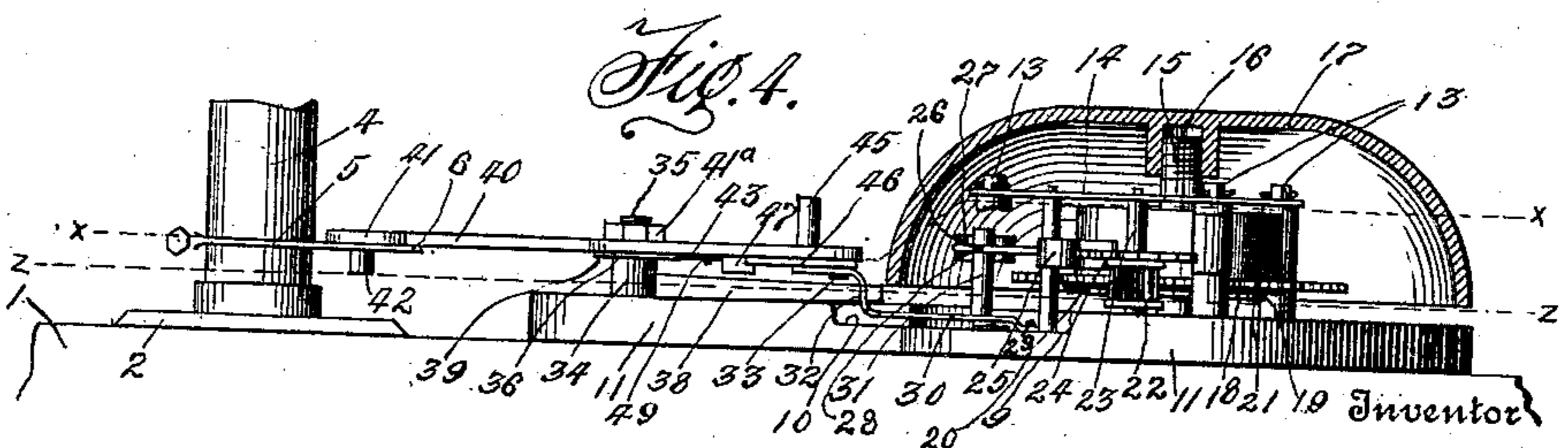
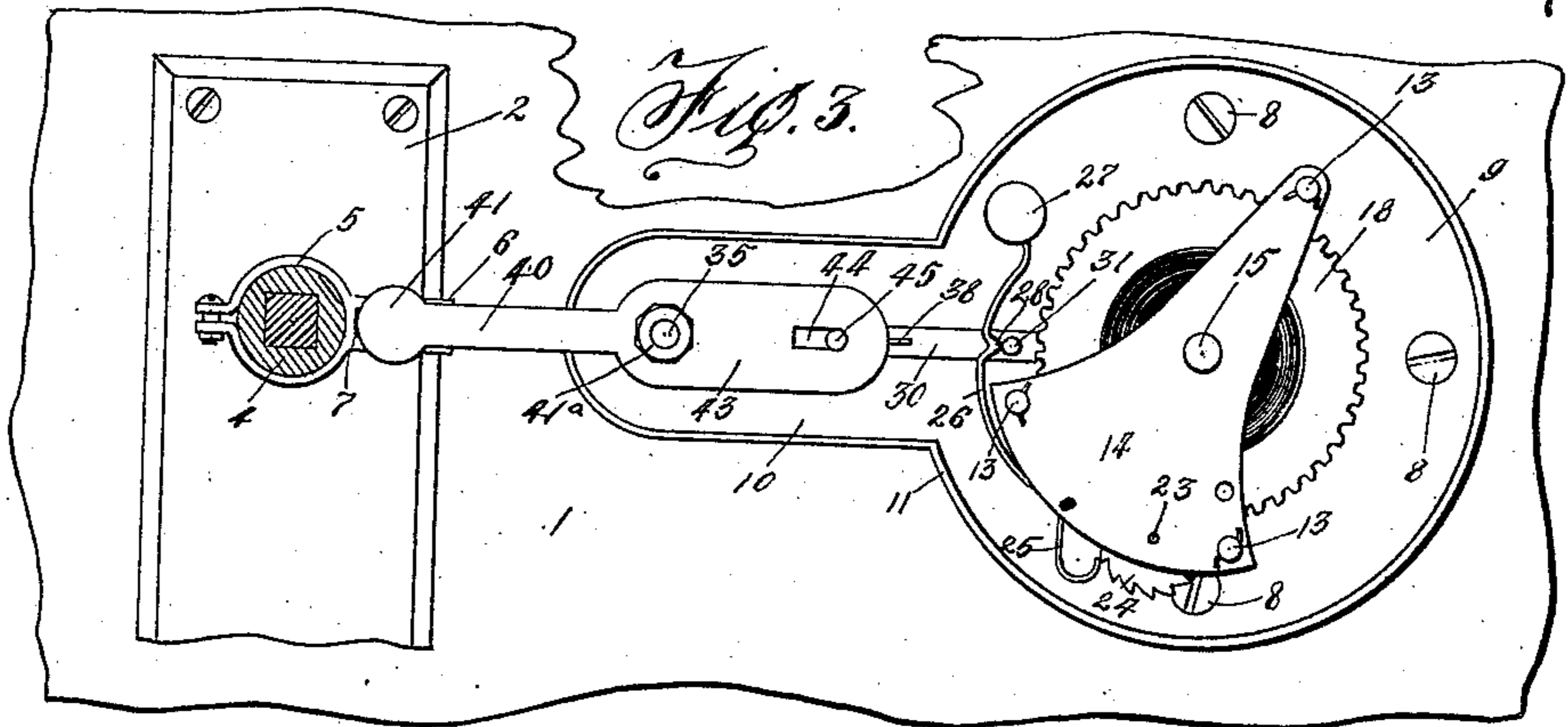
