

(No Model.)

J. SPRANGERS.
MUSICAL CLOCK.

No. 433,220.

Patented July 29, 1890.

Fig. 1.

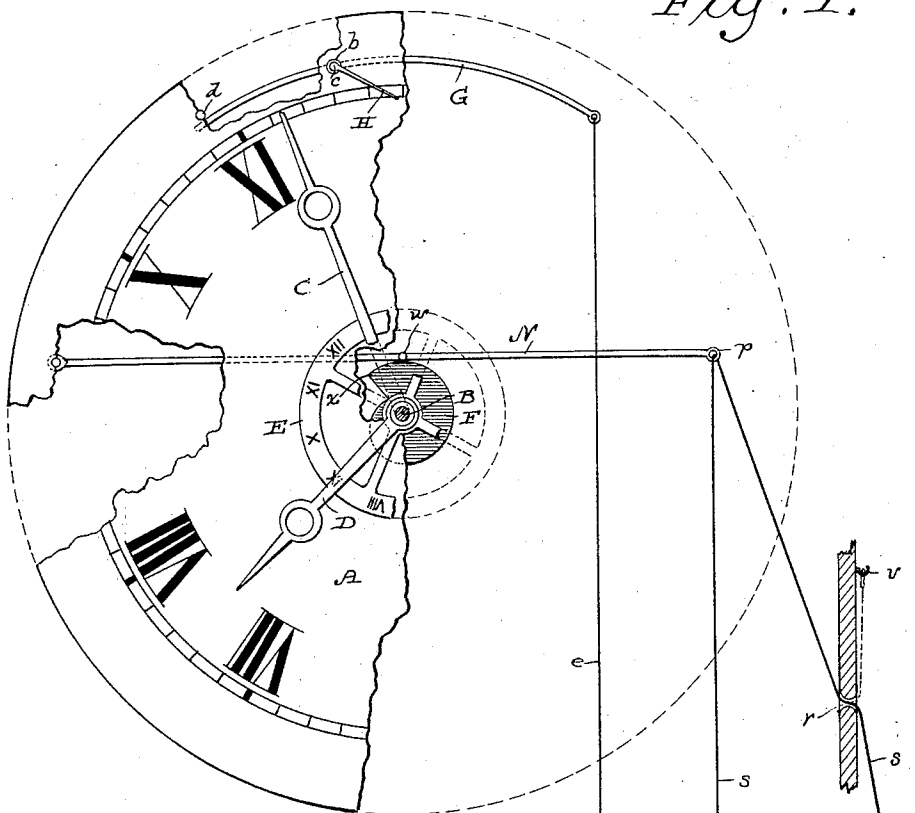


Fig. 2.

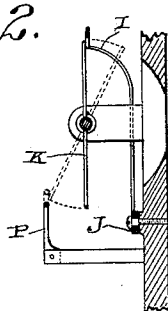
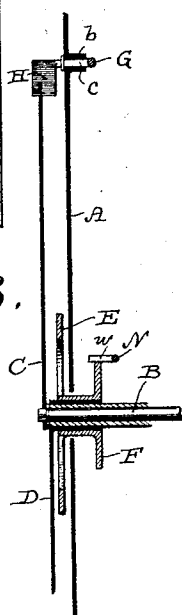
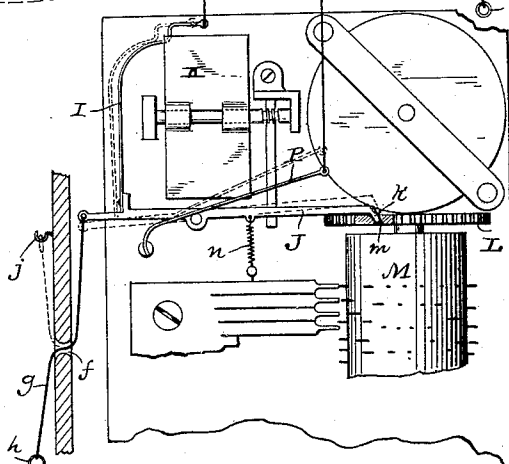


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN SPRANGERS, OF KAUKAUNA, WISCONSIN.

MUSICAL CLOCK.

SPECIFICATION forming part of Letters Patent No. 433,220, dated July 29, 1890.

Application filed January 2, 1890. Serial No. 335,585. (No model.)

To all whom it may concern:

Be it known that I, JOHN SPRANGERS, of Kaukauna, in the county of Outagamie, and in the State of Wisconsin, have invented certain new and useful Improvements in Musical Clocks; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to musical clocks, being designed as an improvement on what is set forth in my patent, No. 408,903, issued August 13, 1889; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 is a diagram illustrating my invention; Fig. 2, a detail view illustrating a music-box fan and a stop mechanism for the same, and Fig. 3 is a sectional view illustrating certain portions of a clock and mechanism for connecting the same with a music-box.

Referring by letter to the drawings, A represents the dial, B the minute-post, C the minute-hand, D the hour-hand, E the alarm-dial, and F the alarm-cam, of an ordinary clock.

