

(No Model.)

2 Sheets—Sheet 1.

W. E. GROVES.
TIME ALARM FOR CULINARY PURPOSES.

No. 446,226.

Patented Feb. 10, 1891.

Fig. 1.

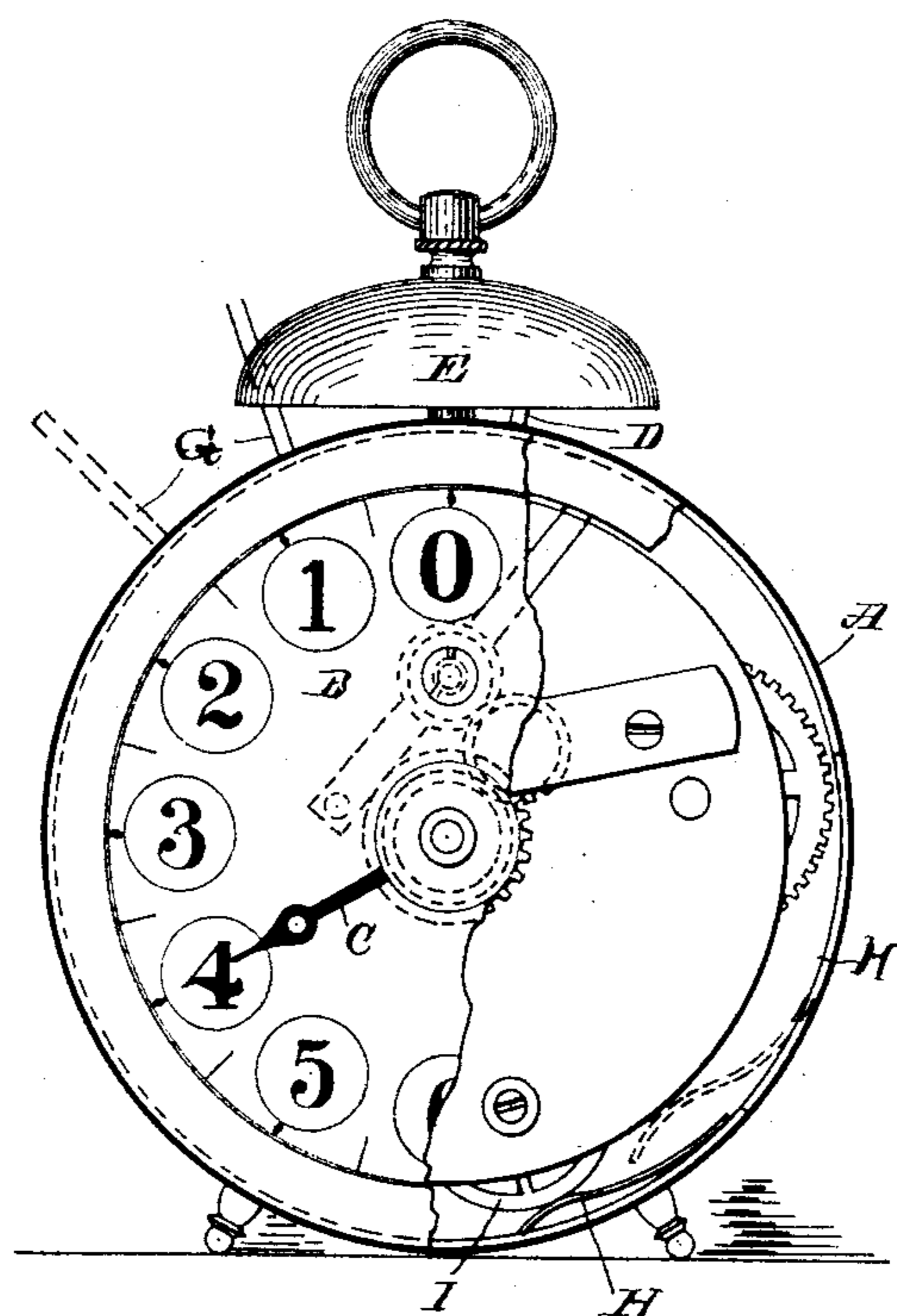


Fig. 2.

