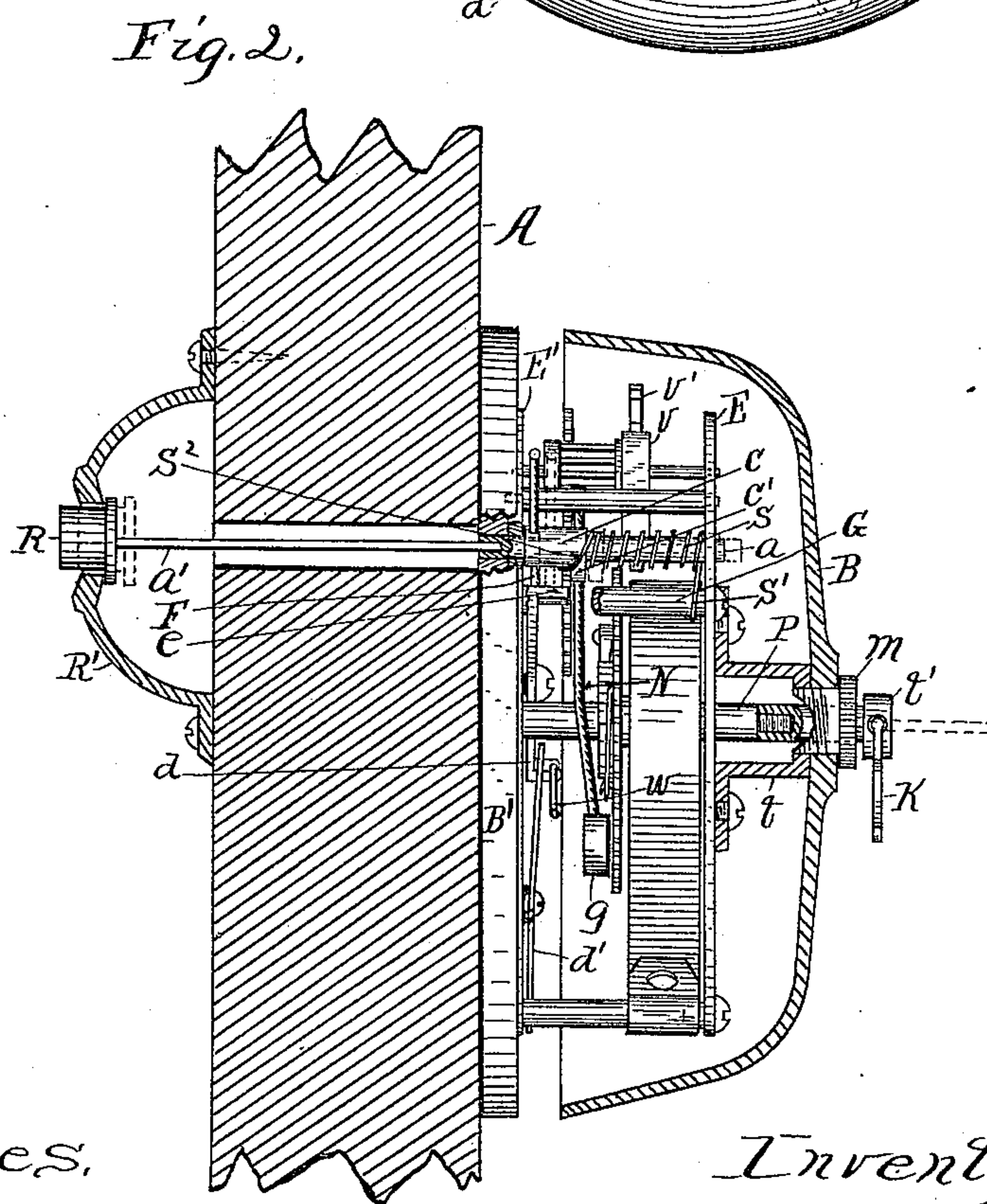
