

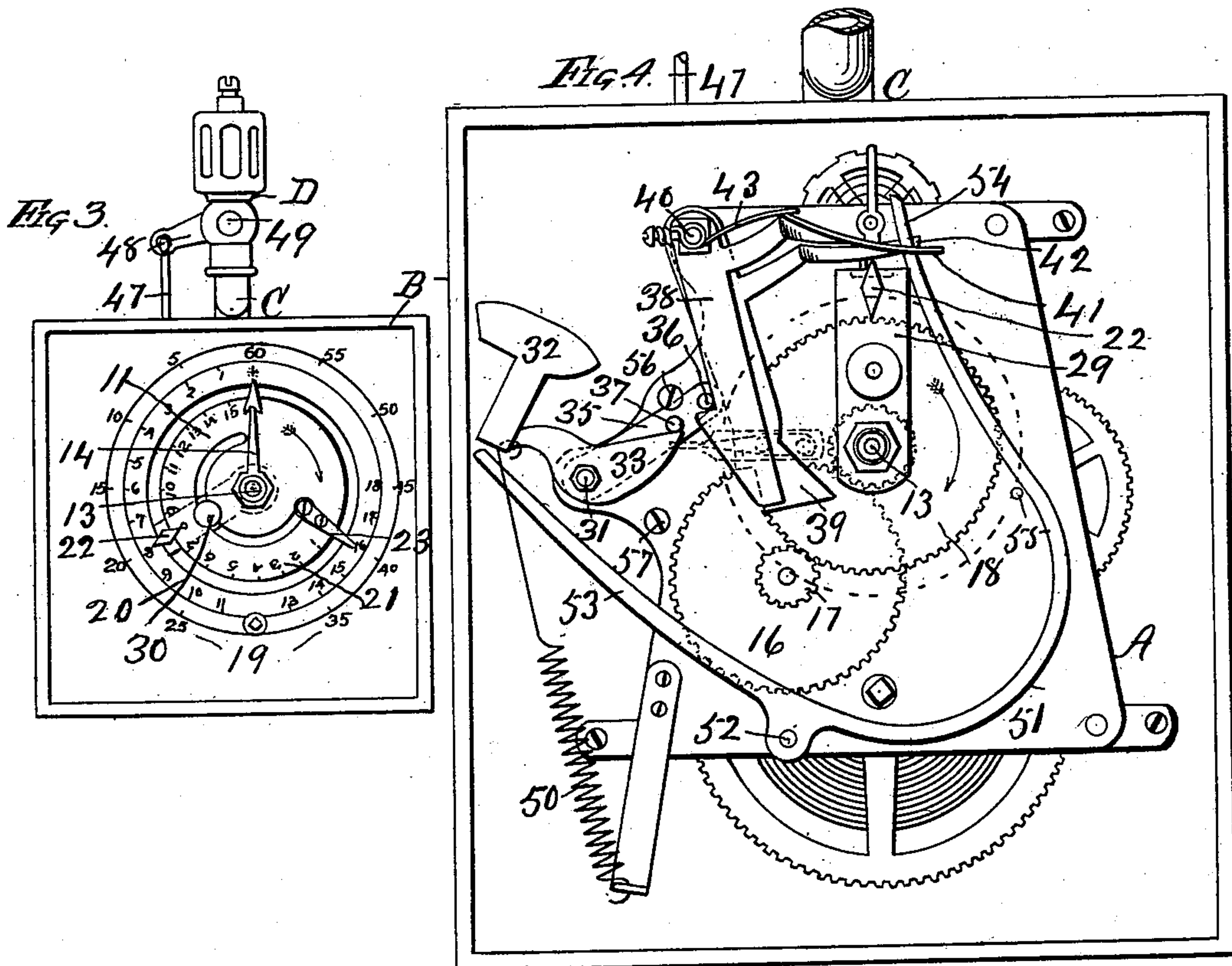