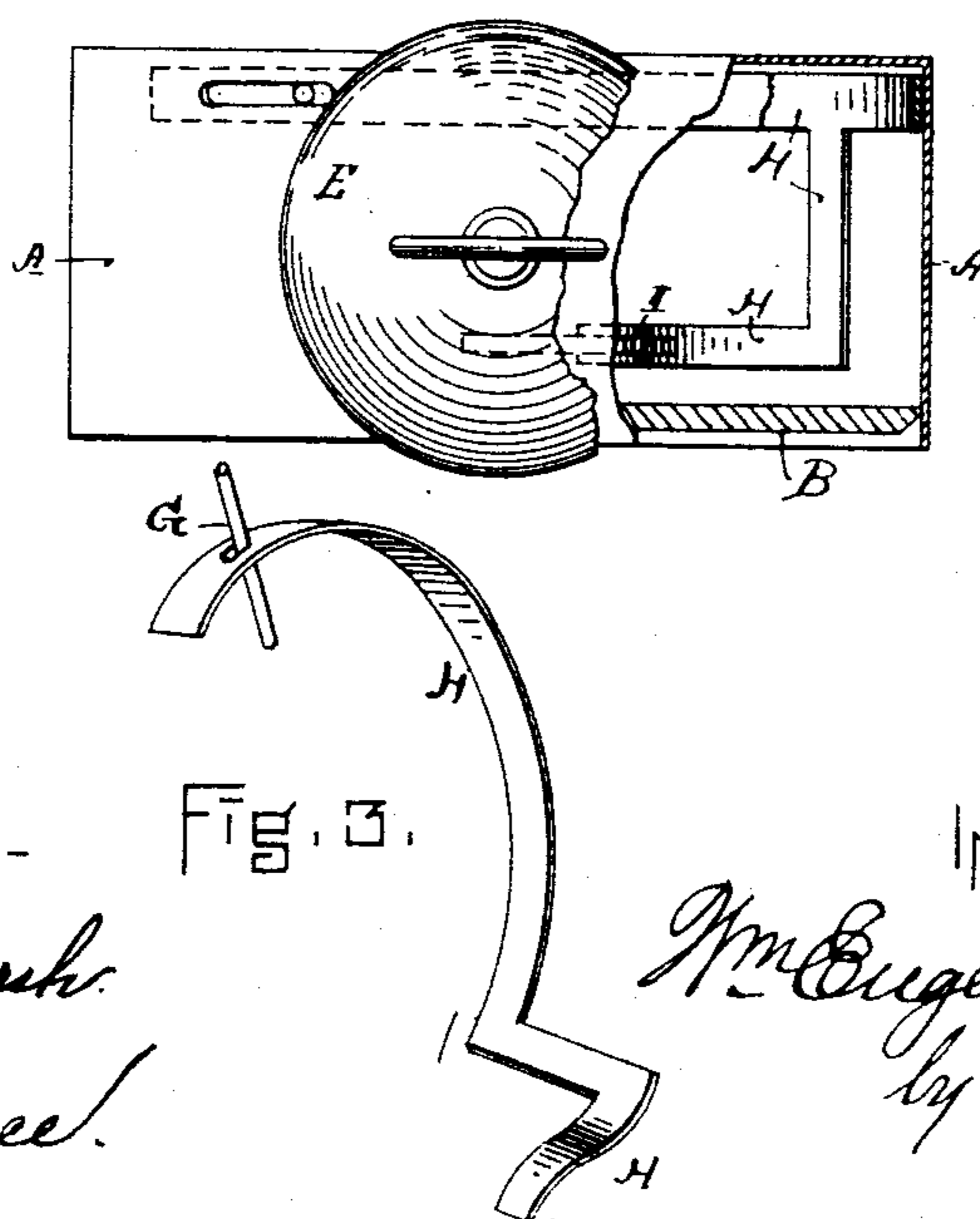


Fig. 3.

WITNESSES.

