

No. 720,347.

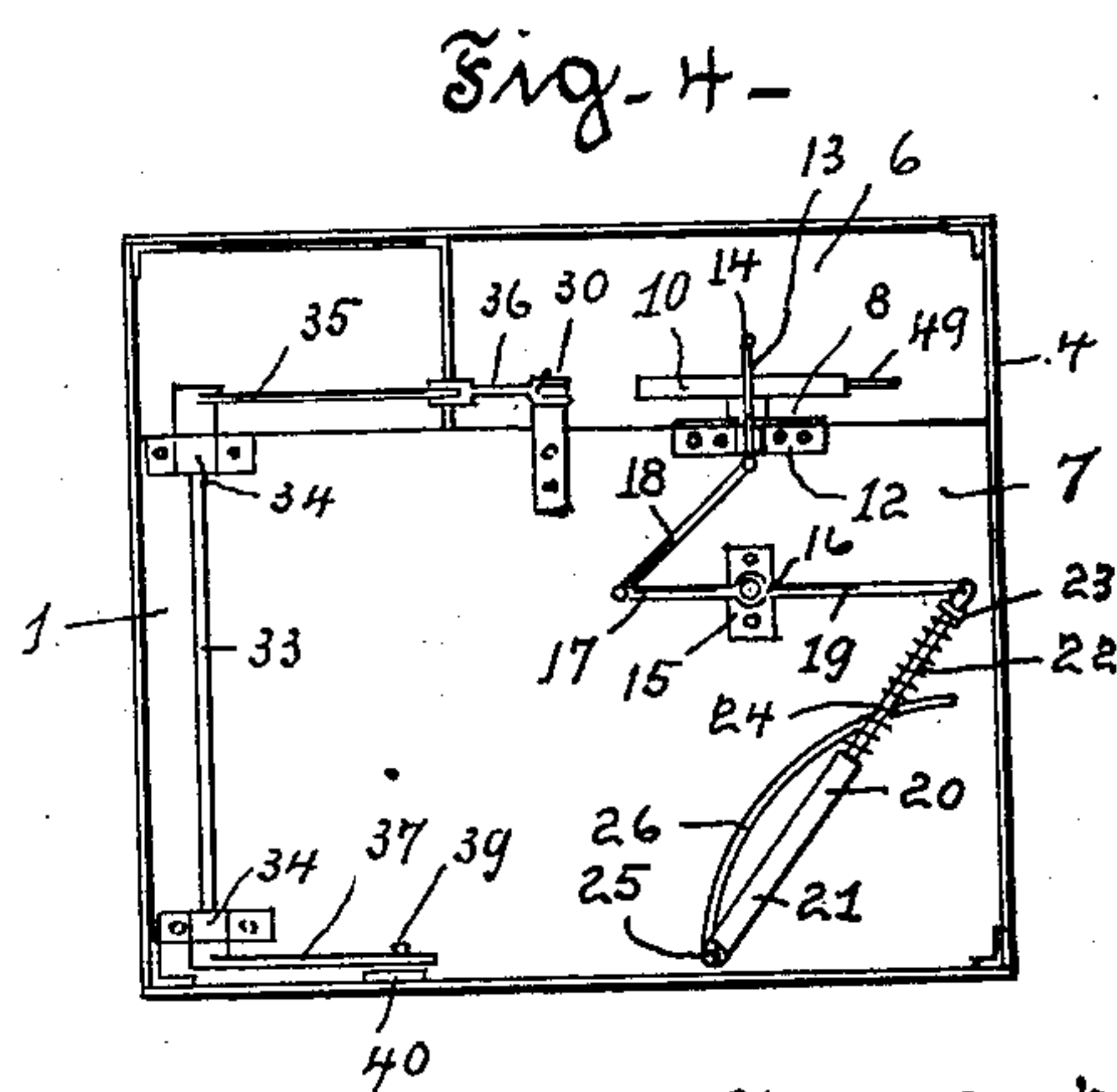
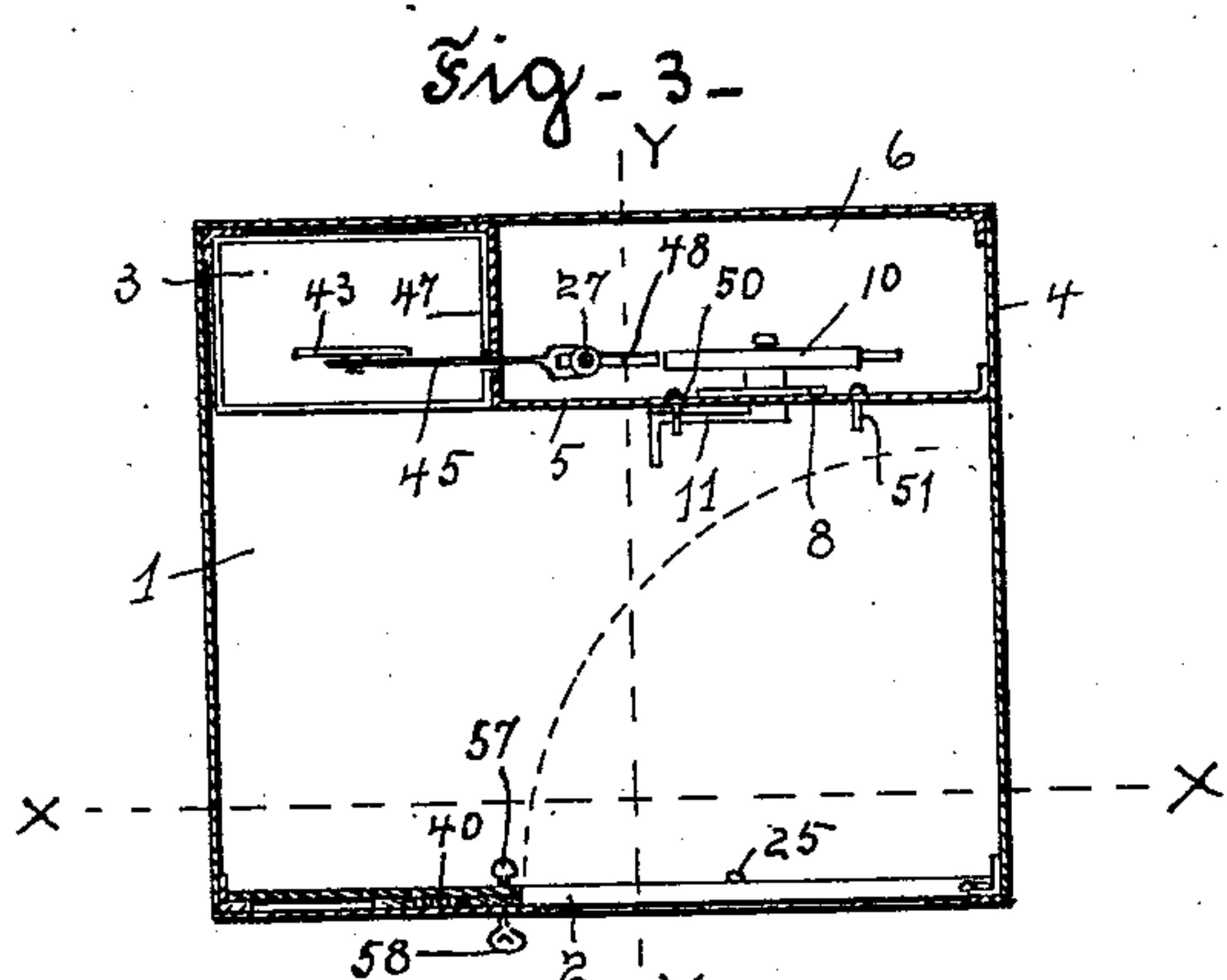