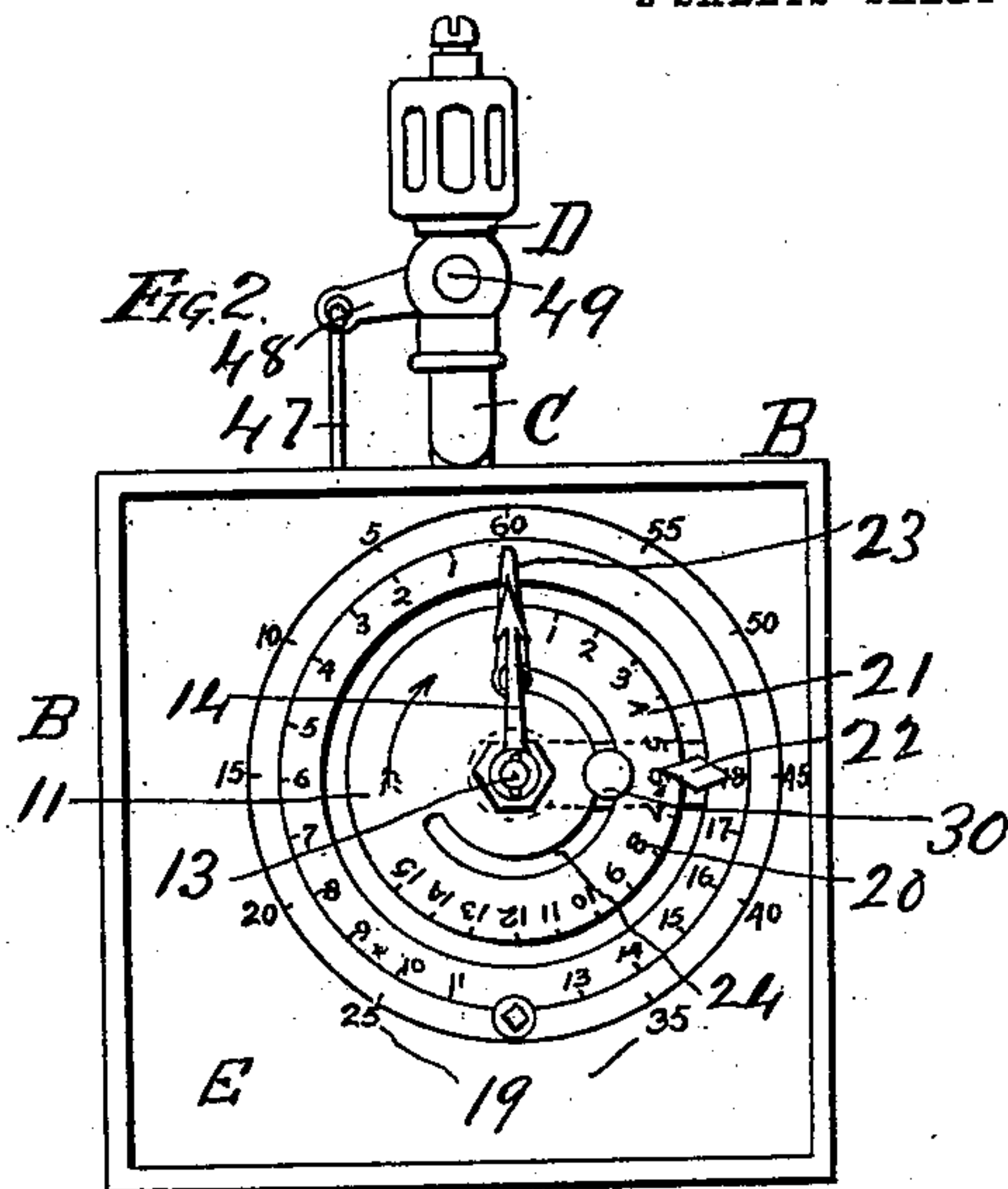
