

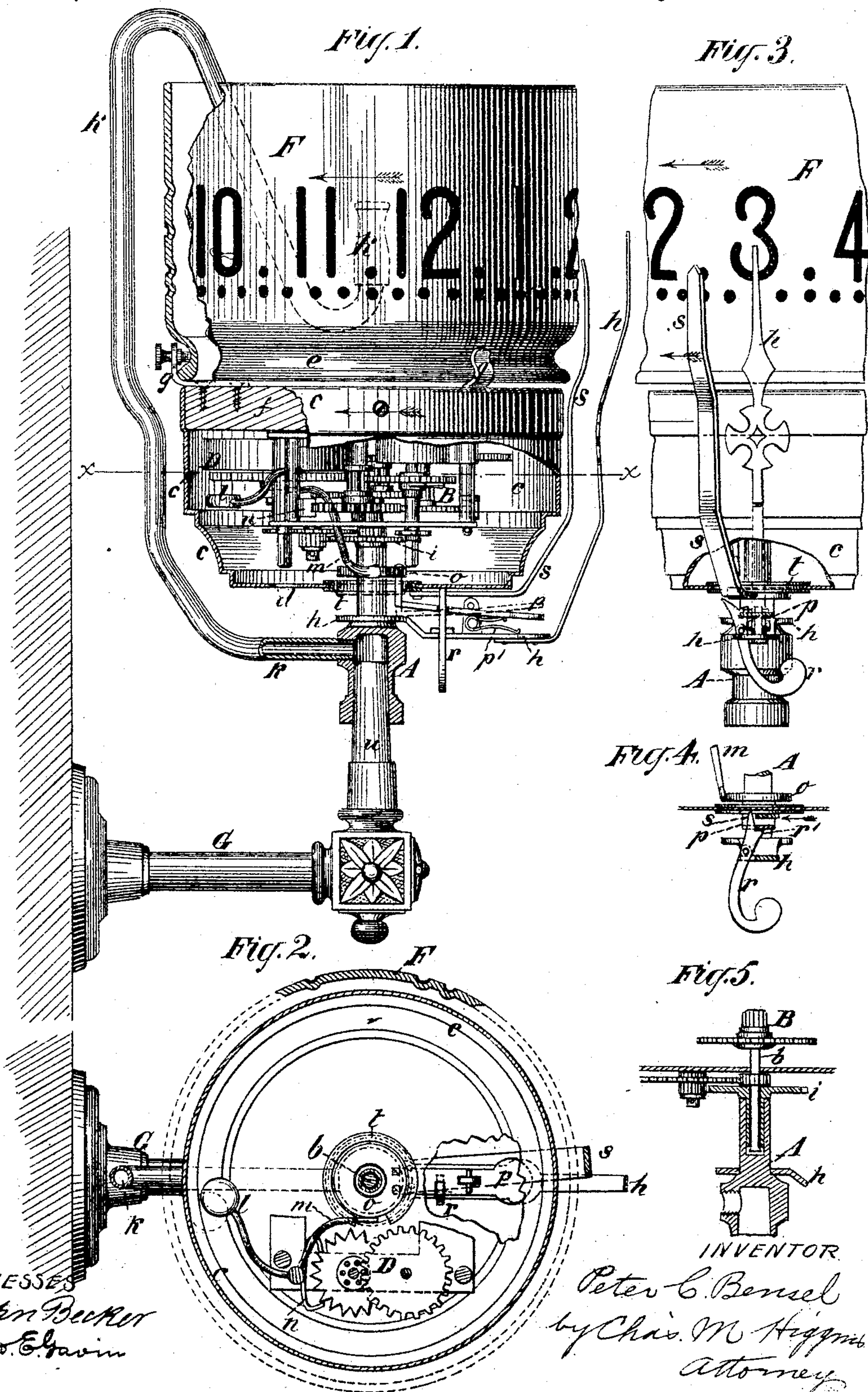
(No Model.)

P. C. BENSEL.

CLOCK.

No. 321,674.

Patented July 7, 1885.



WITNESSES
John Becker
Geo. E. Gavin

Peter C. Benschel
by Chas. M. Higgins
Attorney

UNITED STATES PATENT OFFICE.

PETER C. BENSEL, OF NEW YORK, N. Y.

CLOCK.

SPECIFICATION forming part of Letters Patent No. 321,674, dated July 7, 1885.

Application filed January 10, 1885. (No model.)

To all whom it may concern:

Be it known that I, PETER C. BENSEL, of the city, county, and State of New York, have invented certain new and useful Improve-
5 ments in Clocks, of which the following is a specification.

My invention applies more especially to night-clocks, or those which have an illuminated revolving dial-globe—such as the clock
10 shown in my former patent, No. 126,620, of 1872, on which my present invention is an improvement.

