

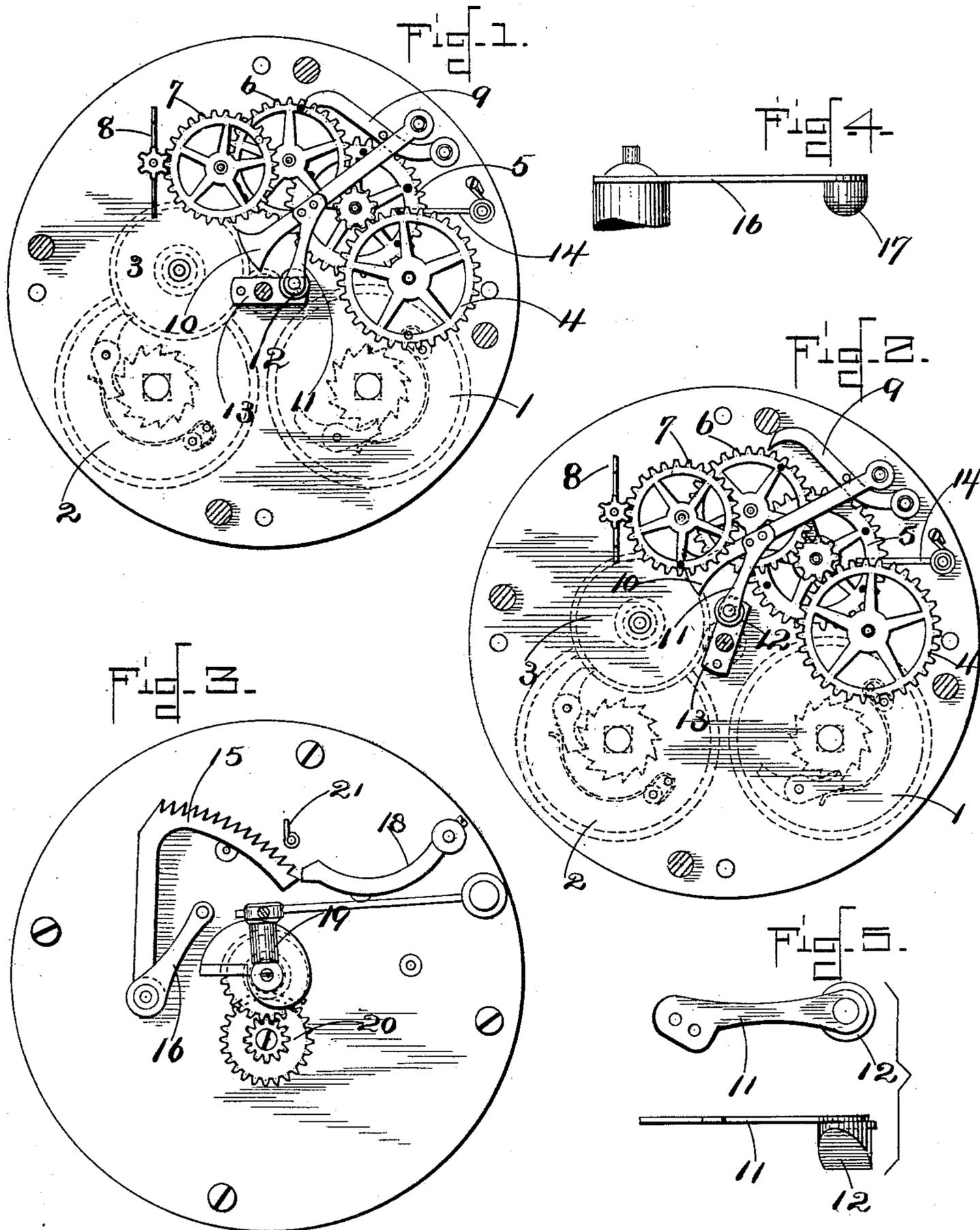
No. 613,183.

Patented Oct. 25, 1898.

G. W. ADAMS.
CLOCK STRIKING MECHANISM.

(Application filed Aug. 31, 1897.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE W. ADAMS, OF STOUGHTON, MASSACHUSETTS.

CLOCK-STRIKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 613,183, dated October 25, 1898.

Application filed August 31, 1897. Serial No. 650,205. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. ADAMS, a citizen of the United States, residing in Stoughton, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Striking Mechanism for Clocks, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to that class of striking mechanism for clocks in which a snail and rack are used in combination with a warn-lever and lifting-lever, and has for its object to obtain simplicity of construction and increase of power and to reduce the number of parts. I have shown this form of mechanism as used with a clock in which the striking-train is placed between the middle plate and the back plate, and the snail, snail-gear, snail-finger, rack, rack-dog, and gathering-pallet are placed upon the back of the back-plate, which clock forms the subject of another application for Letters Patent of the United States filed by me simultaneously with this application; but I do not claim this improved striking mechanism in that application, and it may be used with any other form of clock.