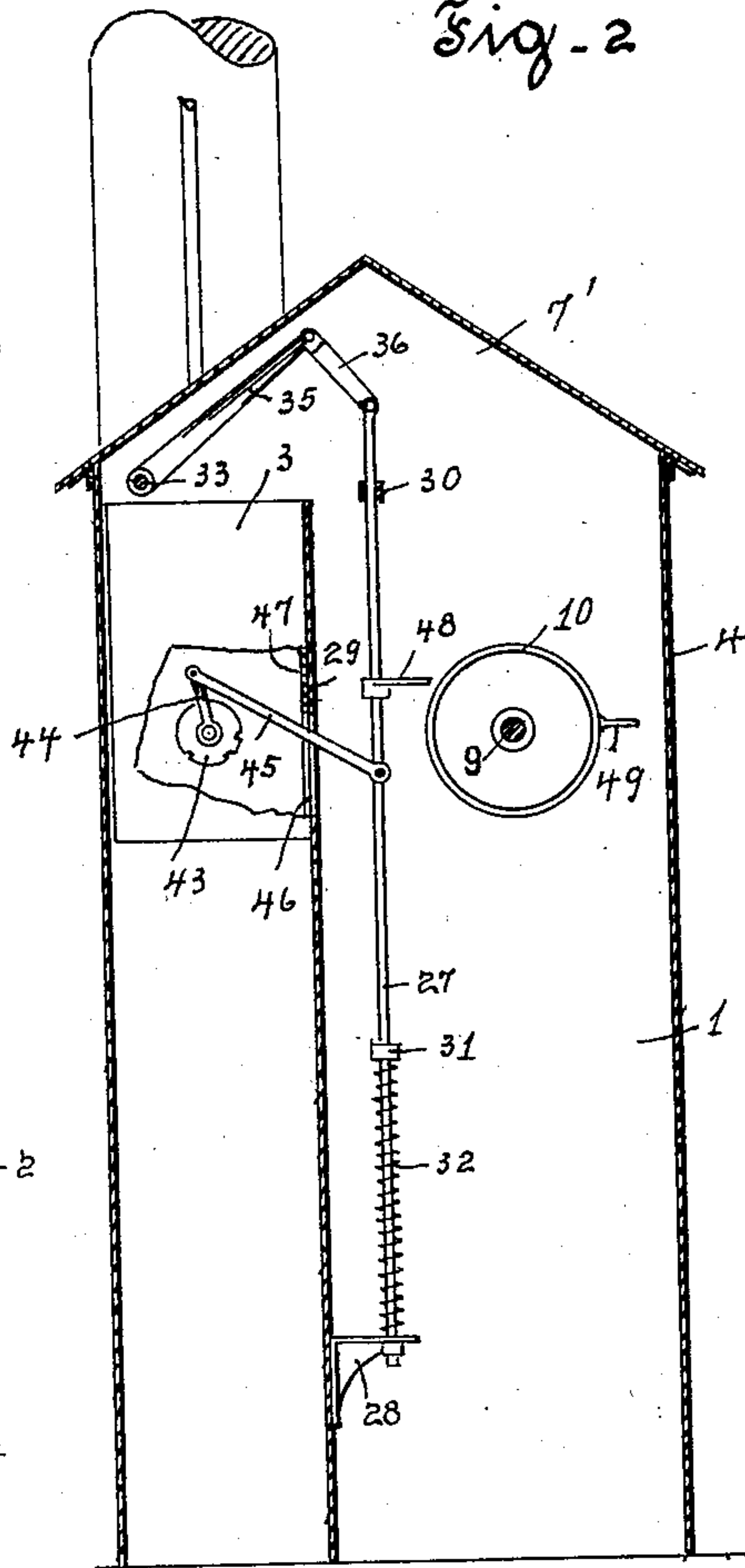
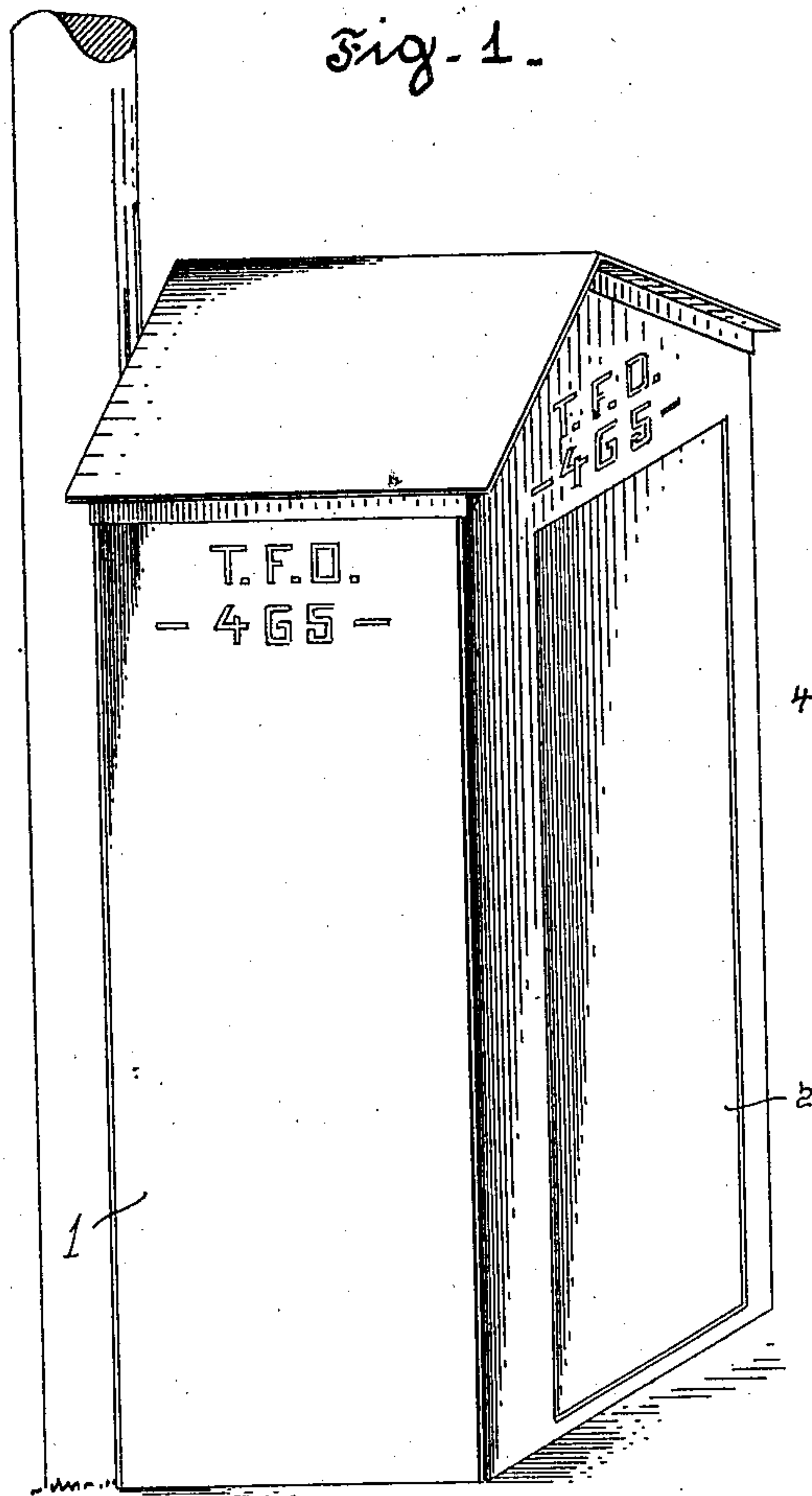
PATENTED FEB. 10, 1903.

