No. 845,070. PATENTED FEB. 26, 1907.

J. FELLHEIMER.

CLOCK.

APPLICATION FILED NOV. 21, 1902.

2 SHEETS—SHEET 1.

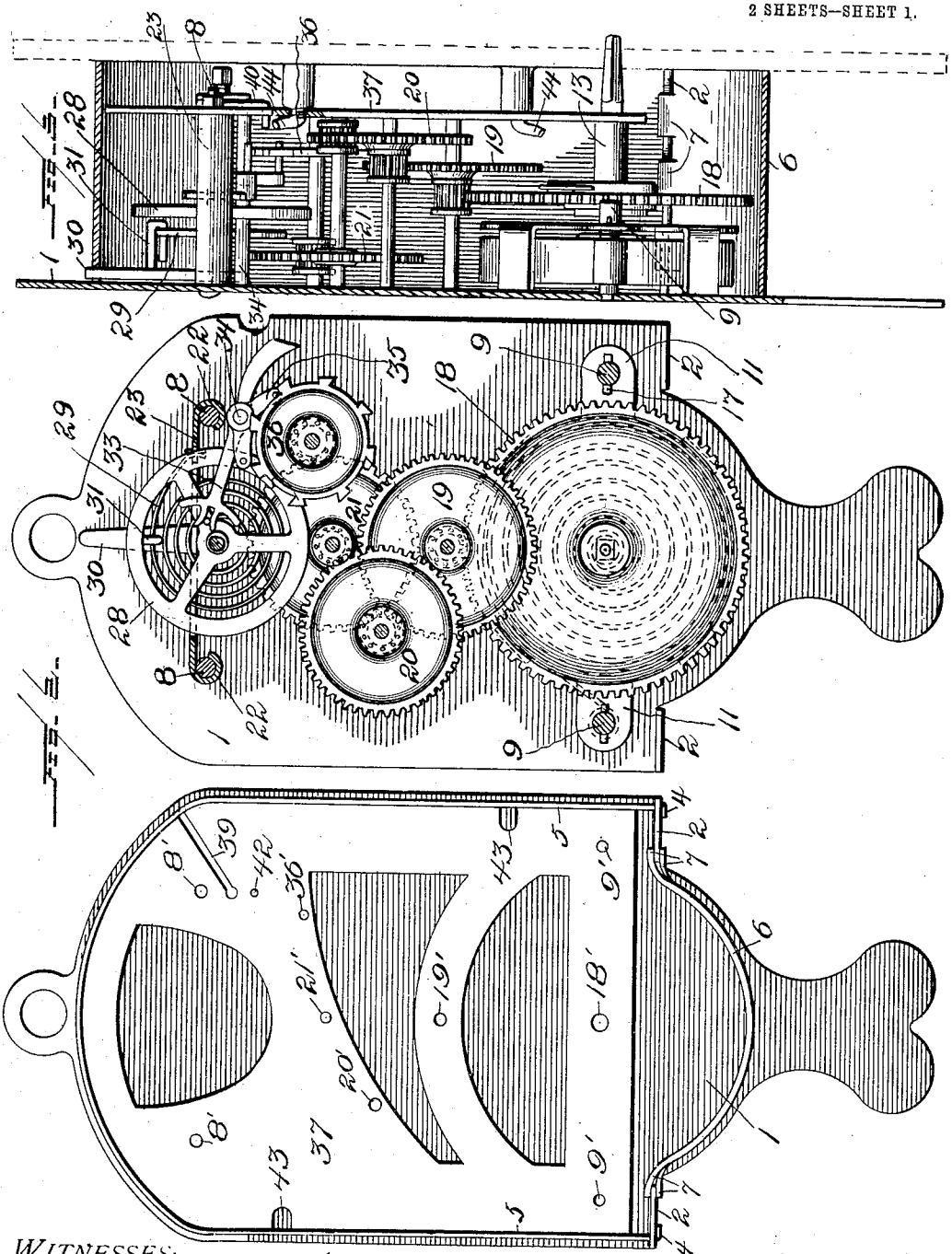


FIG. 1.

FIG. 2.

FIG. 3.

