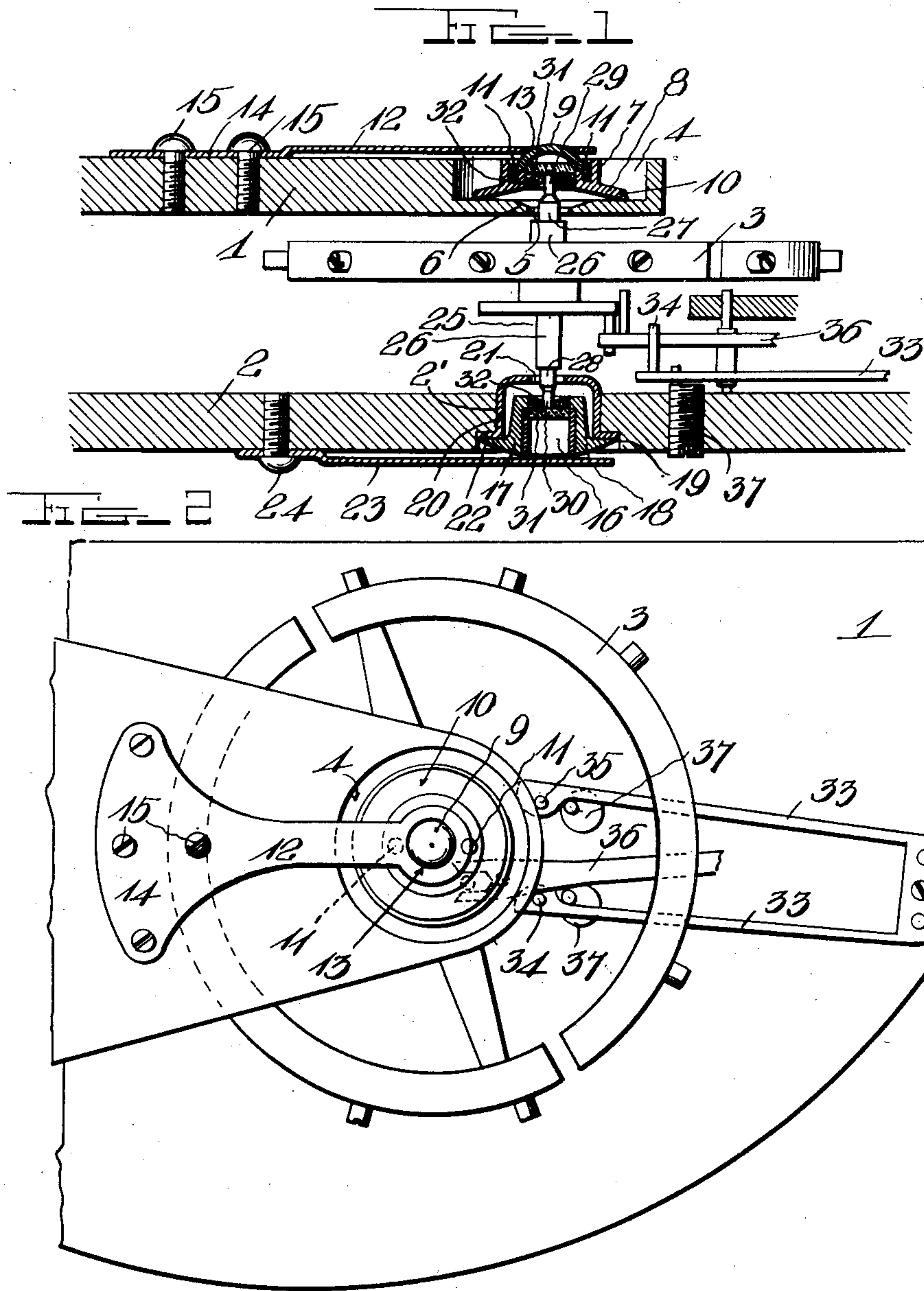


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WATCH BALANCE STAFF SUPPORTER.  
APPLICATION FILED AUG. 26, 1909.

943,890.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.



Witnesses

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WATCH BALANCE STAFF SUPPORTER.  
APPLICATION FILED AUG. 25, 1909.

943,890.

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2 SHEETS—SHEET 2.

