

No. 627,901.

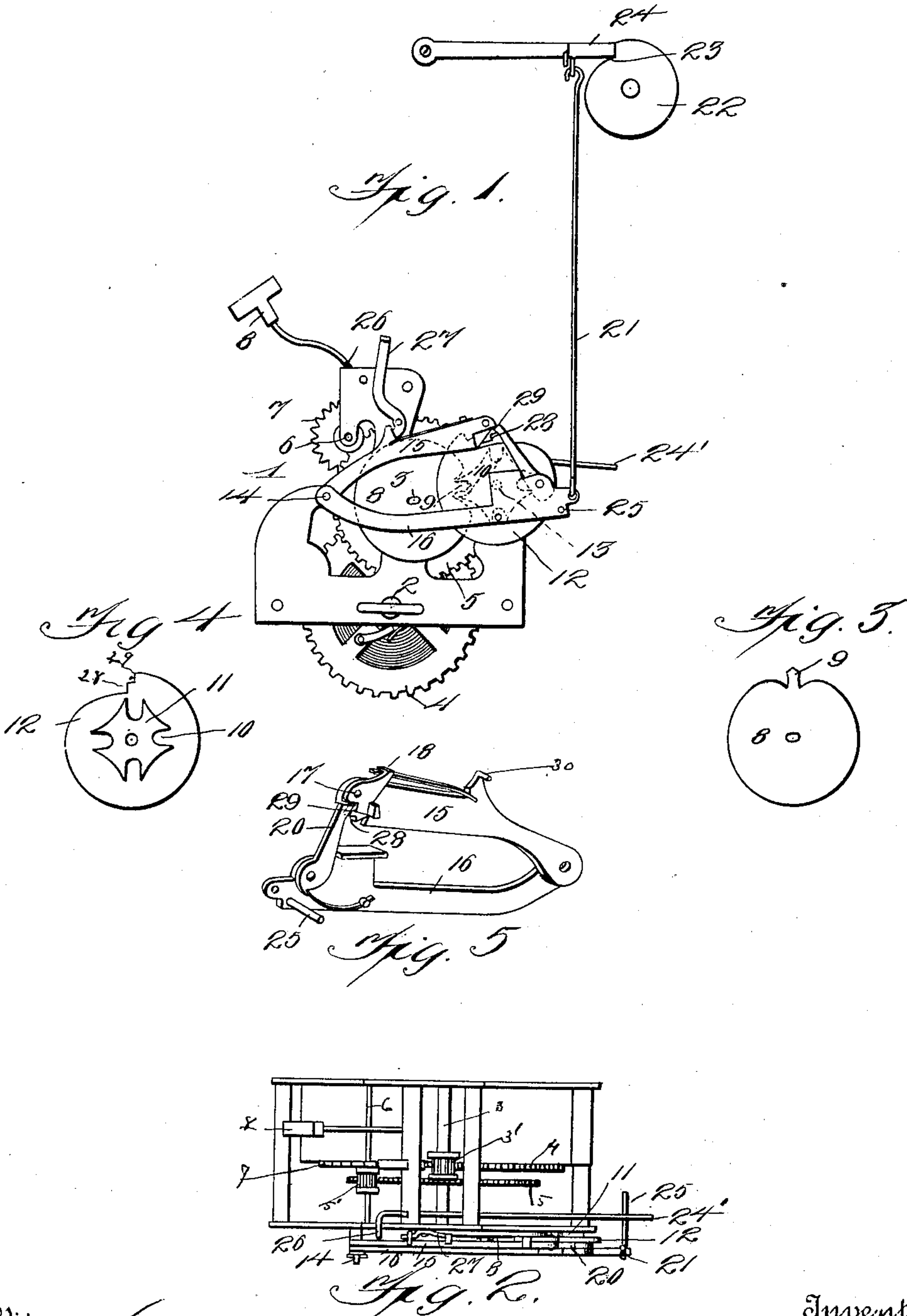
Patented June 27, 1899.

J. H. BRYANS.

ALARM CLOCK.

(Application filed Aug. 24, 1897.)

(No Model.)



Witnesses
 [Signature]
 Victor J. Evans

J. H. Bryan, Inventor
 James H. Bryan,
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UNITED STATES PATENT OFFICE.

JAMES H. BRYANS, OF WOODBINE, IOWA.

ALARM-CLOCK.

SPECIFICATION forming part of Letters Patent No. 627,901, dated June 27, 1899.

Application filed August 24, 1897. Serial No. 649,339. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BRYANS, of Woodbine, in the county of Harrison and State of Iowa, have invented certain new and useful Improvements in Alarms for Clocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in alarm mechanism for clocks.

The primary object of the invention is to provide a mechanism of this character that will be especially simple in construction, durable, economical, and efficient in operation.

The invention consists in a novel combination and arrangement of simple parts, that will be hereinafter fully described and the points of novelty set forth in the claims.

Figure 1 is a front elevation of the alarm mechanism and its connections with the clock mechanism. Fig. 2 is a top plan view of said mechanism. Fig. 3 is a detail perspective view of the wheel forming part of the alarm mechanism. Fig. 4 is a similar view of the wheel for locking and releasing the pivoted arms to sound or "silence" the alarm. Fig. 5 is a perspective view of the pivoted arms forming a portion of my improved mechanism, looking at the rear sides thereof. Fig. 6 is an enlarged detail showing the notched pawl 17 and the end of arm 15.

Referring to the drawings, the numeral 1 indicates a frame in which is journaled in suitable bearings the usual spring-actuated winding-shaft 2, with means on the end thereof to wind the spring. Mounted upon said shaft and gearing with a pinion 3 is a gear-wheel 4. The numeral 5 indicates a gear-wheel keyed to the pinion 3' on shaft 3 and adapted to mesh with a pinion 5' on shaft 6, upon which is also mounted an escapement-wheel 7, having the usual operative connection with the hammer 8.