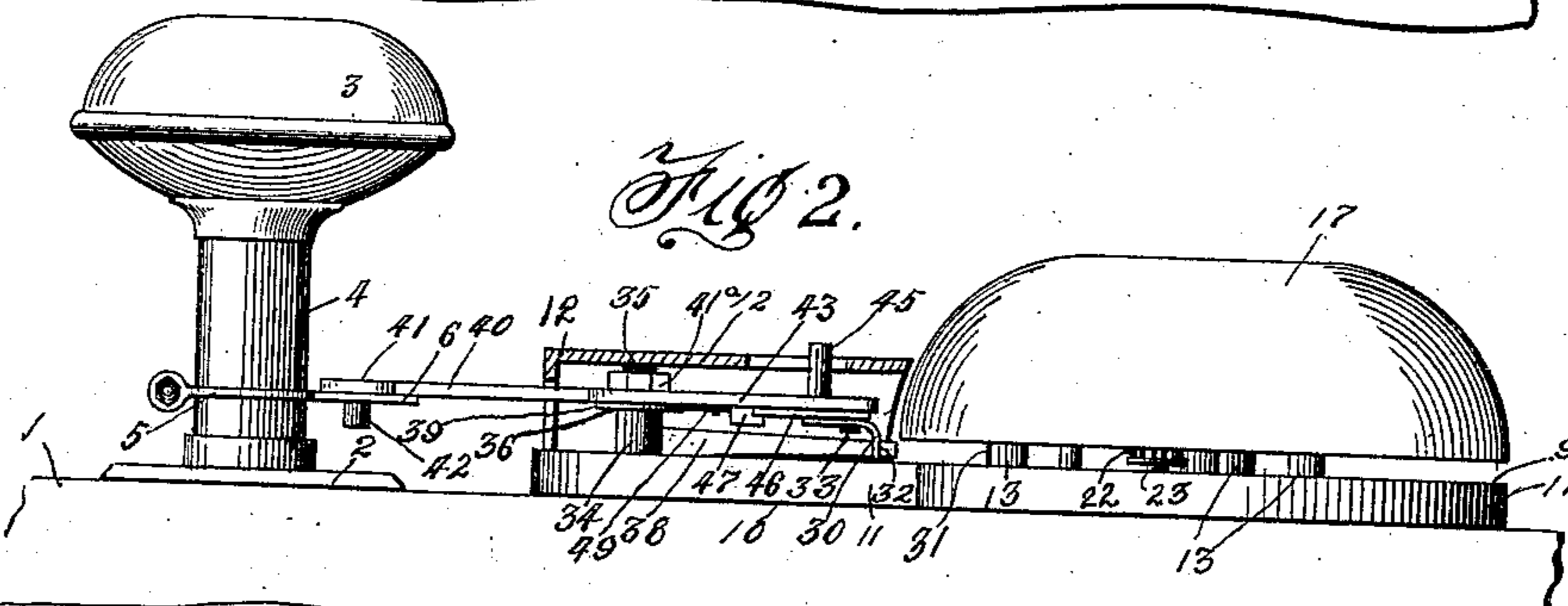
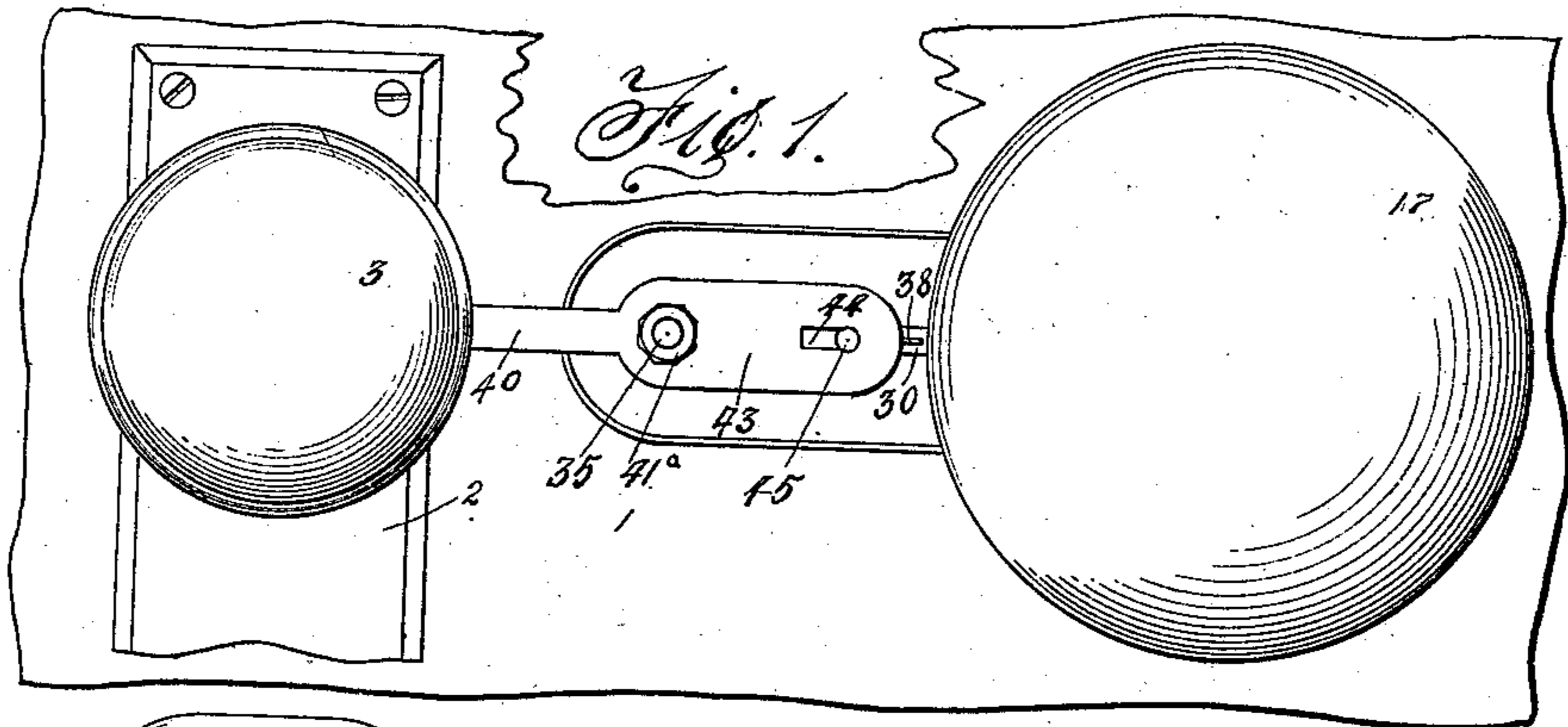