W. J. HOFSTATTER.
FIRE AND POLICE ALARM CALL SYSTEM.

APPLICATION FILED JAN. 31, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



witnesses—

William H. Moor
Chas. A. Boone

Inventor—
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3 SHEETS—SHEET 2.

Fig. 5.

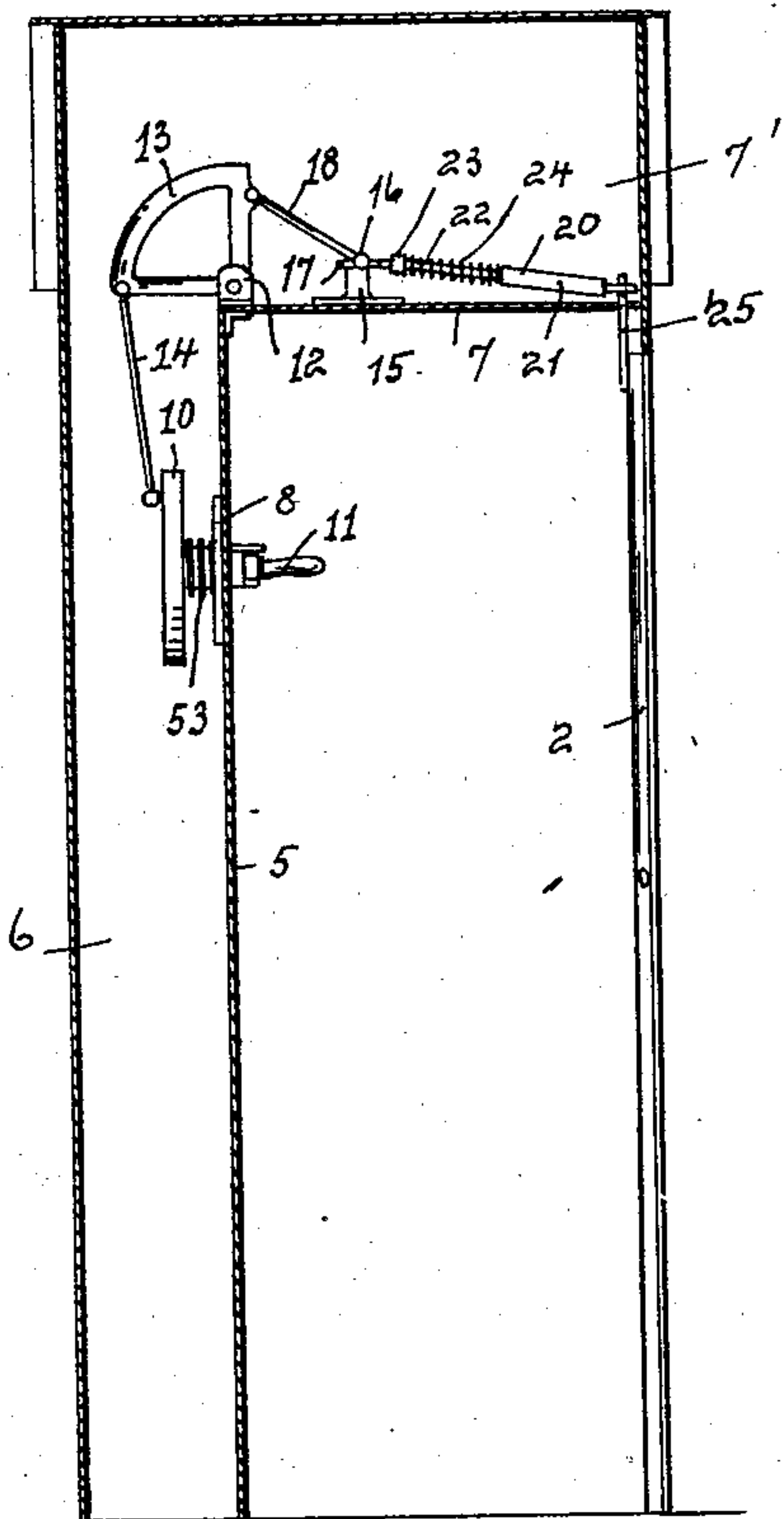


Fig. 6.

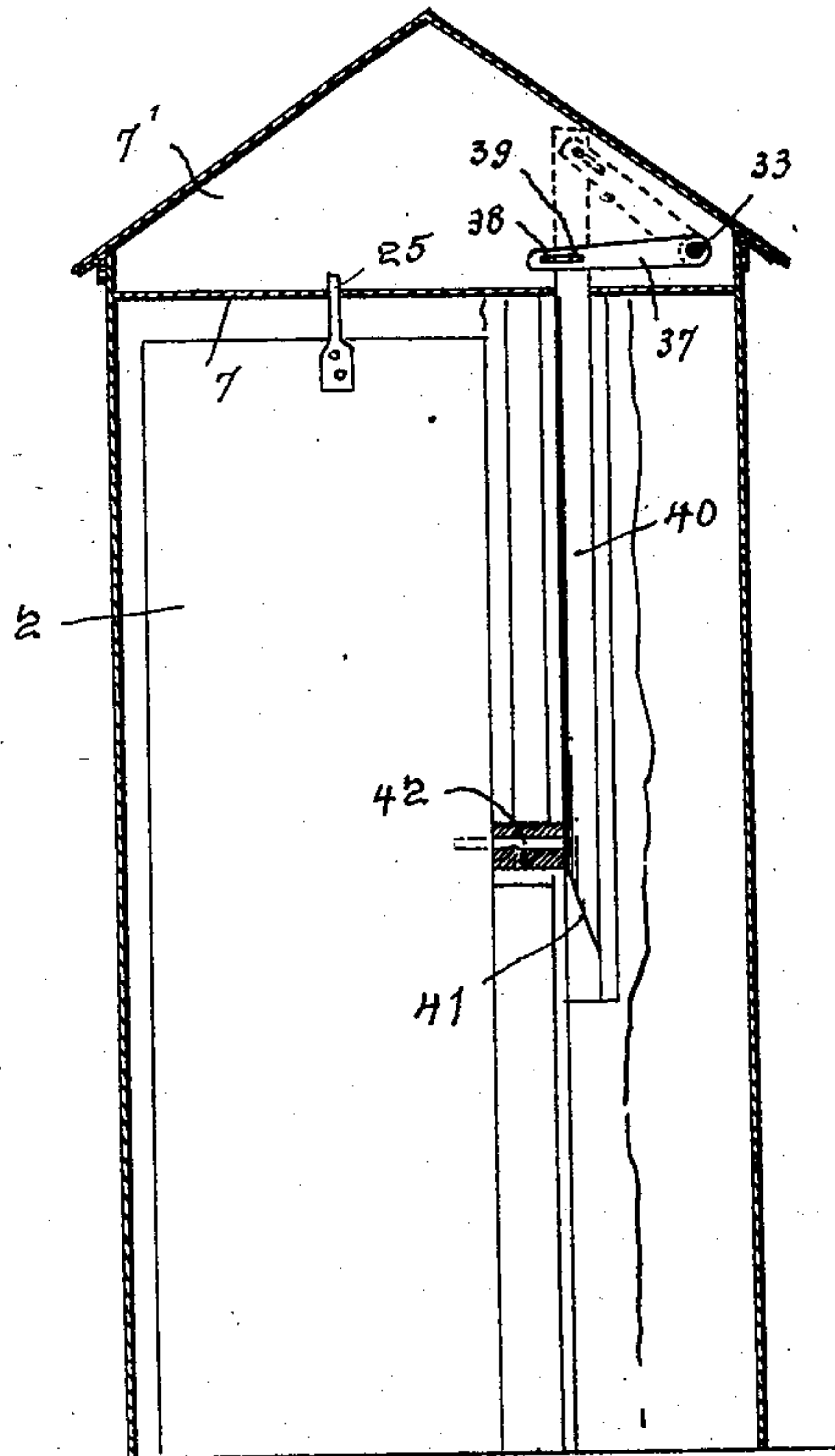


Fig. 7.

