

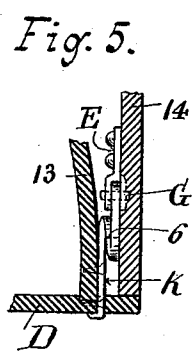
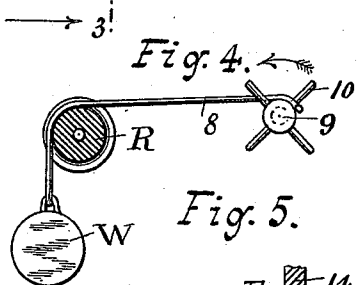
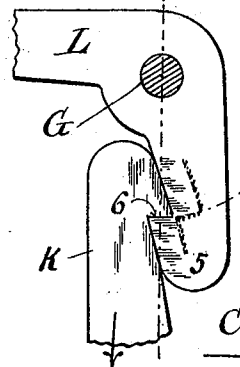
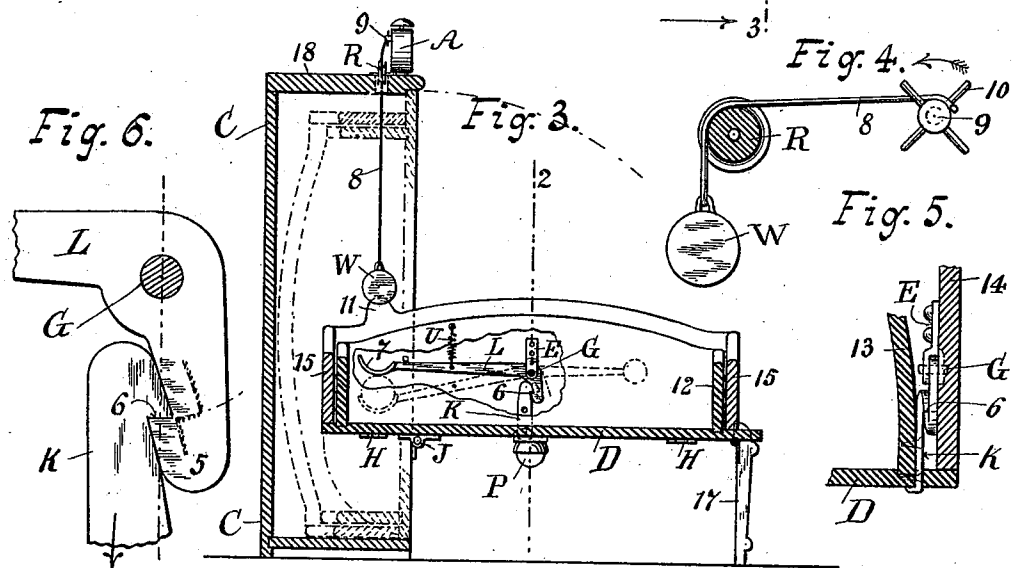
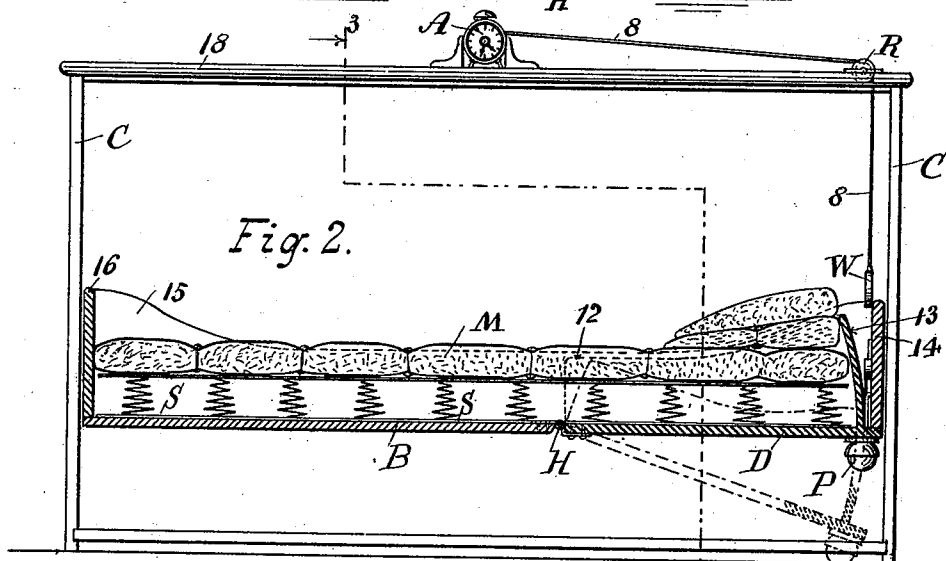
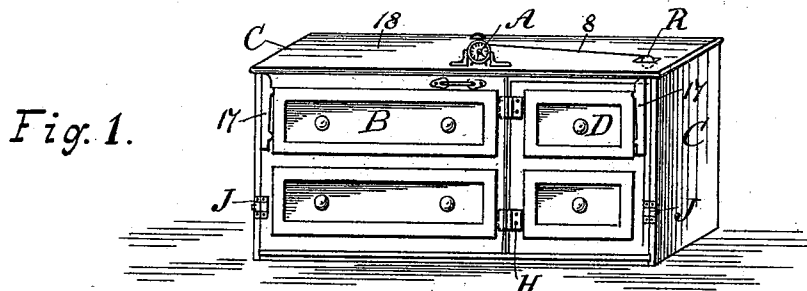
(No Model.)

