

H. B. SNELL.
TIME ACTUATED MECHANISM,
APPLICATION FILED APR. 24, 1908

899,571.

Patented Sept. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

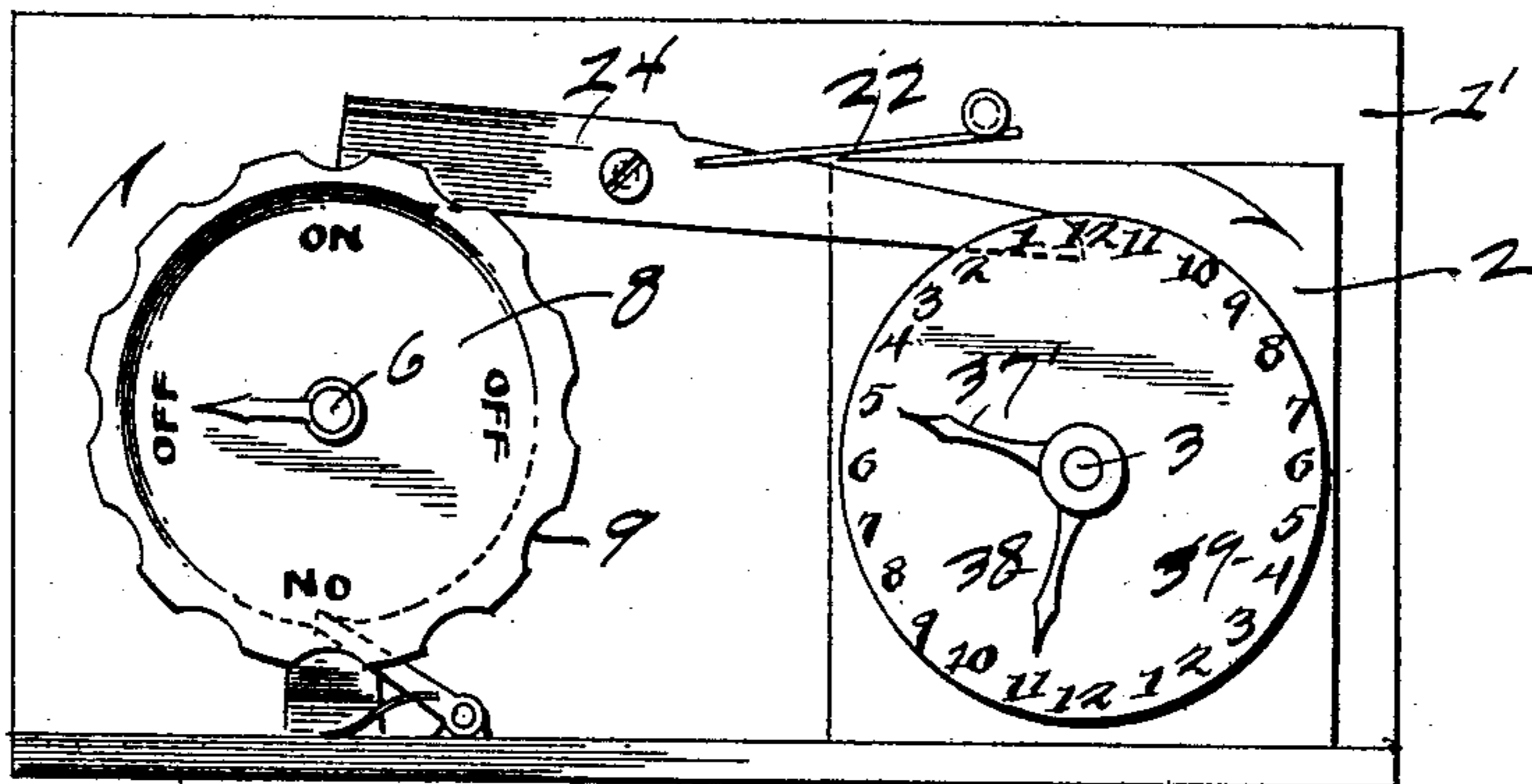


Fig. 2.