The dial A is provided with an inwardly-extended bearing *b*, preferably arranged at a point near the XII-mark on said dial. Arranged in the bearing is an arm *c* of a curved lever G, one end of this lever being held against upward movement by a pin *d*, that also projects in from the dial. Fast on the outer end of the lever-arm *c* is a finger H, arranged to come in the path of the minute-hand C, whereby the lever may be actuated once every hour by the movement of said minute-hand. That end of the lever G farthest from the pin *d* is connected by a cord *e* with a spring-arm I of a spring-controlled stop-lever J, that forms part of an ordinary music-box, the latter being secured to any convenient portion of the clock-frame. The arm I of the stop-lever J serves as a stop for the music-box fan K, and extending from said stop-lever out through an opening *f* in the clock-frame is a cord *g*, the latter being provided with an eye *h*, for engagement with a hook *j* on said clock-frame when it is desirable

to hold said arm I out of contact with the fan. The end *k* of the stop-lever J and the corresponding opening *m* in the gear-wheel L of the music-box are at an obtuse angle, and thus when the fan K is free to revolve the rotation of said gear-wheel will automatically disconnect the latter and said stop-lever, whereby the cylinder M will be free to revolve. The minute-hand C, acting against the finger H, lifts the lever G, and the latter by its connection *e* draws the spring-arm I away from the fan K, thereby permitting the latter to rotate and start the music-box mechanism. The power of the music-box, acting on the gear-wheel L, revolves the latter in the proper direction, and thus the end *k* of the stop-lever J is drawn out of the opening *m* in said gear-wheel. This operation being completed, the stop-lever J and its arm I assume the position shown by dotted lines in Fig. 1, and the finger H, connected to the lever G, is of such length that it is passed by the minute-hand in time to drop said lever, and thereby slacken the cord *e* before the gear-wheel L completes a revolution. When the opening *m* in the gear-wheel L comes opposite the end *k* of the stop-lever J, the latter is drawn down by its spring *n* to engage said opening and bring the arm I into position to stop the music-box fan.

Another lever N is pivoted to the inner side of the dial A, and the free end of the latter lever is provided with an eye *p*, through which an opening *r* in the clock-frame is passed a cord *s*, the inner end of this cord being attached to a spring-arm P, secured to the frame of the music-box and actuated by said cord to come in the path of the fan K, for the purpose to be hereinafter described. The cord *s* has its outer end provided with an eye *t*, for engagement with a hook *v* on the clock-frame when it is desirable to hold the spring-arm P in the path of the fan.

The lever N is provided with an arm *w*, that rests on the alarm-cam F, and in case the cord *s* is connected to the hook *v* to hold the spring-arm P in the path of the fan said cord will be slackened by the drop of said lever when the point *x* of said cam passes the arm *w*, and said spring-arm will resume its normal position out of the path of said fan.

The music-box is designed to take the place of an alarm-bell, and to set the alarm the cord *s* is connected to the hook *v* to bring the spring-arm P in the path of the fan K, and the cord *g* is connected to the hook *j* to hold the stop-lever J out of engagement with the gear-wheel L. The alarm-dial being set for any definite hour, the operation above described, in connection with the cam F, lever N, and spring-arm P, will take place at the predetermined time, and thus the music-box will play until it runs down or until the cord *g* is released from the hook *j* to permit engagement of the stop-lever J and gear-wheel L, as above described. Should the latter operation take place, the mechanism actuated by the minute-hand C will be in its normal arrangement to start the music-box once every hour.

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

1. In a clock, the combination of a music-box having one end of its stop-lever at an obtuse angle, and the cylinder gear-wheel provided with an opening at a corresponding angle to engage said end of the stop-lever, a spring-arm on said stop-lever arranged to be normally in the path of the music-box fan, a lever fulcrumed to the clock-dial, a finger on the lever in the path of the minute-hand of the clock, and a cord connecting said spring-arm and latter lever, substantially as set forth.

2. In a clock, the combination of a music-box, a spring-arm secured at one end to the frame of the music-box in front of the fan, but normally out of the path of the latter, a pivoted lever having an arm arranged to impinge against the alarm-cam of the clock, a cord connected to the spring-arm and passed

through a perforation in the lever, and a device on the clock-frame for engagement with the cord, substantially as set forth.

3. In a clock, the combination of a music-box, a pull-cord connected to the stop-lever of the same, a device on the clock-frame in position to engage with the cord and thereby prevent the stop-lever assuming its normal position, a spring-arm secured at one end to the music-box frame in front of the fan, but normally out of the path of the latter, a pivoted lever having an arm arranged to impinge against the alarm-cam of the clock, a cord connected to the spring-arm and passed through a perforation in the latter lever, and a device on said clock-frame for engagement with the latter cord, substantially as set forth.

4. In a clock, the combination of a music-box having the fan-check I of its stop-lever connected to a lever G and the latter provided with a finger in the path of the minute-hand of the clock, the spring-arm P, connected to the frame of said music-box, the lever N, having an arm *w*, impinged against the alarm-cam of said clock, the cord *s*, attached to said spring-arm and passed through the latter lever, the cord *g*, connected to said stop-lever, and the hooks *v j* on the clock-frame for engagement with said cords, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Kaukauna, in the county of Outagamie and State of Wisconsin, in the presence of two witnesses.

JOHN SPRANGERS.

Witnesses:

PETER SCHNEIDER,
CHAS. SEVERENS.