J. G. POWELL.

TOY-WATCHES.

No. 190,362. Patented May 1, 1877.

Fig.1.

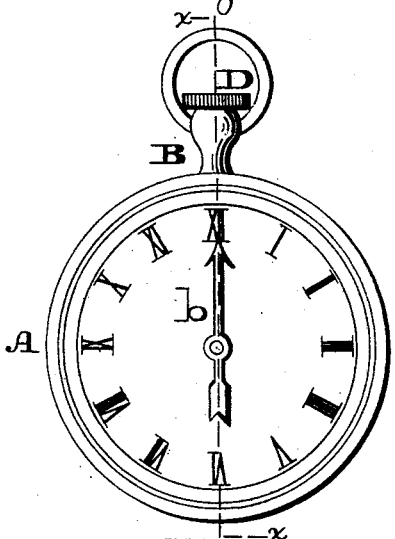


Fig.2.

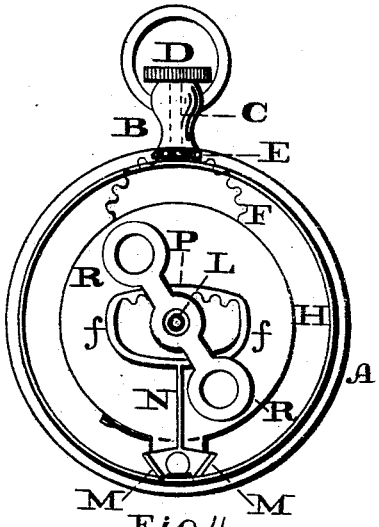


Fig.3.

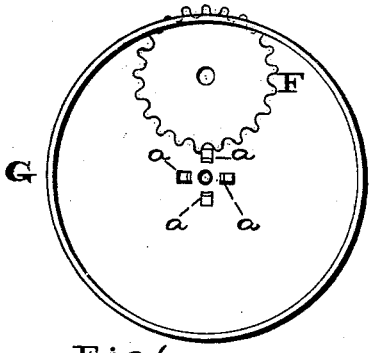


Fig.4.

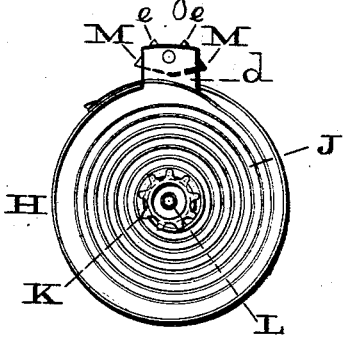


Fig.6.

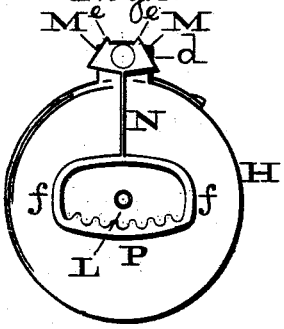


Fig.5.

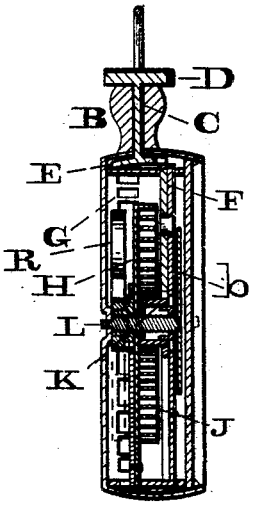


Fig.7.

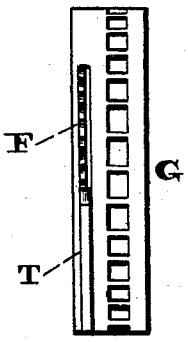
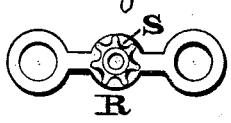


Fig.8.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN TOY WATCHES.

Specification forming part of Letters Patent No. **190,362**, dated May 1, 1877; application filed November 9, 1876.

To all whom it may concern:

Be it known that I, JOHN G. POWELL, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Toy Watches; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a face view of the watch embodying my invention. Fig. 2 is a rear view of the inside thereof. Figs. 3, 4, and 6 are views of detached parts. Fig. 5 is a section in line *x x*, Fig. 1. Fig. 7 is a side view of Fig. 3. Fig. 8 is a face view of the balance.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to a watch especially adapted for children, and in which mechanism is employed to produce a ticking sound similar to that of a time-keeping watch.

