

(No Model.)

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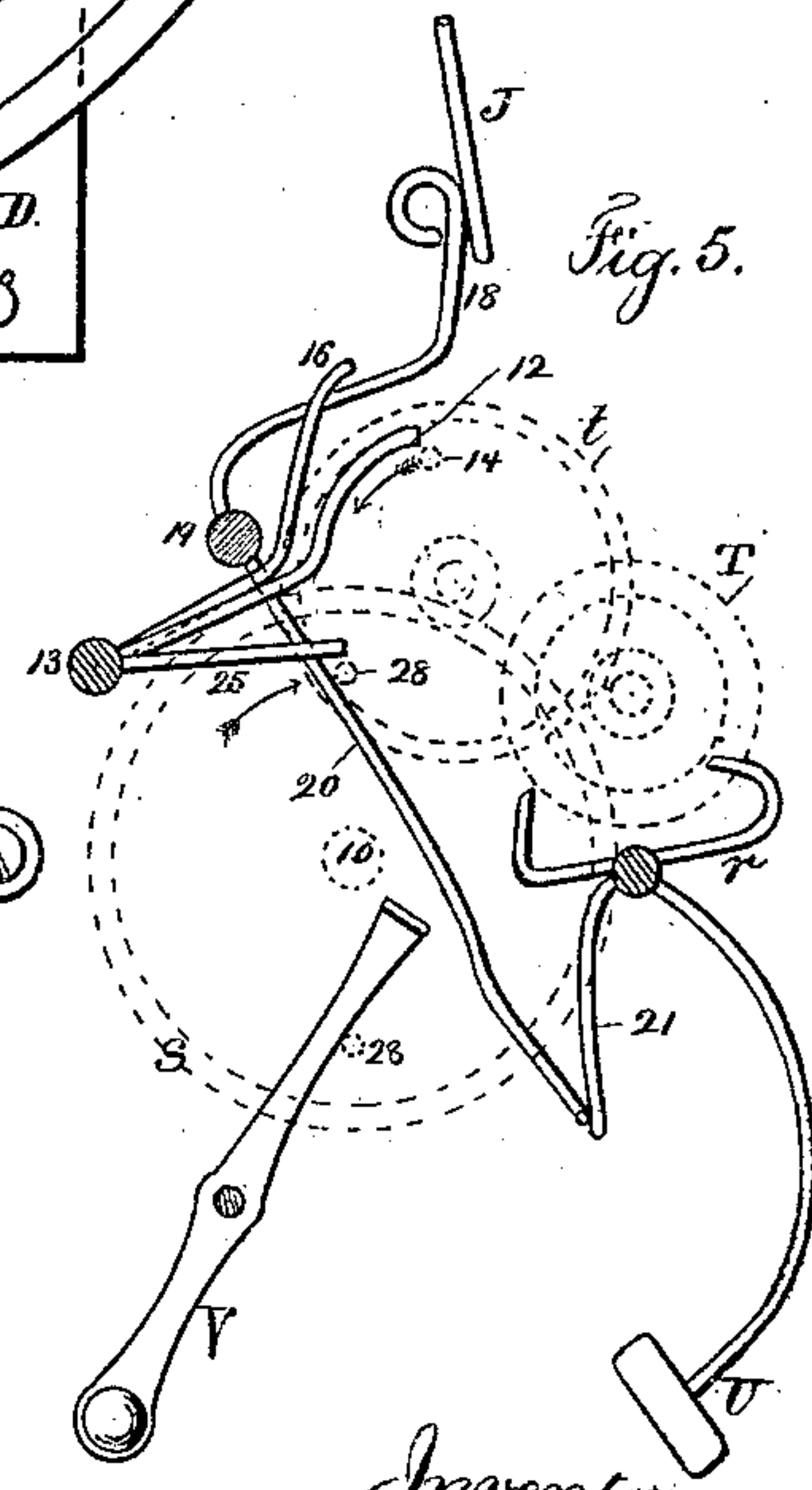
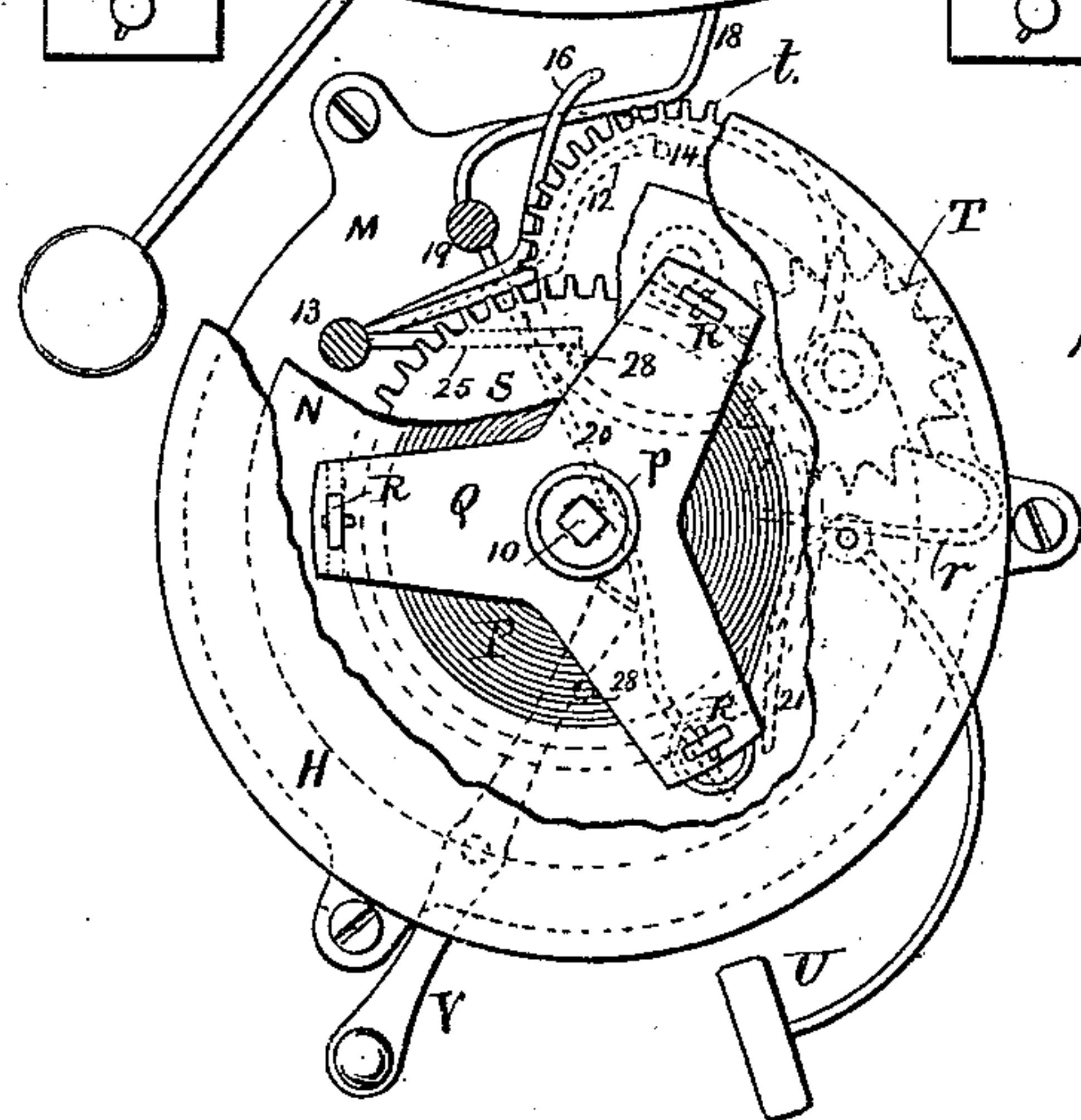