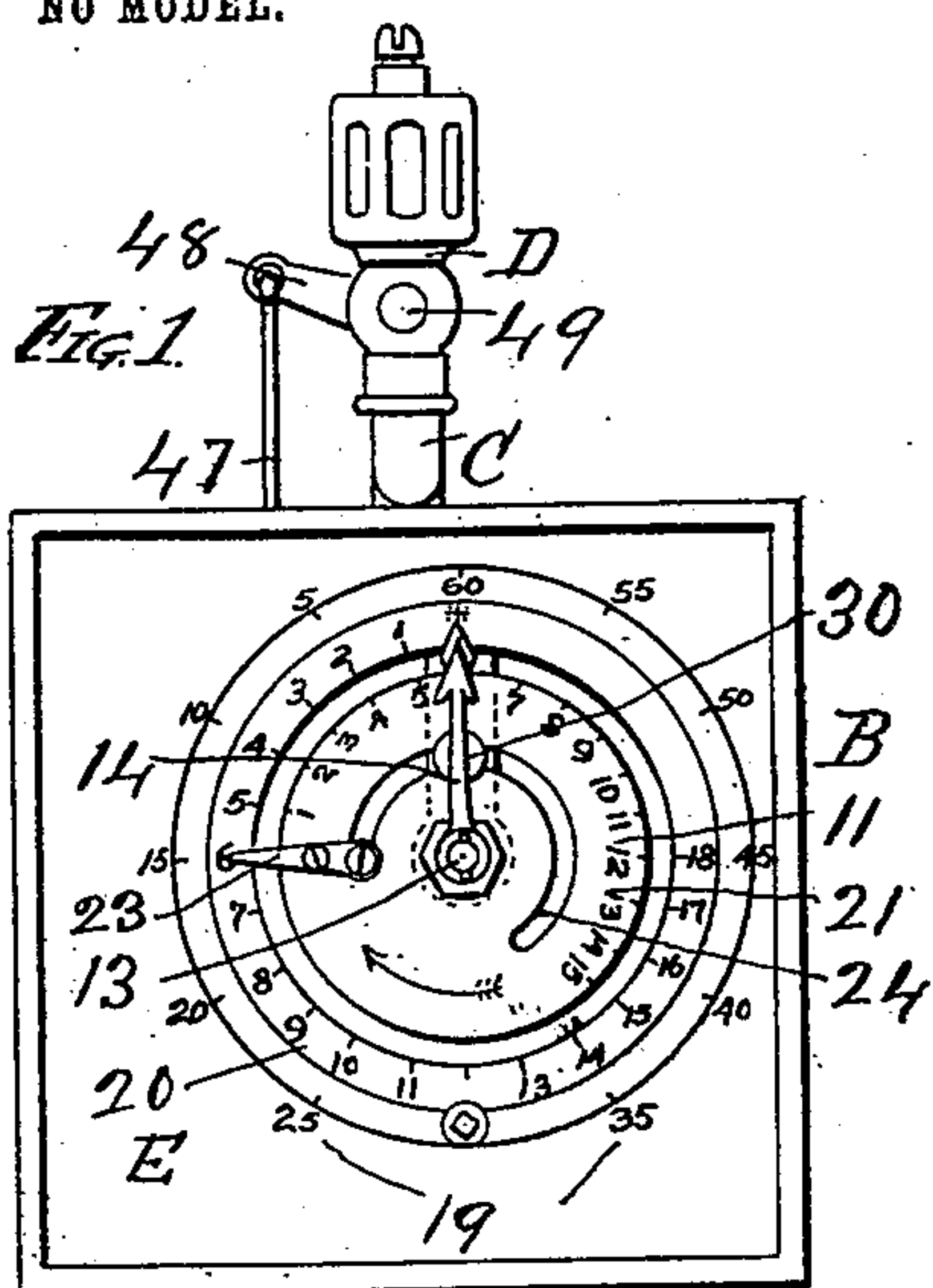
No. 731,208.