The above-described mechanism, it will be noted, is of common construction, and I will now proceed to describe the parts of the mechanism wherein my invention lies.

Keyed to the shaft 3 on the outside of the frame I provide a wheel 8', cut away at one side and formed with a radially-extending

arm 9, adapted to enter the notches 10 in a notched member or plate 11 either formed integral with or firmly secured to the inner face of a wheel 12, mounted upon the outer end of a short stud 13, secured to the front plate of the frame. Pivotaly secured upon a short stud 14 at one side of the frame are two arms 15 and 16. The upper arm 15 has pivoted to its outer end and on the inner side thereof a spring-actuated pawl 17, formed with an arm 18, bent inward, and teeth and notches on its lower side, and said teeth are adapted to be engaged by a pawl 20, pivotaly secured to the lower arm 16. The said arm 16 is formed with an extension on the end thereof, perforated for the reception of the hook formed on the lower end of an operating-rod 21, connecting the alarm mechanism with the clock mechanism, which operates said alarm mechanism and may cause the same to be "silenced," as will more plainly appear from the description of the operation.

In the present instance the clock mechanism which I employ to actuate the alarm mechanism is very simple, the same consisting of a disk 22, cut away, as indicated by the numeral 23, forming a notch and a cam-face, the purpose of which will presently appear. Said disk, it will be noted, is firmly secured to the stem of the hands and adapted to turn therewith, and said disk is adjustable thereon to bring the notch 23 in the periphery thereof below the end of a lever 24, bent to form a transverse arm at its forward end and adapted to fall into said notch, for the purposes which will appear in the operation which will follow.

Reverting to the description of the alarm mechanism proper, the numeral 24' indicates an arm connected with the pallet's arbor of the alarm-escapement, said arm 24' being adapted to be brought into and out of engagement with a rearwardly-extending arm 25 on the arm 16 as said arm 16 is raised or lowered by falling into the notch in the disk 22 and riding over the cam-face in said disk as said disk is rotated. Attached to the pallet's arbor and bent over the upper edge of the frame is an arm 26, adapted to be engaged by a stop-lever 27, pivoted to the outside of the frame and adapted to be shifted in one direction or the other for the purpose of permitting the sounding mechanism to operate or to silence

the alarm, as may be desired, and also to lift the arm 15 and keep the same normally elevated and the pawl 17 thereon out of engagement with the notches or steps 28 and 29 on the wheel 12.

The numeral 30 indicates a short laterally-extending arm formed on the arm 15, which is adapted to be engaged by an extension below the pivot of the stop-lever 27.

10 Having thus described the mechanism constituting my invention, I will now proceed to describe its operation.

Assuming the transverse arm of the lever 24 to be in the notch 23 in the disk 22 of the 15 clock mechanism and the pawl 17 on the pivoted arm 15 to be in engagement with the bottom step or notch on the wheel 12 and the pawl 20 on the end of the arm 16 in engagement with the end of the arm 15 just in 20 advance of the notch in the pawl 17 thereon and it is desired to sound the alarm, the disk 22 in revolving will, by reason of its cam-face, elevate the pivoted arm 24 and, through the medium of the connecting-rod 25 21, will lift the lower pivoted arm 16, causing the pawl thereon to lift the pawl 17 on the arm 15 out of the bottom step or notch of the wheel 12 and cause said pawl to engage the upper step 29. The disk 22 then 30 completes its revolution without affecting the alarm mechanism until the notch 23 is again reached and the pivoted arm 24 falls therein, when the lower arm 16 will be dropped and the pawl 20 thereon brought into position to 35 engage the notch between the teeth of the pawl 17 on the arm 15. The disk 22 meantime revolving will, by reason of the cam-face thereon, again exert a pull upon the rod 21, lifting the lower arm 16 and causing the 40 pawl 17 of the arm 15 to be disengaged from the upper step of the wheel 12 and bring the transverse arm 25 on the end of the arm 16 into engagement with the under side of the arm 24, attached to the pallet's arbor, thus 45 preventing the alarm from being sounded at this point; but another revolution of the disk

of the clock mechanism will cause the drop-arm to enter said notch 28 and permit the lower arm 16 to drop, disengaging the transverse arm thereof from the rearwardly-extending arm 25 on the pallet's arbor and permitting said arbor to oscillate and sound the alarm. When the lever 27 is rocked in position to keep the arm 15 normally elevated, it will be observed that the alarm will be sounded with each revolution of the disk of the clock mechanism, representing a period of time of twelve hours.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An alarm mechanism for clocks, involving the combination with a suitable tripping device operated by the clock mechanism, of a stepped disk or wheel, a pivoted arm, a 65 pawl having teeth carried by said arm, a second arm having a rearwardly-extending projection, a pawl carried by said second arm to engage the toothed pawl, a pallet's arbor, and an arm connected with the arbor in range of 70 the rearward projection of the second arm, substantially as described.

2. An alarm mechanism for clocks, involving the combination with a suitable tripping device operated by the clock mechanism, of 75 a stepped disk or wheel, a pivoted arm, a pawl having teeth carried by said arm, a second pivoted arm having a rearwardly-extending projection, a pawl carried by said second arm to engage the toothed pawl, a pallet's arbor having an arm in range with the rearward projection of the second arm, and a 80 stop-lever for holding the primary pivoted arm normally elevated, substantially as described. 85

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES H. BRYANS.

Witnesses:

W. N. WATSON,
JOHN BARCLAY.