4 Sheets—Sheet 1.

E. C. BARNES, Jr.
TIME ALARM BED.

No. 507,578.

Patented Oct. 31, 1893.



Witnesses
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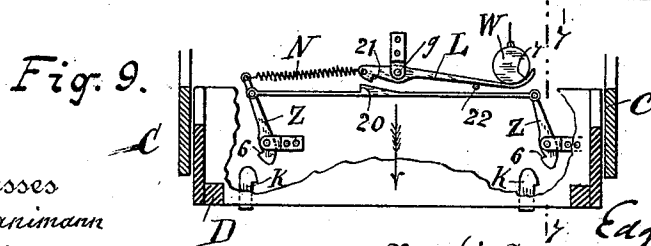
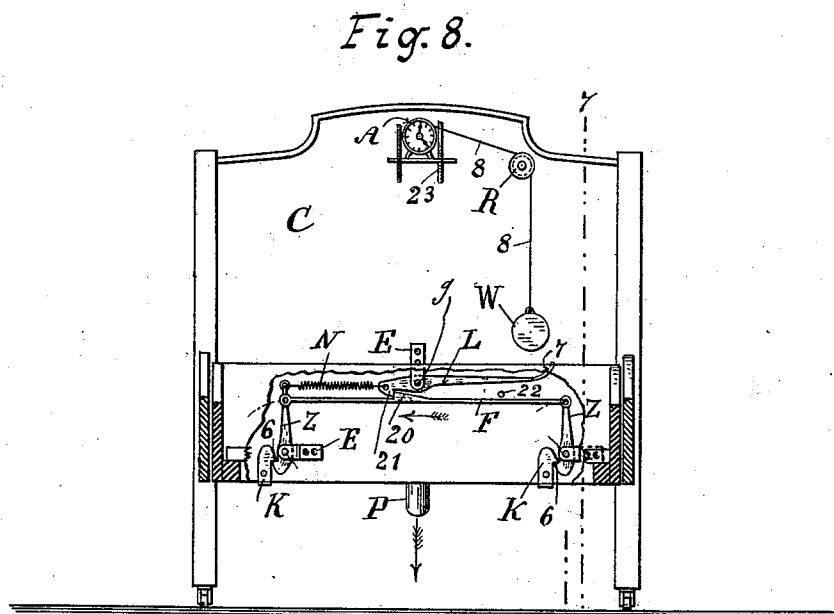
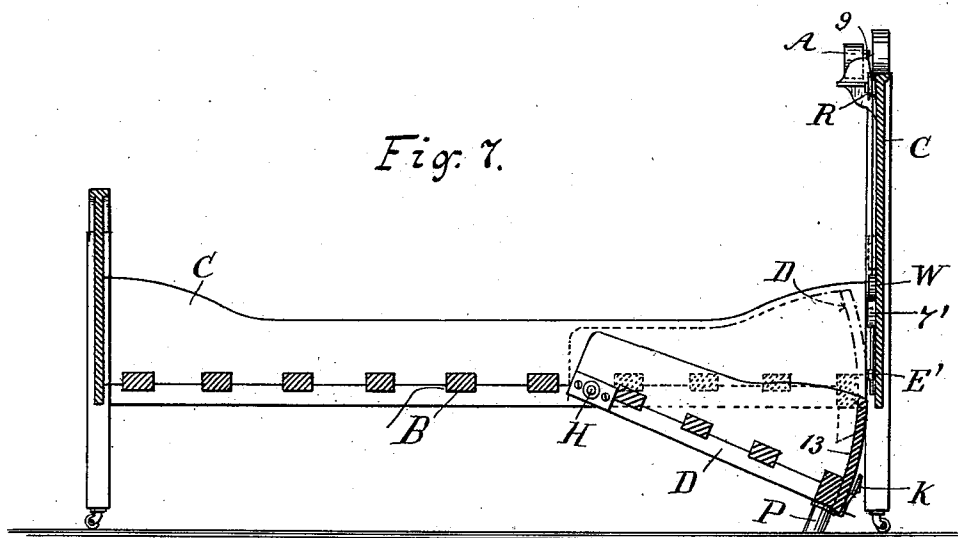
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4 Sheets—Sheet 2.