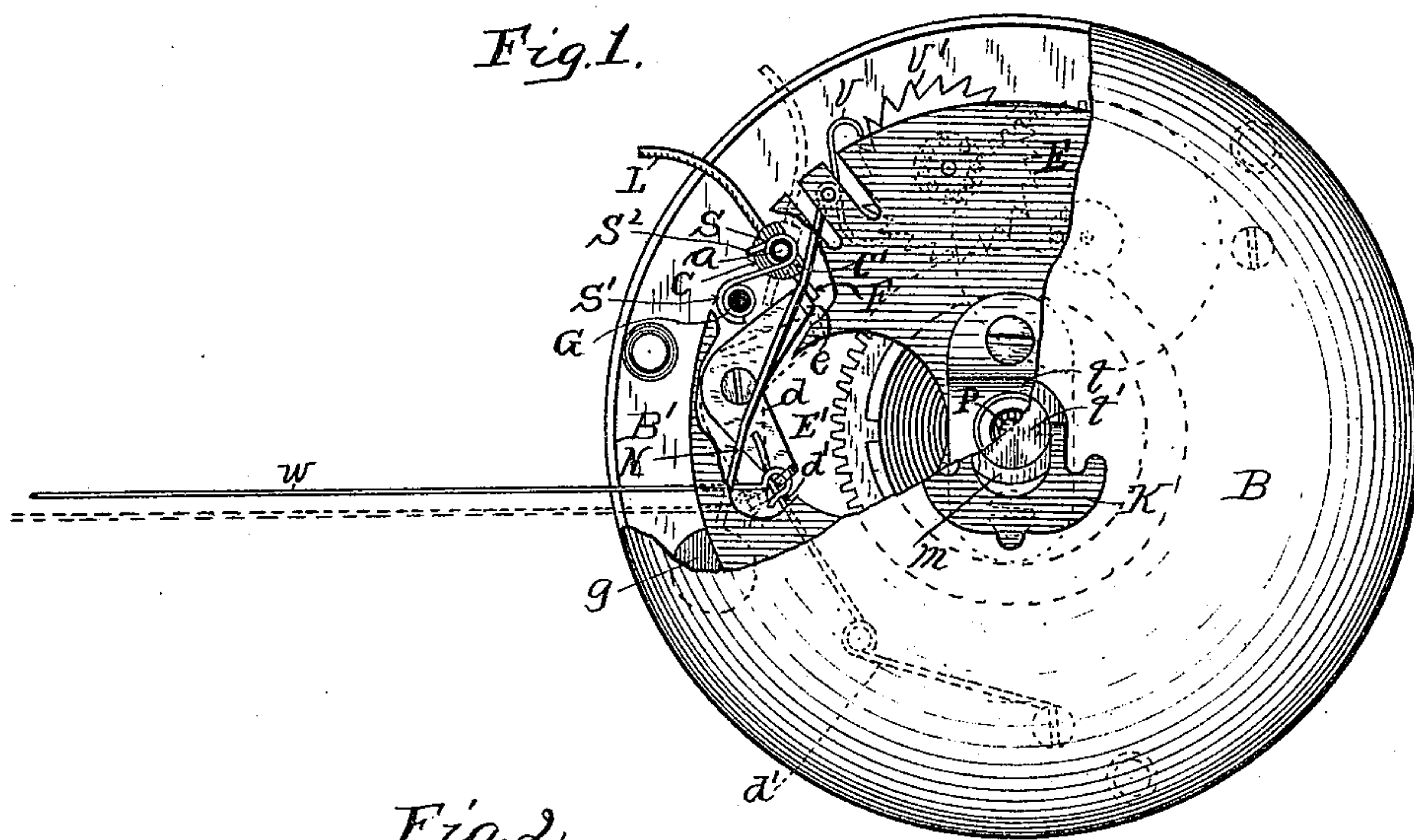


