

(Model.)

W. L. UPSON.
ALARM CLOCK MOVEMENT.

No. 267,619.

Patented Nov. 14, 1882.

Fig. 1

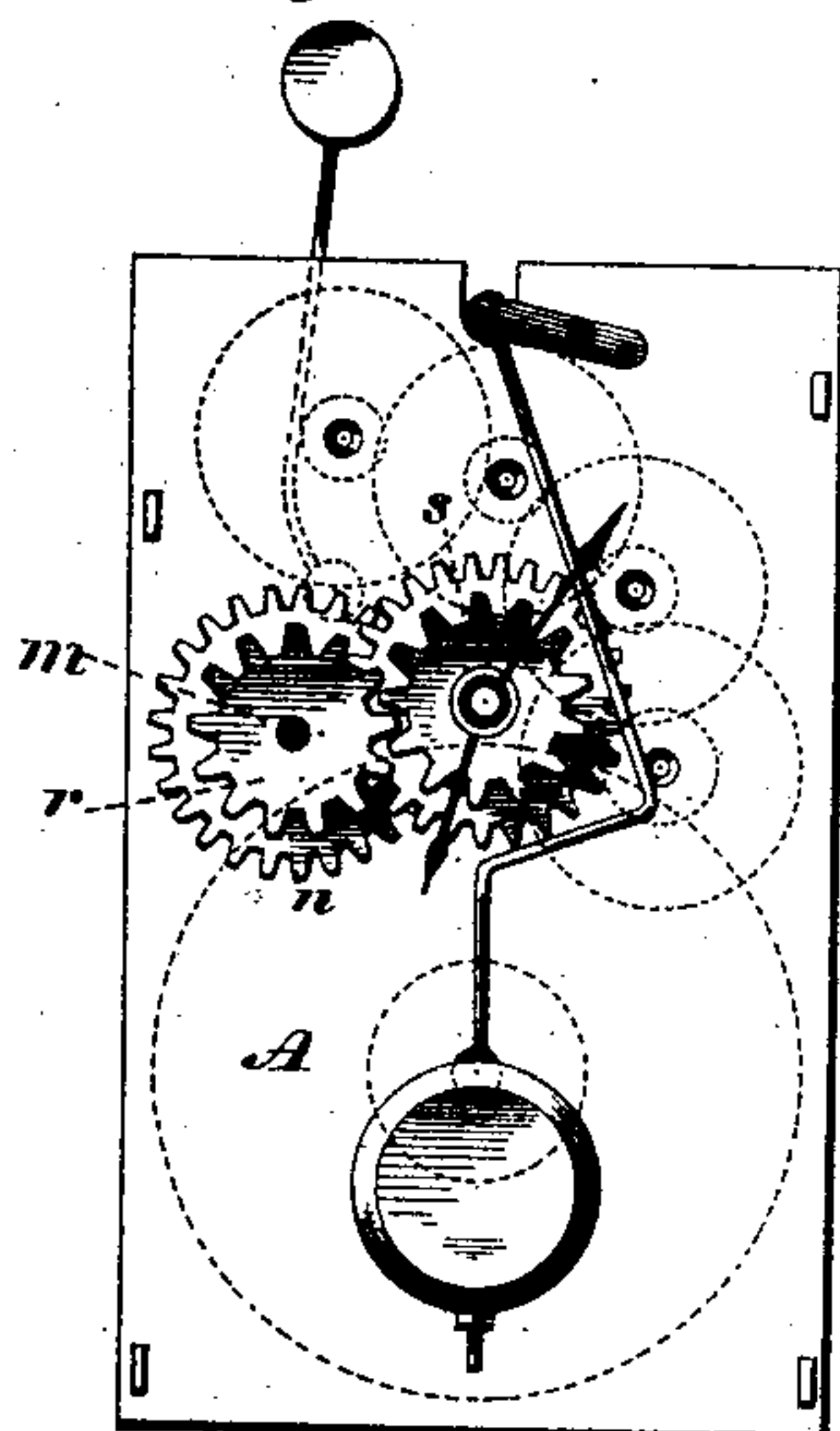


Fig. 2

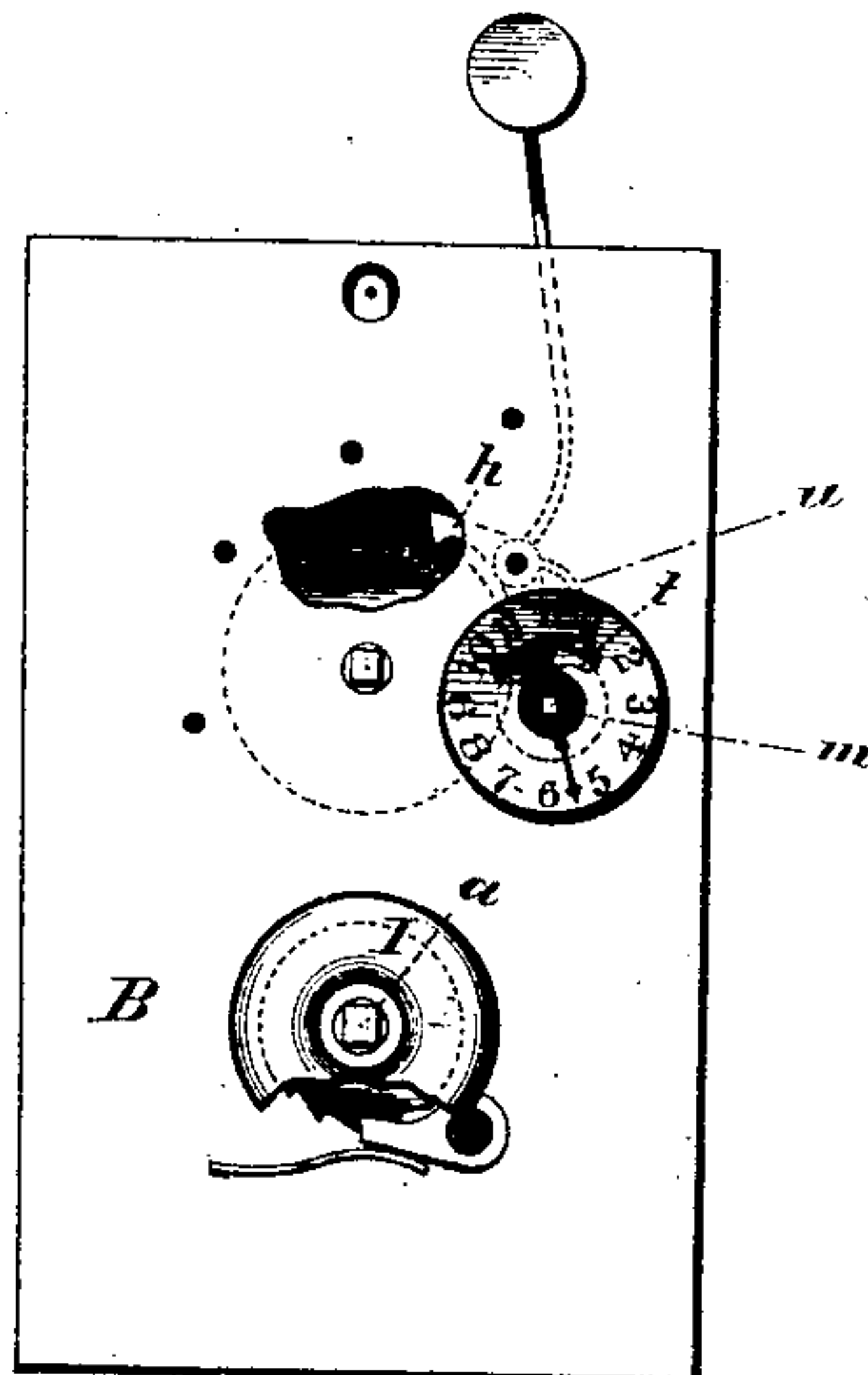
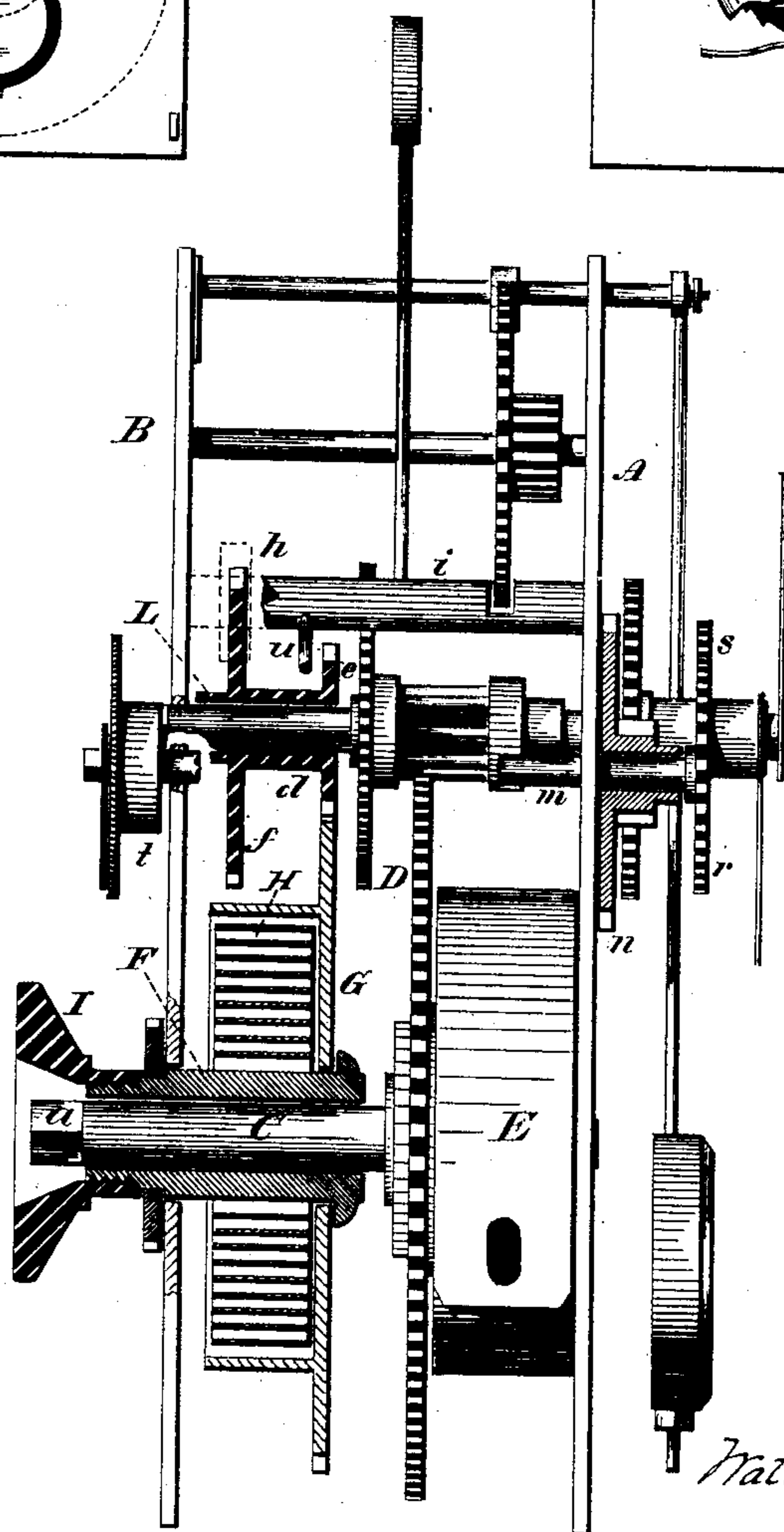