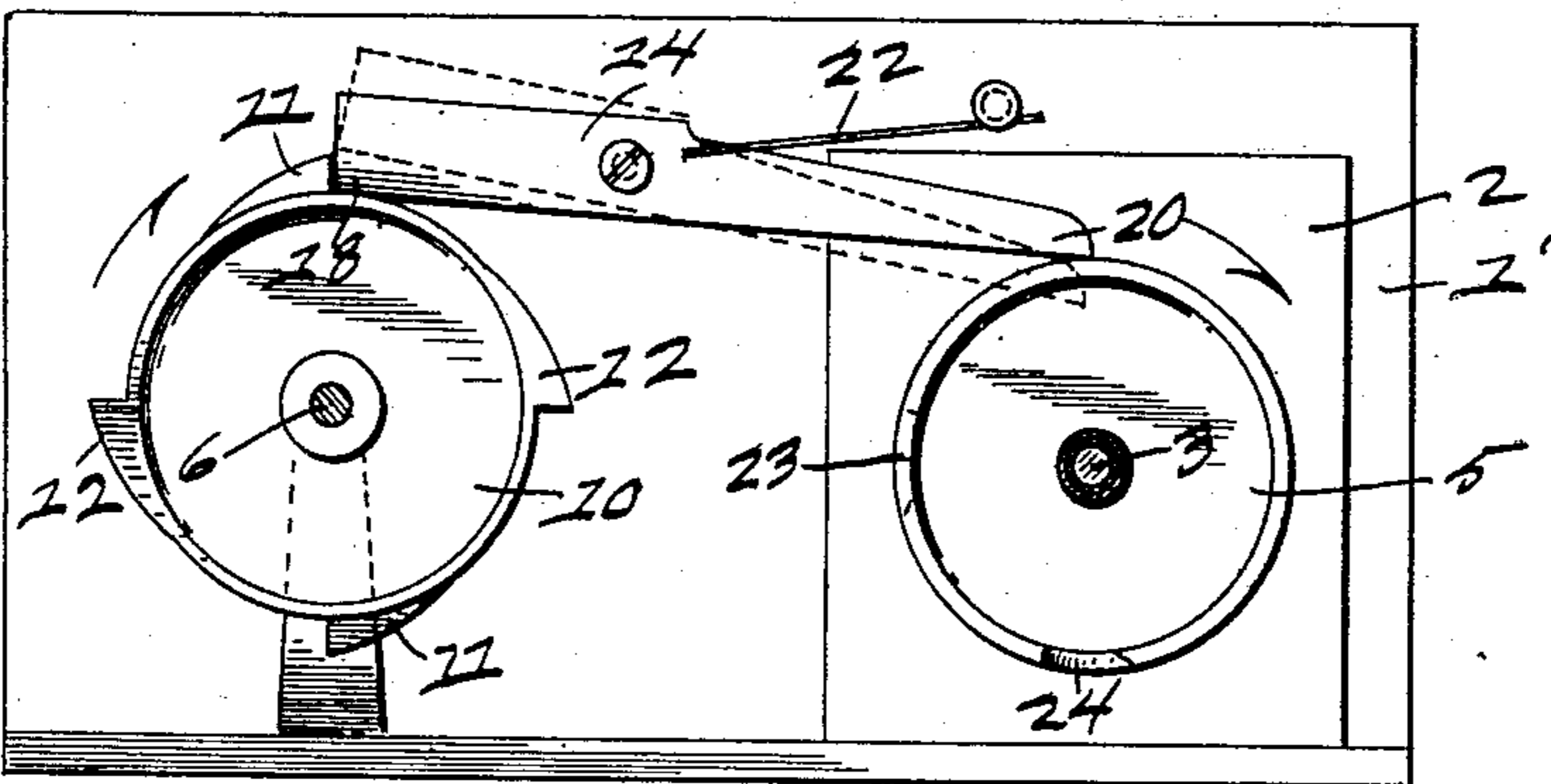