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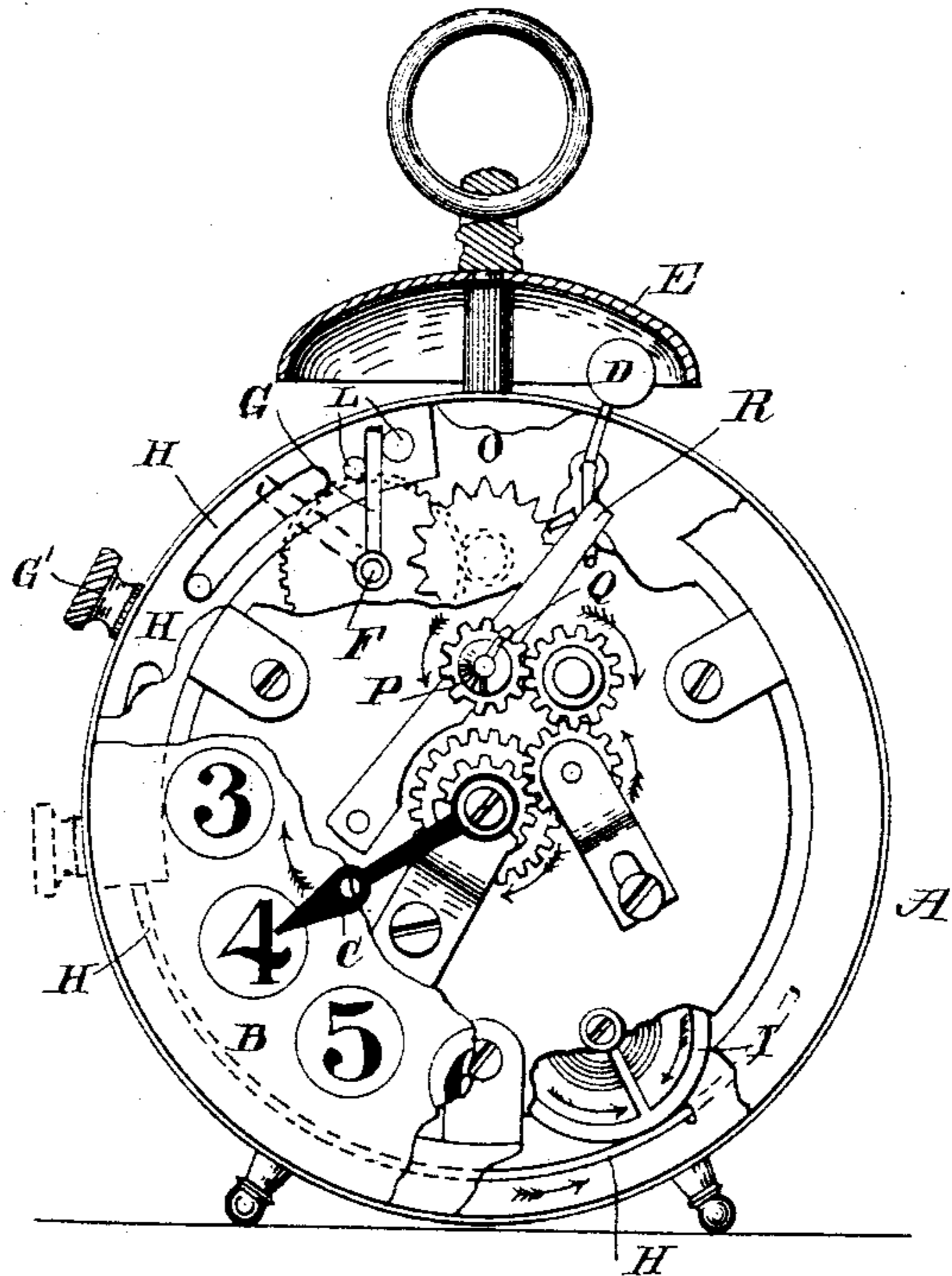


Fig. 4.