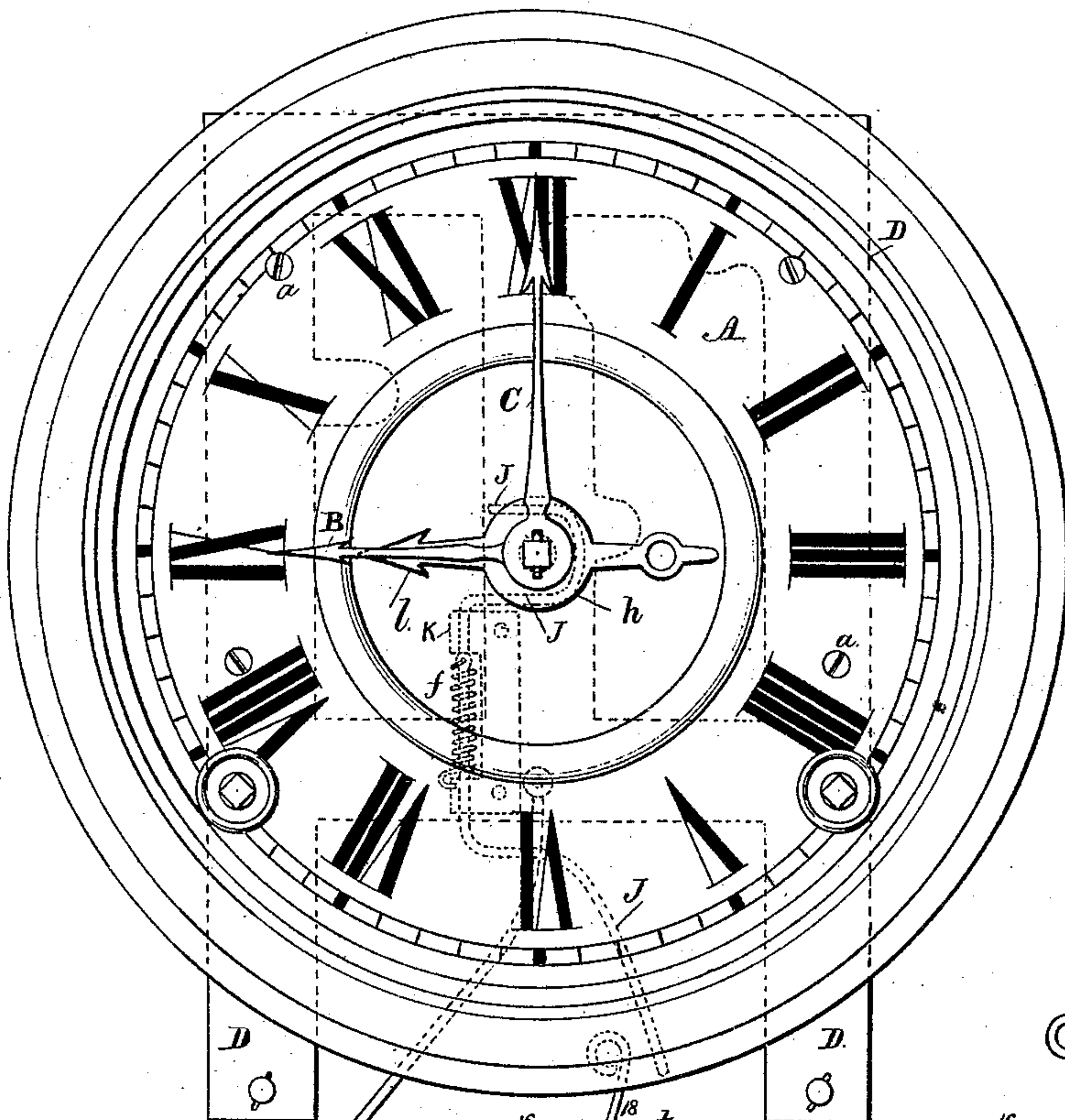
J. GANSS.