Fig. 3



Witnesses.

J. H. Murray
Jas. C. Park

Waldo L. Upson
Inventor.

By Atty.
J. H. Murray

UNITED STATES PATENT OFFICE.

WALDO L. UPSON, OF MERIDEN, CONNECTICUT, ASSIGNOR TO BRADLEY & HUBBARD MANUFACTURING COMPANY, OF SAME PLACE.

ALARM-CLOCK MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 267,619, dated November 14, 1882.

Application filed December 19, 1881. (Model.)

To all whom it may concern:

Be it known that I, WALDO L. UPSON, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Clock-Movements; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, a rear view; Fig. 3, a sectional side view.

This invention relates to an improvement in that class of clock-movements which have an alarm device combined with the time, the object being to provide an independent spring for the alarm, and the application of power to the hammer within the space occupied by the time-movement; and it consists, first, in the arrangement of the main wheel for the alarm on a tubular shaft on the shaft of the main wheel, the shaft of the main wheel extending through the tubular shaft of the alarm-wheel, so that the shaft on the main wheel may be turned to wind the spring of that wheel through the tubular shaft of the alarm-wheel; second, in the arrangement of the verge-wheel, which operates the hammer, loose on the center shaft; third, in the arrangement of the setting-shaft through the time-pinions, all as more fully hereinafter described.

A represents the front and B the rear plates of the movement, secured together in the usual manner. C is the main shaft, upon which is the main driving-wheel D, provided with the usual spring, E, the outer end of the main shaft C constructed of polygonal shape, as at *a*, or otherwise, for the application of the winding-key thereto, so that by turning the shaft the spring will be wound in the usual manner.