2 Sheets—Sheet 1.

No. 440,383.

Patented Nov. 11, 1890.



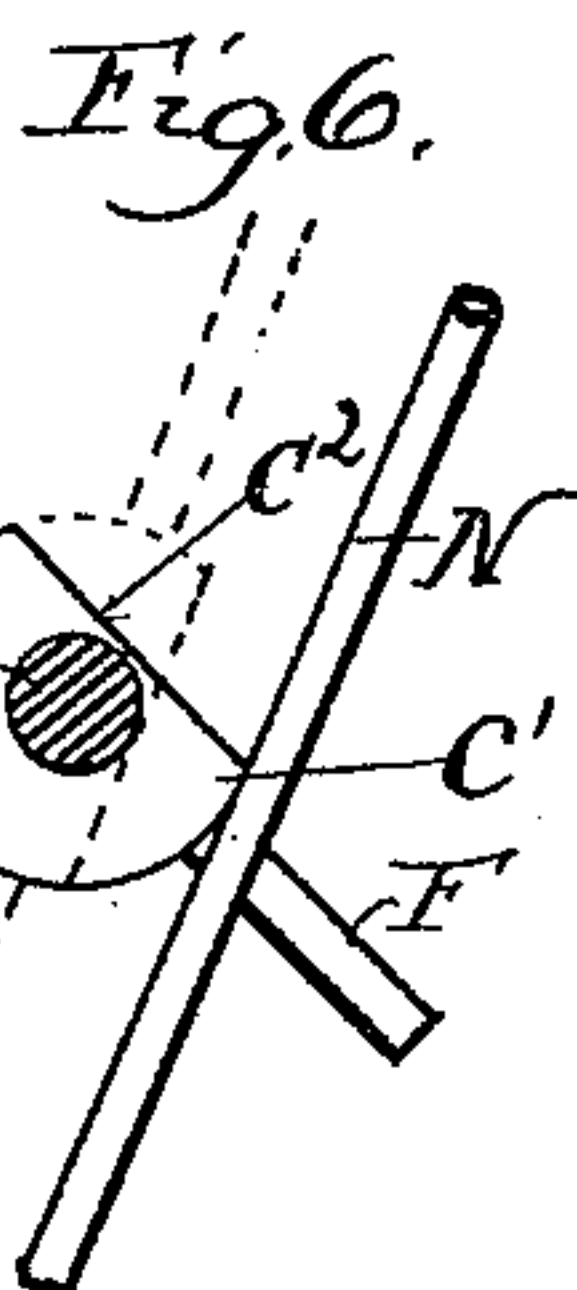