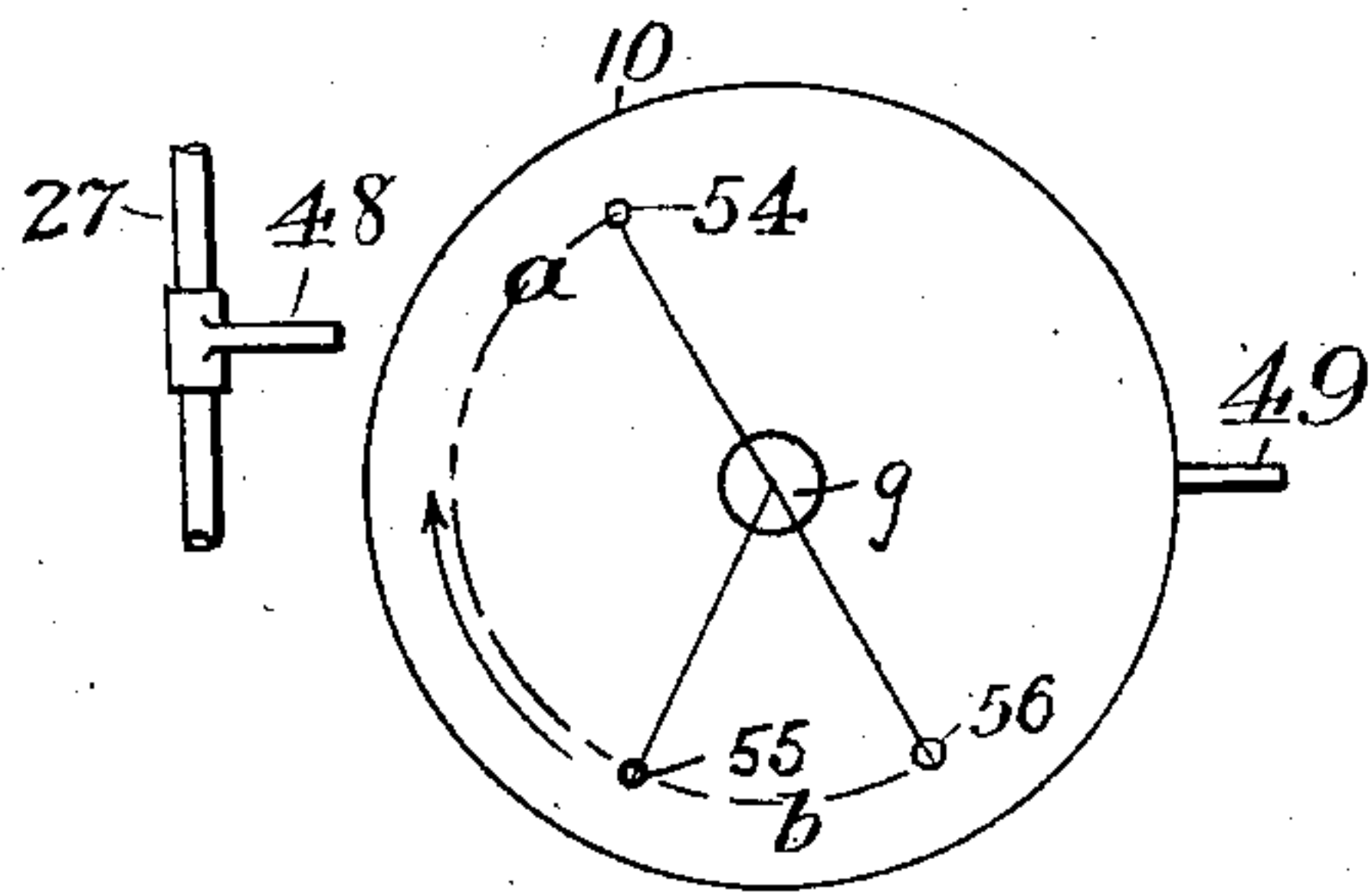


Fig. 8.

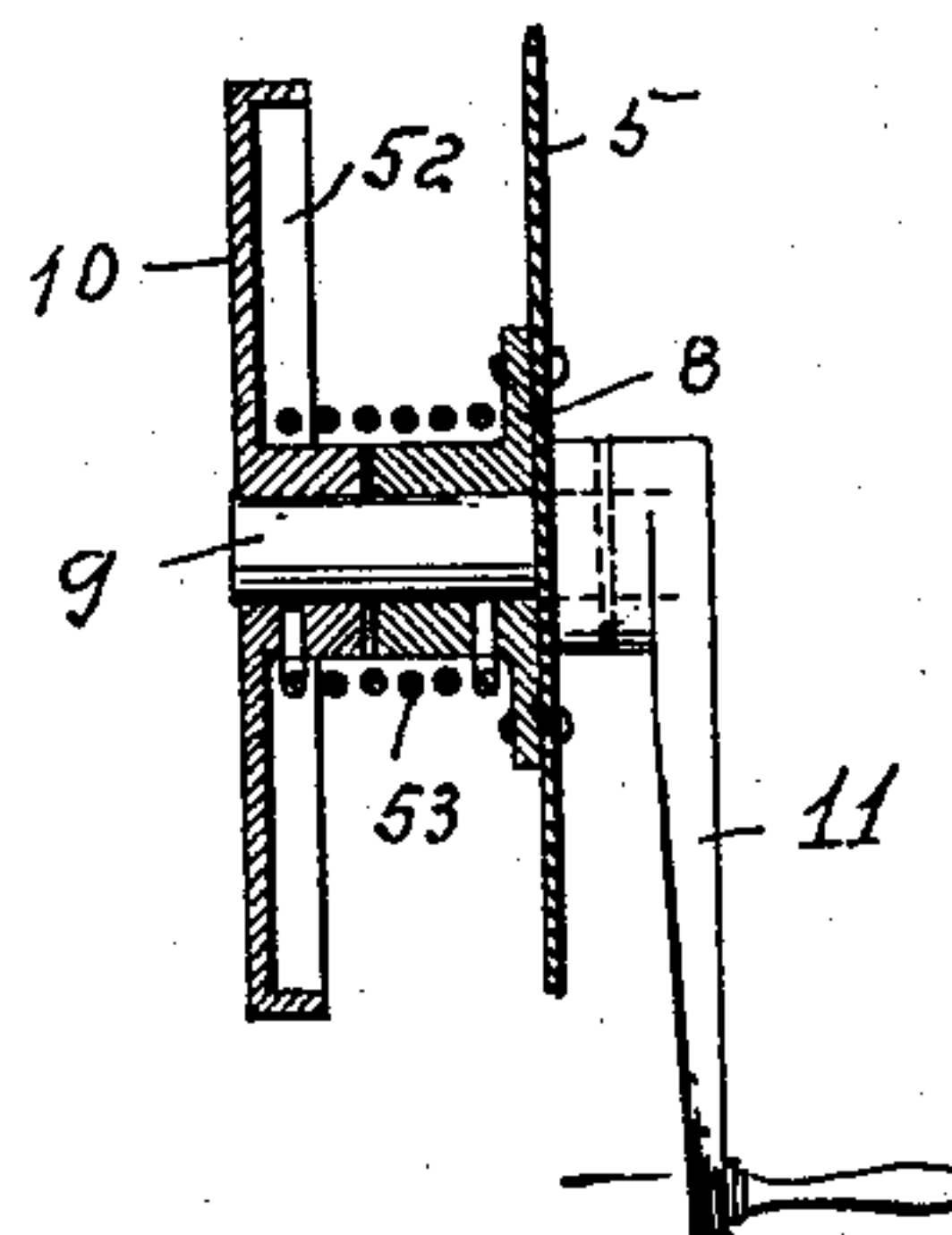
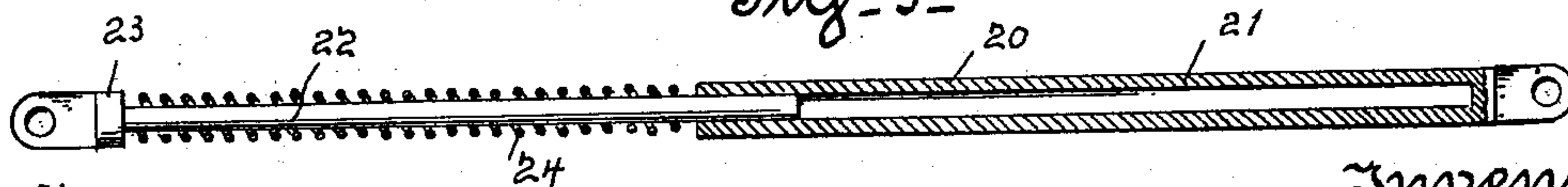


Fig. 9.



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3 SHEETS—SHEET 3.

Fig. 10.

