through a curved slot in the plate to its connection with the pawl. The rocking of shaft T causes the pawl to elevate the hammer until such time as the pin escapes the pawl, when the spring *w* will cause the requisite blow to be given upon the bell. The block in the end of the pawl permits the latter to return without disturbing the hammer, and the return movement is compelled by spring V as soon as rod S is released or allowed to resume its normal position.

The apparatus is under control of the central telephone-station, where no telephonic connection will be given for the apparatus until the requisite coin has been deposited in the machine, and this is determined at the central station upon hearing the gong or bell W. Then the telephone may be employed as at any pay-station.

As soon as the coin is forced beyond the free end of tongue R it drops into the upper mouth of a chute 1 and is thereby conducted to and delivered into a recess 2, provided for it in the cross-piece M. The front of this recess is covered by a glass or transparent plate 3, its lower part communicating with the coin-receiving box 4 by or through a channel 5. The coin is arrested in the bottom of recess 2 by a pin 6, (which is afterward retracted,) and is there exposed to inspection through an opening, as 7, in the front of the casing and through the glass plate 3. The release of each deposited coin depends upon the introduction of a second coin, the pin 6 being only capable of being retracted when the rock-shaft T is properly moved.

To effect the retraction of pin 6 at the proper time, I employ a lever 8, pivoted, as at 9, and supplied with a spring-controlled latch 10, the latch being arranged to engage a hinged arm 11 (with which the pin 6 is jointed or coupled) when lever 8 is moved in one direction and to escape the hinged arm when the said lever is moved in the opposite direction, a suitable spring, as 12, being utilized to return the pin 6 to its normal coin-arresting position as soon as latch 10 passes the end of arm 11. To actuate lever 8 at the proper times, its extremity opposite the latch is coupled with the rock-shaft T through the medium of a coupling-rod 13 and an arm 14, with which rock-shaft T is supplied for that purpose. It will be seen that whenever the rock-shaft T is operated as and under the circumstances before explained the pin 6 is retracted, releasing the previously-detained coin, and immediately snaps back to its coin-detaining position in time to arrest the new coin when the latter reaches the bottom of recess 2.

In connection with the telephone service controlled and regulated as appears from the above the vending or delivery service of the

apparatus is simultaneously controlled by or regulated by the deposit of the same coin and by or through adjuncts to the mechanism so far explained. The particular form of apparatus illustrated in the drawings is calculated for the delivery of checks or disks; but manifestly by changing the sizes and proportions of certain parts other articles might be delivered, especially if they are of substantially-uniform size and shape.

To augment the general utility or desirability of the apparatus, it is my purpose and desire to adapt the machine to deliver to the customer two different commodities or tokens of different values for the deposit of the single coin and this with advantage also to the proprietor of the station or to the subscribers. The checks or disks (represented at 15 in Figs. 7 and 8) bear indications of their value or the terms on which they will be redeemed and the names of houses or parties or the subscribers by whom they will be received. As two sets of these checks or disks are employed, it is my purpose and preference to make those of one set valuable only in store trade and those of the other in the purchase of car-tickets; but any other combinations of purchasing values might of course be given the disks or checks and need not be here specified.

The two tubes or reservoirs 16 and 17 are charged with the checks, they being preferably introduced into the tubes through doors, as at 18 and 19, and when in place the lowermost checks of the two stacks will rest upon the delivery-plungers, which operate beneath the reservoirs. As both these delivery-plungers are alike and are simultaneously operated, an explanation of the special features of one will suffice for present purposes.

The delivery-plunger 20 (see Figs. 7 and 8) is constructed after the plan of that shown in United States Patent No. 572,523 to assignees of Charles Burton, dated December 8, 1896, although its operating connections differ from those shown in said patent. This plunger is recessed at its delivery end to correspond with the thickness of one check or disk which rests in the recess. As the plunger is advanced it carries this check from under the mouth of the reservoir and free of an incline 21 on the back of the reservoir, and at this point of the travel of the plunger a hinged finger 22 contacts with a spring 23 when the latter is properly depressed, which spring bears down one end of the finger, elevating the opposite end, which projects through an opening in the plunger, and thereby raising the disk, as indicated in Fig. 8. Operating in connection with each delivery-plunger is a spring 24, mounted on a rod 25 at the back of the casing, the purpose of each of these springs being to bear upon the margin of the check as the latter is carried under it, and thus, with the finger 22, to tip the disk, as in Fig. 8.