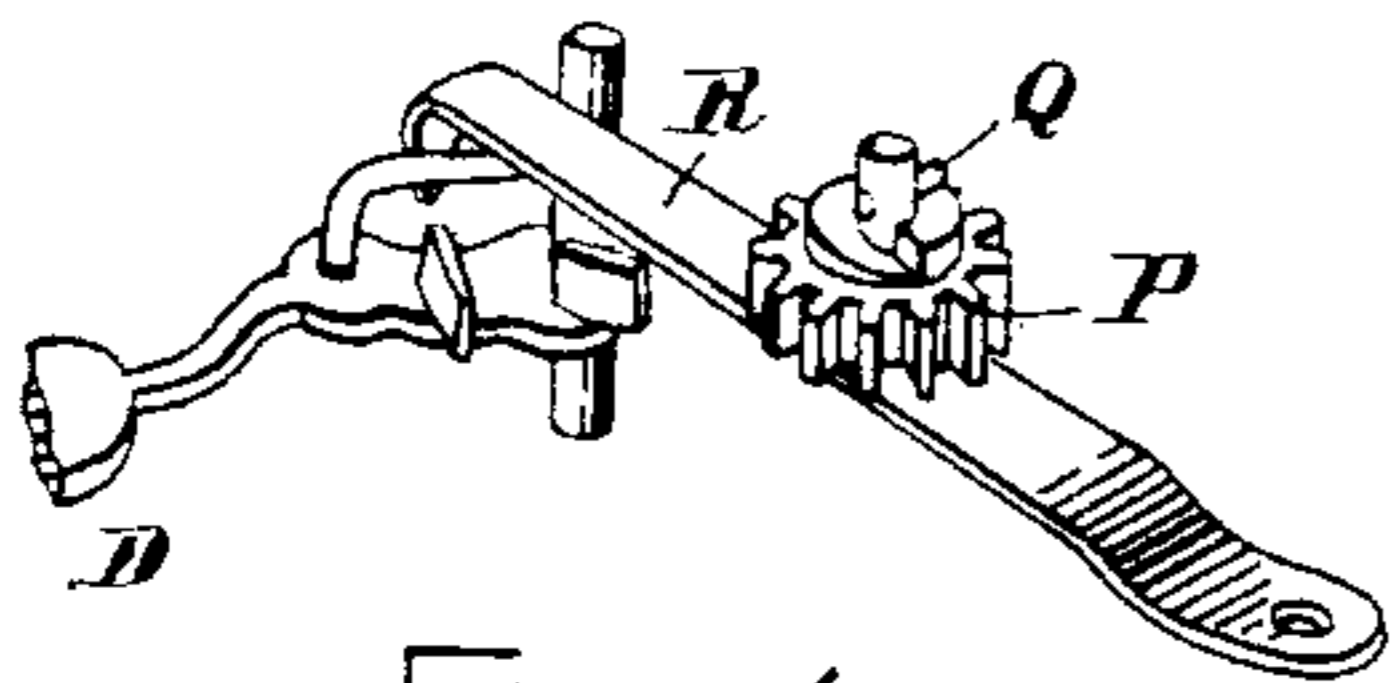


Fig. 6.