In the accompanying drawings, Figure 1 is a front view of the middle plate of the clock and shows the striking-train in full lines, the barrels and one of the wheels of the time-train in dotted lines, and the striking-train as locked by the engagement of a pin on the third wheel with the end of the locking-lever. Fig. 2 is another front view of the same part and shows the locking-lever disengaged from the pin on the third wheel and the train locked by engagement of a pin on the warn-wheel with the end of a warn-lever. Fig. 3 is a front view of the back plate from the back of the clock and shows the snail, snail-gear, snail-finger, rack, rack-dog, gathering-pallet, and striking-hammer. Fig. 4 is a side view of the snail-finger, and Fig. 5 shows the spring-arm in plan view and side view.

In the several figures the same numerals refer to the same parts.

Referring to the drawings, 1 is the barrel of the spring of the striking-train. 2 is the barrel of the spring of the time-train. 3 is the intermediate wheel of the time-train. 4 is the intermediate wheel of the striking-train.

5 is the second or striking wheel. 6 is the third wheel. 7 is the fourth or warn wheel. 8 is the fan. 9 is the locking-lever on the same arbor as the rack-dog. 10 is the warn-lever. 11 is the spring-arm attached to the same, and 12 is the beveled block on the end of the arm. 13 is the lifting block or collet, provided with two actuating-studs 13'. 14 is one arm of the lever of the striking-hammer. 15 is the rack. 16 is the snail-finger on the same arbor as the rack. 17 is the stud on the end of the snail-finger. 18 is the rack-dog. 19 is the snail. 20 is the gearing by which rotation is communicated to the snail from the center arbor 30, and 21 is the gathering-pallet on the arbor of the third wheel 6 of the striking mechanism. With the exception of the spring-arm 11 these parts and their operation are well known and need not be further described.

In my device the warn-lever 9 is pivoted above the locking-lever and near its free end has attached to it, by pins 10' or in any other suitable manner, one end of the flat spring-arm 11, which carries at its other end a block 12, beveled on its face. Just before the hour one of the pins 13' on the lifting-block 13 comes into contact with the straight side of the block 12 and lifts the arm 11, and consequently causes the warn-lever 10, to which this arm is attached, to be lifted into the path of the pin 7' on the warn-wheel 7. By this movement of the warn-lever 10 the end of the locking-lever 9 is disengaged from the pin 6' on the third wheel 6 of the striking-train, so that the train is released and operates until the pin 7' on the warn-wheel 7 comes against the end of the warn-lever 10; but when the hour is reached the pin on the lifting-block 13 escapes from the block 12 on the end of the arm 11 and drops down, thus again releasing the striking-train and permitting the action of the striking mechanism shown in the drawings, which, being well known, both in construction and mode of operation, need not be further described herein.

The arm 11 is made of a piece of thin metal and has a resilient character, it being for this purpose comparatively narrowed toward its center from each end, as shown, and this resiliency, in connection with the bevel which is given to the surface of the block, causes

the arm, when the rotation of the lifting-block is reversed on turning the hands of the clock backward, to yield and permit the pins on the lifting-block to pass without causing
5 any movement of the warn-lever.

The arm 11 may be attached to the warn-lever in any suitable manner; but in order that the surface of this arm may be flush with the surface of the warn-lever, and thus prevent
10 any interference with an adjacent wheel of the train, its end may be placed in a recess on the face of the warn-lever and be fastened therein by pins or any other suitable means, as before stated.

The position of the arm 11 near the outer end of the warn-lever 10 and the pivoting of this lever above the locking-lever, so that this pin in the locking-lever is near this pivoted
15 end, is advantageous in increasing the leverage of the warn-lever.
20

The block 17 on the end of the snail-finger 16 bears against the edge of the snail and is rounded off, as shown in Fig. 4, and the snail-finger is resilient, and therefore should the
25 snail be turned back when the block is near the straight part of the snail, as would be the case at eleven and twelve o'clock, and before the finger has fallen away from the snail this block will rise on this part of the snail and
30 slide over the face of the snail to a position on the edge of the same.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

35 1. The combination of a striking-train, a

locking-lever normally engaging said striking-train, a warn-lever pivoted at one end and adapted to engage at its free end the striking-train and to engage between its pivoted
40 end and free end the locking-lever, said warn-lever being provided with an arm disposed between its free end and its point of engagement with the locking-lever, and means for engaging said arm to actuate said warn-lever.

2. The combination of a striking-train, a
45 locking-lever normally engaging said striking-train, a warn-lever engaging said locking-lever, a stop on said striking-train adapted to engage said warn-lever, and a spring-arm attached to said warn-lever, and an actuating
50 device therefor, said spring-arm permitting said actuating device to be turned backward without interference therewith.

3. The combination of a striking-train, a
55 locking-lever normally engaging said striking-train, a warn-lever engaging said locking-lever, a stop on said striking-train adapted to engage said warn-lever, a spring-arm attached to said warn-lever and provided with
60 a beveled block, and a block on the main arbor provided with a stud for engaging said beveled block.

In testimony whereof I have hereunto subscribed my name this 18th day of August, A. D. 1897.

GEORGE W. ADAMS.

Witnesses:

ALEX. L. HAYES,
L. B. HORSMAN.