ALARM MECHANISM FOR CLOCKS.

No. 277,702.

Patented May 15, 1883.

Fig. 1.



Witnesses  
Charles Smith  
J. Haib

Inventor  
Jacob Ganss  
for Lemuel W. Ferrell atty

(No Model.)

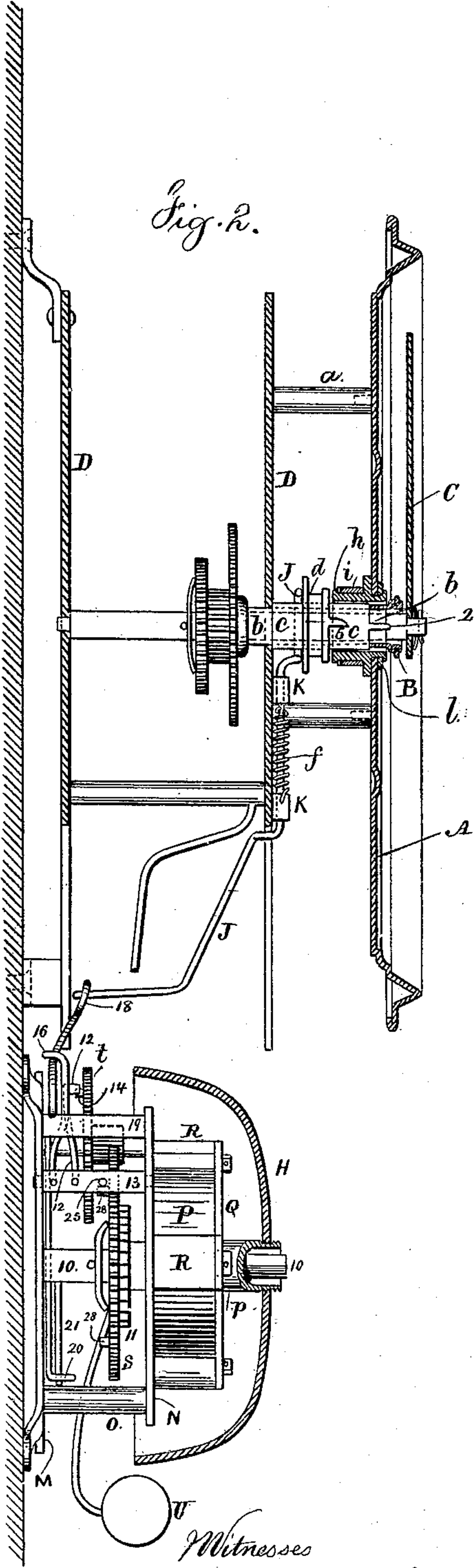
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J. GANSS.