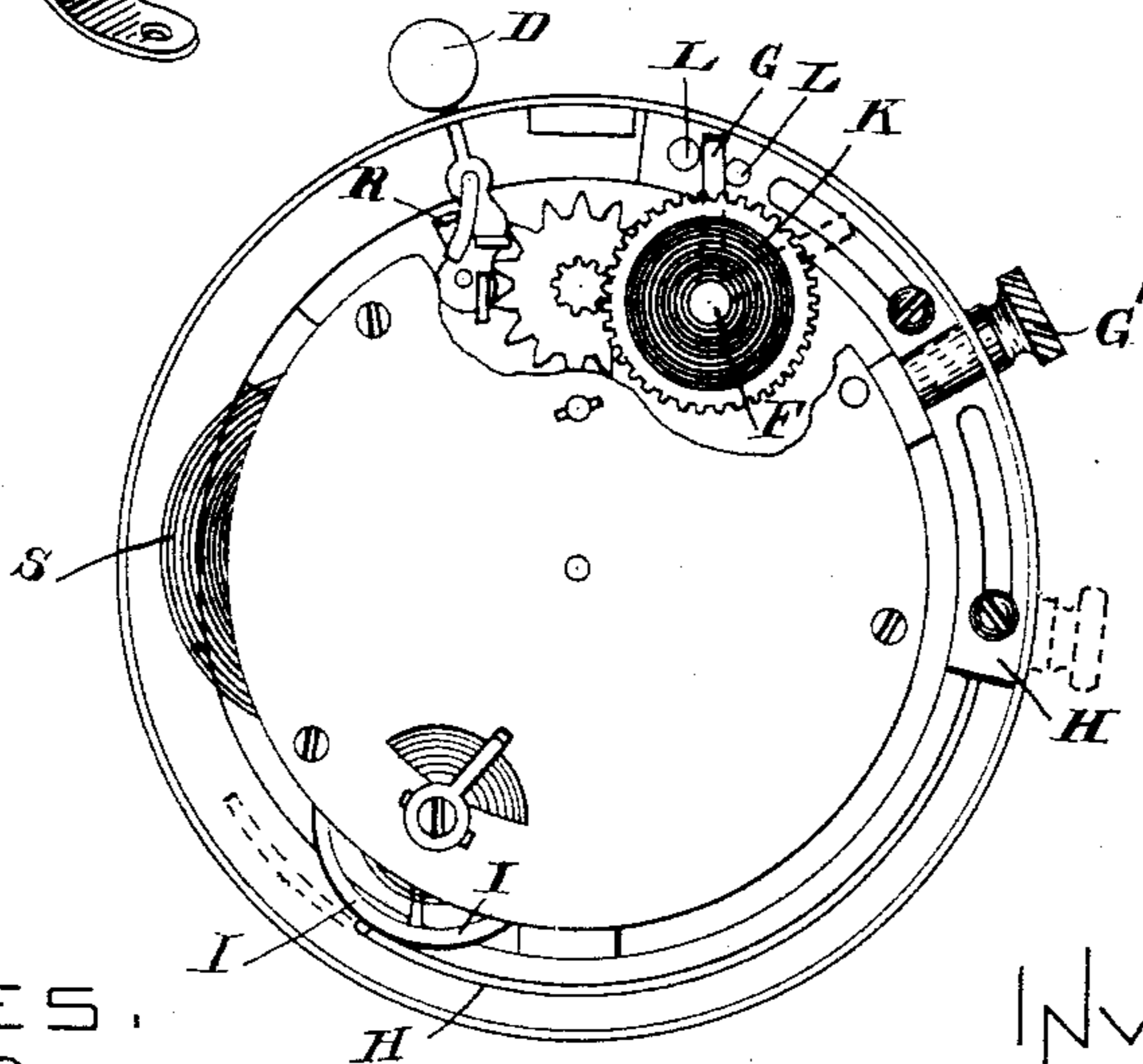


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM EUGENE GROVES, OF BOSTON, MASSACHUSETTS.

TIME-ALARM FOR CULINARY PURPOSES.

SPECIFICATION forming part of Letters Patent No. 446,226, dated February 10, 1891.

Application filed December 3, 1889. Serial No. 332,413. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EUGENE GROVES, of Boston, in the county of Suffolk and State of Massachusetts, have invented
5 certain new and useful Improvements in Culinary-Alarms, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of this invention is to provide,
10 especially for cooks and those in like occupations, an alarm mechanism adapted to be set for operation in a very brief period after being started—as, for instance, in boiling eggs or cooking other articles requiring attention
15 in from one to ten minutes.

The novel feature of this apparatus consists in the setting, starting, and stopping devices by which the interval preceding the alarm is fixed, and the automatic stopping of the ac-
20 tion after the alarm has sounded retains the tension of the driving-spring for use for succeeding alarms indefinitely. The setting is preferably such that the alarm will always sound when the hand or pointer reaches the
25 vertical position representing twelve in an ordinary clock, and the length of the interval is determined by the number of points representing minutes over which the hand is caused to travel. The hand is exposed at the
30 front, and is capable of being turned to the desired extent by the operator using it as a lever, or moving it by means of a knob on its spindle. The alarm is wound by a projecting knob or lever attached to the rotating shaft
35 of the alarm-spring, and when the alarm sounds this lever advances, carrying forward a slide into elastic contact with the periphery of the balance-wheel, on which it acts as a brake or stop, arresting the movement of the
40 mechanism and preventing the spring from running down until the apparatus is again to be used. One winding of the mainspring will therefore suffice to actuate the mechanism for an indefinite period, and each wind-
45 ing of the alarm starts the clock-work, the movement of which stops when the alarm sounds.

In the drawings, Figure 1 is a front view of the device, part being broken away to illus-
50 trate the action of the stop. Fig. 2 is a top plan, and Fig. 3 a detail. Figs. 4 and 5 are

front and rear views, parts being broken away to illustrate more fully the internal arrangement of parts. Fig. 6 is a detail of the alarm mechanism.