928,754.

W. A. HELPHENSTINE.
BURGLAR ALARM.
APPLICATION FILED MAR. 2, 1908.

Patented July 20, 1909.
2 SHEETS—SHEET 1.



Witnesses
R. L. Farrington
H. H. Butler

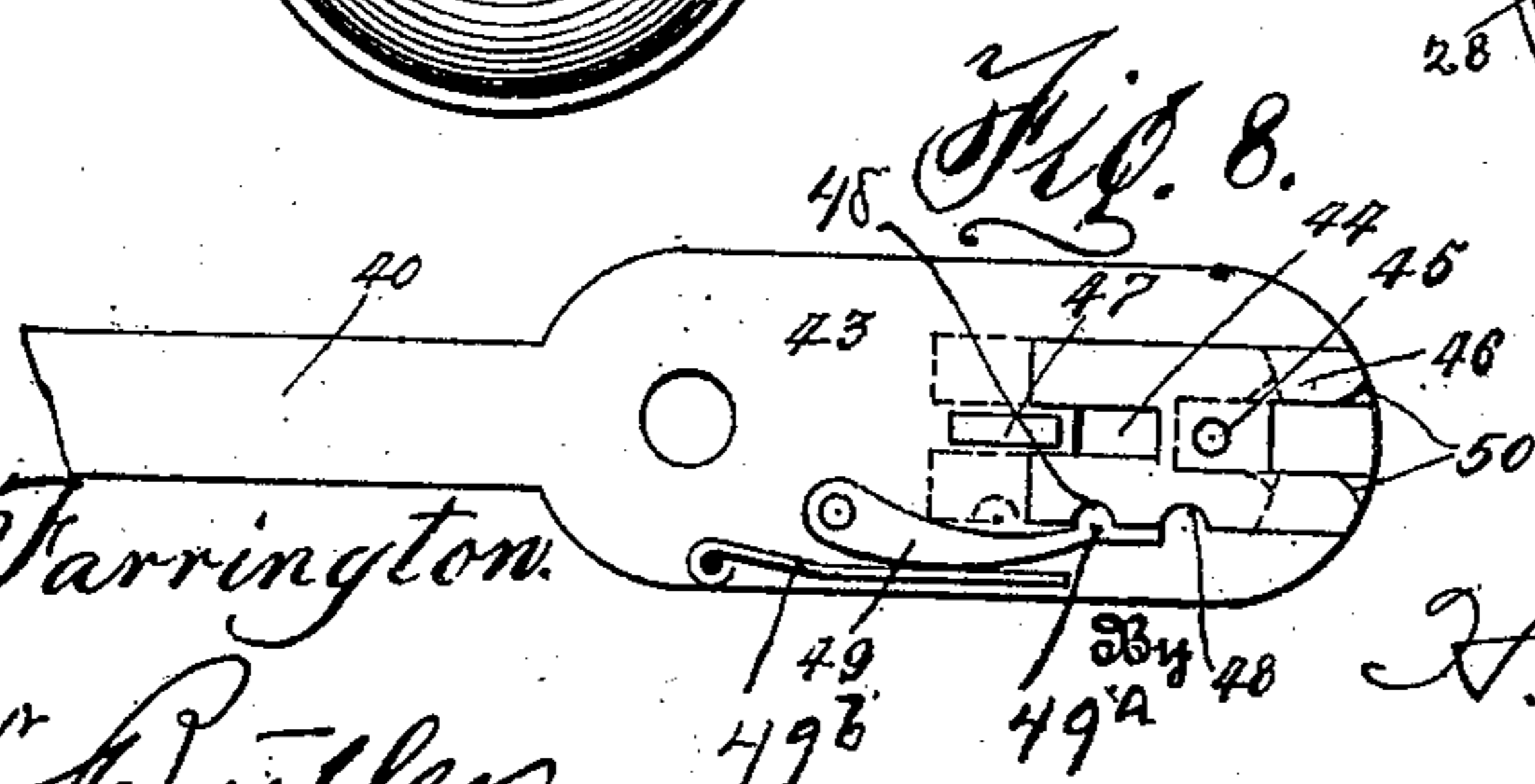
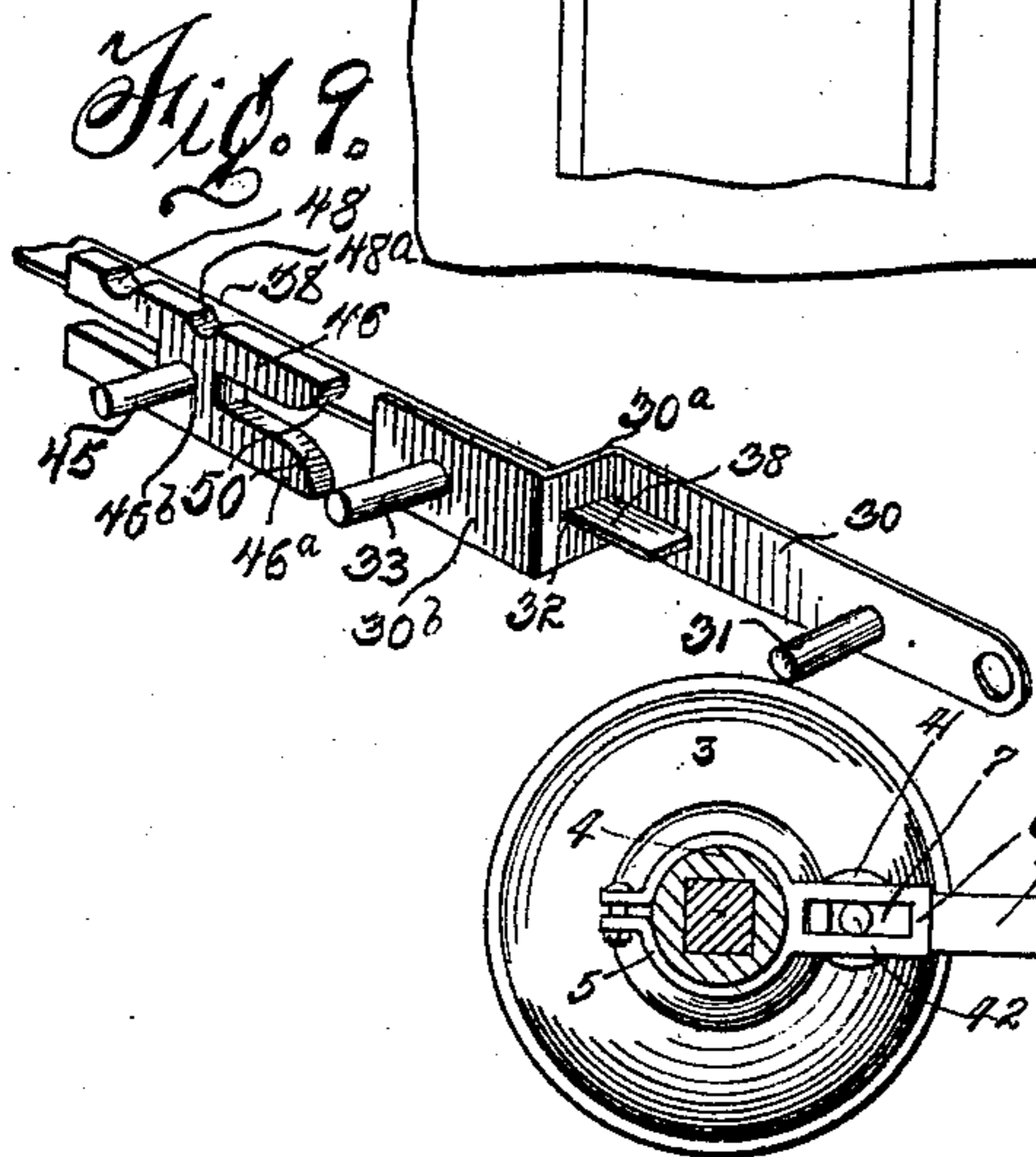
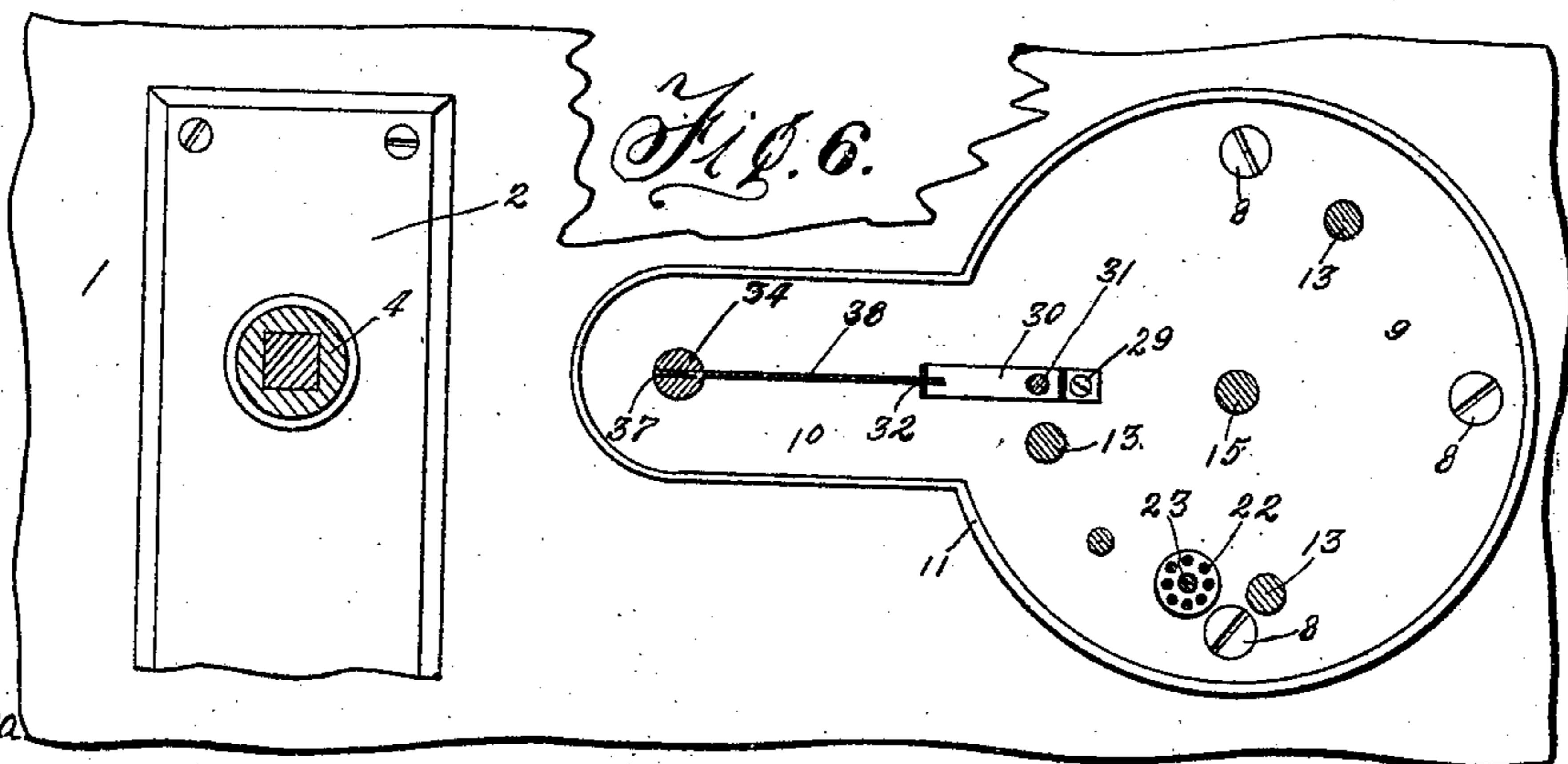