# ALARM MECHANISM FOR CLOCKS.

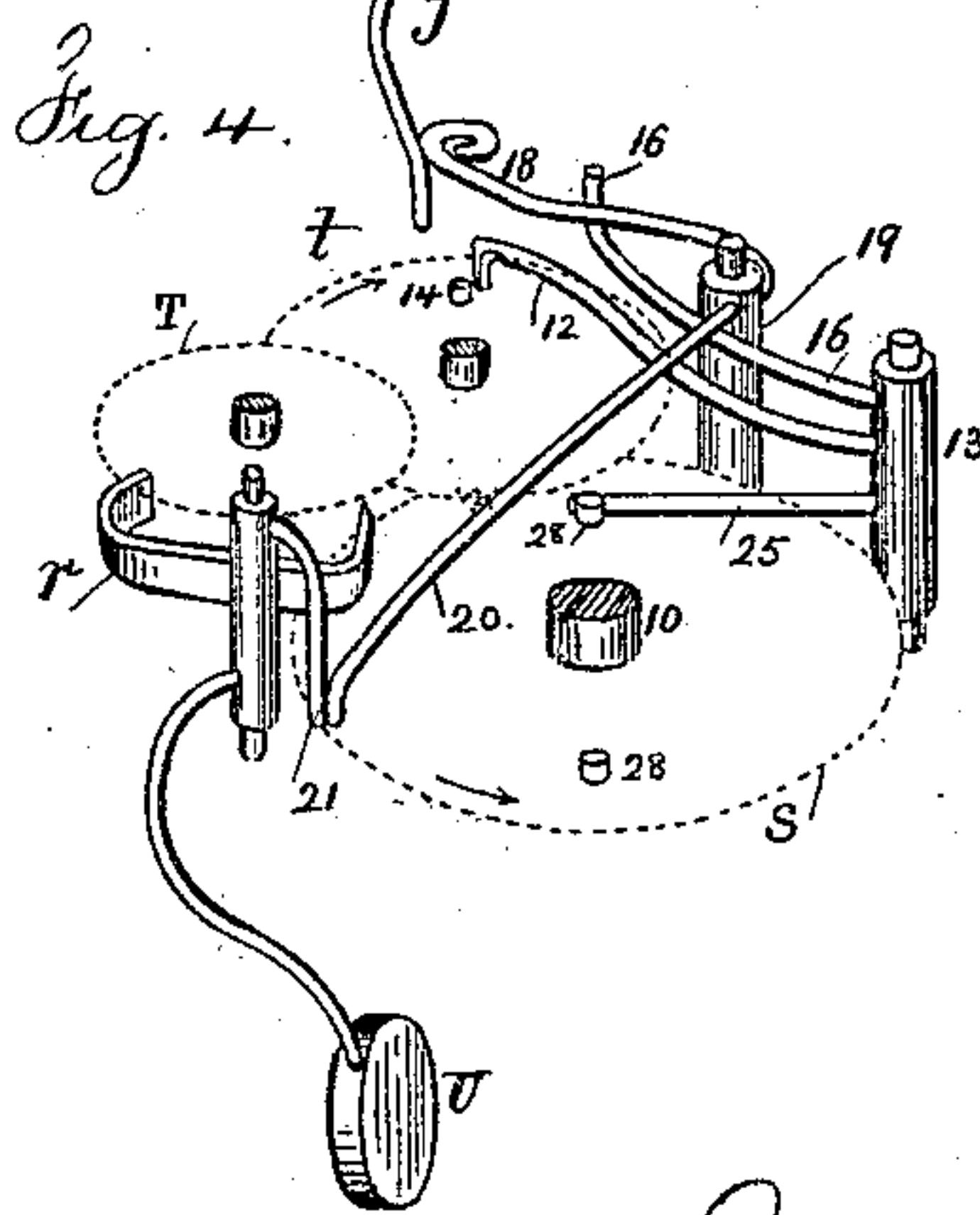