The invention consists of a toy watch, made "stem-winding," and winding directly on the center, the pinion whereof is connected to the pallet-cap by a spring. It also consists of a spring-actuated cap, pallets, and an inner case, in combination with a toothed segment and a balance, whereby rotary motion will be imparted to the hand of the watch and a ticking noise simultaneously produced, the construction being such that the movements will not be stopped while the watch is being wound. It also consists of an elastic arm connecting the toothed segment and pallet, for preventing rapid unwinding of the movements.

Referring to the drawings, A represents the case of the watch, and B the stem, in which is journaled a rod, C, to whose outer end, outside of the stem, is connected a wheel, D, whereby said rod C may be rotated. To the inner end of said rod C is secured a pinion, E, which meshes with a pinion, F, whose axis is on an inner case, G, consisting of a cylindrical-shaped body whose periphery is slotted or toothed, as more clearly seen in Fig. 7, said wheel being fixed within the case A, on the rear of the dial of the watch. H represents a cap, which is of a disk form, and to the same is secured one end of a coiled spring, J, whose other end is secured to a pinion, K, being of cup form, and which is fitted to the center of the cap H, and adapted to engage with the pinion F of the case G, the pinion K having its bearings on lugs or lips *a* turned up from the center of the case G, and so arranged that the center-post L passing through said pinion K will also pass through the center of the case G within the lugs or lips *a*, the said post L projecting through the dial-plate and having the hand *b* secured thereto.

At one point of the periphery of the cap H there is a projecting lip, *d*, to which are pivoted pallets or pallet-arms M, which consist of tapering projections *e*, the action thereof being such that said pallets will engage on the periphery of the case G with the slotted or toothed portion thereof. To the pallets there is connected an elastic arm, N, which is located on the cap H on the side opposite to the spring J, and to said arm N is secured, by means of projecting arms *f*, a segment, P, of a toothed wheel, said arm *f* and segment P circumscribing the post L. R represents a balance-wheel or arm, which is mounted on the post L, and it is formed with, or has connected to it, a pinion, S, Figs. 2 and 8, located at its center and engaging with the toothed segment P.

In order to prevent improper winding of the watch, I employ a spring, T, which engages with the pinion F and allows the latter to rotate in one direction only.

The operation is as follows: The watch will be wound by rotating the wheel D of the stem B, in which operation rotation is imparted to the rod C and pinions E F K, whereby the spring J will be wound. As said spring is connected to the cap H the reaction or unwinding of the spring imparts rotary motion to the cap, in which motion the pallets M, carried around with the cap, alternately engage with and disengage from the slots or teeth of the case G, whereby a ticking or clicking sound is produced.

The balance R receives rotary reciprocating motions from the segment P, and thus acts as a detaining device for preventing running away of the cap H, and consequently rapid movement of the hand *b*.

Owing to the elastic nature of the arm N said arm will be bent by the throw of the segment when the latter moves to its full extent, so that the rapid return of the segment to the opposite direction will be checked; hence the movement of the cap and hand will be "slowed," and rapid running down of the spring prevented.

It will be noticed that the winding of the spring does not interfere with unwinding thereof, since the pinion K is loosely fitted on the axis of the cap, and the pinion F is connected to the cap by means of said loosely-fitted cap and the spring J; hence the watch may be wound without stopping the rotation of the hand. It will also be seen that the winding of the watch is accomplished at the center, whereby parts otherwise required are dispensed with, and there is great simplification in construction of the watch.

It is evident that the inner case G may have the pallet-arm pivoted to it, in which case the cap H will be toothed, but the operation will be the same as has been stated.

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

1. The toy watch having a stem-winding rod, in combination with a centrally-arranged pinion connected by the power-spring to the pallet-cap, substantially as and for the purpose set forth.

2. The case G, with turned-up lips *a*, in combination with the cup-pinion K, the spring J, and cap H, substantially as and for the purpose set forth.

3. The elastic arm N, intermediate of the pallets M, and toothed segment P, substantially as and for the purpose set forth.

4. The case G, cap H, spring J, pallets M, toothed segment P, and balance R, in combination with the pinion K, pinions E F, and stem-rod C, substantially as and for the purpose set forth.

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