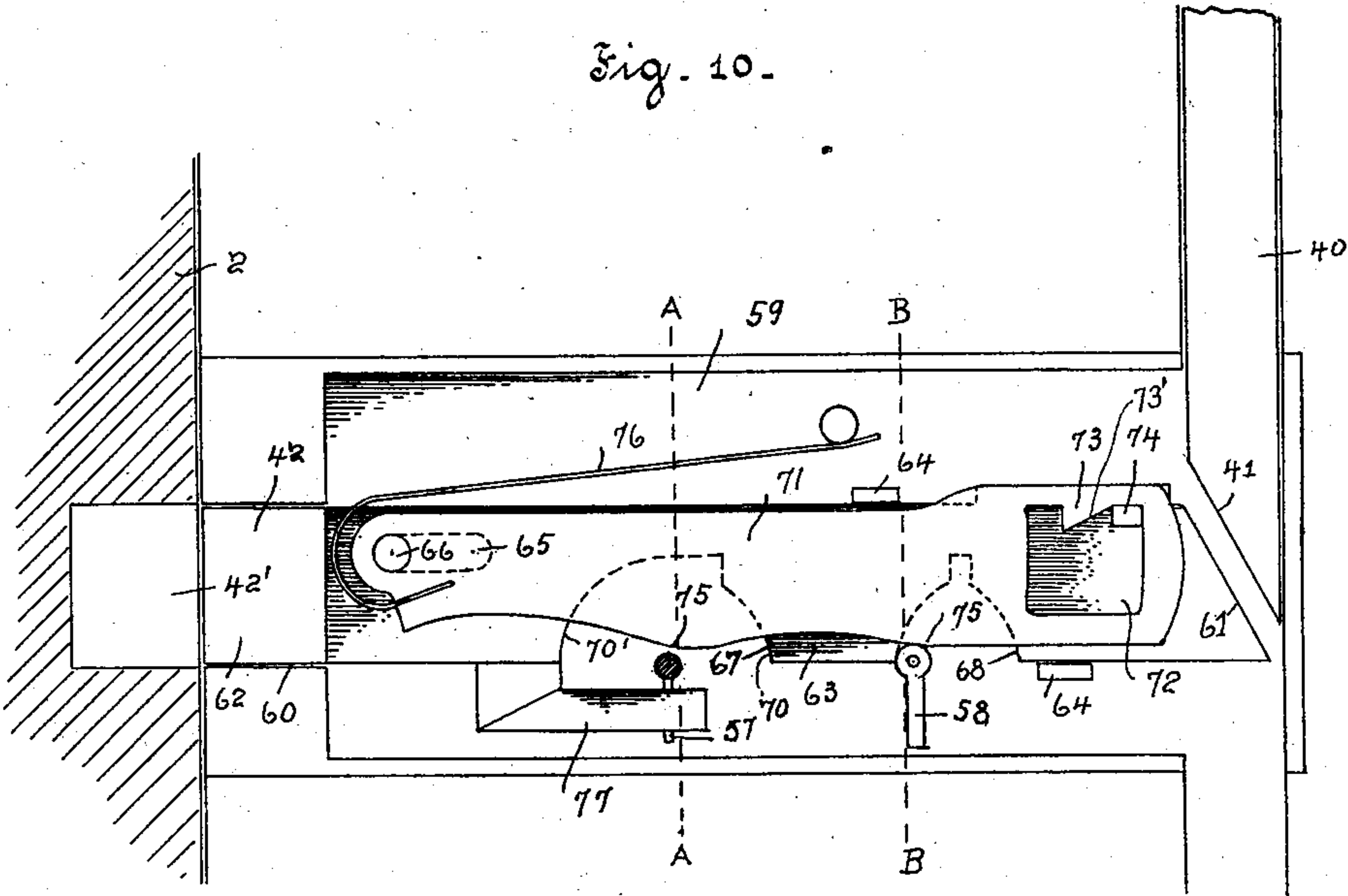


Fig. 11.

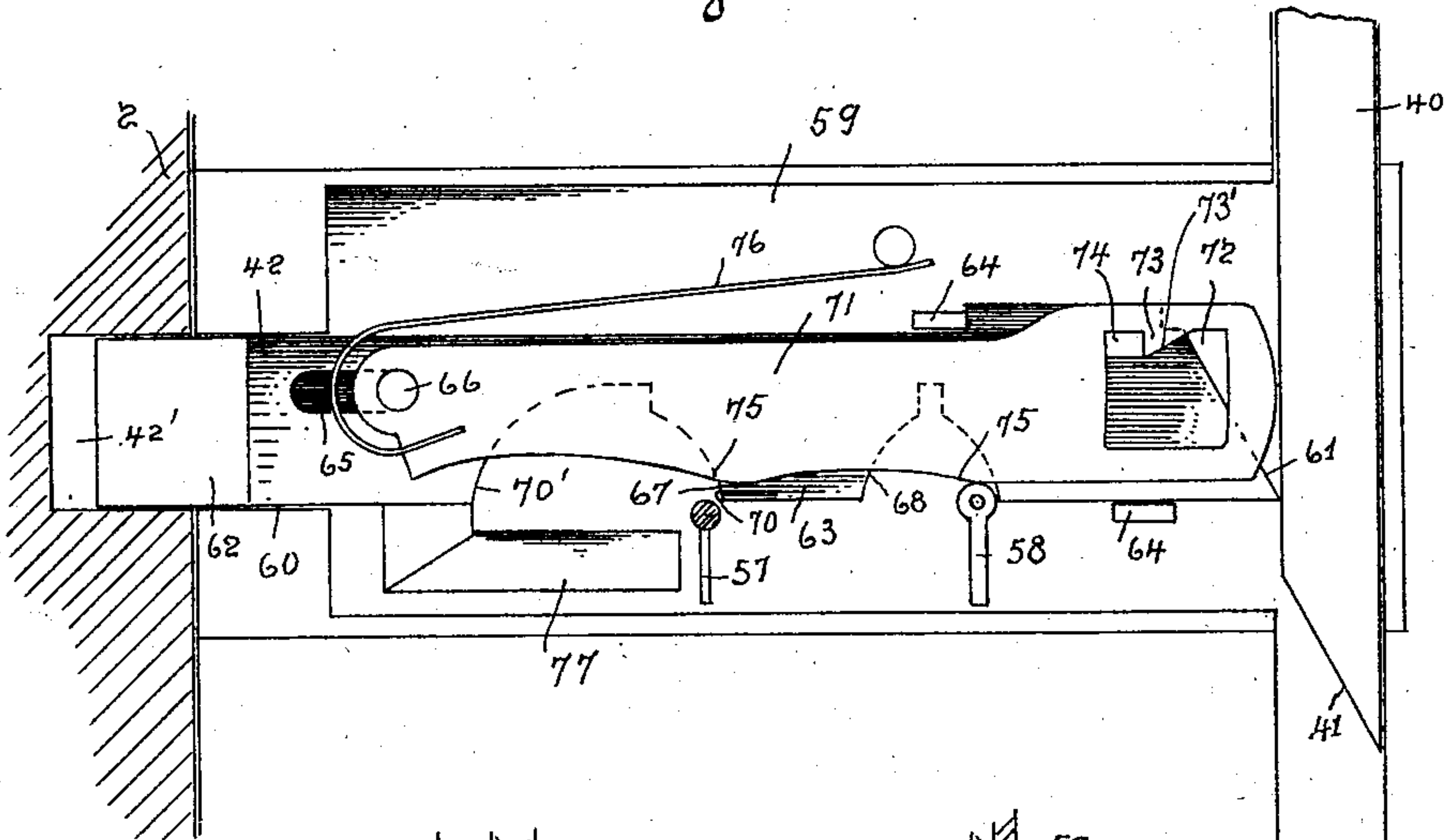


Fig. 12.