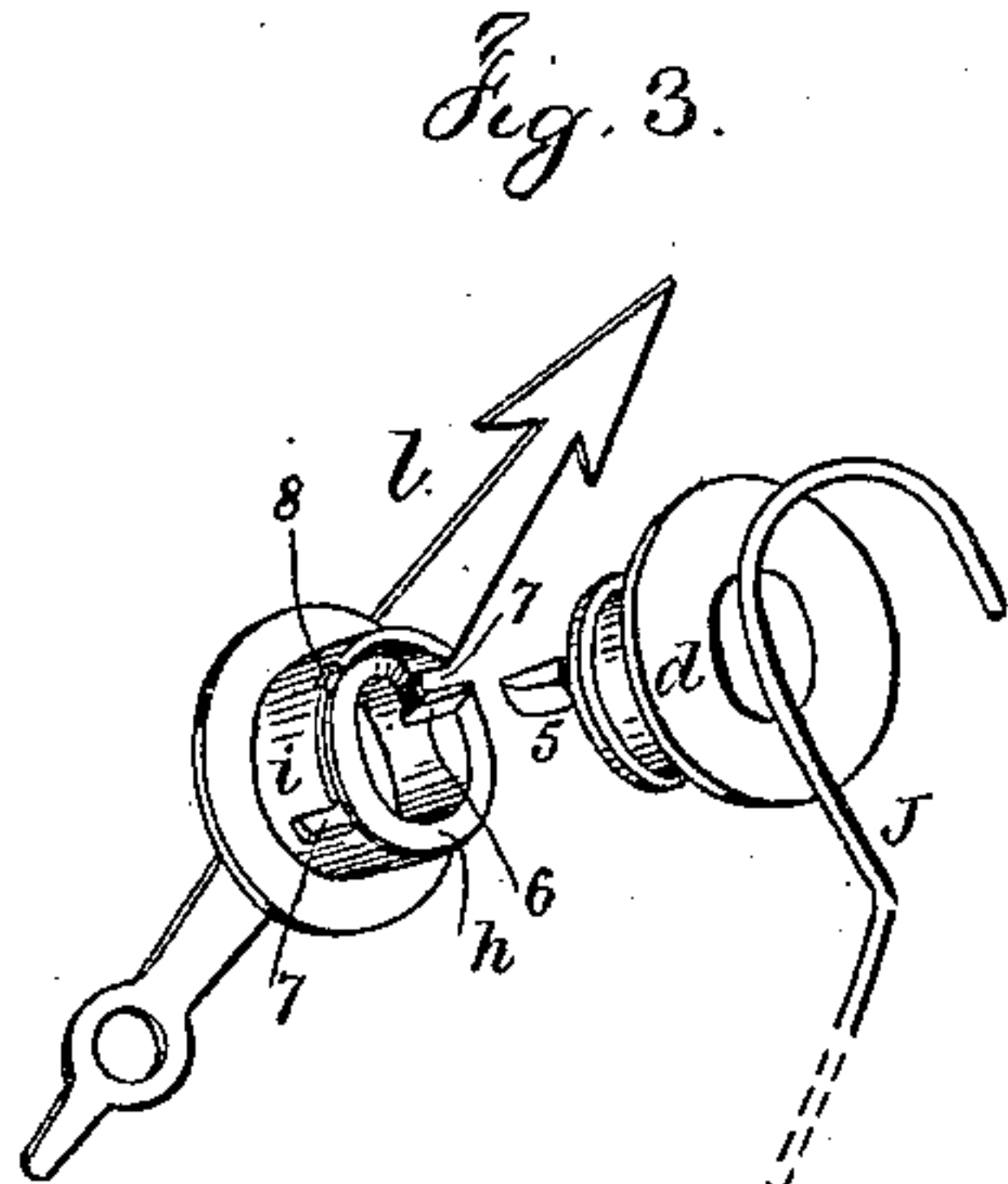
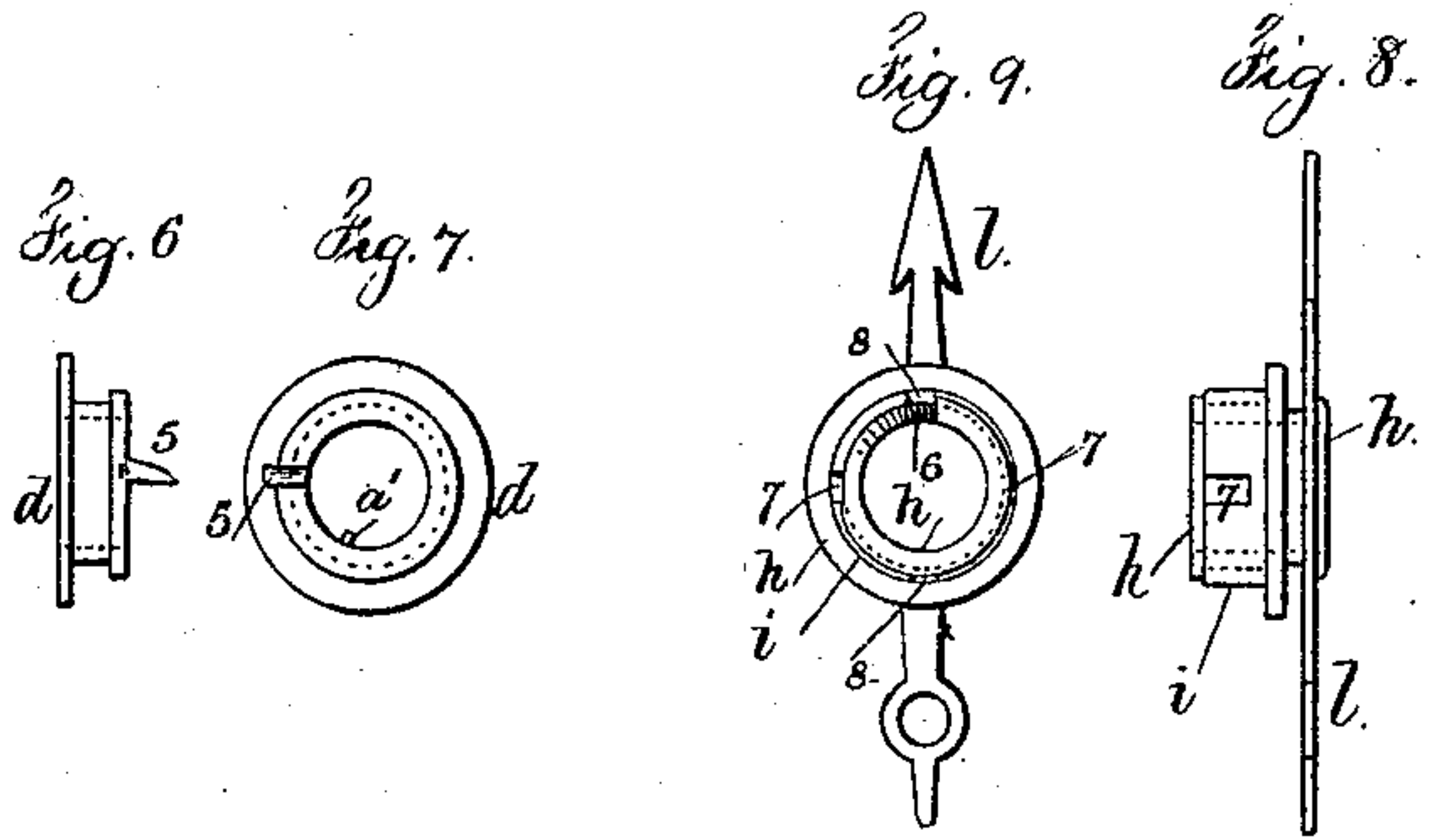
No. 277,702.