As the delivery-plunger is retracted from the position shown in Fig. 8 the check rides

up on an incline 21, from whence it drops as soon as the plunger is out of the way and is received in the chute 26. The mouth of this chute is of ample width to receive both checks, 5 being located beneath the points where they are forced off the plungers, and the chute is gradually contracted from its receiving-mouth and leads to its point of discharge, which is the opening 27 in the casing. (See 10 Fig. 1.) Both disks are deposited on the projection 28 of plate *f* and may be thence removed by the customer to be afterward used in purchases, as above intimated.

To insure the simultaneous operation of 15 both check-delivering plungers and to control their operation as the other parts of the machine are controlled, each plunger is supplied with a rod, as at 29 and 30, passing through guiding-plates, as 31 and 32, and connected by a cross-bar, as 33. To the cross- 20 bar 33 is applied the operating-rod 34, the opposite end of which rod is coupled with the lower part of lever *N*. Obviously as the lever *N* is moved so must both the check-delivering 25 plungers be operated.

The check-delivery plungers will not permit the checks to drop until the lever *N* reaches the limit of its operating travel; but it is necessary to make this dropping or de- 30 livery dependent upon the deposit of the required coin, and for this purpose it is that the finger-tripping springs 23 are mounted upon or in connection with the rock-shaft *T*, which, as before explained, can only be moved 35 (and therefore the tripping-springs can only be moved) when the coin has been introduced. The adjustment of the springs 23 is such that the movement of rock-shaft *T*, compelled by the coin in the coin-receiving plunger, is not 40 quite sufficient to carry the said springs down far enough to effect the requisite tripping of the checks, so that no insufficient movement of the crank *F* or the introduction of a coin of insufficient diameter can avail to effect the 45 delivery of the checks. This being so, the down turning of crank *F* must be continued a trifle after the gong *W* has sounded or until lever *N* has traveled far enough. If desired, a stop, like *z*, might be provided to limit 50 the down turning of the crank *F*.

To insure the sufficient movement of the fingers 22, and thereby the discharge of the disks under proper conditions, I mount a small wheel or equivalent bearing 35 upon the rod 55 34 and supply the rock-shaft *T* with an arm 36, calculated to project under wheel 35 when the rock-shaft is moved far enough to permit such projection (as it always will be when the proper coin has been introduced) and calcu- 60 lated to pass over or escape the said wheel or bearing whenever the rock-shaft is not sufficiently turned. When wheel 35 bears upon arm 36 and the rod 34 is moved, it effects a slight further turning of rock-shaft *T* and de- 65 pression of springs 23, so that the discharge of the disks is certain to be effected, and when the wheel does not bear upon the arm the

check-delivering plungers will not discharge the disks, but simply move back or forth without effecting any useful result. This last operation may occur when it is attempted to operate the machine without the preliminary deposit of a coin or after the deposit of one of unsuitable size.

The connections of parts with the arms upon 75 the rock-shaft are preferably made adjustable, as indicated; so that the various parts may be accurately located or adjusted to perform their offices at the proper times and move in proper degree with respect to other 80 operating parts.

The deposited coin is removed only by authorized persons from the coin-box through a suitable door, as at 37.

It is intended that the owners of the ma- 85 chine shall redeem for cash all checks received by the station-keeper or subscribers except those used in the purchase of car-tickets, the profit on these latter, as well as the deposited coin, belonging to the said owners; 90 and it will be perceived that the improved machine is calculated to stimulate trade in the region where it is located, to afford telephonic service for the customer, and at the same time an advantage to him in the way of 95 a reduction in the price of his car-tickets, which reduction nearly always amounts to the value of the coin deposited. The element of chance or speculation common to some coin-controlled machines is entirely elimi- 100 nated from this, which delivers always to each customer a constant value in service, trade, and transportation. The station-keeper and subscribers are recompensed by their in- 105 creased trade, to say nothing of the convenience to them and the saving of annoyance to them by reason of the location of the apparatus, which cannot be used except upon pre- 110 payment of a fixed charge, and the telephone owners are benefitted by the insurance which the machine affords against promiscuous use of their instruments without recompense.

The improved machine is neat and compact in appearance and is calculated for use in private houses, as well as in public places. It is 115 durable and reliable in all its parts and admirably answers all the purposes or objects of the invention to which allusion has herein been made.

