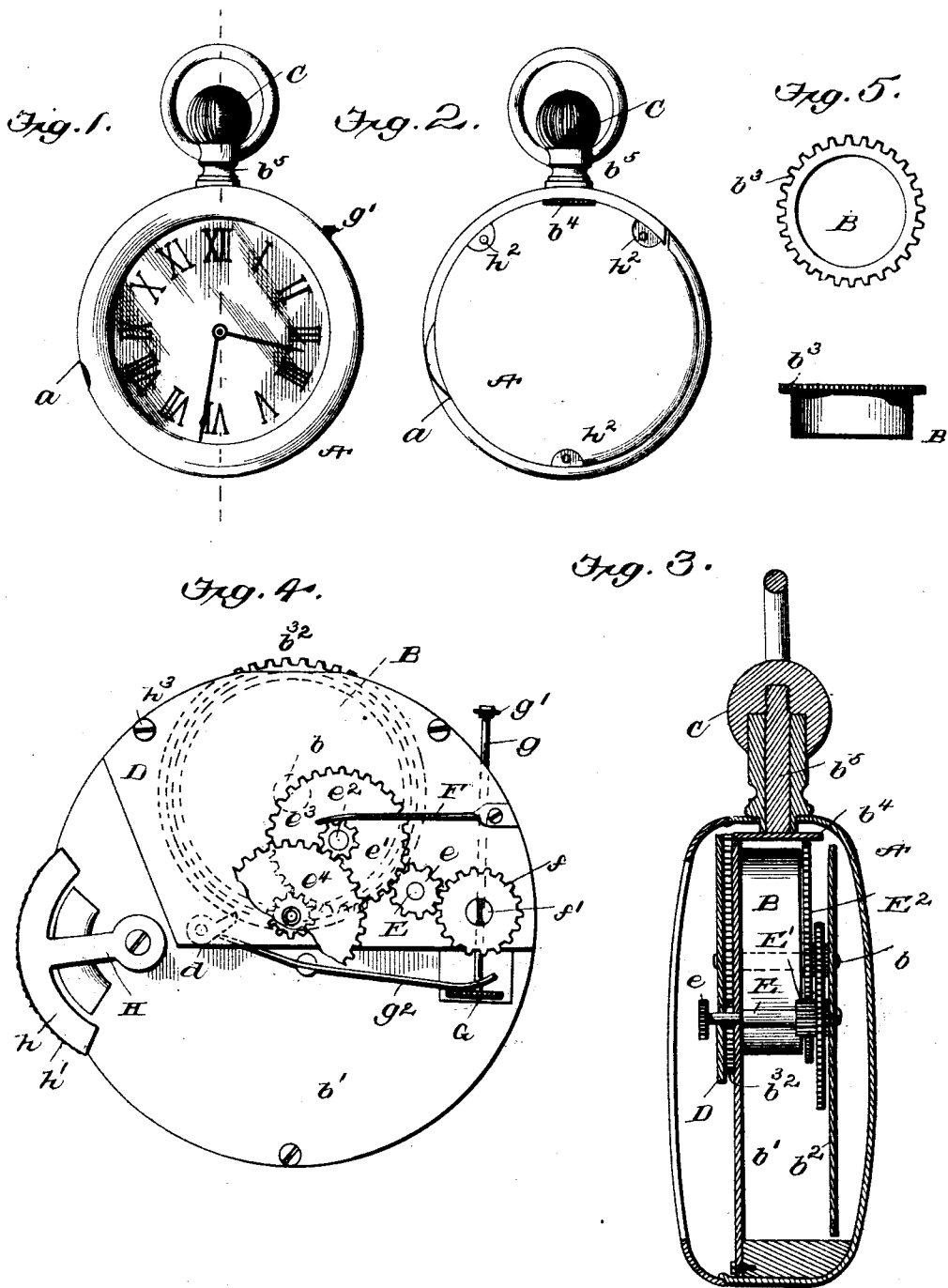


(No Model.)

S. ARONSON.
WATCH.

No. 516,718.

Patented Mar. 20, 1894.



Witnesses

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WATCH.

SPECIFICATION forming part of Letters Patent No. 516,718, dated March 20, 1894.

Application filed September 21, 1892. Serial No. 446,492. (No model.)

To all whom it may concern:

Be it known that I, SAUL ARONSON, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful

Improvements in Watches; and I do hereby 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 appertains to make and use the same.

This invention contemplates certain new and useful improvements in watches, and has for its object the production of a watch all the parts of which are strong, durable and positive in operation.

It is well known that in the manufacture of cheap or inexpensive watches it is not only highly important, but absolutely necessary, to dispense with thin pivots, highly polished pinions and nicety of escapement; and hence the rougher the escapement and general make up of the movement the greater the power required for driving such movement.

With these objects in view the invention consists of a watch movement having a wide barrel for the main spring, said barrel being open at both ends and provided with teeth with which engage a spur gear mounted on the stem which projects beyond the watch case.

The invention further consists of a watch movement having the minute pinion and hour wheel engaged by an intermediate dial wheel and pinion, respectively, said dial wheel and pinion being held to their engagement by spring pressure, said dial wheel being engaged by a pinion loose on the main driving arbor.