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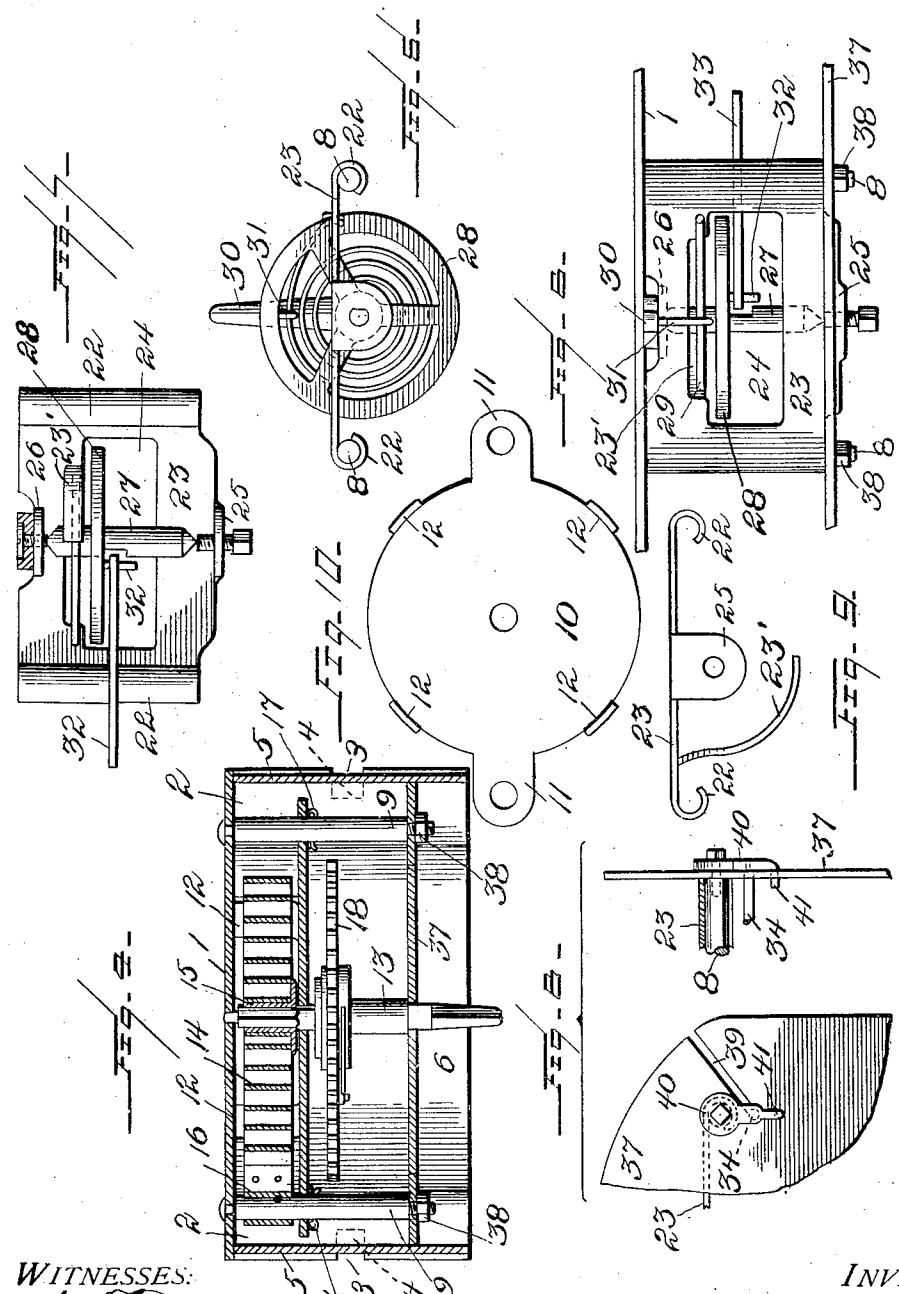
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2 SHEETS—SHEET 2.



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JAKOB FELLHEIMER, OF FURTWANGEN, GERMANY.

CLOCK.

No. 845,070. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed November 21, 1902. Serial No. 132,331.

To all whom it may concern:

Be it known that I, JAKOB FELLHEIMER, a subject of the King of Great Britain, and residing at Furtwangen, Germany, have invented certain new and useful Improvements in Clocks, of which the following is a specification.

The present invention has reference to improvements in clocks, and relates more especially to spring-balance-escapement clocks; and the object of the invention is to provide a clock of the spring-balance-escapement type which can readily be set up and taken apart by children for self-instruction or demonstrating purposes.

With this object in view the invention consists of the construction and arrangement of parts, as hereinafter fully described, and specifically pointed out in the appended claims.

In order to make the invention more readily understood, I will describe it with reference to the accompanying sheet of drawings, of which—

Figure 1 is a front elevation of the casing with the works removed. Fig. 2 is a front elevation of the rear plate or back with the works assembled thereon. Fig. 3 is a sectional elevation showing the face in dotted lines. Fig. 4 is a sectional elevation taken through the bottom portion of the clock. Fig. 5 is a front elevation of the bridge and balance-wheel and the spiral spring. Fig. 6 is a top plan thereof; Fig. 7, a bottom plan thereof. Fig. 8 is a detail of the means employed to anchor the escapement-arbor. Fig. 9 is a front elevation of the bridge, and Fig. 10 is a front elevation of the mainspring-bridge.

The casing of this clock is constructed of metal, as are the works, and with a view to excluding as much dust as possible. This casing comprises a rear plate 1, the lower portion thereof forming a rest and the upper portion having an eye whereby same may be hung on a wall. Two brackets 2 extend at right angles from the rear plate and are formed with notches 3 3, (see Fig. 4,) into which hooks 4 4 on the bottom of the border 5 engage, said border being in the shape of an inverted U. Between each of the brackets 2 2 is a bowed bottom piece 6, having its opposite ends split to form tongues 7, engaging on opposite sides of each of the said brackets.