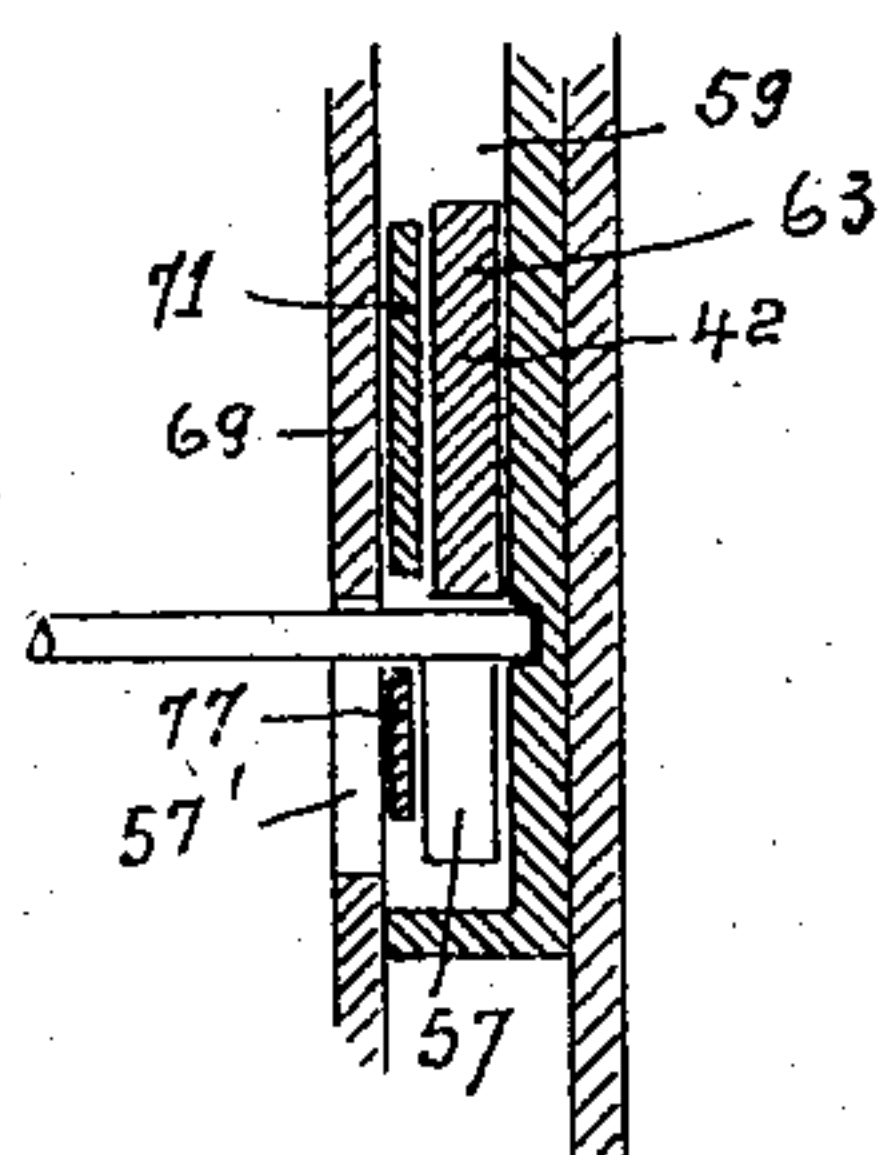
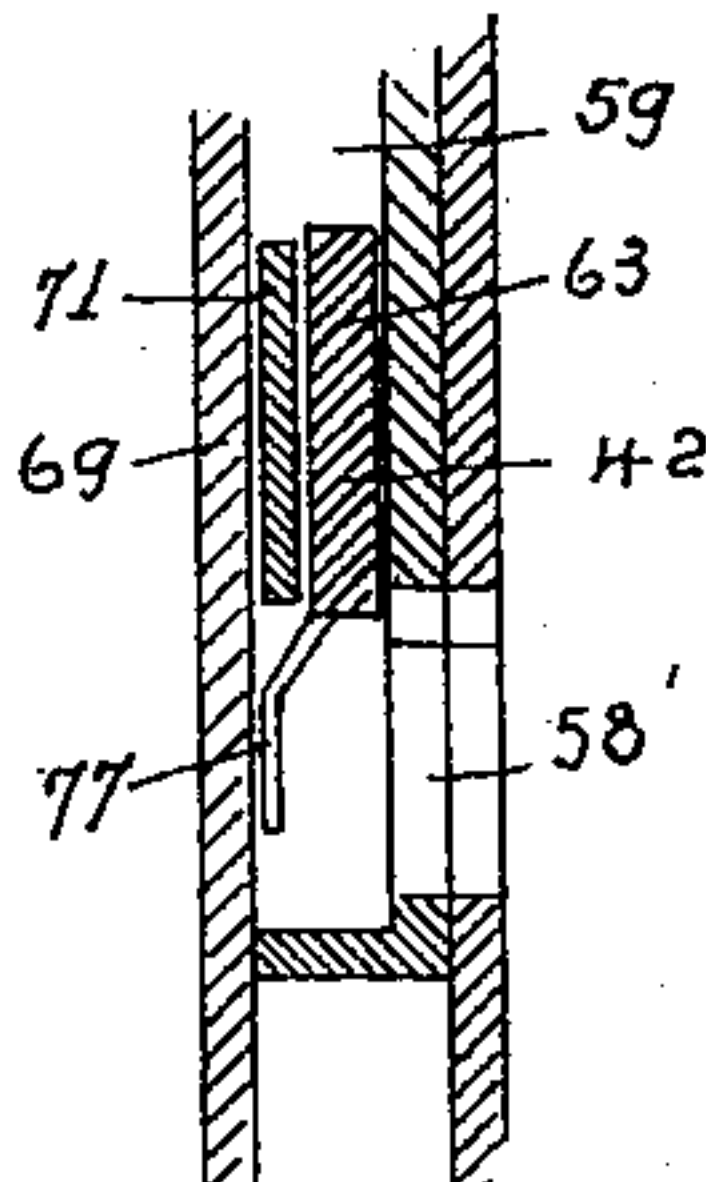


Fig. 13.



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UNITED STATES PATENT OFFICE.

WILLIAM J. HOFSTATTER, OF TOLEDO, OHIO.

FIRE AND POLICE ALARM CALL SYSTEM.

SPECIFICATION forming part of Letters Patent No. 720,347, dated February 10, 1903.

Application filed January 31, 1902. Serial No. 91,970. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. HOFSTATTER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Fire and Police Alarm Call Systems, of which the following is a specification.

My invention relates to an improved system for turning in fire-alarms and police-calls by means of the fire-department and police-call box systems in general use in cities, and has for its object, first, to facilitate the sending in of such calls; second, to prevent the sending in of false alarms of fire by designing and irresponsible persons and providing the means for certainly identifying the person who has turned in the alarm or who is responsible for the alarm being turned in. I accomplish the first of these objects by providing a booth for the alarm-box having a door that is normally closed, but left unlocked, and that may be readily opened by any person for the purpose of turning in an alarm, and by pivoting a crank-lever in the booth normally ready for use and so connecting it with the operating mechanism of the box that a partial turn of the lever will send in a call. I accomplish the second of these objects by connecting the crank-lever for turning in the call with concealed mechanism whereby the door is closed and securely locked before the mechanism of the alarm-box is or can be operated, thereby securely locking the person turning in the call within the booth, from which he can only be released by a master-key in the custody of a person responding to the call inserted from the outside or by a numbered and registered key supplied to the person making the call and adapted to unlock the door only from the inside, but which cannot be withdrawn from the lock without the use of the master-key on the outside, whereby the user of the key or the person accountable therefor may be certainly identified.

The mechanism, construction, and operation of my invention by which these objects are accomplished are hereinafter set forth and described, and illustrated in the drawings, in which—

Figure 1 is an isometric view of a fire-alarm call-box booth constructed in accordance with

my invention. Fig. 2 is a transverse section through the same, showing the operating mechanism with the inclosing partition removed. Fig. 3 is a horizontal section of the booth below the ceiling. Fig. 4 is a like view showing the door closing and locking mechanism above the ceiling. Fig. 5 is a section through the booth on the line X X of Fig. 3. Fig. 6 is a like section on the line Y Y of Fig. 3. Fig. 7 is a diagram indicating the arcs through which the pitman-coupling of the disk travels to complete the several operations effected thereby. Fig. 8 is a vertical section through the same, and Fig. 9 is an enlarged view of the door-closing rod. Fig. 10 is a plan view of a door-lock for the booth with the cover-plate removed and showing the locking-bolt in its normal position, withdrawn from the socket in the door. Fig. 11 is a like view showing the locking-bolt in the socket of the door. Fig. 12 is a section on line A A of Fig. 10, showing the baffle-plate in position to prevent the withdrawing of the common or inside key, and Fig. 13 is a section on line B B of Fig. 10.

In the drawings, 1 designates the booth, constructed in a suitable manner of sheet metal or other suitable material and adapted to receive within it the fire-alarm, police-call, or other similar call-boxes of fire and police alarm systems. The booth is of a suitable size for a single person to enter and is provided with a door 2 for entering and the concealed mechanism, hereinafter described, for operating the alarm-box by a visible operating-crank, by means of which the door is closed, then locked, and the alarm rung up. The alarm-box 3, having electrical connection with a central station, is located in one corner of the booth, and the intervening space between the alarm-box and the wall 4 of the booth is closed by means of a partition 5, by which a chamber 6 is formed, in which the operating mechanism in part is located. The booth is also provided with a ceiling 7, forming, with the roof of the booth, an overhead chamber 7', in which is located the door closing and locking mechanism.

