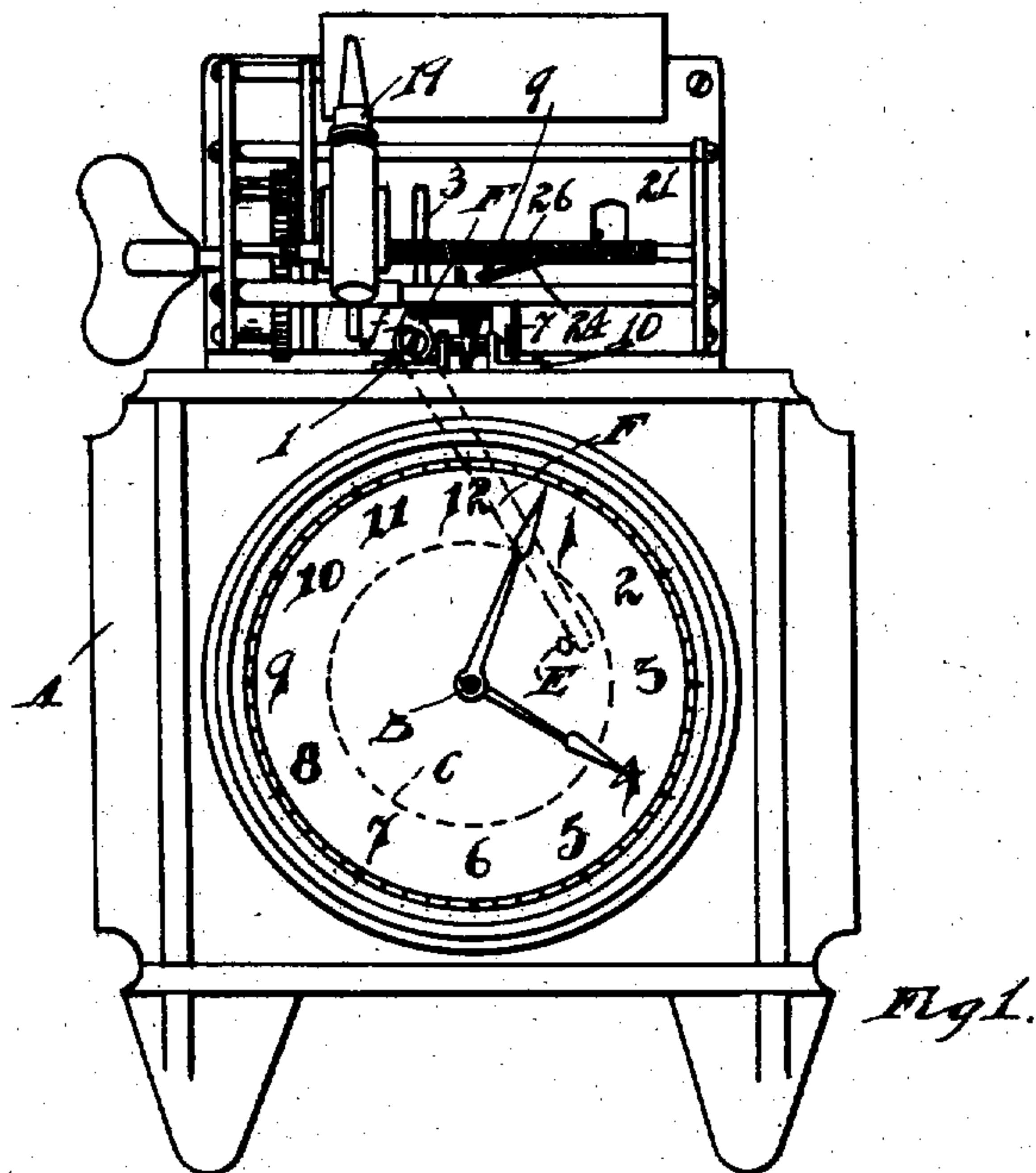


No. 781,601.

PATENTED JAN. 31, 1905.