On the main shaft C is a tubular shaft, F, which takes its bearing in the rear plate, and extends outward around the main shaft. On this tubular shaft F is the main alarm-wheel G, provided with its independent spring H, one end of which is attached to the tubular shaft F and the other to the wheel G, in the usual manner. The outer end of the tubular shaft F is fitted with a hollow key, I, by which the shaft F may be turned to wind the spring, the shaft provided with the usual pawl and ratchet to hold the spring, as seen in Fig. 2. Thus

either shaft C or F may be turned to wind its respective spring independent of the other, and the two being on the same shaft occupy no more space as to width and height than either would without the other.

The train of gearing between the main time-wheel D and the pointers is of the usual arrangement, and needs no further description than to say that L is the center shaft upon which the pointers are arranged. On this shaft, in rear of the time-wheels, is a sleeve or hollow shaft, *d*, loose on the said shaft, or so that one may revolve independent of the other. This hollow shaft *d* is provided with a pinion, *e*, into which the main wheel G of the alarm works, so as to impart to that shaft the revolution given to the main wheel by the spring; also, on the hollow shaft *d* is the verge-wheel *f*, working into the verge *h* on the hammer-shaft *i*, as seen in Fig. 2. With the pinion *e* and verge-wheel *f* thus arranged upon the center shaft, they occupy no additional space over what is required for the time-movement. The hammer-shaft is applied within the space of the time-movement, so that, in fact, the addition of the alarm, with its independent spring, is made with no greater width and height of the movement than would be required were the alarm not present.

m is the setting cam-shaft, which passes through the time-pinions *n*, so that the shaft becomes the center or bearing on which the time-pinions *n* revolve, these pinions *n* being the same as usually employed between the hour and minute pinions on the center shaft to communicate the differential revolution to the hour and minute hands. The shaft *m* is provided at its front end with a pinion, *r*, working into the hour-pinion *s* on the center shaft, so that the rotation of the hour-hand is imparted to the shaft *m*. This shaft extends through the movement to the rear, and is there provided with the setting-cam *t*, with which an arm, *u*, from the hammer-shaft engages until the fall-off on the cam permits the arm from the hammer-shaft to escape. Thus the alarm is sounded. This cam is adjusted by turning it upon its shaft in the usual manner, the dial thereon indicating the position of the cam in the usual manner. This tripping mechanism, being concentric with the time-pinions, also comes within the space required for the time-movement. This concentric arrangement of

the two independent springs may be employed in the time and striking movement as well as in time and alarm. I therefore do not wish to confine this part of my invention to an alarm mechanism.

It is not essential that the verge-wheel and its pinion should be arranged concentric with the center shaft, as they may be otherwise arranged and yet preserve the main wheel concentric with the time main wheel. My invention is therefore not to be limited to the combined arrangement of the main wheel and the verge-wheel or setting-shaft.

I am aware that two independent wheels have been arranged upon the same shaft, each to have a movement independent of the other, and therefore do not broadly claim such construction or arrangement; but

What I do claim is—

1. The combination of the main time-wheel, its shaft and spring, with a second and main wheel and its independent spring, arranged upon the shaft of the main wheel, with a tubular extension or shaft from the said second main wheel, outward and around the shaft of the main time-wheel, by which said tubular extension the spring of the second main wheel may be wound, leaving the main shaft exposed to wind the time-spring, substantially as described.

2. The combination of the verge-wheel of

the alarm and its pinion, arranged and loose upon the center shaft of the time part, with mechanism, substantially such as described, to impart revolution to the verge-wheel independent of the center-shaft, substantially as described.

3. In a combined alarm and time movement, the combination of the setting-shaft *m*, arranged concentrically through the pinions *n*, which connects the hour and minute pinions on the center shaft with the pinion *r* on said setting-shaft, in connection with the hour-pinion *s* on the center shaft, substantially as described.

4. In a combined alarm and time movement, the combination of the alarm main wheel and its independent spring, arranged concentric with and loosely upon the main shaft of the time part, the said alarm main wheel constructed with a tubular shaft extending outward and around the main shaft, whereby either spring may be wound independent of the other, with the alarm-verge and its pinion arranged concentric and loosely upon the center shaft of the time-movement, substantially as described.

WALDO L. UPSON.

Witnesses:

T. J. SEIDENSTICKER,
C. P. BRADLEY.