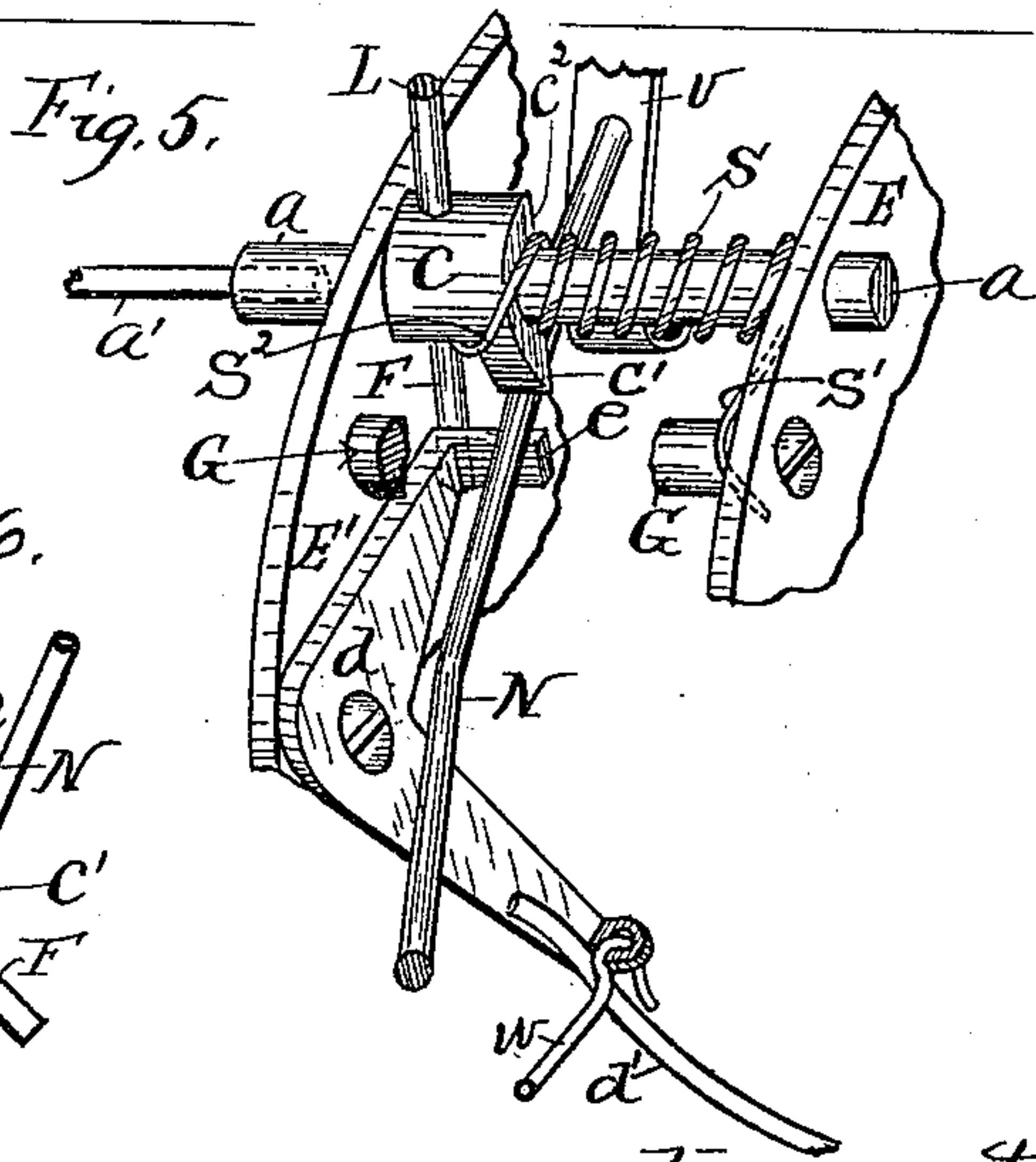
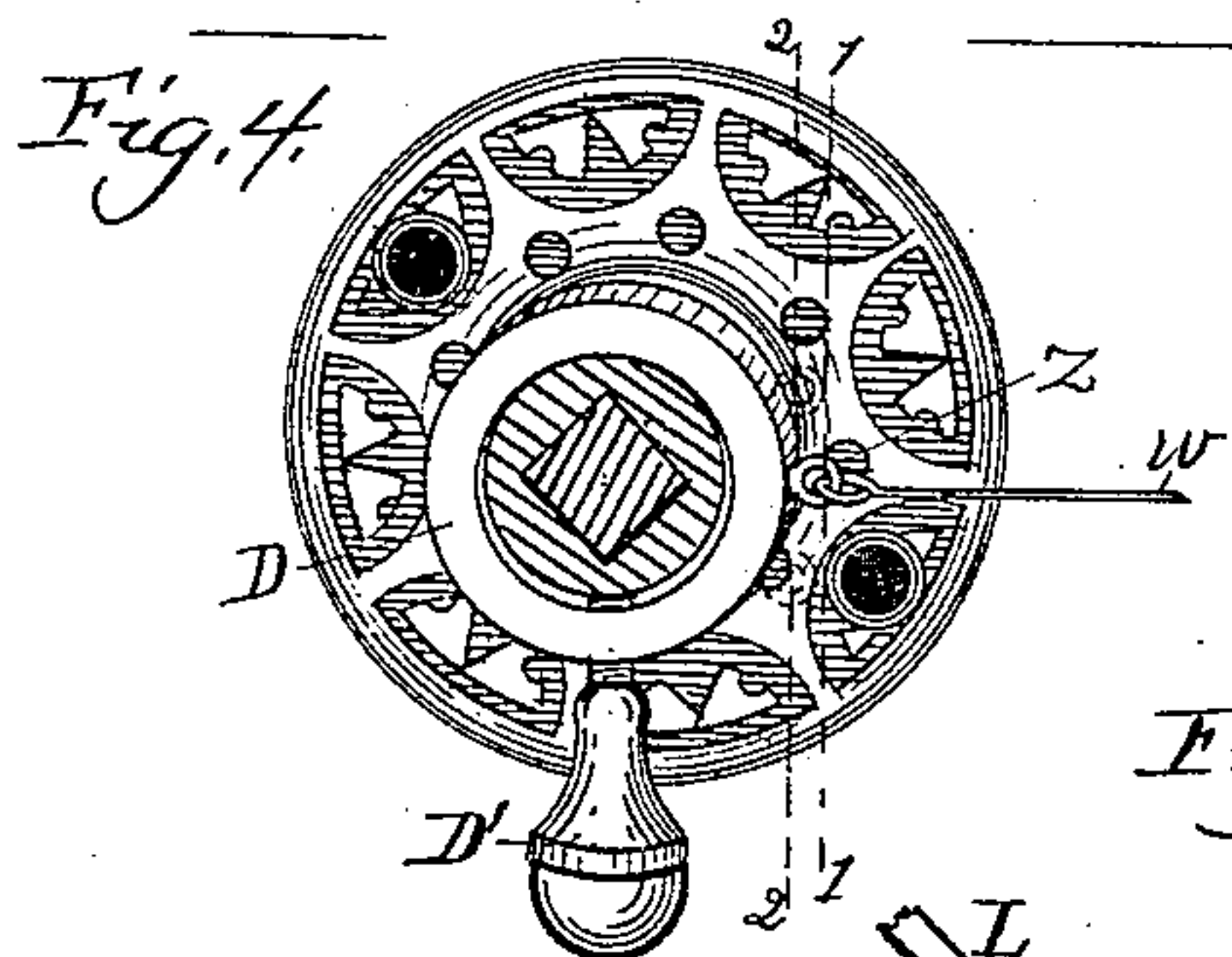
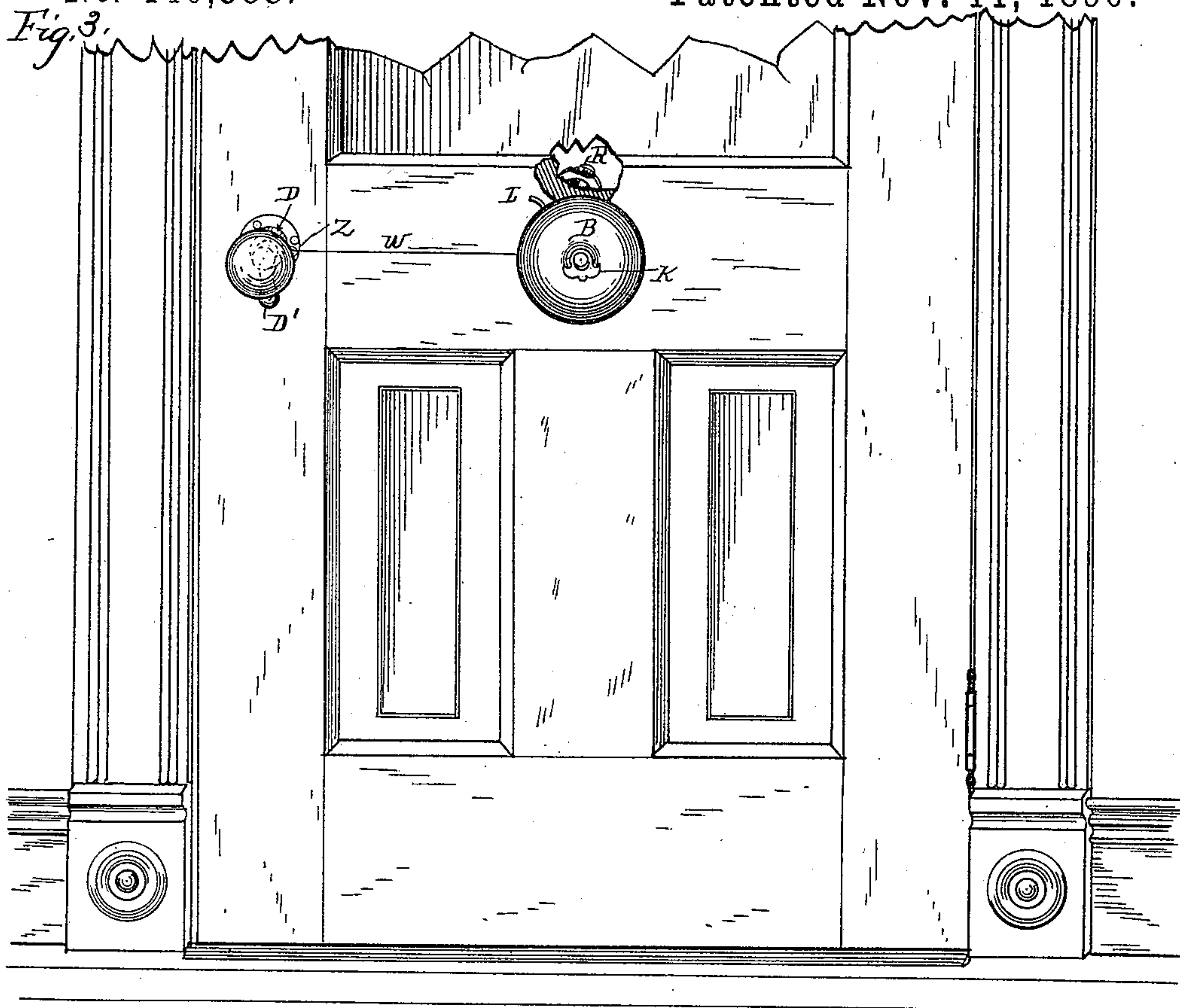
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COMBINED DOOR BELL AND BURGLAR ALARM.