Having now fully described my invention, 120 what I claim as new herein, and desire to secure by Letters Patent, is—

1. In a machine of the character herein set forth, the gong arranged to be struck by its hammer which is moved by connections with 125 the rock-shaft, the rock-shaft, the coin-receiving plunger, the rod operated by said plunger and connected with the rock-shaft, and the check-delivering mechanism also connected with the said plunger, the parts being combined and arranged for operation at 130 the times and substantially in the manner set forth.

2. In a machine of the character herein set

forth, the gong and its striking mechanism, a rock-shaft connected with the latter, a coin-receiving plunger, the rod operated by said plunger and connected with the rock-shaft, a check-delivering mechanism connected with the coin-receiving plunger, and a coin-arrester located in the path of the coin for the purpose of temporarily arresting it, the parts being combined and arranged for operation at the times and substantially in the manner set forth.

3. In a machine of the character herein set forth, the back board for sustaining the telephone, the casing, the interior plate anchored to the sides of the casing, a gong mounted on said plate and mechanism for striking the gong, a check-delivering mechanism, a coin-receiving plunger, and a lever connecting said plunger and check-delivering mechanism, the parts being combined and arranged for coöperation substantially in the manner and for the purposes set forth.

4. The combination in a machine of the character herein set forth of the rock-shaft actuated by a rod made movable by the deposited coin, and the coin-arresting pin, said pin being supplied with a returning-spring and connected with a lever arranged to contact with a latch operated by the said rock-shaft, substantially as shown and described.

5. The combination in a machine of the character herein set forth of the coin-receiving plunger, the toggle-joint for operating the said plunger, and the connecting-rod leading from an arm on the crank-shaft to the toggle-joint, substantially as shown and described.

6. In a machine of the character herein set forth, the rock-shaft actuated by the deposited coin, said shaft carrying arms for actuating the gong-sounding mechanism, for retracting the coin-arresting pin, and for engagement with a bearing connected with the discharging mechanism, all combined and arranged for operation substantially as shown and described.

7. In a machine of the character herein set forth, the connected and simultaneously-discharging plungers made movable by connections with the crank-shaft and coin-receiving plunger, an arm upon the coin-controlled rock-shaft engaging with a bearing on the discharging mechanism for the purpose of further turning the rock-shaft, springs on the rock-shaft, and tripping-fingers arranged to be moved by said springs, and the gong-operating connections, the parts being combined and arranged for movement at the times and substantially in the manner specified.

8. In a machine of the character herein set forth, the coin-receiving plunger mounted and made movable in a casing applied upon the top of the metallic plate, said plate bearing the gong as explained, connections for moving the said plunger from the exterior, the hinged tongue in the plunger, the rod operated by said tongue and connections from said rod through the rock-shaft to the gong-hammer, the said coin-receiving plunger being also connected with the discharging mechanism and the whole being sustained upon the back board, the parts being combined and arranged substantially as shown and described.

9. In a machine of the character herein set forth, the coin-chute extending down to a transparent plate and means for temporarily arresting the coin at this plate, a side channel leading from the bottom of the coin-chute to the coin-receiving box, the check-chute having the enlarged mouth and extending from beneath the two check-reservoirs down to an opening through the exterior casing and to a ledge beneath said opening, the coin-receiving plunger, the hinged tongue in the plunger, the rock-shaft with its arm and connections for moving the gong-hammer, the gong-hammer, and the check-delivering plungers and connections for operating the same, combined and arranged substantially as shown and for the purposes set forth.

10. The combination with the two check-discharging plungers, of the connecting cross-bar, the rod extending from said cross-bar to the end of the lever carrying the coin-receiving plunger, the exterior hand-crank, the crank-shaft, the connecting-rod, and the toggle for operating the said lever, all arranged to effect the reciprocation of the discharging-plungers, substantially as and for the purposes set forth.

11. In a machine of the character herein set forth, the plate bearing the gong and anchored to the sides of the exterior casing, the lever connected at one end with the coin-receiving plunger and at the other with the toggle operated from the exterior through the crank-shaft and connecting-rod and with the check-discharging mechanism, the said lever being hinged on the back of said plate, substantially as shown and described.

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

CHAS. H. KRAFT.

Witnesses:

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WORTH OSGOOD.