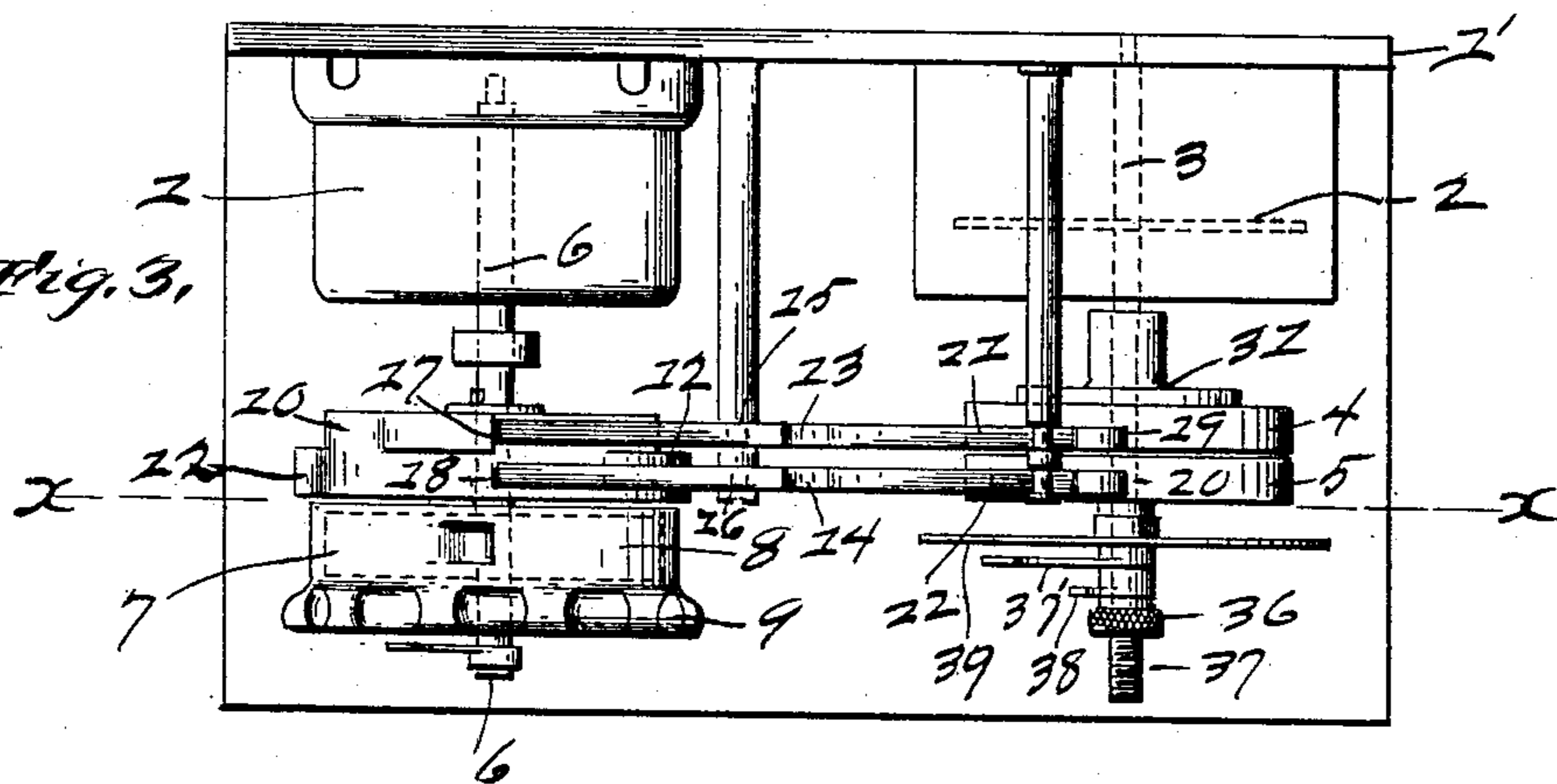