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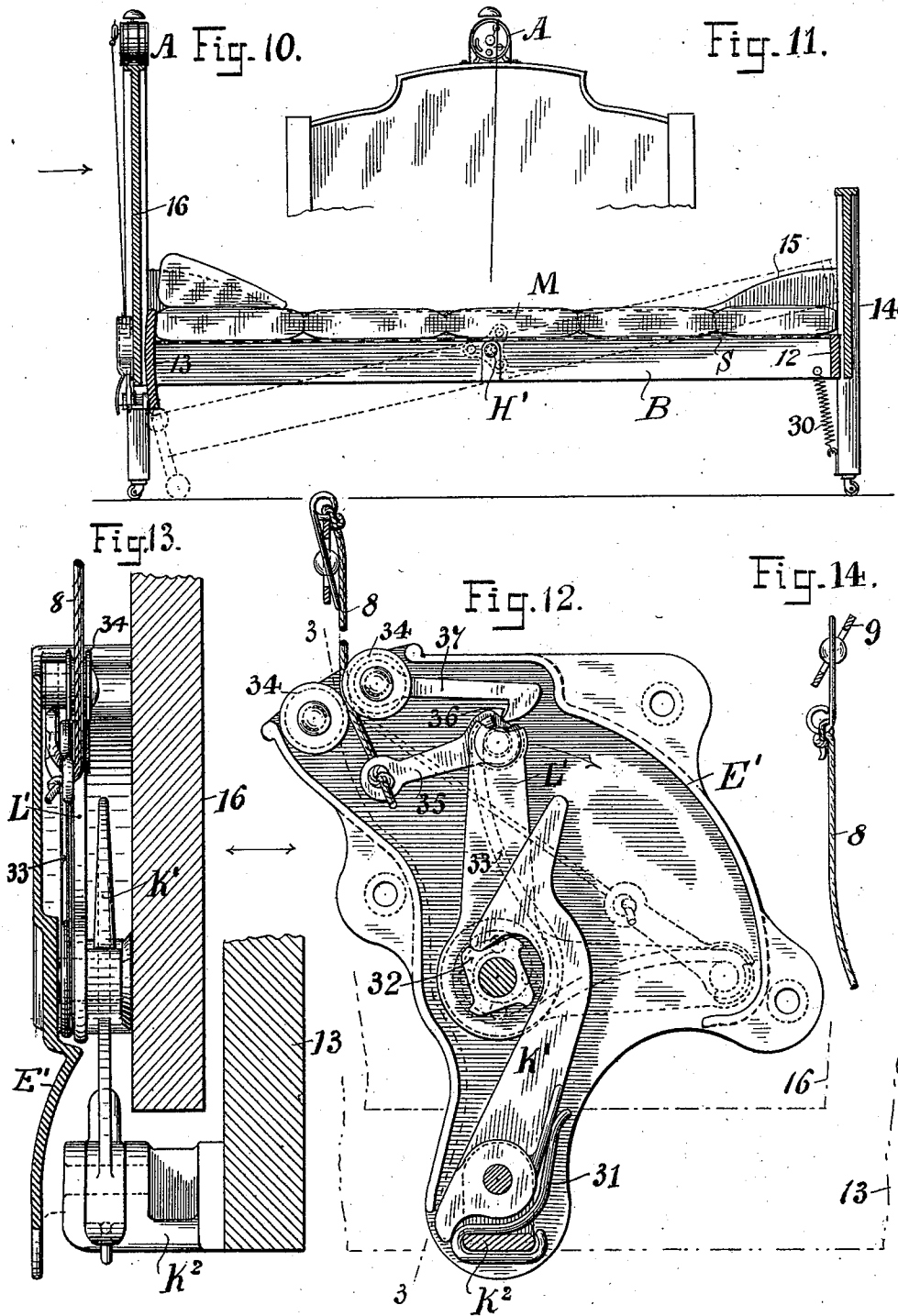
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4 Sheets—Sheet 3.