A bridge-piece 10 is provided, being circular in form and having two oppositely-disposed apertured ears 11 11 and rearwardly-bent flaps 12. Through a central aperture in this bridge-piece 10 is inserted one end of an arbor 13, which is square in cross-section, and upon this end of said arbor is placed the mainspring 14, having a correspondingly square apertured sleeve 15 and a looped end 16. This looped end is slipped over the left-hand post 9, and then the ears 11 of the bridge-piece are slipped over the same until the rear end of the arbor enters its seat in the rear plate. When in this position, the pins 17 are passed through the two posts 9 9 to hold the parts in position, the flaps 12 abutting the rear plate. On the forward end of this arbor 13, in front of the bridge-piece 10, is arranged a motor-wheel 18 in the form of a gear actuated by said mainspring. Into the rear plate is then introduced the arbors of the minute-wheel 19, receiving movement from the motor-wheel, and then is also introduced into the rear plate the arbor of the third wheel 20, receiving movement from the said minute-wheel. Close to the rear plate is the second wheel 21, in the rear of said wheels 19 and 20, which are both in front of the motor-wheel. Upon the upper posts 8 8 is next slipped the looped ends 22 22 of a second bridge 23, which is formed with a cut-out portion 24 and on its front and rear edges with depending flaps 25 26, between which the arbor 27 is journaled by screw-points. Operating in this cut-out portion is a balance-wheel 28 and also a spiral spring 29, both mounted on said arbor, and the free end of the latter is secured to the bridge 23, from which is struck a tongue 23′ to protect the spring. Pivoted upon the rear journal-screw for arbor 27 is a regulating-hand 30, which when the bridge 23 is pushed back on said posts 8 8 against the rear plate lies close to said plate. This hand has a hook 31, which engages the spiral spring 29 to increase or retard the balance-movement.

From the front of the balance-wheel projects a pin 32, which is engaged by an arm 33 on an escapement-lever staff 34, the latter carrying at its forward end an escapement-pallet 35, coöperating with an escapement-wheel 36, journaled in the rear plate and receiving movement from the second wheel 21.

When all but the lever and pallets are placed in position in the order in which described, a front plate 37 is placed on the front ends of the posts 8 8 and 9 9, the latter being received in apertures 8′ 8′ and 9′ 9′ of said plate. The forward ends of the arbors

of wheels 18, 19, 20, 21, and 36 are received in openings 18′, 19′, 20′, 21′, and 36′, respectively, formed in the front plate, which latter forms a complement member with the other portions of the casing to inclose the described works. When said forward ends are in their respective openings, the placing thereof being facilitated by finger-openings in the front plate, the said front plate is then secured on the posts 8 8 and 9 9 by nuts 38 of a size to be operated by the clock-key.

In the upper right-hand portion of the front plate is formed a slot 39, through which is guided the staff 34, with its arm 33 and pallet 35, until the same reaches the limit of its movement and finds its bearing into the rear plate, when a bridge 40 (see Fig. 8) is slipped over the forward end to form a bearing therefor. This bridge is then secured on the projecting end of the right-hand upper post 8, and a projection 41 of said bridge seats in an aperture 42 in the front plate. The aforementioned border 5 is next placed on the rear plate, and the works are now ready to receive the clock-face. To secure the latter, notches 43 are provided on opposite sides of the face, and into these, hooks 44 on the rear of the clock-face are inserted and turned to lock the same.

Thus it will be seen that I have produced a very simple clock the parts of which may be assembled without the attendance of any difficulties.

What I claim, and desire to secure by Letters Patent, is—

1. A clock to be put together without the use of instruments, comprising the casing the rear wall of which serves as rear plate, a front plate, pillars connecting the said plates, nuts screwed on the threaded front ends of said pillars, a clockwork comprising a mainspring with winding-arbor and a train of wheels, a bridge-piece, means for retaining the said mainspring of the clockwork, a sleeve on the inner end of the said mainspring adapted to fit over the said mainspring-arbor, means for securing the outer end of the said mainspring, a second bridge-piece, two loops on the second bridge-piece adapted to engage two of the said pillars, a protecting-tongue stamped out of the said bridge-piece, a balance device journaled in said bridge-piece, and an anchor device connecting the said balance device with one of the said wheels, substantially as specified.

2. In a clock, a rear plate, posts thereon, a bridge removably mounted on said posts, and formed with an opening, an arbor journaled at both ends in said bridge, a balance wheel and spring operating in said opening, a tongue integral with said bridge and partially surrounding the balance-spring, and a regulating means for said spring and removable with the bridge.

3. In a clock, a rear plate, posts thereon, a front plate mounted on said posts and provided with a slot, a balance-wheel, an escapement-wheel, and actuating means therefor arranged between said plates, an escapement-arbor journaled in said rear plate and in the slot of the front plate, means carried by the arbor for transmitting motion from the escapement-wheel to the balance-wheel, and a block mounted on one of said posts and forming a bearing and retaining means for one end of said escapement-arbor.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JAKOB FELLHEIMER.

Witnesses:
EDWARD P. MACLEAN,
AUGUSTUS E. INGRAM.