Patented May 15, 1883.



Witnesses

Chas H. Smith  
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# UNITED STATES PATENT OFFICE.

JACOB GANSS, OF BROOKLYN, ASSIGNOR TO HIMSELF AND JOHN BLACKWOOD, OF NEW YORK, N. Y.

## ALARM MECHANISM FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 277,702, dated May 15, 1883.

Application filed December 28, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB GANSS, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Time Alarm-Clocks, of which the following is a specification.

The object of this invention is to ring an alarm for a short period of time once in every twenty-four hours, and to provide for the alarm being set for any desired hour. This is effected with but little addition to the time mechanism of the clock, and the alarm mechanism is placed in the bell, and the same bell answers for the striking mechanism of the clock and for the alarm. The alarm mechanism is constructed in such a manner that it may ring for a brief period of time as frequently as it may be set going or allowed to run by the action of the time-movement of the clock. I however prefer to use the devices herein described for connecting the alarm and the clock, so that the former will be brought into action once in twenty-four hours only.

In the drawings, Figure 1 represents the face of the clock and the alarm, the bell being partially in section, the parts being in the position they assume after the alarm has finished striking. Fig. 2 is a vertical section, the time wheels and gearing of the clock not being shown. Fig. 3 is a perspective view of the let-off mechanism detached from the sleeve of the hour-hand and viewed from the rear. Fig. 4 is a diagrammatic view in perspective of the alarm let-off viewed from the rear. Fig. 5 is a diagram showing the alarm mechanism in its position previous to being let off. Fig. 6 is a side view, and Fig. 7 an end view, of the revolving and sliding collar. Fig. 8 is a side view, and Fig. 9 an end view, of the cylinder that carries the hand for setting the alarm.

The clock-face A and hands B C are of any desired character. The plate or frame D of the clock-movement is adapted to the particular arbors, wheels, springs, &c., of the time and striking movements of the clock. As these parts may be of any suitable construction and form no part of the present invention, they are not further shown or described. The face A may be attached to the frame B by the pillars and screws a.

Around the tubular arbor *b* of the hour-hand a cylinder, *c*, is secured, having a pin, 2, that passes up into a slot in the tubular eye of the said hour-hand, so that said hand can only be placed upon the arbor in its correct position relatively to the other parts of the mechanism. Upon this cylinder *c* there is a sliding collar, *d*, having a pin or feather, *a'*, entering into a slot in said cylinder, so that the two parts will turn together; but the collar can slide endwise upon the cylinder.

Upon the frame D is a lever, J, preferably formed of a bent wire passing through the cylindrical support K upon the frame D, and turning freely therein. One end of this bent lever J is made as a loop partially surrounding the arbor *b*, and between the frame and the sliding collar *d* the other end passes to the alarm mechanism to set off the same at the proper time. There is a spring, *f*, that tends to move the lever J and press the collar *d* toward the back of the clock-face, and there is upon the collar *d* a tooth, 5. The alarm mechanism hereinafter described is constructed so that when this tooth 5 and collar *d* are pressed back toward the frame the alarm-stop is disengaged from its wheel, but the escapement is simultaneously held from moving; but when the collar and tooth are allowed to move toward the back of the face the escapement of the alarm is released and the alarm allowed to ring for a limited period and be again arrested by the alarm-stop.

The central hole in the face is enlarged sufficiently to receive through it the neck of notched cylinder *h*, and upon this neck there is a hand or indicator, *l*, the same having a key or projection passing into a notch in the neck, so that the hand *l* can be used for revolving the cylinder *h* and bringing its notch 6 into any desired position around the arbor of the hour-hand. A cylindrical ring, *i*, surrounds the notched cylinder *h*, and in it are four notches, the notches 7 7 being deep and the intermediate notches, 8, being shallow.

The operation of these parts is as follows: The tooth 5 is pressed by the lever J against the back of the cylinder *h*, and it is carried around by the collar *d* and hour-hand arbor. The shape of the notch in the cylinder *h* is such



that the tooth 5 will slip off the edge of the cylinder at the notch and move freely toward the face, and in the further movement of the tooth it will run over the inclined part of the cylinder *h* at said notch and be pressed back thereby. If the alarm is to be set off once every twelve hours, or if the collar *d* was revolved once in twenty-four hours, these parts are all that would be required to allow the tooth 5 to slip off the edge of the cylinder *h* into the notch, and thereby trip the alarm-lever *J*, and afterward restore it to the normal position as the tooth runs over the incline. However, to prevent the alarm being set off every twelve hours when used with the ordinary movement, the ring *i* with its four notches is used. The notch 6 in the cylinder *h* occupies about one-quarter of its circumference. Hence the tooth 5, dropping into one of the notches in the ring *i*, will carry the ring around a quarter of a revolution, and then the tooth, running up the incline, will be lifted out of the notch and rim upon the end of the cylinder *h*, leaving the ring *i* stationary, and the next notch on the ring will be at the deep end of the notch. As before mentioned, one notch is deep, the next is shallow. Hence when the tooth drops into the deep notch and liberates the alarm by allowing the spring *f* to move the lever *J*, the tooth 5, as it and the collar *d* are revolved, turns the ring *i* and brings to the deep part of the notch 6 one of the shallow notches 8. Hence the next time the hour-hand arbor and collar reach the notch 6 in *h* the tooth 5 drops into the shallow notch, and the movement allowed to the lever *J* is not enough to liberate the alarm. Hence said alarm does not ring; but the tooth 5 moves the ring around the cylinder *h* a quarter-revolution and leaves it with the deep notch 7 in place, ready for the alarm to be set off at the recurrence of the time the next twelve hours.

