

J. A. FREUND.
BANKING PIN.
APPLICATION FILED JAN. 12, 1911.

1,062,645.

Patented May 27, 1913.

Fig. 1.

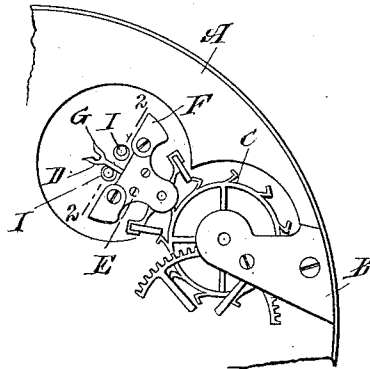


Fig. 2.

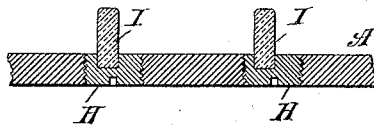
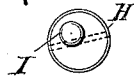


Fig. 3.



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JOSEPH A. FREUND, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO THE KEYSTONE WATCH CASE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BANKING-PIN.

1,062,645.

Specification of Letters Patent.

Patented May 27, 1913.

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To all whom it may concern:

Be it known that I, JOSEPH A. FREUND, a citizen of the United States, and a resident of Waltham, in the county of Middlesex and State of Massachusetts, have made and invented certain new and useful Improvements in Banking-Pins, of which the following is a specification.

My invention relates to an improvement in watch movements, and more particularly to that part or portion thereof usually known and referred to as the banking pin. Heretofore these pins have been made from a single piece of metal, usually steel, the consequence being that in the course of time, the arm or stem of the pallet will wear a flat side on the pin, and also a corresponding depression in the arm or stem of the pallet. These worn parts permit of a greater swing or oscillation to the pallet, and a corresponding increase in the depth of the lock between the pallet stones and locking faces of the teeth of the escape wheel, and also to a certain extent change the relation between the guard pin and the roller. By reason of the increased depth of the lock between the pallet stones and teeth of the escape wheel, there is necessarily an increase in friction between the parts, and a like increase in the resistance in the action of unlocking, all of which materially interfere with the time keeping qualities of the movement. In the case of metal pins there is also a certain amount of corrosion of the metal which constantly takes place. This action, of course, will produce the same effect on the banking pins and pallet as does the constant hammering of the pallet on the pins. Furthermore, in the corrosion of the metal and the wearing thereof, the fine particles of metal mix with the lubricating oil, and accumulate in the space between the banking pin and the stem or arm of the pallet, forming a pasty and sticky mass, still further increasing the resistance in the action of the unlocking of the pallet stones with the teeth of the escape wheel, and destroying, to that extent, the time keeping qualities of the movement.

The object of my invention is to so form the banking pins that these objections will be overcome, avoiding all wear on the pins, caused either by the hammering thereon of the arm of the pallet, or by corrosion, and also to entirely overcome the electrolytic and

magnetic action between the parts heretofore made entirely of the metal.

With these and other ends in view, my invention consists in forming the banking pin in two parts; the head or banking screw being made of metal and threaded into the dial or pillar plate, and a pin proper formed of ruby, sapphire, garnet or other jewel stones, and tightly secured by friction or otherwise in the head or banking screw. The invention further consists in certain novel features of construction as will be hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plain view of a part of a watch movement consisting in part of my improved banking pin. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1, showing the construction and arrangement of the banking pin. Fig. 3 is a bottom plan view of one of my improved banking pins.

Referring to the drawings and particularly to Fig. 1, A represents a dial or pillar plate of a watch movement, B the train bridge, C the escape wheel, D the pallet, E the pallet end-stone cap, F the pallet bridge, and, G the pallet fork, these parts being constructed and arranged in the usual way. In the dial plate A are employed two banking pins whereby to limit the movement of the pallet, which banking pins have heretofore been constructed of a single piece of metal. As illustrated in the drawings, however, it will be seen that instead of having each of the pins made of a single piece of metal, I form the same in two parts, the head or screw H being made of metal, and a pin proper I, made of garnet, sapphire or other hard stone such as is usually employed for jewels in a watch or clock movement. These pins I, are secured in a recess formed in the heads H, either by friction or otherwise, the head H, being of approximately the same thickness as the dial plate in order that the faces thereof may rest flush with the outer and under surfaces of the dial plate when the parts are properly assembled. In order that the distance between the pins I, may be adjusted, and the swing or movement of the pallet thereby regulated, the jewel pins I, are secured in the heads H eccentric thereto. By thus constructing the banking pins, it will be under-

stood that all wear on the portions I, constructed of jewel stones will be avoided, said pins retaining their original shape and contour for an indefinite length of time and preserving the time keeping qualities of the movement. Furthermore, all the objections heretofore urged against the banking pin as ordinarily constructed are avoided, and while the first cost of my improved pin may be somewhat greater than that as usually employed, it is far more economical in that the necessity of removing the worn pins and substituting new ones therefor is avoided. Again the depth of the lock between the pallet stones and the teeth of the escape wheel remains constant, and all change in the amount of friction between the moving parts overcome, so that after the several parts of the watch movement have once been adjusted, no change therein becomes necessary by reason of damage or wear to the banking pins.

What I claim is:

1. In a timepiece employing a lever escapement, bankings for said lever composed of practically non-oxidizable material located upon both sides of said lever.

2. In a timepiece employing a lever escapement, bankings for said lever composed of practically non-oxidizable material located upon both sides of said lever, and means for adjusting one of said bankings.

3. In a timepiece employing a lever escapement, bankings for said lever composed of practically non-oxidizable material mounted on the plate upon both sides of said lever.

4. In a timepiece employing a lever escapement, bankings for said lever composed of jewels located upon both sides of said lever.

5. In a timepiece employing a lever es-

capement, bankings for said lever composed of jewels mounted on the plate upon both sides of said lever.

6. In a timepiece employing a lever escapement, bankings for said lever composed of jewels located upon both sides of said lever, and means for adjusting one of said bankings.

7. In a watch employing a lever escapement, bankings for said lever comprising jewels mounted in the watch plate upon both sides of said lever.

8. In a watch employing a lever escapement, bankings for said lever comprising jewels mounted in the watch plate upon both sides of said lever, and means for varying the distance between said jewels.

9. In timepieces employing a lever escapement, and abutments for limiting the movement of said lever, jewels adapted to serve as one of the impact members upon both sides of said lever, in combination with hard metal surfaces adapted to serve as the other of said impact members.

10. A banking pin for use in watch or clock movements, and comprising a head or screw formed of metal, and a separate pin or stud formed from a jeweled stone secured tightly in said head and eccentric thereto, substantially as described.

11. A banking pin for use in horological instruments, comprising a head made of metal, and a pin formed of a jewel stone and secured to said head, substantially as described.

Signed at Waltham, in the county of Middlesex, and State of Massachusetts, this ninth day of January, A. D. 1911.

JOSEPH A. FREUND.

Witnesses:

W. B. MEHL,
H. M. DUGAN.