C. W. HENRICH.
GRAPHOPHONE CLOCK.
APPLICATION FILED SEPT. 11, 1903.

3 SHEETS—SHEET 1.



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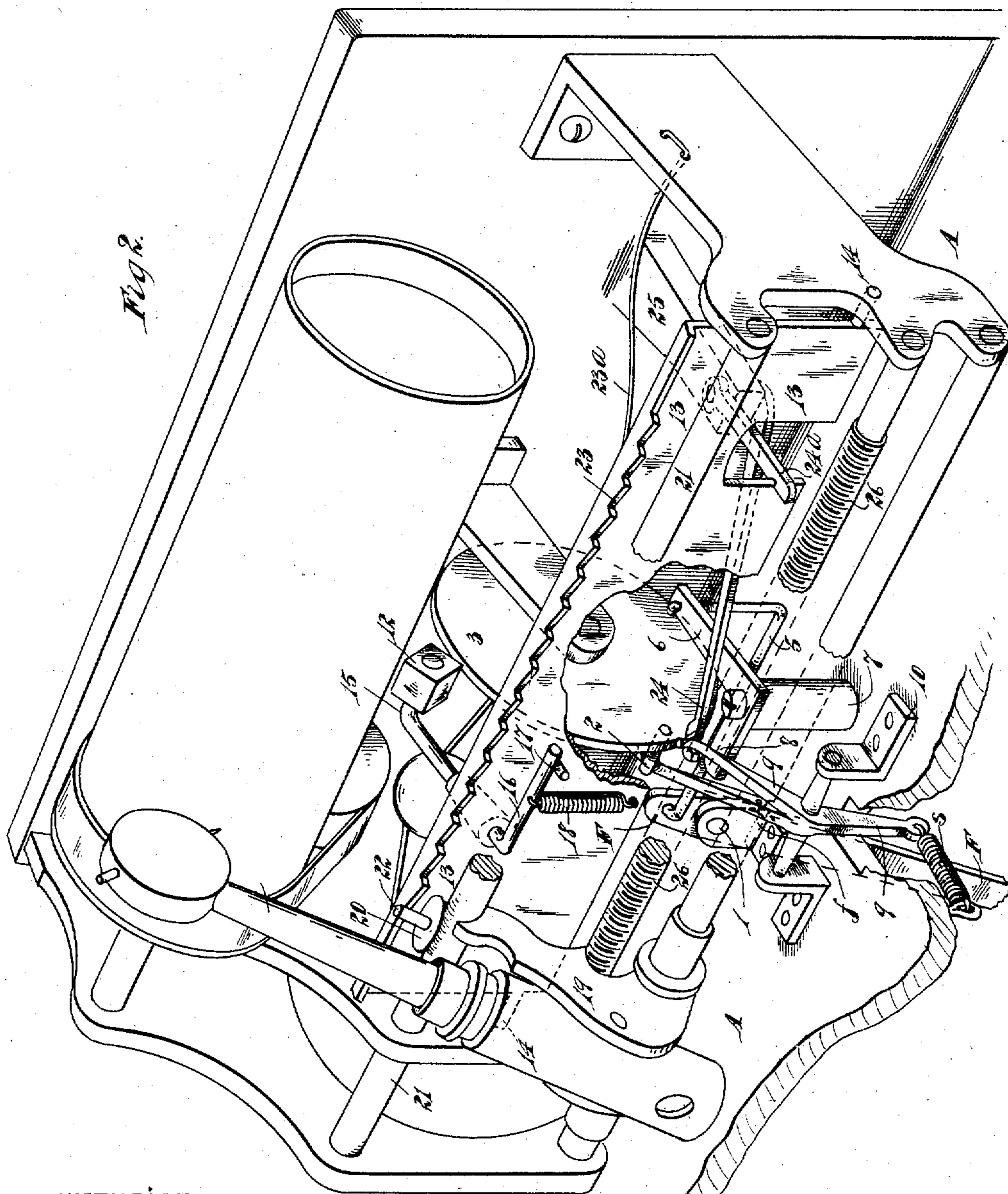
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3 SHEETS—SHEET 2.