I remark that the parts are to be placed so that the index or hand will point to the hour at which the alarm will be rung, and should the alarm ring at the wrong period in the twenty-four hours, it will be rectified by turning the hands around twelve hours. In turning the clock-hands there will be a sound at the time the tooth drops into the shallow notch. This will indicate the time of the alarm, and the person is then sure that the alarm itself will be given twelve hours from that time.

The plates *M N* are connected with pillars 55 *o*, and the spring *P* is between the triangular frame *Q* and the studs *R*, that support the same. There is a tube, *p*, upon the frame *Q*, and upon this the bell is supported, either by being screwed directly upon such tube or by a nut to hold the bell in place. The arbor 10 of the spring *P* may have winding squares at either or both ends, and the ratchet-wheel 11 is tight on such arbor, and the gear-wheel *S* is driven through the agency of the spring-pawl that is acted upon by the ratchet-wheel and spring. The escapement-wheel *T* receives its

movement by one or more intermediate pinions. I have shown the two pinions and the intermediate gear, *t*. The hammer *U* is vibrated by the escapement *r* and rings the alarm. The wire forming the handle of the hammer passes by preference behind the edge of the bell, so that the hammer is outside the bell.

In order to stop the escapement and vibrator, I employ a detent, 12, upon a shaft, 13, and a pin, 14, on the wheel *t*. There is an arm, 16, on the shaft 13, that is adjacent to and is acted upon either directly by the lever *J*, but preferably through the lever 18 upon the shaft 19, so that the lever *J*, acting on 18, moves 16, 13, and 12, and withdraws 12 from 14 to free the escapement. In order, however, to cause the parts of the alarm to act in harmony with the let-off mechanism on the hour-hand arbor, I employ the lever 20, that projects from the shaft 19, near to the arm 21 on the escapement, so that when the tooth 5 runs over the incline at the notch 6 on the cylinder *h* and moves the lever *J* said lever will unlatch the detent 12; but the arm 20 will hold the escapement *r* until the tooth 5 drops into one of the deep notches in *i* and allows the alarm to ring.

In order to bring the detent 12 into the path of the pin 14, I use the arm 25 upon the shaft 13, and act upon the same by one of the pins 28 upon the wheel *S*, according to the proportion of the gearing and the number of the pins 28, so the alarm will be made to ring a longer or shorter time. If the alarm is to be entirely stopped, I turn the lever *V* by hand, so that the end comes into contact with the arm 20, and the latter moves the arm 21 on the escapement and blocks the same immovably. The time-movement is not in any way confined, and it makes no difference to the clock itself whether the alarm is in action or not. The lever *V* is omitted from Figs. 2 and 4 for greater clearness.

It is preferable to construct the alarm in the manner shown, so that it will only require to be wound every week. The clock by preference is also what is known as an "eight-day movement."

I claim as my invention—

1. The alarm mechanism, its spring, hammer, and escapement, in combination with a tubular projection from the frame surrounding the arbor of the spring, and a bell attached to such tubular projection, substantially as set forth.

2. The combination, with the time and the alarm mechanism, of a sliding and revolving collar, *d*, a notched cylinder, *h*, a hand to set the same, a notched ring, *i*, and a tooth upon a sliding collar, substantially as and for the purposes set forth.

3. The combination, with the time mechanism in a clock and an alarm mechanism, of automatic mechanism, substantially as specified, between the arbor of the hour-hand and the alarm, for actuating the alarm once in every two revolutions of the hour-hand, so that said



alarm is actuated only once in twenty-four hours.

4. In an alarm mechanism, the combination, with the escapement-wheel, escapement, and  
5 hammer, of a spring to actuate the main wheel, an intermediate pinion and wheel between the escapement-wheel and main wheel, a pin upon the main wheel, a detent and pin on the inter-

mediate wheel, and a stop-lever for the escapement-arm, substantially as specified. 10

Signed by me this 19th day of December, A.  
D. 1882.

JACOB GANSS.

Witnesses:

GEO. T. PINCKNEY,  
CHAS. H. SMITH.