PATENTED JUNE 16, 1903.

E. NEWMAN.
TIME LIGHT CONTROLLER.
APPLICATION FILED OCT. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

F. B. Townsend

J. B. Donaldson

INVENTOR.

INVENTOR.
BY *E. Newman.*
L. B. Corbly and Co.
ATTORNEYS

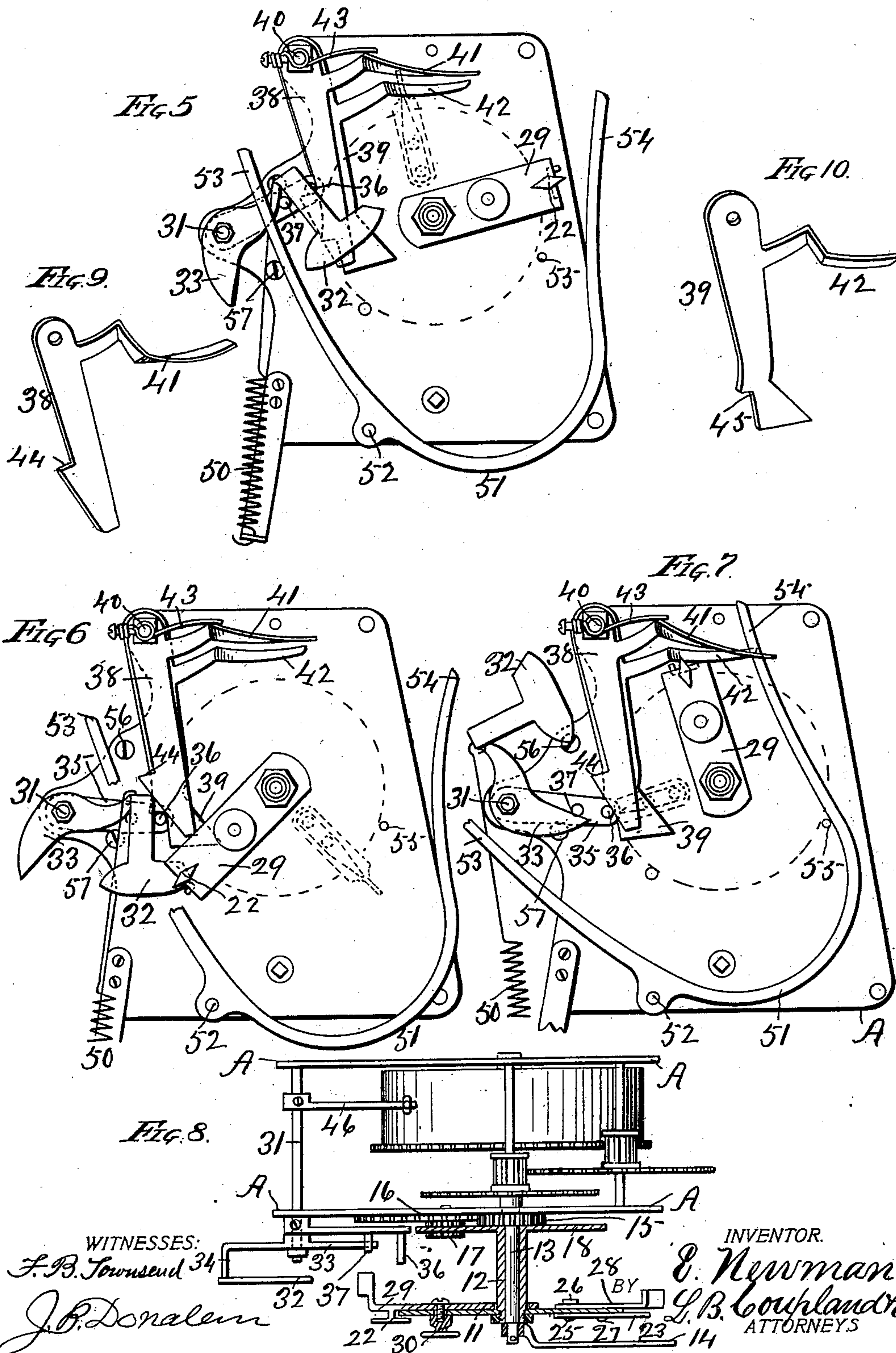
No. 731,208.