No. 440,383.

Patented Nov. 11, 1890.



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UNITED STATES PATENT OFFICE.

GEORGE F. WHITLOCK AND FRANK REDFIELD, OF WICHITA, KANSAS; SAID
WHITLOCK ASSIGNOR TO SAID REDFIELD.

COMBINED DOOR-BELL AND BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 440,383, dated November 11, 1890.

Application filed February 18, 1890. Serial No. 340,869. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. WHITLOCK and FRANK REDFIELD, citizens of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have
5 invented certain new and useful Improvements in Combined Door-Bells and Burglar-Alarms, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a face plan view of the bell having portions broken away to show the essential operating parts. Fig. 2 is a side plan
15 view of the same, representing the bell in cross-section to expose the operating parts, also showing in similar section a portion of a door and a push-button frame secured there-
20 to opposite the bell, and a side plan view of the push-button and rod communicating with the bell mechanism. Fig. 3 is a perspective view of a door or the lower portion thereof having the bell and burglar-alarm attachment attached thereto. Fig. 4 is a detail perspective
25 view showing a door-knob plate, a knob-spindle in cross-section, and a collar sleeved on the spindle, which collar is a portion of the burglar-alarm attachment. Fig. 5
30 is a detail perspective view, showing the essential elements of the bell attachments; and Fig. 6 is a detail view of the tumbler of the bell mechanism, its depending arm, a portion of its lever, and of a portion of the hammer-arm, and a cross-section of its shaft.

This invention relates to certain improvements in a combined door-bell and burglar-alarm designed to be attached to outer doors of a house, preferably a front door, and is
40 adapted during calling hours as a call-bell, and for that purpose is provided with a communicating push-button in imitation of an electric bell, and during the night as a burglar-alarm, and for that purpose is connected
45 with the door-knob spindle in such manner that when the knob is turned it will set the alarm in motion, ringing the bell; and it consists of the particular mechanical mechanism which is fully set forth and explained in
50 the following specification and claims.

Referring to the drawings, A represents a door to which the bell is attached.

B' represents the bell-base supporting a frame similar to a clock-frame, which supports an ordinary spring alarm mechanism
55 similar to that employed in alarm-clocks, the plates of which frame are represented by E and E' and the winding-post of said mechanism by P.