FIG. 3

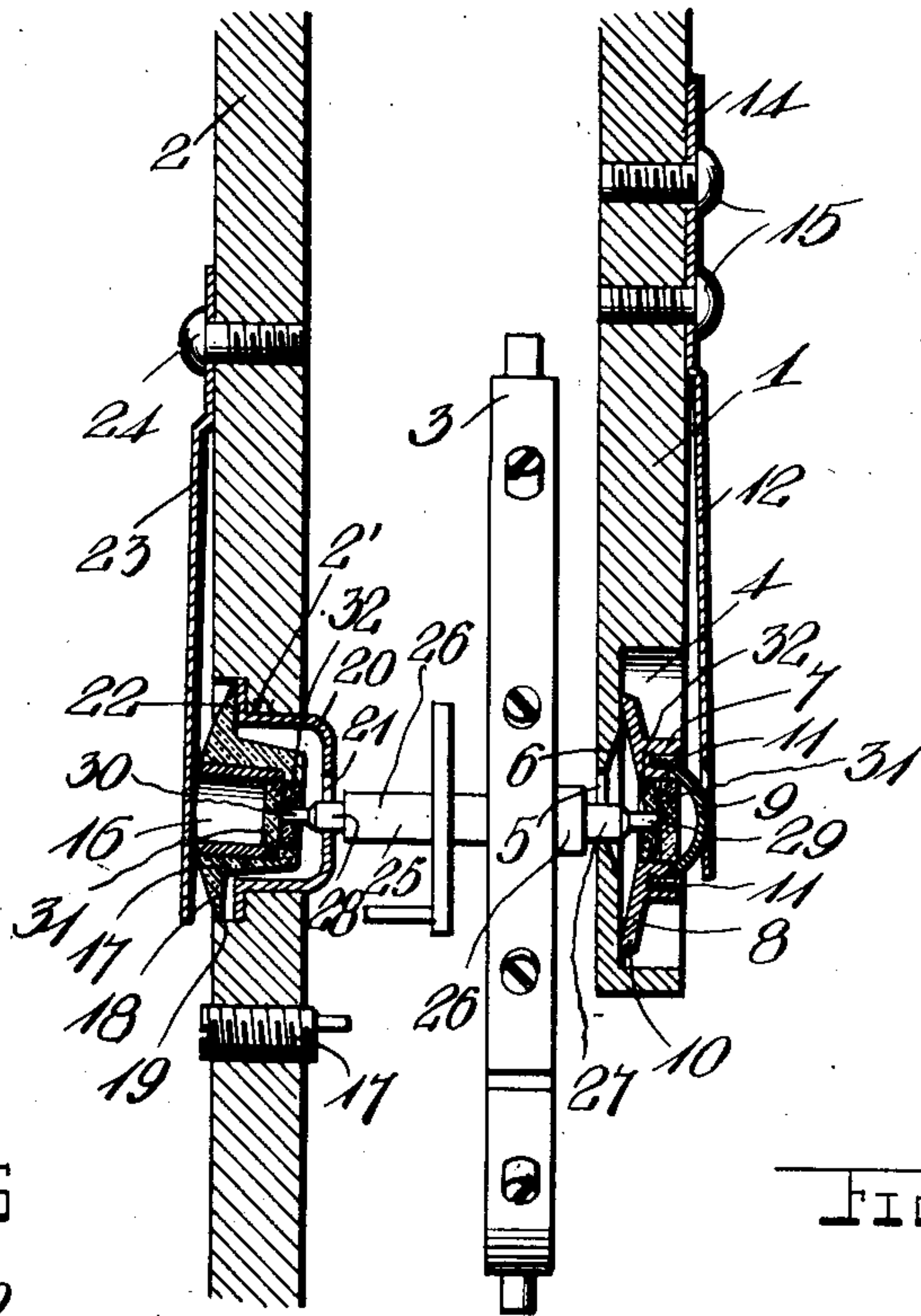


FIG. 5