PATENTED JUNE 16, 1903.

E. NEWMAN.
TIME LIGHT CONTROLLER.
APPLICATION FILED OCT. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

F. B. Townsend

J. B. Donahue

INVENTOR.

E. Newman.

L. B. Coupland & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD NEWMAN, OF CHICAGO, ILLINOIS.

TIME LIGHT-CONTROLLER.

SPECIFICATION forming part of Letters Patent No. 731,208, dated June 16, 1903.

Application filed October 22, 1902. Serial No. 128,209. (No model.)

To all whom it may concern:

Be it known that I, EDWARD NEWMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Light-Controllers; 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 improved mechanism for automatically controlling the working of gas-lamps and other illuminating devices, and has for its object to provide an attachment that will at predetermined intervals turn up the light to burn at full head for a certain number of hours and then turn the same down again to near the extinguishing-point, when the period for burning at full head has elapsed.

In the accompanying drawings, Figure 1 is an elevation with the graduated face-plate in place, the burner-valve being in its wide-open position. Fig. 2 is a similar view showing the indicating devices in a different position and the burner-valve in its opposite position, the light being turned down. Fig. 3 is a similar view with the indicators set in another position, the valve being in the same position as in Fig. 2. Fig. 4 is an elevation with the face-plate removed, the position of the parts shown corresponding to Fig. 1. Fig. 5 is an elevation showing the working parts in a different position from that illustrated in Fig. 4. Fig. 6 is an elevation showing the parts in another position corresponding to that of Fig. 3. Fig. 7 is an elevation showing the parts in position just before the position in Fig. 1. Fig. 8 is a horizontal plan section, and Figs. 9 and 10 are views in perspective of tripping-arms.

Clockwork mechanism of the ordinary construction is employed as the actuating means, and a description thereof in detail will be omitted.

A represents the frame parts supporting the clockwork mechanism; B, an inclosing case; C, a pipe connecting with the source of the gas-supply; D, a burner-tube mounted on the end thereof, and E a face-plate.

A revoluble graduated disk 11 is rigidly mounted on the outer end of a sleeve or hol-

low shaft 12, which is in turn loosely mounted on the clock-arbor 13, forming a bearing therefor. A minute-hand 14 is rigidly mounted on arbor 13, which revolves once every hour. The disk 11 revolves at a reduced speed, and motion is transmitted thereto by a train of gears comprising a pinion 15, rigidly mounted on the arbor 13, a gear-wheel 16, engaged by said pinion, a pinion 17, formed rigidly on the hub of gear 16, and a gear-wheel 18, mounted on the back end of sleeve 12 and engaging the pinion 17. These gears are so timed as to cause the revoluble disk 11 to make a complete revolution every twenty-four hours. The outside circle of numerals 19 indicate minutes in setting the mechanism for fractions of an hour. The middle circle 20 is used to indicate the number of hours that are to elapse before the light is turned up and also the number of hours in which it will be turned down and the inside circle 21 on the surface of the revoluble disk to indicate the number of hours the light is to burn when turned up. To illustrate, reference is had to Fig. 3, in which the double pointer 22 is set on numeral "8" in both the middle and inner circle, the stationary indicator 23 pointing to "16" in the middle circle of numerals and the minute-hand at "60." This position indicates that the light will be turned up in eight hours, will burn for eight hours, and be turned down for sixteen hours. This combination may be changed to any time practical working may require. The revoluble disk is positioned in an opening in the face-plate and is provided with a circular slot 24. The stationary indicator 23 is secured to the other side of the disk in a fixed position by a small bolt 25, having a nut 26, Fig. 8, engaging the inner end and a fastening-screw 27 also inserted through the indicator and disk. A hand 28 is rigidly secured to the inside of the disk in line with indicator 23 by the same fastening devices. The outer end of hand 28 projects beyond the edge of the disk in position to contact an object that may be located in its path. A manually-adjustable hand 29 is loosely mounted on sleeve 12 and also has its outer end projecting past the edge of disk 11. This hand is attached to the disk by a clamping thumb-screw 30, inserted through the circular slot