To the rear of the partition 5 there is secured a bearing 8, in which is journaled an arbor 9, having mounted thereon a disk 10, located in the chamber 6, and an operating-

lever 11 on the outside of the chamber. In a vertical line above the bearing 8 there is secured to the ceiling a pivot-bearing 12, to which is pivotally connected a bell-crank 13. The bell-crank is connected to the disk by means of a pitman 14, and both of the couplings or connections of the pitman are formed with a universal coupling or a ball-and-socket joint of usual construction.

To the top of the ceiling there is secured a bearing 15, upon which is pivoted a lever 16. The arm 17 of the lever 16 is connected to the bell-crank by means of a coupling-link 18, which is also provided with a ball-and-socket coupling or universal joint at each end. From the opposite arm 19 of the lever 16 extends a rod 20, comprising a tubular portion 21 and a rod portion 22, adapted to enter the tubular portion, and upon the rod there is formed an annular shoulder 23, and between the shoulder and the end of the tubular rod there is mounted upon the rod an encircling spring 24. The door is hinged to the front wall of the booth in a manner to conceal the hinges, and from the top of the door extends a pin 25 above the ceiling through a segmental slot 26, which is formed in the ceiling. The end of tubular rod portion 21 is coupled to the pin and is thereby adapted to close the door by the movement of the bell-crank and the disk.

27 designates a trip-rod, which is reciprocally mounted in a vertical position in the chamber 6 and is held in position by means of a bracket 28, secured to the side wall 29 of the chamber 6. The top of the rod is held in position by the bearing 30, which is secured to the top of the ceiling. Upon the trip-rod there is mounted a collar 31, and between the collar 31 and the bracket 28 there is mounted on the rod an encircling spring 32, adapted to urge the rod into the original and operative position.

33 designates a shaft which is located above the ceiling of the booth and is journaled in bearings 34, which are secured to the top of the ceiling.

Upon the shaft 33, above the call-box, there is mounted a lever 35, the free end of which is connected to the vertical trip-rod by means of a coupling-link 36. Upon the opposite end of the shaft 33 there is also mounted a lever 37, in the free end of which is formed an elongated slot 38, having an area to receive a pin 39, which is secured to a vertical movable locking-bar 40. The locking-bar 40 is housed in the front wall of the booth and is provided at its lower end with an inclined plane 41, adapted to engage and force the locking-bolt 42 of a suitable baffle-lock into a suitable recess in the door-stile and lock the door.

43 designates the index-wheel of the call-box, which is provided with the usual operating-crank 44, and the crank 44 is connected to the spring-pressed trip-rod 27 by means of a coupling-link 45, which is inserted into the

alarm-box through the elongated slot 46, extending through the side wall 47 of the call-box and the side wall 29 of the chamber 6. Above the point of connection of the coupling-link 45 there is mounted upon the rod 27 a trip-arm 48, adapted to be engaged by a dog 49, which is secured to the periphery of the disk 10 in a position when the disk is turned to engage the trip-arm 48 and operate the alarm. In the front face of the partition-wall 5, to which the bearing 8 is secured, there are mounted pins 50 and 51, adapted to limit the movement of the operating crank-lever 11. The disk 10 is provided with an annular cavity 52, and encircling the hub of the disk and the bearing there is mounted a spring 53, the ends of which are respectively secured to the hub and to the bearing, whereby when the disk is revolved the spring will be compressed and after the release of the operating crank-lever the spring will return the disk to its normal position.

In Fig. 7, 54 designates the normal position of the disk-coupling of the pitman relative to the movement of the disk, and when the disk is turned by the crank-lever 11 the door will be closed when the coupling has traveled in the arc *a* to the point 55, at which point the disk engages the trip-rod 27 to lock the door and operate the call-box, which operations are completed while the coupling travels through the arc *b* to the point 56, after which, upon the release of the lever-arm, the disk is brought back into its normal position by the spring 53. The door of the booth is held normally closed by the spring 24 of rod 20, but will readily yield and swing freely inward, so that any one can enter the booth to ring the alarm; but, after entering, in moving the lever to ring the alarm the door will be first closed and then locked before the alarm can be rung, thereby securing the operator in the booth until released by the proper authorities. In order to avoid such detention, a plurality of indexed or numbered keys 57 are provided for distribution by the department to a suitable number of responsible persons living in the vicinity of the box upon their names, addresses, and key-numbers being duly registered, and a person turning in an alarm, being the holder of a key, may release himself from the booth by throwing the locking-bolt with his key to unlock the door; but after doing so, the lock being constructed, as hereinafter described, to retain the key, he is obliged to leave it in the booth as a means of identification of the person who has turned in the alarm. This key 57 is released from the booth by means of a master-key 58, which is held by the department.

The locking-bolt 42, together with the locking mechanism, is housed in a suitable casing 59, which is secured within the wall of the booth adjacent to the opening for the door 2. The bolt extends from under the locking-bar 40 through a suitable end opening 60 in the

casing, and the end of the bolt under the locking-bar 40 is beveled to form an inclined plane 61 coincident with the inclined plane 41 of the locking-bar. From the head 62 the body of the bolt is reduced in thickness to form a shank portion 63, which is movably held between guides 64, suitably secured to a side plate of the casing. A slot 65 is formed in the shank portion near the head of the bolt, and the slot is of a width to receive a stud 66, which is mounted to the bottom plate of the casing and adapted to operate as a stop to limit the movement of the locking-bolt by contacting with the ends of the slot. At a suitable distance from each other there are formed in the shank portion of the bolt incuts 67 and 68, extending from the bottom edge of the bolt into the body portion thereof for engagement with a suitable key. Both sides of the incut 68 are adapted to alternately engage with the department-key 58 to move the bolt into or out of the socket 42', formed in the adjacent free edge of the door. The department-key 58 is inserted from the outside of the wall through a suitable opening 58'. In juxtaposition to the incut 67 there is formed inside of the booth a suitable aperture 57' through the closure-plate 69 of the casing for inserting the citizen's or inside key 57 into the lock to engage with the side 70 of the incut 67 to withdraw the bolt by turning the key. The opposite side 70' of the incut 67 is enlarged toward the head of the locking-bolt, whereby the citizen's key is only adapted to withdraw the bolt from the socket. The locking-plate 71 for the bolt is pivotally mounted upon the stud 66, and the plate is of a length to extend from the stud to near the beveled end of the shank portion 63 and is provided with an angular opening 72 at the end of the plate, with the sides of the opening of a length to allow of a limited movement of the plate. Centrally to the top edge of the opening there is formed a pendent saw-toothed shoulder 73, which is arranged with the vertical side toward the pivotal point of the plate and is provided with an inclined plane 73', adapted to raise the locking-plate by means of a stud 74, movable with the bolt and contacting with the plane, whereby the bolt is free to move into the socket of the door. The stud 74 is suitably secured to the shank of the locking-bolt 42 and projects into the opening 72 of the plate, and when the bolt 42 is in the socket of the door the stud 74 prevents the return movement of the bolt by engaging with the vertical side of the pendent shoulder, as shown in Fig. 11. With the bolt 42 in this position the locking-plate may be raised to disengage the shoulder 73 from the stud 74 by means of the department-key or the citizen's key, adapted to contact with cams 75, formed upon the lower edge of the locking-plate. The locking-plate 71 is actuated to engage the stud 74 by means of a spring 76. The withdrawing of the inside key from the aperture after the bolt has been withdrawn from the socket is

prevented by a baffle-plate 77, integral with the bolt and arranged to partially cover the inside key-aperture 57' when the bolt is withdrawn from the socket.