WITNESSES

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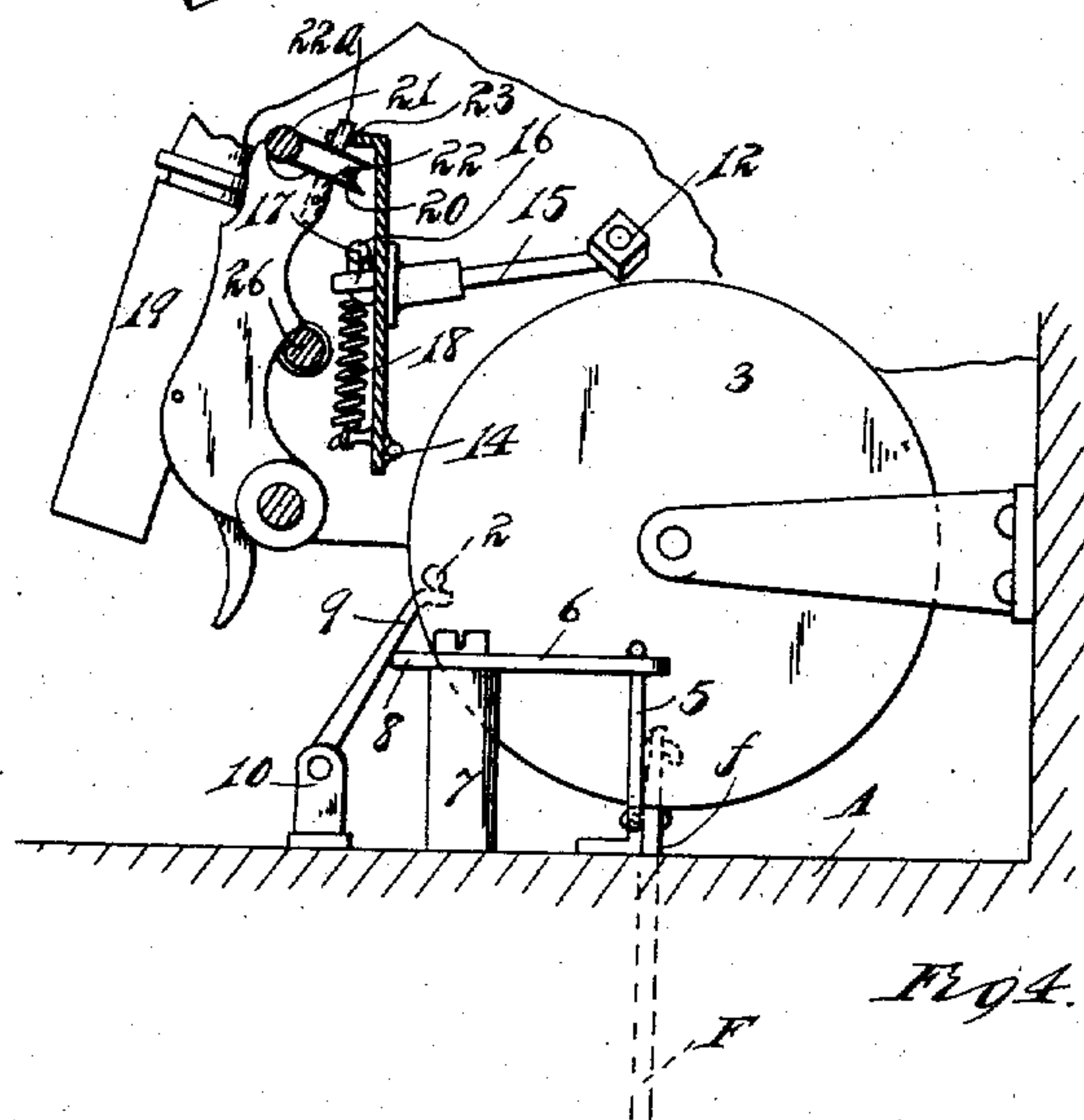
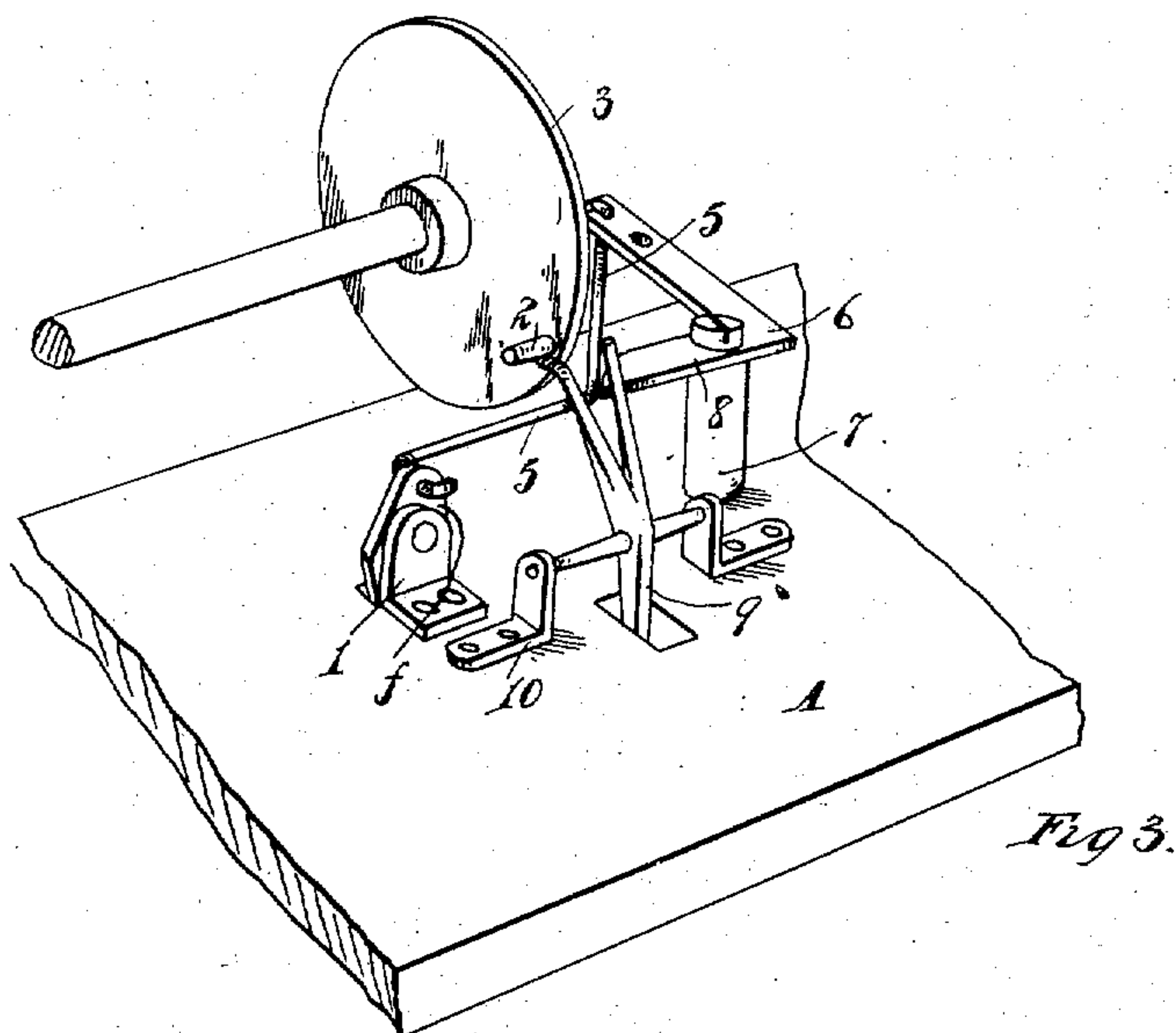
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3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHRISTIAN W. HENRICH, OF DETROIT, MICHIGAN, ASSIGNOR OF
TWO-THIRDS TO CHARLES H. BREDIN AND HUGH E. KENNEY,
OF DETROIT, MICHIGAN.