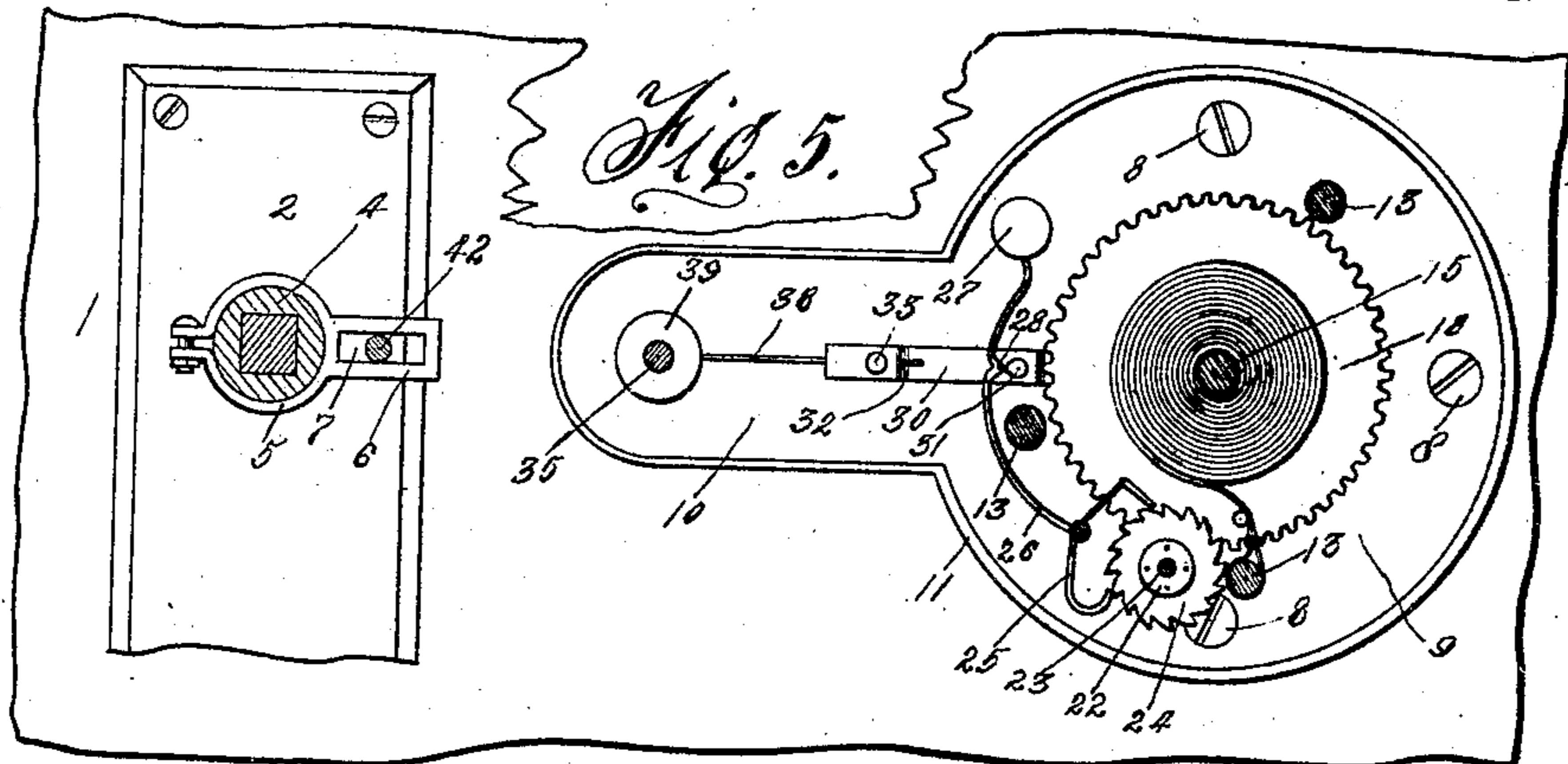
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UNITED STATES PATENT OFFICE.