In closing the door of the booth the locking-bar 40 is moved downward, and contacting with the inclined plane of the locking-bolt, forces the locking-bolt into the socket formed in the door, and by the outward movement of the bolt the locking-plate 71 is raised by the stud 74 traveling upon the inclined plane of the shoulder 73, and after passing over the inclined plane the locking-plate 71 is urged into the normal position by spring 76 with the stud engaged between the vertical side of the shoulder and the opposite side of the opening 72. By the outward movement of the locking-bolt the baffle-plate is removed from in front of the aperture for the citizen's key, and the cam-faces of the incuts 67 and 68 in the shank 63 of the bolt are in position for engagement by either key. The bolt thus inserted into the socket, the door may be opened from the outside by withdrawing the bolt by means of the department-key, which by turning disengages the locking-plate, withdraws the locking-bolt, and disposes the baffle-plate in front of the aperture for the citizen's key.

A citizen equipped with an inside key for the booth and locked within the booth by ringing the alarm may insert his key into the lock and by turning the key disengage the locking-plate and withdraw the locking-bolt from the socket, and by withdrawing the bolt the baffle-plate is disposed behind the feather of his key, whereby the key 57 cannot be withdrawn from the aperture, and the incut 67 being enlarged toward the head of the bolt the citizen's key cannot engage the locking-bolt to remove the baffle-plate by an outward movement of the bolt. To release the citizen's key, the department-key is inserted from the outside of the booth while the door is partly open, and locking-bolt 72 is thrown outward a distance sufficient to remove the baffle-plate from in front of the inside aperture 57', upon which the citizen's key may be removed, after which the locking-bolt is withdrawn into the normal position (shown in Fig. 10) and the department-key withdrawn from the lock.

Thus constructed, in operating the crank-lever to turn in an alarm the movement of the several parts of the mechanism will be as follows: During the revolving of the disk 10 through the arc α the pitman 14 will operate the bell-crank lever 13, which in turn, through the lever 16 and the link 18, will operate the spring extension-rod 20 to close the door. If the door be released after the operator enters the booth, the spring 24 on the rod 22 will operate to extend the rod 20 and close the door, and during the movement of the disk 10 through the arc α the spring 24 will be compressed by the tubular portion 21 of the rod 20, rod 22 being telescoped therein until the tubular rod 21 and the spring 24

form a solid and unyielding connection between the lever 16 and the door, from which it is apparent that if the door be held open during the operation of the crank-lever 11 the lever cannot be moved to turn the disk 10 through the entire arc *a* and that no further movement of the lever 11 is possible until the door is allowed to close. When the disk 10 is revolved to the point 55, as shown in Fig. 7, the dog 49 on the disk engages the trip-arm 48 on the trip-rod 27, and the further movement of the disk through the arc *b* depresses the trip-rod, thereby compressing the spring 32 and operating the lever 35 to turn the shaft 33, thereby operating the lever 37 to throw the locking-bar 40 and force the locking-bolt 42 into a suitable recess in the edge of the door and lock it. The movement of the trip-rod 27 also operates the crank 44 of the index-wheel 43 of the call-box by means of the connecting rod or link 45, whereby the call is sent in during the movement through the arc *b* of the disk-coupling of the pitman 14. When the point 56 in the arc of the movement of the disk 10 is reached by its pitman-coupling, the further movement of the crank-lever 11 is prevented by the pin 51, secured in the partition-wall 5 within the radius of its movement, and when the crank-lever is released the spring 53 on the hub of the disk 10 will automatically reverse the movement of the crank-lever 11 until it is in its normal position in engagement with pin 50, also secured in the partition 5. By the reversal of the crank-lever 11 to its normal position each of the springs 24 and 32 are released and the several parts of the operating mechanism are returned to their normal positions, excepting the door-locking bolt 42, which remains in a locking position. The locking-bolt 42 is provided with any suitable operating baffle-lock mechanism, whereby it may be either locked or unlocked from the outside by the master-key 58 and unlocked, but not locked, from the inside by any one of the registered keys 57, which the lock mechanism is adapted to retain until the bolt is thrown into a locking position by the master-key.

It is apparent that a person without a key in case of actual necessity for sending in an alarm will not be deterred from doing so by reason of the short detention in the booth that he will be thereby subjected to. On the other hand, the sending in of false alarms by designing persons, which so frequently occurs with the systems in use, will be prevented by reason of the absolute certainty of detention, arrest, and punishment.

What I claim to be new is—

1. In a fire and police alarm system, a booth provided with a door normally closed and a concealed locking-bolt for the door normally unlocked; a call-box secured in the booth having electrical connections with a central station; a crank-lever mounted on an axle having bearings supported by a partition-wall of the booth, and mechanical means concealed

by the walls of the booth and operatively connecting the axle with the door, the locking-bolt, and with the crank of the call-box, whereby, by operating the lever through an arc, the door will be first closed and held closed, then locked and the call-box operated to send in an alarm-signal.

2. In a fire and police alarm system, a booth provided with a door normally closed and a concealed locking-bolt for the door normally unlocked; a call-box secured in the booth having electrical connections with a central station; a crank-lever mounted on an axle having bearings supported by a partition-wall of the booth; mechanical means concealed by the walls of the booth and operatively connecting the axle with the door, the locking-bolt, and with the crank of the call-box, whereby, by operating the lever through an arc, the door will be first closed and held closed, then locked and the call-box operated to send in an alarm-signal, and means to reverse each of the several movements by reversing the lever and leave the door locked.

3. In a fire and police alarm system, a booth provided with a door normally closed and a concealed locking-bolt for the door normally unlocked; a call-box secured in the booth having electrical connections with a central station; a crank-lever mounted on an axle having bearings supported by a partition-wall of the booth; mechanical means concealed by the walls of the booth and operatively connecting the axle with the door, the locking-bolt, and with the crank of the call-box, whereby, by operating the lever through an arc, the door will be first closed and held closed, then locked and the call-box operated to send in an alarm-signal, and means to automatically reverse the movements of the crank-lever and its connections and return them to their normal positions when the lever is released, and leave the door of the booth locked.

4. In a fire and police alarm system, a booth provided with a door normally closed and a concealed locking-bolt for the door normally unlocked; a call-box secured in the booth having electrical connections with a central station; a crank-lever mounted on an axle having bearings supported by a partition-wall of the booth; mechanical means concealed by the walls of the booth and operatively connecting the axle with the door, the locking-bolt, and with the crank of the call-box, whereby, by operating the lever through an arc, the door will be first closed and held closed, then locked and the call-box operated to send in an alarm-signal; means to automatically reverse the movements of the crank-lever and its connections and return them to their normal positions when the lever is released and leave the door of the booth locked; an inside key for unlocking the locking-bolt and adapted to be retained by the bolt when unlocked thereby, and an outside key adapted to lock and unlock the bolt and release the inside key.

5. In a fire and police alarm system, a booth

provided with a door normally closed and a concealed locking-bolt for the door normally unlocked; a call-box secured in the booth having electrical connections with a central station; a crank-lever mounted on an axle having bearings supported by a partition-wall of the booth; a disk mounted on the opposite end of the axle behind the wall; an extension-rod held normally extended by a spring, and pivoted at one end to the door; mechanical means operatively connecting the opposite end of the extension-rod with the disk, whereby, when the disk is partially turned by the lever, the extension-rod will be moved to close the door and compressed to hold it closed, and means to actuate the locking-bolt to lock the door and to operate the signal mechanism of the call-box, adapted to be engaged and operated by the disk, by the further movement of the lever.

6. In a fire and police alarm system, a booth provided with a door normally closed and a concealed locking-bolt for the door normally unlocked; a call-box secured in the booth having electrical connections with a central station; a crank-lever mounted on an axle hav-

ing bearings supported by a partition-wall of the booth; a disk mounted on the opposite end of the axle behind the wall; an extension-rod held normally extended by a spring, and pivoted at one end to the door; mechanical means operatively connecting the opposite end of the extension-rod with the disk, whereby, when the disk is partially turned by the lever, the extension-rod will be moved to close the door and compressed to hold it closed; means to actuate the locking-bolt to lock the door and to operate the signal mechanism of the call-box, adapted to be engaged and operated by the disk, by the further movement of the lever, and means to automatically reverse the movement of the crank-lever and return the connections to their normal positions when the lever is released, and leave the door locked.

In witness whereof I have hereunto set my hand this 22d day of January, A. D. 1902.

WILLIAM J. HOFSTATTER.

Witnesses:

JACKSON DENEAL,
WILLIAM H. MOOR.