GRAPHOPHONE-CLOCK.

SPECIFICATION forming part of Letters Patent No. 781,601, dated January 31, 1905.

Application filed September 11, 1903. Serial No. 172,728.

To all whom it may concern:

Be it known that I, CHRISTIAN W. HENRICH, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Graphophone-Clocks; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to graphophone-clocks, and has for its object an improved combined graphophone and clock by means of which, at stated intervals determined by an attachment to the clock, the graphophone-actuating mechanism is released from a stop and allowed to act to reproduce a record that may be on the graphophone-record cylinder and arranged properly with respect to the clock-dial to reproduce therefrom a given sound.

The improvement consists in an attachment to the clock of a disk which revolves with the minute-hand and which actuates a lever that in turn releases the stop mechanism on the graphophone, in connection with special mechanism which stops the graphophone itself after a certain number of revolutions of the graphophone-record and sets the mechanism for a second or subsequent release thereof.

In the drawings, Figure 1 is a front elevation of the clock-dial with the graphophone attachment above. Fig. 2 is a perspective detail of the mechanism connected with the graphophone. Fig. 3 is a perspective detail of a portion of the mechanism, showing the disk and its connecting mechanism from an opposite point of view. Fig. 4 is an end view of the disk and attachments from the right-hand side of Fig. 2, the framework and mechanism up to the disk being removed.

Similar letters and figures refer to similar parts.

A indicates the clock; B, the post or shaft of the minute-hand; C, a rotatable disk carried by the minute-hand and to which is secured the pin E on the shaft which carries

disk, and F a lever pivoted at 1 and arranged to be actuated by the pin E. As the connection of such a disk with the minute-hand shaft is well known, it is not specifically illustrated. The bar, which is the short end of the lever F, projects through the casing of the clock into the casing of the graphophone attachment at *f* and is connected by a link 5 to a rock-lever or bell-crank lever 6, mounted on the top of post 7. The end 8 of the rock-lever 6 engages a bifurcated vertically-swinging lever 9, supported on horizontal trunnions 10. One end of this vertical lever 9 engages under a pin 2 in a disk or wheel 3, that is mounted on a shaft extending from the motor-wheel of the graphophone. The wheel 3 is utilized as a brake-wheel and the graphophone is brought into action by releasing the brake from this wheel and is stopped from this action by allowing the brake to again engage the wheel. It is also positively stopped by the engagement of the pin 2 with the lever 9.