WILLIAM A. HELPHENSTINE, OF WIND RIDGE, PENNSYLVANIA.

BURGLAR-ALARM.

No. 928,754.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed March 2, 1908. Serial No. 418,739.

To all whom it may concern:

Be it known that I, WILLIAM A. HELPHENSTINE, a citizen of the United States of America, residing at Wind Ridge, in the county of Greene and State of Pennsylvania, have invented certain new and useful Improvements in Burglar-Alarms, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to burglar alarms, particularly designed for doors and has for its object to provide a device of such class in a manner as hereinafter set forth and which is adapted to be attached to the inner side of a door to cause when the knob of the door is turned, an audible signal or alarm.

Furthermore the invention aims to provide an alarm with means in a manner as hereinafter set forth whereby the device can be set in an inoperative position so that when the door knob is turned, the alarm or signal will not be sounded, such arrangement being essential in connection with a door which is continually opened and closed during the day-time.

To this end, briefly described, the invention comprises the combination with a spring actuated bell, of an escapement controlled through the medium of a mechanism as hereinafter referred to, said mechanism being located between the bell and the door knob and adapted to be actuated to operate the alarm when the knob of the door is turned.

In describing the invention in detail, reference is had to the accompanying drawings, wherein like reference characters denote corresponding parts throughout the several views, and in which,—Figure 1 is a front elevation of the burglar alarm, with the casing thereof removed, Fig. 2 is a plan of the same, illustrating the casing in cross section, Fig. 3 is a front elevation of the alarm with the casing and bell crown removed, and the door knob in cross section, Fig. 4 is a plan of the same with the casing removed and the bell crown in section, Fig. 5 is a vertical longitudinal sectional view taken on the line X—X of Fig. 4 looking toward the base plate of the alarm, Fig. 6 is a similar view taken on the line Z—Z of Fig. 4 looking in the same direction, Fig. 7 is a similar view taken on the same line looking in an opposite direction toward the bell crank. Fig. 8 is a rear elevation of the main operating lever, and Fig. 9 is a detail in perspec-

tive illustrating the locking mechanism for the bell clapper and further illustrating means for shifting said mechanism clear of the clapper so as to allow the operation of the alarm.