Fig. 3.



Witnesses,
J. L. Bick,
A. C. Ulmer

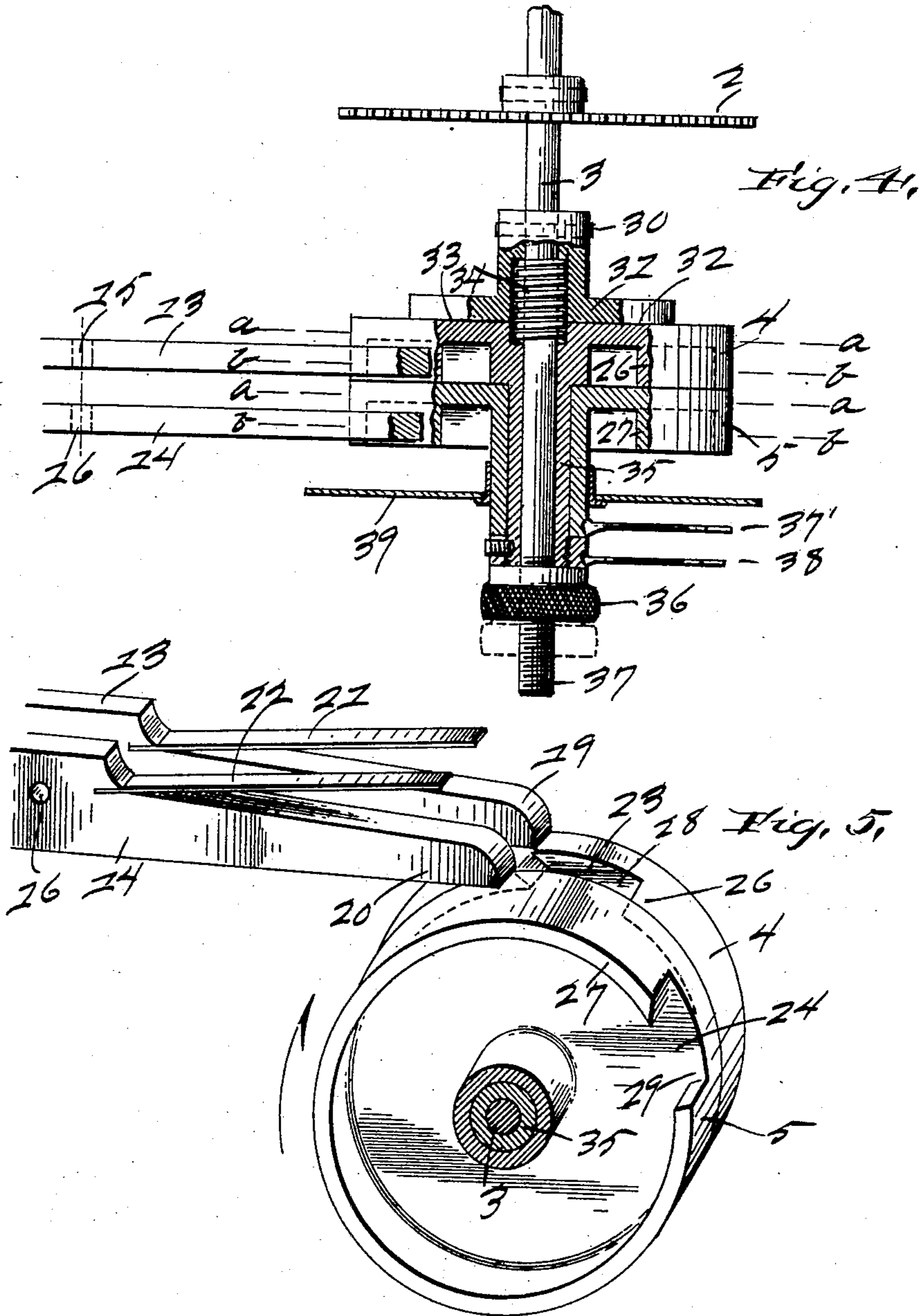
Inventor,
Harry B. Snell
By Carl H. Keller,
att'y.

H. B. SNELL.
TIME ACTUATED MECHANISM.
APPLICATION FILED APR. 24, 1908

899,571.

Patented Sept. 29, 1908.

2 SHEETS—SHEET 2.



Witnesses,
J. L. Pick.
A. C. Ulmer

Inventor,
Harry B. Snell
By Carl H. Keller
att'y.

UNITED STATES PATENT OFFICE.

HARRY B. SNELL, OF TOLEDO, OHIO.

TIME-ACTUATED MECHANISM.

No. 899,571.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed April 24, 1908. Serial No. 428,896.

To all whom it may concern:

Be it known that I, HARRY B. SNELL, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Time-Actuated Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to time mechanisms for actuating switches to light and extinguish the lamps in an electric circuit at predetermined times, and it has for its object to provide an improved setting means for the mechanism.

In carrying out the invention I employ the novel combination, arrangement and the details of construction hereinafter shown described and claimed.

In the accompanying drawings illustrative of the invention, Figure 1 is a front elevation of a mechanism for operating a snap switch at predetermined times, the same embodying my improvement; Fig. 2 is a front elevation of the mechanism to the rear of the section line $x-x$, Fig. 3; Fig. 3 is a plan view of the complete mechanism; Fig. 4 is a sectional detail of the setting mechanism; Fig. 5 is an enlarged perspective of the notched or shouldered setting disks and also showing the ends of the levers which ride thereon.

Referring to the details, the mechanism for actuating the switch 1 at quarter rotations to turn the lights in a circuit "off" and "on" in succession comprises a frame 1'; a clock-train 2 adapted to rotate an arbor 3 once in twenty-four hours; a pair of notched setting or timing disks 4 and 5 upon the arbor 3 and rotating therewith; an arbor 6 connecting with and operating the switch; a band-spring 7 (shown in dotted outline in Fig. 3) confined in a case 8 having a notched margin 9 to facilitate turning by hand to wind the band-spring, the spring being connected at its outer end to the case and at its inner end to the arbor 6 in the usual manner; a shouldered escapement wheel 10 having pairs of diametrically disposed shoulders 11, 11 and 12, 12, operating in different planes of rotation; a pair of tripping or releasing levers 13 and 14 pivoted at intermediate points 15 and 16, the ends 17 and 18 of the levers alternately engaging and releasing the shoulders

11, 11 and 12, 12 when the ends 19 and 20 are depressed by springs 21 and 22 to enter the notches 23 and 24 in the timing disks 4 and 5, the latter being properly set relative to each other with respect to the notches therein to cause the operation of the levers at predetermined times, as will be readily understood from the prior state of the art.