E. C. BARNES, Jr.
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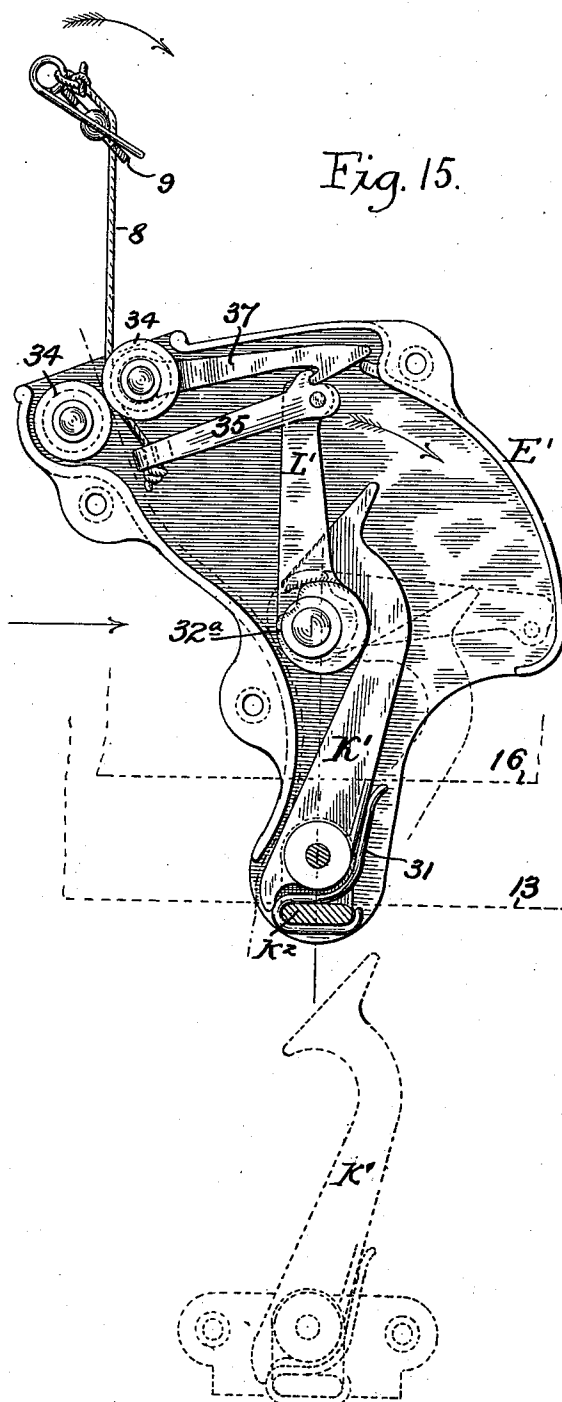
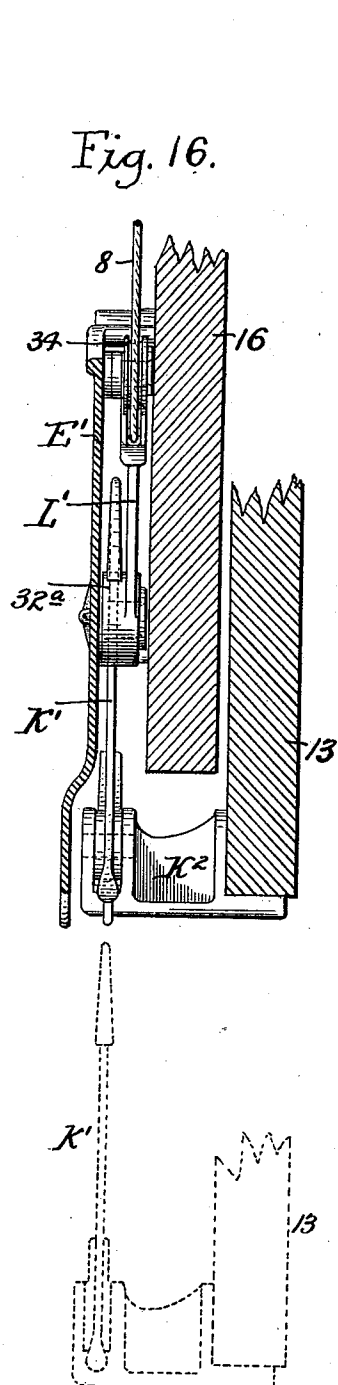
(No Model.)