In the accompanying drawings, 1 designates a portion of a door having an escutcheon or key hole plate 2 and a knob 3 having a shank 4. Secured to the shank 4 of the door knob 3, upon the inner side of the door is a clamp 5 having an extension 6 formed with a longitudinal slot 7. The clamp 5 is fixedly connected to the shank 4 so that the said clamp will turn with the shank when the latter is shifted in either direction.

Secured to the inner side of the door 1 by screws 8 or similar fastening means is a circular base plate 9 having an extension 10 projecting toward the escutcheon plate 2, but is positioned below the plane of the extension 6 of the clamp 5. The base plate 9 and the extension 10 are provided with a peripheral flange 11, this flange of the extension 10 supporting a detachable casing 12 protecting the operating mechanism to be presently referred to and which is located upon the extension 10.

Upon the circular base plate 9 is located a spring actuated alarm mechanism, which is placed in an operable condition by using the bell crown of the mechanism for placing the spring thereof under tension. These parts are of the ordinary and well known type, but in order that my invention can be fully understood, a brief résumé of these parts is herewith set forth.

The circular base plate 9 is provided with posts 13 supporting a plate 14. Journaled in the plates 9 and 14 is a winding arbor 15 having the outer end thereof threaded, as at 16 for a bell crown 17. Upon the arbor 15 are arranged a large gear wheel 18 and a ratchet wheel 19, the former being loosely connected to said arbor. The gear wheel 18 is provided with a pivot pawl 20 normally held in engagement with the ratchet wheel 19 by a spring 21. The gear wheel 18 meshes with a pin wheel 22 mounted upon a shaft 23 journaled in the plates 9 and 14. This shaft 23 is provided with an escapement wheel 24 normally engaged by a two-point escapement arm 25 trunnioned between the plates 9 and 14. The arm 25 is provided with a curved clapper arm 26 having a clapper 27, and a protuberance 28 positioned intermediate the ends of the arm. All of these

parts are common to a crown wound bell, with the exception of the protuberance 28, which is associated with an alarm locking mechanism for the purpose of controlling the operation of the alarm.

The alarm locking mechanism consists of a flat shift bar 30 having its inner end loosely connected to the plate 9 through the medium of the screw 29. Carried by the bar 30 in proximity to the screw 29 is a pin 31 which is normally positioned in the path of the protuberance 28 so as to prevent the operation of the clapper arm 26 until the bar 30 is shifted in either direction which removes the pin 31 in a lateral direction out of the path of the protuberance 28 and allows the oscillation of the clapper arm 26 so as to audibly sound the signal or alarm. The shift bar 30 has an angle-shaped outer end being indicated as at 30^a and the other as at 30^b. The leg 30^a is formed with a slot 32 through which extends the free end of a spring 38, the function of the latter being to normally maintain the shift bar 30 in such position as to have the pin 31 arranged in the path of the protuberance 28 to prevent the operation of the clapper arm 26. The bar 30 is shifted against the action of the spring 38, and the manner in which the bar 30 is shifted will be presently referred to. The leg 30^b of the angle-shaped end of the bar 30 carries a stud 33 adapted to be engaged in a manner to be presently referred to by the shifting mechanism for the bar 30 so as to release the alarm mechanism when occasion so requires. Mounted upon the extension 10 of the plate 9 is a post 34 which is slotted as at 37 and fixedly secured within the slot of the post 34 is one end of the spring 38.

The shifting mechanism for the alarm mechanism will now be described. The post 34 hereinbefore referred to is formed with a contracted threaded end 35 providing an annular shoulder 36 and upon the said annular shoulder 36 is placed a washer 39 which serves as a bearing for a fulcrumed actuating lever 40, the said lever being held upon the post 34 by a nut 41^a. One end of the lever 40 is formed with a head 41 having a pin 42 which extends in the slot 7 of the extension 6. The other end of the lever 40 is formed with an oblong enlargement 43 having a longitudinally disposed slot 44 and extending through the slot 44 is a shiftable pin 45, the direction of travel of the pin 45 being longitudinal with respect to the lever 40. Fixed to the inner end of the pin 45 and arranged against the inner face of the lever 40 is an H-shaped actuating member adapted to engage the stud 33 to shift the bar 30. The actuating member comprises the arms 46 and 46^a connected together by the transverse arm 46^b, the pin 45 being connected to the transverse arm 46^b. One end of each of the arms 46 and 46^a is beveled as at 50, the said bev-

eled end being adapted to ride against the stud 33 for the purpose of shifting the bar 30 when the lever 40 is moved on its pivot when the knob of the door is turned. The arm 46 of the actuating member has its outer edge at the rear thereof provided with a pair of notches 48 and 48^a for a function to be hereinafter referred to. Projecting from the inner face of the lever 40 is a rib 47 adapted to extend in the opening 44 formed between the rear ends of the alarms 46 and 46^a, the said rib constituting a guide and in connection with the pin 45 guiding the actuating member and its movement. Pivotaly secured to the inner face of the lever 40 is a pawl 49 provided with a protuberance 49^a adapted to engage in one of the notches in the arm 46 for maintaining the actuating member for movement after it has been set in an inoperative position or in an operative position with respect to the stud 33. In this connection it will be stated that when the actuating member is in its operative position, the protuberance 49^a engages in the notch 48 and when the said actuating member is in its inoperative position the protuberance 49^a engages in the notch 48^a. The pawl 49 is engaged by a spring 49^b carried by the lever 40, the said spring maintaining the protuberance 49^a in engagement in one of the notches of the actuating member.