My present invention relates to an alarm attachment which may be set to sound an
15 alarm at any desired time without interfering with the action of the other mechanism, and my invention lies in the novel construction and arrangement of the said parts, as herein-
after fully set forth and claimed.

20 In the drawings annexed, Figure 1 presents a side elevation of my improved night-clock, shown partly in section, and mounted on the top of an ordinary gas-bracket. Fig. 2 is a sectional plan of the same on line *xx* of Fig.
25 1, with the dial-globe indicated in fragmentary and dotted lines. Fig. 3 is a fragmentary front elevation. Fig. 4 shows a detail of the alarm trip mechanism; and Fig. 5 shows a detail of the central spindle of the main move-
30 ment and the central pedestal and socket of the clock, about which the clock revolves.

Referring to Figs. 1, 2, 3, and 5, A indicates the central supporting-pedestal of the clock, which is formed hollow at the base and
35 adapted to be socketed over the top of the gas-burner *u* on the gas-bracket G, as shown in Fig. 1, or over the burner on an upright stand or drop-light, or any other equivalent support. B indicates the usual time-movement
40 of the clock, the central or hand spindle, *b*, of which is mounted centrally on the top of the pedestal A, about which the entire clock revolves, as will be soon apparent. The move-
45 ment is inclosed by an ornamental spun-brass case, *c c*, having a free central opening in the bottom, through which the top of the pedestal A rises, as shown best in Figs. 1, 2, and 3, and also having key-holes *d* in the bottom in line
50 as will be understood from Figs. 1 and 2. The top of the case *c* is affixed to the top or foundation board, *f*, to which also the frame

of the movement B is affixed on the under side, as shown in Fig. 1. The top of the case *c* is provided with three clamp-ears, *g g*, one of
55 which is provided with a screw similar to the chimney-holders of lamp-burners, in which clamps is received the neck of the translucent cylinder or dial globe F, which rises some distance above the clock-case *c*, and is figured on
60 the exterior with the numerals of the twelve or twenty-four hours, and dots for the half-hours and quarter-hours, as fully shown in Figs. 1 and 3, which figures extend uniformly
65 around the circumference of the globe, as illustrated. To the pedestal A is attached a fixed hand, *h*, which is bent out under the case and up in front of the dial-globe, its tip ending in front of the hour-figures, as shown
70 in Figs. 1 and 3.

The time-movement B is of the marine type, and by referring to Figs. 1 and 5 it will be seen that the central and terminal wheel, *i*, of the train to which the hour-hand is usually attached has its hub tightly socketed in the
75 hollow tip of the pedestal A, so that said wheel is practically fixed to the pillar. The central spindle, *b*, of the movement, to which the minute-hand is usually applied, fits loosely, however, in the hub of the hour-wheel *i*,
80 and is free to turn loosely in the pillar A, as will be readily understood from Fig. 5. It hence follows that when the clock-work is set in motion the movement, with its case *c* and globe F, will revolve bodily around the
85 fixed wheel *i* on the pillar A, and hence the rotation of the figured globe F past the fixed hand *h* will mark the flight of time; and if this globe is illuminated from within by a
90 small light the dial and the hand will be visible at night, and the time can be easily read in a dark room. I prefer to provide this illuminating-light by extending a small gas-pipe,
95 *k*, from the gas-socket in the pillar A, which pipe is prolonged up one side of the clock and bent down within the center of the dial-globe, and is provided at its tip with a small gas-
burner, *k'*, so that when the clock is mounted, as shown, on the gas-fixture, and the gas
100 turned on, a small flame may be lighted at the tip *k'* within the globe, which will illuminate the globe fully for night service without using any appreciable amount of gas. Where gas is not available a small night-lamp

may be placed on the board *f* within the globe with the same effect, as will be readily understood.

So far as above described, which refers to the general construction, the invention is substantially the same as set forth in my former patent, and I will therefore now set forth the novel features of my invention.

In my practical experience with my former invention I found it not only desirable to indicate the time at night, but also to provide an alarm in connection therewith, which could be set to sound at any time desired. This I provide in my present improvement in a somewhat novel manner, as will now appear.