B represents the bell seated upon the stand
60 of the front plate E, and thus secured by means of the hollow screw *m*, arranged through a central hole of the bell and turned into a screw-threaded hole of the stand.

t' represents the key, which by means of its
65 female screw is secured on the screw-threaded end of the winding-post P, from whence it extends through the hollow screw *m*, and is provided at its outer end with the pivoted thumb-piece K.

V' represents the escapement-wheel of the alarm mechanism, and V the verge thereof, connected to the hammer-arm N, which is provided with the hammer *g* by means of its piv-
70 otal shaft in the usual manner.

G' represents one of the posts of the frame. *a* represents the combined tumble and push shaft of the improvement, and is seated at its ends, respectively, in bearings in plates E and E', and has fixed thereon adjacent to the plate
80 E' the tumbler C, which is provided with the lug C', (see Figs. 2 and 5,) and with one flat or cut-away surface, as shown at C², and also with the upward-extending lever L and the depending arm F.

S is a coil-spring sleeved upon shaft *a* between the said tumbler and plate E and yieldingly holds the tumbler against plate E', and is provided with the extending terminals S' and S², which respectively hook about the post
90 G and tumbler C, which by means of such connections and its torsional strain will, when arm F of the tumbler is released, rotate the tumbler to bring said arm in contact with post G as a stop and bring the flattened face C²
95 facing the hammer-arm N, thus raising lug C', and thereby releasing the said hammer-arm, leaving it free to vibrate.

L represents a lever fixed to and extending from the tumbler for the purpose of return- 100

ing it after it has been rotated by the action of the spring S.

d is a bell-crank lever fulcrumed to the plate E' by means of a screw or other similar means, and is provided at its upper end with the arm e , extending at a right angle from the plate E' , against which the arm F of the tumbler rests, and by means of which the tumbler is held from being rotated by the torsional strain of the spring S. The lower end of lever d terminates with an extending perforated ear, into which is hooked the connecting-wire W , and against which a spring d' yieldingly bears for the purpose of yieldingly holding the upper end of the lever up against the post G , which post acts as a stop for it to prevent it moving too far, so its arm e will properly engage the arm F of the tumbler.

D represents a collar sleeved on the door-knob spindle, and is provided with the eye Z , secured thereto at one side, for connecting the connecting-wire W of the bell mechanism with the collar and with the weighted set-screw D' , by means of which the collar may at will be set to rotate with the knob-spindle, the weight of the screw being for the purpose of a gravity-weight to hold the collar when the screw is not set, so the eye Z will at all times be held opposite the spindle-center facing the bell mechanism, in order that one inexperienced will not fail, when setting the screw, to properly locate the eye Z , so that a like movement will be given to the connecting-wire W when the door-knob is turned in either direction.

The attachment of the bell is preferably made to the center of a door on the inside, as shown in Fig. 3, with the push-button at the outer side of the door, as shown in said Fig. 3 and Fig. 2, wherein the push-button R is provided with the supporting-frame R' , secured to the door A , and with the push-rod a' arranged through a hole in the door communicating with push-shaft a or formed as a part of said shaft, as may be desired.

In use during calling hours the set-screw D' is loosened to leave the collar D free, so the door-knob may then be turned and not sound the alarm, and at such times the caller will press on button R , which will, through the medium of the rod a' , likewise press the shaft a to one side far enough to move the lug C' of the tumbler C off the hammer-arm N , thus permitting the said arm to vibrate between said lug C' and arm F of the tumbler, during which time the arm F slides out upon the arm e of the bell-crank d , and thus is prevented from being released to permit the rotation of the tumbler. When the push-button is released from pressure, the spring S will immediately return it, the shaft a , and lug C' to their normal positions, bringing the said lug again over the hammer-arm N and preventing further vibration of the same; and, as the hammer g is so arranged as to strike the bell B at each vibration of the hammer-arm, each pressure of the push-button will cause

the bell to ring in imitation of an electric bell.