The beveled ends 50 of the arms 46 and 46^a ride against the stud 33 so as to shift the bar 30, in this connection it will be stated that when the lever 40 is shifted so as to elevate the enlarged end 43, the beveled end 50 of the arm 46^a will engage the stud 33 and when the lever 40 is shifted in the opposite direction, the beveled end of the arm 46 will engage the stud 33 to cause the shifting of the bar 30. When the lever 40 is shifted in either direction, assuming that the actuating member is in its operative position, the bar 30 will be shifted so as to move the pin 31 laterally out of the path of the protuberance 28 allowing of the operation of the clapper arm.

When the alarm is set as shown in Figs. 1 to 4 inclusive, a partial rotation of the knob 3 in either direction will shift or rock the actuating lever 40 and cause the actuating member to elevate or lower the stud 33, shift the arm of the bar 30 and move the pin 31 laterally, the shifting of the pin 31 laterally moves the same out of the path of the protuberance 28, allowing of the oscillation of the clapper arm 26 so as to sound the alarm. It will be assumed that the spring actuating mechanism of the alarm has been previously wound by rotating the bell crown 17. The shifting of the arm 30 places the spring 38 under tension, so that immediately upon the knob 3 being released, the spring 38 returns the bar 30 to its normal position locking the clapper arm 36. The return of

the lever to normal position is caused by the latch springs of the door which assist the knob to assume its normal position. The return of the lever 40 and the bar 30 from its normal position places the alarm mechanism in such condition that it can be actuated when the knob is again shifted in either direction.

Should it be desired to place the alarm mechanism temporarily out of commission, the pin 45 is shifted to the left hand side of the slot 44. This movement of the pin 45 positions the actuating member clear of the stud 33; in this position the protuberance 49^a of the pawl 49 engages in the notch 48^a. When the actuating member is positioned in the manner as stated the rocking of the lever 40 will not affect the stud 33 for the reason that the arms 46 and 46^a clear the stud 33 when the lever 40 is rocked.

Having now described my invention, what I claim as new, is:—

1. In a burglar alarm, the combination with a door, a door knob, and a spring actuated bell carried by said door adjacent to said knob, of a spring held bar pivotally supported adjacent to said bell and adapted to control the movement of the clapper thereof, an actuating lever pivotally mounted between said bell and said knob, a clamp carried by said knob and loosely connecting with said lever for rocking said lever, a member adjustably mounted upon said lever and adapted to engage said bar and release the clapper of said bell when said bar and said lever are moved by said knob, and a spring-pressed detent carried by said lever for normally holding said member in an adjusted position.

2. In a burglar alarm, a spring actuated bell adapted to be carried by a door, a shift bar arranged in operative relation with respect to the bell and adapted to control the movement of the bell clapper, said bar having an angle-shaped end provided with a stud, an actuating lever operatively connected with the knob of the door and adapted to be shifted by the movement of the knob, an adjustable actuating member carried by said lever and adapted when the lever is shifted to engage said stud to shift the bar to release the clapper, and means carried by said lever

for maintaining the member in an adjusted position.

3. In a burglar alarm, a spring actuating alarm mechanism adapted to be carried by a door, a shift bar arranged in operative relation with respect to said mechanism and provided at one end with means normally in the path of the clapper of the mechanism to prevent the operation of the clapper, said bar having an angle-shaped end portion provided with a stud, a lever actuated from the knob of the door, an H-shaped actuating member carried by said lever and adapted to engage said stud when the lever is shifted to move said bar to release the clapper to allow of the operation of the alarm mechanism, said H-shaped member capable of being shifted clear of said stud so as to allow the alarm mechanism remaining passive when the knob is operated, and means carried by the lever for maintaining said H-shaped member in its adjusted position.

4. In a burglar alarm, a spring actuating alarm mechanism adapted to be carried by a door, a shift bar arranged in operative relation with respect to said mechanism and provided at one end with means normally in the path of the clapper of the mechanism to prevent the operation of the clapper, said bar having an angle-shaped end portion provided with a stud, a lever actuated from the knob of the door, an H-shaped actuating member carried by said lever and adapted to engage said stud when the lever is shifted to move said bar to release the clapper to allow of the operation of the alarm mechanism, said H-shaped member capable of being shifted clear of said stud so as to allow the alarm mechanism remaining passive when the knob is operated, means carried by the lever for maintaining said H-shaped member in its adjusted position, and means extending through the angle-shaped end of said bar for maintaining the latter in its normal position.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM A. HELPHENSTINE.

Witnesses:

J. W. BRYAN,
J. S. JOHNSON.