E. C. BARNES, Jr.
TIME ALARM BED.

4 Sheets—Sheet 4.

No. 507,578.

Patented Oct. 31, 1893.



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UNITED STATES PATENT OFFICE.

EDGAR C. BARNES, JR., OF NEW YORK, N. Y.

TIME-ALARM BED.

SPECIFICATION forming part of Letters Patent No. 507,578, dated October 31, 1893.

Application filed June 17, 1892. Serial No. 437,078. (No model.)

To all whom it may concern:

Be it known that I, EDGAR C. BARNES, JR., a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Automatic Means for Wakening the Occupant of a Bed, Couch, or the Like, of which the following is a specification.

The present invention relates generally to means for wakening a sleeping person or persons at some predetermined time; and it consists briefly of a bed, couch or the like having an abnormal movement or movable part, a catch holding the bed or movable part in position and an automatically operative trip for the catch to loosen the latter and thus free the bed or movable part so that the latter may move into such position as to waken the occupant.

The accompanying drawings illustrate several practical embodiments of the invention showing different ways of accomplishing the object sought.

In said drawings Figure 1, is a perspective view of a folding bed in its closed position. Fig. 2, is a sectional elevation the bed being open. Fig. 3, is a cross section of the same. Fig. 4, is an enlarged detail of the automatic trip. Fig. 5, is an enlarged section on the line 2 of Fig. 3; and Fig. 6 is an enlarged detail of the catch. Fig. 7 is a sectional elevation of a slightly modified form of the invention applied to a larger bedstead. Fig. 8 is a cross section of the same; and Fig. 9, is a like view illustrating the operation of the trip and catches. Fig. 10 is a sectional elevation of another modified form of the invention. Fig. 11, is a partial rear view of the bedstead head and automatic tripping device. Fig. 12, is an enlarged sectional elevation of the catch and its trip. Fig. 13 is a side elevation of the same, the supporting case being in section; and Fig. 14, is a detail. Figs. 15 and 16 are views similar to Figs. 12 and 13, showing a slight modification thereof with the catch indicated by dotted lines in its released position.