24 in the disk and which provides for the setting of hand 29 at any point within the range of the slot and in accordance with the number of hours the light is to be turned up.

5 A rock-shaft 31 (best shown in Fig. 8) is journaled in the clock-frame. An angular movement-pawl, consisting of a head end 32, a foot end 33, and a connecting cross-bar 34, forming an integral structure, is loosely
10 mounted on rock-shaft 31, which extends through a foot part of the pawl, as shown in Figs. 5, 6, 7, and 8. One end of a bar 35 is rigidly mounted on shaft 31, the disengaged
15 end extending inward, and has two pins 36 and 37 fixed therein. The pin 36 will be termed a "lock" or "locking" pin and pin 37 a "stop-pin" in order to avoid confusion.

The upper ends of companion trip-arms 38 and 39 are loosely mounted on a fixed shaft
20 40 and are supported in a swinging position therefrom and held normally in position to engage the pin 37 in controlling the movement of the angular pawl. A detail of these arms is shown in Figs. 9 and 10. In their
25 relative working position arm 39 is placed back of arm 38 with an intervening space, as each arm has an independent movement from that of the other. The arm 38 is provided with a finger projection 41 and arm 39 with
30 a finger projection 42, both of which project across and above the revoluble disk and in line therewith, so as to be in the path of the hands attached thereto and be intermittently contacted thereby at the proper time in each
35 revolution of the disk. Arm 38 is held in its normal position by a spring 43 and arm 39 by force of gravity. Arm 38 is provided with an uppercut shoulder 44 for the periodical engagement of the locking-pin 36 and pre-
40 vents the bar 35 from dropping to its lower position before the proper time. The companion arm 39 is provided with an undercut shoulder 45, with which the same locking-pin engages and temporarily locks bar 35 in its
45 lower position until automatically released by the controlling mechanism.

One end of a rocker-arm 46 is rigidly mounted on the rear part of shaft 31, as shown in
50 Fig. 8. The lower end of a rod 47 is connected to the disengaged end of the rocker-arm and the upper end connected to a valve-handle 48, mounted on the stem end of a valve 49, located in the gas-supply pipe. The angular movement-pawl has four positions—an
55 upper, lower, and two intermediate ones. In the upper position (illustrated in Fig. 4) the valve-handle is up, Fig. 1, the valve open, and the light turned on full head. On the down movement the intermediate position of
60 the pawl is shown in Fig. 5, at which point it comes to full stop. In Fig. 6 the pawl has reached its lowest position, and in Fig. 7 it is shown in its intermediate position on the up movement, which is a different position from
65 that of the intermediate position on the down movement. The pawl is retained at its highest point by means of a spring 50, which is

properly connected in its working position and readily yields to permit the pawl to move to its other positions. A U-shaped lever 51
70 has a tilting movement on its pivot 52. The branch 53 of this lever extends up on the outside of the movement-pawl and in position to bear against the same at the proper time. The branch 54 runs up the opposite side of
75 the working parts, and when the light is turned up it assumes its innermost position, Fig. 4, in the path of hand 29. A pin 55 limits the inner movement of the lever on that side.