The present invention relates to the means for setting the timing disks 4 and 5 carried upon and rotatable with the arbor 3, the same being illustrated in Fig. 4. These disks each have a smooth and unbroken periphery in the planes indicated by $a-a$, Fig. 4, and one face of each is provided with a marginal flange as at 26 and 27 and a notch, as at 28 and 29, the notches interrupting the continuity of the disk peripheries in the planes $b-b$, Fig. 4. Upon the arbor 3 is firmly secured by a pin 30, a friction disk 31 the face 32 of which is adapted to contact with the face 33 of the setting or timing disk 4.

34 is a coiled spring surrounding the arbor 3, being disposed in an annular space between the friction disk 31 and the disk 4, so that, when the disk 4 is free to move longitudinally of the arbor 3, the spring will force the face of the disk out of contact with the face of the friction disk, the disk 4 being therefore free to be rotated upon the arbor 3.

35 indicates an extension or elongation of the hub of the setting disk 4, and upon this hub is mounted concentrically thereto and concentrically to the arbor 3, the hub of the setting disk 5.

36 is a nut upon the threaded outer end 37 of the arbor 3 and adapted to engage the hub of the setting disk 5, so that, by tightening the nut against the hub of the setting disk 5 the adjacent faces of the setting disks and also the faces of the disk 4 and the friction disk 31 will be in firm frictional contact, the disks being firmly locked upon the arbor 3 to rotate therewith. When the disks 4 and 5 are thus secured to rotate with the arbor 3 the ends of the levers 13 and 14 in contact with the peripheries of the setting disks will traverse or ride the disks in the planes $b-b$ in path of the notches in said disks. If now the disks are to be set to alter the position of the notches therein and thereby to change the time of operation of the levers, the nut 36 is unscrewed to the position in dotted lines, Fig. 4, the disks 4 and 5 following the out-

ward movement of the nut along the arbor 3 owing to the action of the spring 34 pressing against the disk 5. The position of the disks being thus altered, the ends of the levers 13 and 14 will now traverse the peripheries of the disks in the planes *a—*a**, Fig. 4. With the disks in this position, they may be freely rotated without operating the levers, and by means of the setting hands 37' and 38 carried respectively by the hubs of the disks 4 and 5, and the dial 39 to indicate precisely the relative position of the notches in the setting disks, the latter are readily set to cause the levers 13 and 14 to be actuated at times desired. After the notches in the disks 4 and 5 have been set to required positions, the nut 36 is again screwed up tightly against the hub of the disk 5 to lock both disks 4 and 5 and the disk 31 together and also to secure them firmly upon the arbor 3. Thus it is seen that the setting disk may be readily adjusted to alter the relative position of the notches therein without tripping the releasing levers in contact with their peripheries.

25 Having described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a mechanism of the class described, the combination with a pair of releasing levers, of a pair of rotatable timing disks provided with notches in their peripheries and also having a portion of their peripheries continuous, and means for shifting the position of the disks axially to cause the ends of the levers to ride in contact with either the notched portions or the continuous portions

of the peripheries of the timing disks, substantially as described.

2. In a mechanism of the class described, the combination with a pair of releasing levers, a clock-driven arbor, a pair of timing disks having notches in their peripheries and also having a portion of their peripheries continuous, means upon the arbor to hold the notched peripheries of the timing disks in the paths of the lever ends, and spring means for moving the timing disks along the arbor when said holding means is released to cause the continuous portions of the timing disk peripheries to travel in the paths of the lever ends, substantially as described.

3. In a mechanism of the class described, the combination with a pair of releasing levers, of a rotatable arbor, a friction disk fast upon the arbor, a pair of timing disks each having a periphery one portion of which is provided with a notch, the other portion being continuous, hubs for the timing disks which are concentric with the arbor, setting hands upon the hubs, a nut screwed upon the outer end of the arbor to force the timing disks into contact with each other and the inner timing disk into contact with the friction disk upon the arbor, and a coiled compression spring to move the timing disks axially, substantially as described.

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

HARRY B. SNELL

Witnesses:

CARL H. KELLER,
ALBERT P. MCKEE.