The invention in its simplest form consists of a bedstead B adapted to move to an abnormal position or having a movable part D adapted to move with respect to the other portion of the bedstead; a catch L for hold-

ing the bedstead or movable part in its normal position and a trip W connected with some suitable automatically operating device A, as an alarm clock, by the movement of which the trip moves to release the catch and free the bedstead or movable part so that it may drop and thus waken the occupant.

Referring to Figs. 1 to 6, the bed bottom B forms the front of a cabinet having a top 18 and sides and back C, the bed bottom having the usual sides 15 and head and foot pieces 14, 16, and being hinged at J to the sides of the cabinet may swing down into the position, Fig. 3, supported by legs 17. The head portion of the bed bottom is formed by the movable part D having an inner head piece 13 and inner side pieces 12 and hinged at H to the other portion of the bed bottom which may carry the usual bed springs S and mattress M, the spring and mattress preferably also formed of movable parts adapted to follow the movable part D into the position seen in dotted lines Fig. 2. The movable part is held in its normal and usual position by the catch L in the form of a lever pivoted at G, to a bracket E fastened to the head piece 14, the hooked end 5 of which catch Fig. 6, engages the hook 6 of a fixture K fastened to the inner head piece of the movable part D, a spring U tending to hold the two hooks engaged or it might be a weighted end to the lever as seen by dotted lines. The free end of the catch lever L has a cup 7 that receives the trip W, in the form of a weight suspended at the end of a cord, chain or the like 8, the opposite end of which is connected to a movable part 9 of the alarm clock A as for instance the winding up key which as is well known revolves in the reverse direction when the alarm goes off. The cord or chain 8, see Fig. 4, is connected to one of the radial arms 10 of the winding key and passes over a guide pulley R supported in the frame of the bed cabinet holding the weight in position to drop into the cup end of the catch lever when the automatically operative device moves.

The occupant before retiring sets the alarm to operate at the desired hour and winds up the alarm by the key 9 thereby also winding up the cord 8 and raising the trip W as in Figs. 2 and 3. At the hour set the alarm operates,

the key rotates in the direction of the arrow Fig. 4, unwinds the cord 8 and lowers the trip. As soon as the trip meets the cup end of the catch lever L its weight rocks said lever into the position indicated by dotted lines Fig. 3, thus disengaging the hooks and allowing the movable part to drop suddenly down into the position indicated by dotted lines Fig. 2, the force of the fall being deadened by a cushion P of rubber or the like, thereby suddenly disturbing the sleeper and awakening him.

In the slight modification shown in Figs. 7, 8 and 9, the bedstead is of the usual form instead of a folding one as in the construction just described. The automatically operative device A as the alarm clock is supported by a bracket 23 fast to the headboard and the pulley R is similarly supported. The catch lever L has a hook 21 engaging a hook 20 on a rod F connecting two supplemental catches Z pivoted to the headboard and each having a hook 6 to engage the hooked end of the fixture K fastened to the inner head piece of the movable part D. When the trip weight W drops onto the catch lever L it is rocked against its stop pin 22 as in Fig. 9, releasing the connecting rod F and allowing the spring N to rock the supplemental catches Z free of the fixtures K so that the movable part D is free to fall as before.