The invention further consists of a watch movement having its regulator adjuster provided with a toothed segment which fits in and incloses a slot in the watch case, only a portion of said segment being exposed by said slot.

The invention also comprises the details of construction, combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1 represents a face view of my improved watch. Fig. 2 is an inside view of the case, after the

movement has been removed. Fig. 3 is an end view of portions of the interior mechanism, the case and other parts being in section, with the main spring and train of the watch removed. Fig. 4 is a face view of the movement after the dial plate and hands have been removed. Fig. 5 represents the spring barrel.

Referring to the drawings, A designates the watch case in one side of which is a short narrow slot *a*.

B is a barrel for the main spring, the outer end of which latter is secured to said barrel, its inner end being attached to an arbor *b* journaled in watch plate *b*² and bridge D. This barrel is made very wide, is open at its ends, and is provided with a circumferential row of teeth *b*³ with which latter is designed to engage a spur-gear *b*⁴ on the lower end of stem *b*⁵. This stem is provided on its outer end with a crown C. By thus making the barrel of maximum size I am enabled to employ a widened and thickened spring, whereby the necessary power is obtained. The teeth of the barrel B move in a circular plane between watch plate *b*¹ and the bridge D, said plate serving to keep said teeth of the barrel in engagement with spur gear *b*⁴. The backward movement of barrel B is prevented by a pawl *d*.

E is an arbor or spindle projected through bridge D and supported by watch-plates *b*¹, *b*². Said arbor is rotated by the main spring through the agency of common watch train (not shown). A pinion *E*¹ on this arbor is engaged by main-wheel *E*² fast on arbor *b*. On this arbor is also a pinion *e* frictionally fitted thereon, so that it can be rotated independently when it is desired to set the hands. This pinion meshes with a dial wheel *e*¹ mounted on a stud *e*², and a pinion *e*³ also on said stud meshes with the hour wheel *e*⁴ while dial wheel *e*¹ engages the minute pinion (see Fig. 4). On the respective arbors of the latter the hour and minute hands are secured. The dial wheel *e*¹ and pinion *e*³ are held in proper engagement by a spring F, which serves to prevent the minute wheel from having any play or shake. In engagement with pinion *e* is a wheel *f* whose stud *f*¹ is supported by bridge D. This wheel can be rotated to effect the setting of the hands by a wheel G mounted

on the lower end of a sliding rod *g* movable between plate *b'* and bridge *D*, the outer end of said spindle having a milled head *g'*. A spring *g²* in engagement with wheel *G* serves to hold rod *g* depressed and in order to effect engagement of said wheel with wheel *f* the rod *g* is moved outward and by turning the same the adjustment of the hands can be easily accomplished.

10 H is the regulator adjuster mounted on plate *b'* and free to move concentrically with the hair-spring of the movement. The outer end of this regulator adjuster is a segment of a circle *h*, and is provided with small notches or teeth *h'*. A small portion of this toothed segment projects into and fills up slot *a* of the watch case. A few teeth of the segment are projected through said slot and by means thereof the regulator can be readily adjusted, 15 the teeth being moved from one end of the slot toward the other.

To fasten the movement into the case, the latter is provided with three posts *h²* to which plate *b* is secured by screws *h³*.

25 The advantages of my invention are apparent to those skilled in the art to which it appertains.

It will be seen that by reason of my improvements a simple and inexpensive watch 30 can be constructed; that the strength of the parts are not impaired; and that adjustment of the regulator as well as the hands can be easily accomplished without opening the watch-case. It will also be seen that the segment of the regulator fills the slot in the watch case so that the latter is rendered dust proof.

I claim as my invention—

1. The combination in a watch movement, 40 of a wide-barrel for the main spring open at

both of its ends and provided with teeth on one of said ends, the watch plate having an opening for said barrel, whereby the latter is kept in position while the spring is being wound and the stem having a spur gear engaging said teeth, as set forth.

2. The combination in a watch movement, of the minute and hour pinion and wheel, the dial wheel and pinion in engagement therewith, and the spring bearing on said dial wheel and pinion, substantially as set forth.

3. The combination in a watch-movement, of the minute and hour pinion and wheel, the spring held dial wheel and pinion, the pinion *e*, the spring held sliding rod carrying a wheel *G*, and the wheel with which said wheel *G* is designed to engage, substantially as set forth.

4. The combination with a watch movement and the inclosing case having a slot in its periphery, of a regulator adjuster consisting of a segment projecting into said slot, and having notches or teeth substantially as set forth.

5. The herein-described improvement in watches, consisting of the combination in a watch movement, and a case therefor having a slot, of a barrel having teeth, a spur gear in engagement with said teeth, a stem for said spur gear, a regulator having a toothed segment projecting into said slot, the loose wheel *e*, the dial wheel in engagement therewith, the pinion carried by said dial wheel, the minute and hour pinions and wheel, the wheel *f*, and the sliding rod carrying a wheel designed to engage said wheel *f*, substantially as set forth.

SAUL ARONSON.

Witnesses:

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