After "calling" hours, in setting the burglar-attachment, the operation is simply to turn the set-screw D' against the knob-spindle, which will not prevent ringing the bell by pressure on the button; but thereafter, should the knob be turned in either direction, the eye Z will be rotated, as represented by dotted lines in Fig. 4, and will pull the wire W from the position represented on dotted line 1 to that of line 2, which action will move the lower arm of the bell-crank outward and its upper arm down, as shown by the dotted lines in Fig. 1, which will release the arm F from engagement with the arm e of the bell-crank lever, and permit the action of the spring S to rotate the tumbler to the position represented by dotted lines in Figs. 1 and 6, which will free the hammer-arm N , as before described, and cause the bell to ring until the alarm-spring is unwound and its power exhausted. Should it be desired to stop the ringing of the bell when thus set in motion by the burglar attachment sooner, it may be done by raising the lever L to its upright position, which will cause the depending arm F to ride out on the upper part of the bell-crank lever and beyond the said lever when the action of the spring d' will force up that end of the lever with its arm e and again hold the tumbler in an erect position and prevent further ringing until again set in motion in a like manner or by pressure on the push-button. When pressure is applied to the push-button, the bell will ring as long as the pressure continues and cease when the pressure is released.

One winding of the alarm mechanism is sufficient to provide power to ring the bell during a large number of calls, and when it is run down it is the labor of but a moment to again wind it by turning the key t' .

Having thus described our invention, what we claim as new and useful, and desire to secure by Letters Patent, is as follows:

1. The combination, with a spring alarm mechanism mounted on the base B' , and the bell B , attached thereto, as set forth, of the push-shaft a , the tumbler C thereof provided with the extending lug C' and flattened on one side at C^2 , the spring S , sleeved upon said shaft, adapted to exert a longitudinal pressure and a torsional strain on the said tumbler, the depending arm F of the tumbler, the bell-crank lever d , provided with the extending arm e for engaging said arm F to hold the tumbler erect with its lug engaging the hammer-arm, the alarm mechanism, and the push-button and its connecting-bar a' for giving side movement to the tumbler to release the hammer-arm, substantially as and for the purpose set forth.

2. In the combined door-bell and burglar-alarm described, the combination, with the hammer-arm N of the alarm mechanism, of the combined tumble and push shaft a , the

tumbler C, fixed on said shaft and provided with the depending lug C', engaging the hammer-arm, and with one side flattened at C², the spring S for yieldingly holding the tumbler sidewise and rotating the same when it is released, the depending arm F for holding the tumbler erect, the lever L for erecting the same when down or turned, and the push-button and its connecting push-rod for operating said shaft and tumbler to permit the ringing of the bell, substantially as specified.

3. In the combined door-bell and burglar-alarm, the combination, with the alarm mechanism, of the push-shaft *a*, the tumbler C thereof provided with the depending lug C' and flattened on one side at C², the spring S thereof for yieldingly holding the tumbler, the depending arm F of the tumbler, the lever L for erecting the tumbler, the bell-crank lever *d*, provided with the extending arm *e*, engaging and holding arm F, the collar D, the door-knob spindle, provided with the eye Z, and weighted set-screw D', the connecting-wire W for connecting the said collar and bell-crank lever, and the spring *d'* for yieldingly holding the said bell-crank, substantially as and for the purpose set forth.

4. In the combined door-bell and burglar-alarm described, in combination with the alarm mechanism, the tumbler C, provided with the lug C' and the flattened face C² and

seated upon the combined tumble and push shaft *a*, adapted to hold the alarm hammer-arm when at rest and release the same when moved sidewise or when rotated, substantially as and for the purpose set forth.

5. In a combined door-bell and burglar-alarm, the combination of the base support, the frame, the bell supported by the frame, the spring alarm mechanism provided with the hammer-arm and hammer for ringing the bell, the push-shaft *a*, the tumbler C thereof provided with the lug C' for engaging and holding the hammer-arm, and with the flat side surface of less prominence than said lug, the spring S, sleeved upon the said shaft, adapted to yieldingly hold the said tumbler toward the bell-base and rotate the same when released, a push-button, a push-rod to which the button is attached arranged bearing against the shaft *a*, the burglar attachment consisting of the bell-crank lever *d*, the spring *d'* thereof, the collar D as arranged on the door-knob spindle, the weighted set-screw thereof, the eye Z of the collar, and the connecting-wire W, substantially as and for the purpose set forth.

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