The approved form of the invention is shown in the modification embraced by Figs. 10 to 14 inclusive; wherein the bed bottom is a four-sided frame 12, 13, supporting the bed spring S and mattress M and mounted between the usual head and foot boards 14, 16 and the side pieces 15, upon substantially central pivots H' so as to tilt into the position indicated by dotted lines Fig. 10 against the force of a spring 30. The head piece 13 of the movable bed bottom as before carries a hook K' borne upon by a spring 31 and forming one part of the catch, pivoted to a fixture K² projecting from said head piece, and adapted to extend upward on the rear of the head board 16 of the bedstead. The other member of the catch is formed by the shoulder hub 32 of the lever L' pivoted to a fixture E' secured to the rear of the headboard, which lever is borne upon by a spring 33 tending to rock it down into the dotted position seen in Fig. 12. The upper end of the lever L' carries a loosely pivoted tripping arm 35 having a shoulder 36 adapted to be engaged by a pawl 37, the free end of the arm 35 being connected by a cord 8 guided by a pair of grooved wheels 34 with a pin engaging the wind up key 9 of the alarm clock A supported on the top of the headboard. When the alarm is wound up and the bed bottom is in its usual position the parts are in the position shown by full lines Fig. 12, the cord holding the shoulder 36 of the arm 35 against the pawl 37 and the latter holding the lever L' upward against the force of its spring 33.

When the alarm of the automatic device operates, the cord 8 is loosened thus allowing the tripping arm 35 to drop and remove its shoulder from the pawl so that it is free to pass unobstructedly beneath the pawl as the spring 33 then acts to rock the lever downward in the direction of the arrow Fig. 12. The rocking of the lever L' brings one of the shoulders of its hub 32 in forcible contact with the nose of the hooked end of the catch K' compelling it to rock outward against the force of its spring 31 until said nose is no longer supported by the hub when the bed bottom and the catch K' drop into the inclined position shown by dotted lines Fig. 10 under the weight of the occupant.

In the return of the bed bottom to its normal position it is not necessary to reset the trip arm, but the lever L' may remain in its down position so that the catch may hook over onto the shouldered hub, thus being effectually sustained. When the trip is to be reset the lever will simply be rocked to its vertical position without disturbing the catch, the latter and the bed bottom lifting slightly as the shoulders of the hub pass beneath the nose in rocking the lever.

In Figs. 15 and 16 another slight modification of the invention is shown, wherein the lever L' is provided with a hub 32, 32^a, having a recess or depression in its surface, and being of eccentric or cam form with respect to the pivot of said lever. In the normal position of the parts as shown in full lines in Fig. 15, the hooked end of the catch K' rests upon the cam with its nose in substantial alignment with the recess in said hub; the strain of the parts being substantially or nearly vertical through the pivots of the catch K' and lever L', and thus there is no strain upon the tripping arm 35 and the pawl 37. The eccentric of the hub is so arranged that its weight preponderates to one side of the lever L' so that when the tripping arm 35 raises the pawl 37 by the loosening of the cord 8, as in the other instances, the lever L' will be free to fall in the direction indicated by the arrow, and as soon as the notch or depression in the eccentric hub 32^a meets the nose of the hooked end of the catch K', the catch is bodily rocked from off the hub into the position shown in dotted lines so that the bed bottom and catch fall, as indicated also by dotted lines in said figures. In this case gravity is depended upon for the movement of the lever L', instead of using the spring as in Fig. 12.

From the foregoing it will be understood that the invention is not limited to the particular constructions shown, but that quite widely differing forms may be used without departing from its essential characteristics.

In each of the constructions shown the connecting cord 8 between the winding key and the trip is adapted to wholly leave the winding key or other movable part of the auto-

matic device on a partial rotation of said movable part and thus not interfere with its continued rotations.

What is claimed is—

5 The combination, with the bedstead frame, of a movable part pivoted to the said frame, the hook K' pivoted to the said part, a revolvable cam carried by the said frame and normally supporting the said hook and part, a
10 lever L' for turning the said cam and releasing the hook K', a pivoted pawl 37 normally engaging with the said lever, an arm 35 piv-

oted to the end of the lever L' and adapted to release it from the pawl 37, an alarm clock, and a cord operatively connecting the arm 15 35 with the winding mechanism of the clock, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

EDGAR C. BARNES, JR.

Witnesses:

N. MARLER,

GEO. H. GRAHAM.