The brake 12 has a bearing in and extends through a swinging plate 13, that has a short escapement movement that will be explained hereinafter, and has a swinging movement on pin 14 to lift or depress the brake 12. The brake-stem 15 extends through the body of the plate and is bent at right angles with its stem 16, extending parallel with the face of the plate, and the terminal of this stem bearing against a stop-pin 17, to which it is held by a spring 18.

The reproducing-frame 19 carries on shaft 22, upon which is journaled a traveler-wheel 20, that bears against the frame rod 21, and the extended end of the shaft 22 bears against a toothed rack on a turned flange 23 of the plate 13. (See Fig. 4.)

A bent lever 24, supported in vertical bearings on bracket 25, has one end projecting under one branch of the lever 9 and another end, 24^a, extending in front of one side of an opening in the plate 13, and the plate 13 has a slight longitudinal movement on its bearings against the pressure of the lever 24.

As the reproducing-frame progresses under the actuating influence of the driving-screw

26 the shaft 22 of the traveling wheel 20 pushes against an angular high part of the rack and the first result is to move the rack endwise until it is stopped by the frame or
 5 some suitable stop, after which the shaft pushes the rack gradually backward and causes the brake 12 to swing downward and stop the brake-wheel 3. This will cause the
 10 motor to stop with the shaft 22 on a high part of the rack and with the rack shifted against the lever 24^a; but as soon as one branch of the lever 9 is permitted to swing with its upper end against an arm of the lever 24 this
 15 latter lever is actuated to force the plate to the left, and the movement to the left is sufficient to allow the shaft 22 to drop from the high part of the rack into the next succeeding notch, and this allows the rack to swing forward and lifts the brake from off the friction-
 20 wheel; but the friction-wheel is now prevented from revolution by the engagement of the other branch of the lever 9 under the pin 2, and the parts remain out of action until the disk C swings the lever F, which is held in a
 25 position to hold the arm of the lever 9 out of its contact with pin 2 until the disk C turns to and carries the pin E beyond the end of the lever F; but during the larger part of this travel the brake-wheel has been in contact
 30 with the brake 12 and out of action with the shaft 22, resting on the high part of the rack, and it continues to rest on the high part of the rack until the disk turns to carry the pin E beyond the end of the lever, when by the
 35 connection described the rack is shifted back, also swings to release the brake, and at the same time one arm of the lever 9 swings under the pin 2, when it is in position to repeat. It will be noted that after one operation when
 40 the brake is released the disk 3 is held positively by means of the stop-pin 2 in contact with one arm of the lever 9 after the plate 13 has resumed its vertical position, the pin or shaft 22 being in the next consecutive notch
 45 thereon.

What I claim is—

1. In combination with a clock mechanism and a graphophone, a lever actuated period-

ically by the clock mechanism, a brake-wheel and a stop therefor released by said lever, a
 50 brake-actuator, means actuated by the graphophone-motor for setting said brake, and means actuated by the clock mechanism for releasing the brake and simultaneously setting a posi-
 55 tive stop to the brake-wheel, substantially as specified.

2. The combination with a clock mechanism and a graphophone operated by a motor, and having a traveling reproducing-frame, means for actuating the reproducing-frame, a brake
 60 mechanism, means for setting the brake mechanism adapted to be actuated by the traveling frame, and means for disengaging the brake mechanism and traveling frame adapted to be
 65 actuated by the clock.

3. The combination with a clock mechanism and a graphophone operated by a motor and having a traveling reproducing-frame, means for actuating the reproducing-frame, a brake-
 70 wheel, a swinging frame, a brake actuated by the swinging frame adapted to engage the brake-wheel, a series of corrugations upon the swinging frame, the reproducing-frame being adapted to engage said corrugations to apply
 75 the brake, and means actuated by the clock for disengaging the traveling frame from said corrugations.

4. The combination with a clock mechanism and a graphophone operated by a motor and having a traveling reproducing-frame, a
 80 brake-wheel, a swinging frame adapted to move longitudinally in its bearings, a brake actuated by the swinging frame adapted to engage the brake-wheel, a series of corrugations upon the swinging frame, the reproducing-frame being adapted to engage said cor-
 85 rugations to apply the brake, and means actuated by the clock for moving the swinging frame longitudinally in its bearings to disengage the traveling frame.
 90

In testimony whereof I sign this specification in the presence of two witnesses.

CHRISTIAN W. HENRICH.

Witnesses:

NETTIE V. BELLES,
 CHARLES F. BURTON.