In Figs. 1 and 2, *D* indicates an alarm-movement of about the usual kind, and mounted within the case *c* in the same frame with the time-movement *B*, in the ordinary manner, as will be understood from the drawings. The hammer *l* of the alarm-movement, however, is arranged to strike against the interior of the case *c*, as indicated in Figs. 1 and 2, which case, being of thin metal, will be quite resonant and enable a strong sound to be emitted when the alarm strikes. A bell may of course be employed to receive the strokes of the hammer; but I prefer to so employ the case, as being more efficient and more simple and cheap, as will be readily appreciated. The alarm-hammer *l* is operated, as usual, by an ordinary escapement, *n* as seen in Figs. 1 and 2, and a "wire tail" or detent-wire, *m*, projects from the escapement and rests normally against a sliding ring, *o*, which encircles the pillar *A*, and is capable of being slid up or down by a spring finger-lever, *p*, which is pivoted on the lower part of the stationary hand *h*, as well shown in Figs. 1 and 2. When, therefore, the outer arm of the finger-lever *p* is depressed against the stress of the spring *p'*, as shown in Fig. 1, the ring *o* will be raised up on the pillar in the path of vibration of the detent-tail *m*, and hence the detent will be thereby detained and the escapement and hammer prevented from vibrating. When the finger-lever is thus placed, it will be engaged and held by a trip latch or pawl, *r*, which is also pivoted on the fixed hand *h*, and has a tooth, *r'*, which engages and holds the finger-lever. The tip of the pawl *r* projects above the finger-lever and in the path of a movable or adjustable hand, *s*, which controls the release of the alarm, and which hand *s* projects up in front of the dial-globe and in a different plane from the fixed or time hand *h*, which stands at a farther radius from the globe, as shown in Figs. 1 and 2. This movable or alarm hand *s* projects from a grooved split spring-ring, *t*, which is sprung into the central opening in the case *c*, as well shown in Figs. 1 and 2, and is thus frictionally engaged with the case and capable of being moved around the clock, so that the tip of the finger will point on the globe to any desired hour or fraction thereof at which it is desired the alarm should sound.

When, therefore, the parts are set as de-

scribed, and shown in Fig. 1, it will be seen that as the clock revolves before the fixed time-hand *h* and carries with it the alarm-hand *s*, it will be noted that the hour-figure to which the alarm-hand is set will in due time pass in front of the time-hand *h*, and the alarm-hand *s* will contact with the tip of the pawl *r*, as seen in Figs. 1 and 4, and thus trip the pawl, as shown in Fig. 3, and thus release the finger-lever, which will cause the detaining-ring *o* to slip down, as shown by dotted lines in Fig. 1, and thus release the detent and allow the alarm-movement to act to operate the hammer *l*, and thus sound the alarm at the desired moment.

It will be seen that this alarm mechanism is very simple and perfectly adapted to my revolving clock, and adds greatly to the desirability thereof, which feature, together with the improved dial-globe, greatly improves my former invention, and provides a night-clock with many points of advantage and of superiority.

I do not confine myself to the exact mechanism shown, as any equivalent thereof may be employed.

In the drawings I have shown a novel construction of dial, which will form the subject-matter of an application soon to be filed.

What I claim is—

1. The combination, with the fixed central axial support, *A*, and fixed time-hand *h*, of the revolving clock *B c*, mounted on said support *A*, and provided on the top with the clamps *g g*, one of which is provided with a thumb-screw, with the dial-globe *F*, mounted over said clock, and formed with the lipped neck *e*, to engage said clamps, substantially as shown and described.

2. The combination, with a revolving clock, a fixed central support, and a fixed time-hand, of an alarm-movement in said clock, and an adjustable alarm-hand moving with the clock and movable about the dial thereof, with a trip or latch controlling the release of the alarm-movement arranged in the path of the alarm-hand, whereby the said latch is tripped and the alarm released when the clock with the alarm-hand revolves into the position corresponding to the hour for which the alarm-hand was set, substantially as shown and described.

3. The combination, with a revolving clock, a fixed central support, and a fixed time-hand and an alarm-movement embodied in said revolving clock, of the detaining-ring *o*, forming a stop to the alarm-escapement and supported upon and encircling the fixed central support, with a manipulating device, *p*, for locking said ring, spring *p'*, for retracting the same, and a trip-pawl, *r*, for releasing the locking device, with the alarm-hand *s*, adjustable around the clock in the path of said pawl, substantially as herein shown and described.

4. The combination, with a revolving clock embodying an alarm-movement and inclosed by the case *c*, having a central opening in the

base, with a fixed central support rising therein and a fixed time-hand extending from the support, with the adjustable time-hand *s*, extending from the case *c* and formed with the grooved friction-ring *t*, sprung into the central opening of the case, with suitable trip devices for controlling the release of the alarm arranged in the path of said hand *s*, substantially as herein set forth.

10 5. The combination, with a revolving clock and its inclosing resonant case *c*, of an alarm-movement inclosed in said case, with its hammer arranged to strike against the interior of said case, substantially as set forth.

6. The combination, with the fixed central support, *A*, revolving clock *B c F*, mounted thereon, and fixed time-hand *h*, with alarm-movement *B*, stop-ring *o*, finger-lever *p*, spring *p'*, pawl *r*, and adjustable alarm-hand *s*, arranged and operating substantially as and for the purpose set forth. 20

PETER C. BENSEL.

Witnesses:

CHAS. M. HIGGINS,
JNO. E. GAVIN.