A represents the cylindrical case, and B the dial, numbered in reverse order from 1 to 12, the figures showing the number of minutes required for the hand C to travel from each
55 to the point O, when the alarm will sound, the hammer D being caused by suitable means to strike one or more blows upon the bell E every time the hand reaches that point. This prevents the necessity of any indicator de-
60 noting the position of the alarm or any knob or device for adjusting it.

Instead of setting the alarm in the usual way from the back by turning its shaft, I turn the hand C to the figure denoting the number of minutes desired to elapse before the alarm
70 sounds, and the driving-spring S carries the hand forward to the fixed sounding-point O, the gearing being so speeded in the instrument herein shown as to cause the hand to traverse one-third of the face of the dial in
75 four minutes. This very considerable movement in a brief space of time affords an opportunity of setting the device so as to give an alarm in a fraction of a minute, which has not been practically attainable heretofore.
80 The hammer D is caused to strike the alarm by means of the usual coiled spring K, Fig. 5, to which tension is given by rotating its shaft. Sufficient tension for one alarm is given by a partial rotation, which I effect either by a
85 knob on the end of such shaft, or, as shown in Figs. 1 and 2, by the lever G, projecting from it through a slot in the case A, which permits its vibration. This lever also passes through
90 or is otherwise connected loosely with a slide H, which extends to the balance-wheel I, against which its free end bears with a yielding pressure, or from which it is withdrawn by vibration of the lever G. In Figs. 4 and 5
95 the lever G does not itself protrude, but runs between two pins L on the body of the slide H, and is thereby loosely connected to said slide. The protruding part is the knob G', which passes inwardly through a slot in the case and is secured to the slide. Now when
100 the hand C has been set at the point denoting the number of minutes which should elapse

before an alarm, and it is desired to start the device, the lever G or knob G' is drawn back to the position shown in dotted lines in Figs. 1, 4, and 5, which movement partially winds the alarm-spring by partially rotating its shaft F, and at the same moment releases the balance-wheel with a sliding or frictional action sufficient to set it and the connected train in motion, its action being then continued by the usual driving-spring, which causes the hand C to traverse the dial until it reaches the point O. The springing of the alarm then releases the arbor F, causing the lever G to advance to the position shown in full lines in Fig. 1, carrying the slide H forward until its elastic laterally-bent tip again touches and stops the balance-wheel I and the mechanism thereto connected.

The alarm mechanism used with my improved slide is of suitable form, and may be briefly described with special reference to Figs. 4, 5, and 6. The shaft which carries the hand C is geared to a pinion P, revolving loosely round a fixed stud having a transverse pin Q. The pinion P has on its side an inclined cam with an abrupt termination. A spring-strip R beneath said pinion keeps the cam-face pressed against the pin Q, and is held down by the thick part of the cam coming between it and said pin. While so held down the tip of this spring engages the hammer-arm, as in Fig. 6, and retains the tension of the alarm-spring K, imparted by moving the slide H by knob G' or lever G. When the hand C reaches the vertical position or alarm-point, the abrupt shoulder of the cam has reached the pin Q, allowing the spring-strip R to rise and release the hammer and the shaft F of spring K to make a partial ro-

tation, sounding the alarm and moving the lever G, knob G', and slide H forward to the full-line positions.

I claim as my invention—

1. An alarm mechanism provided with a stop, brake, or slide adapted to engage automatically with the periphery of the balance-wheel to stop its movement when the alarm has sounded and to be moved in a tangent therefrom by the operator, the latter movement serving to release and start the balance-wheel and to impart tension to the alarm-spring, substantially as set forth.

2. The case A, with a suitably-actuated train of gearing, the indicator-hand C, alarm devices D E, and alarm-spring K, in combination with the curved slide H, connected to a lever protruding through the case, whereby the slide may be disengaged from the periphery of the balance-wheel by the operator and engaged therewith by the action of the alarm-spring, substantially as set forth.

3. In an alarm device, the hand or indicator adapted to be rotated by the operator in setting and to be carried forward by the driving-spring, in combination with an alarm device having one unvarying sounding-point, and with gearing adapted to speed the movement of the hand toward said point, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 20th day of November, A. D. 1889.

WILLIAM EUGENE GROVES.

Witnesses:

A. H. SPENCER,
ERNEST L. MORANDI.