The operation and movement of the differ-
80 ent parts are as follows: The positions of the working parts in Figs. 1 and 4 correspond, the light being turned up and the movement-pawl in its highest position. In this position the foot end of the pawl is in contact with
85 stop-pin 37, fixed in bar 35, which also rests at its highest point. The locking-pin 36 is now in engagement with shoulder 44 on arm 38 and holds bar 35 in its highest position. Now assuming that the light is to be turned
90 down it will be noted that hand 29 is moving in contact with branch 54 of lever 51, and forcing it back brings the branch 53 in contact with the movement-pawl and throws the same down to the position illustrated in Fig. 95
5. The down movement of the pawl is arrested at this point by the cross-bar 34 coming in contact with stop-pin 37. It will be noted that the bar 35 still remains at its
100 highest point and the light turned up. The parts remain in this position until hand 28 comes in contact with the under side of finger projection 41 and raises it high enough to retract trip-arm 38 and release the lock-
105 ing-pin 36, when the movement-pawl will be pulled down to its lowest position, Fig. 6, by its spring and at the same time carry bar 35 with it and turn shaft 31 far enough to pull the valve-handle down to the turned-off po-
110 sition. (Shown in Figs. 2 and 3.) In this position the light will remain turned down for the time set, and at the proper time hand 29 will come in contact with the head end of the movement-pawl, Fig. 6, and push it up far
115 enough to throw the tension of spring 50 on the other side of the axial center of the pawl and complete the movement of the same to the up intermediate position. (Shown in Fig. 7.) The up movement of the pawl is arrested
120 at this point by the foot end 33 coming in contact with stop-pin 37, the bar 35 remaining in its lowest position and not moving with the pawl at this time, the light being still turned down. In this down position of bar
125 35 the locking-pin 36 is in engagement with shoulder 45 and prevents the up movement of the bar with the pawl at this time. As hand 29 continues its movement it next con-
130 tacts the under side of finger projection 42 and slightly raising the same draws the trip-arm 39 away from its engagement with the locking-pin 36 and releases bar 35, which is then carried up to its highest position by the spring movement of the pawl and by reason

of the foot end being in engagement with pin 37. This up movement of the bar 35 rocks the shaft 31 in the opposite direction from that of the down movement and turns on the light full head through the medium of the connections with the valve. The stop-pins 56 and 57 limit the movement of the pawl and bar 35 to the space between.

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

1. In a light-controlling device, the combination with a revoluble graduated disk, of a fixed hand and an adjustable hand attached thereto, a movement-pawl with which the adjustable hand is adapted to have contact and move the same upward, means for arresting the up movement of the pawl in its intermediate position when the hand shall have passed out of contact, means for releasing said pawl from its intermediate position on the up movement, means for completing the up movement of the same when so released, and the operative connection between the pawl and valve in the supply-pipe, substantially as described.

2. In a light-controlling device the combination with a revoluble graduated disk, a fixed hand and an adjustable hand attached thereto, a movement-pawl, a rock-shaft on which the pawl is loosely mounted, a bar having a stop-pin and a locking-pin fixed therein and rigidly mounted on the rock-shaft; the companion trip-arms each having a finger projection and adapted to alternately engage said

locking-pin and be disengaged therefrom by the contact of said hands at the proper time in fixing the position of the movement-pawl, substantially as set forth.

3. In a light-controlling device, the combination with a revoluble graduated disk, of a pair of hands attached thereto, a movement-pawl, a rock-shaft on which the pawl is loosely mounted, the companion trip-arms provided with finger projections positioned to be contacted by said hands, a bar rigidly mounted on the rock-shaft and having a stop-pin and a locking-pin fixed therein, whereby the movement-pawl may be moved to different positions, the controlling-valve in the supply-pipe, and the operative connection between the rock-shaft and valve, substantially as set forth.

4. In a light-controlling device, the combination with a revoluble disk, of means for transmitting motion thereto, an adjustable hand attached to said disk, a movement-disk loosely mounted on its axis, and a U-shaped lever, having one branch positioned to be engaged by said hand once in each revolution of said disk and the other branch in position to engage said pawl at the proper time and initiate the down movement thereof, substantially as described.

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

EDWARD NEWMAN.

Witnesses:

J. B. DONALSON,
L. B. COUPLAND.