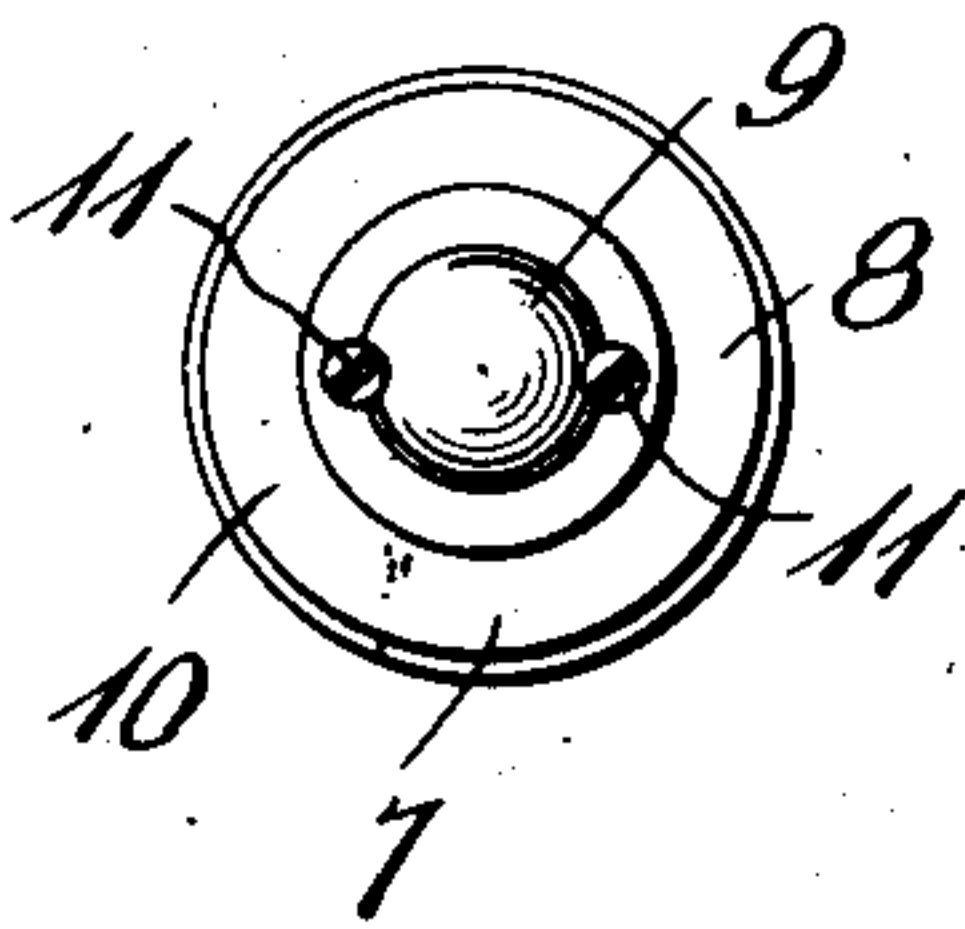


FIG. 6

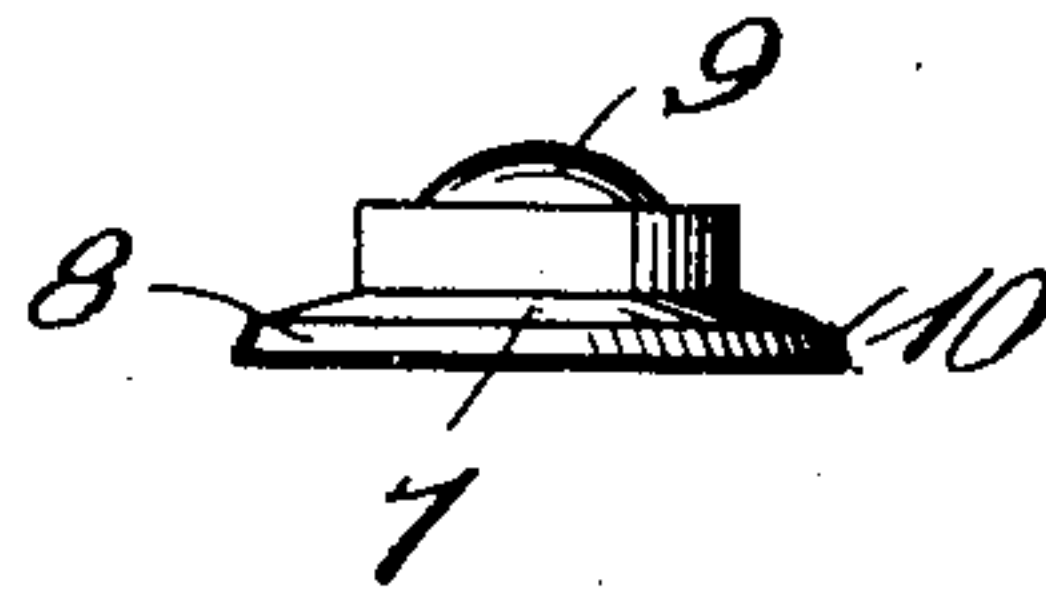
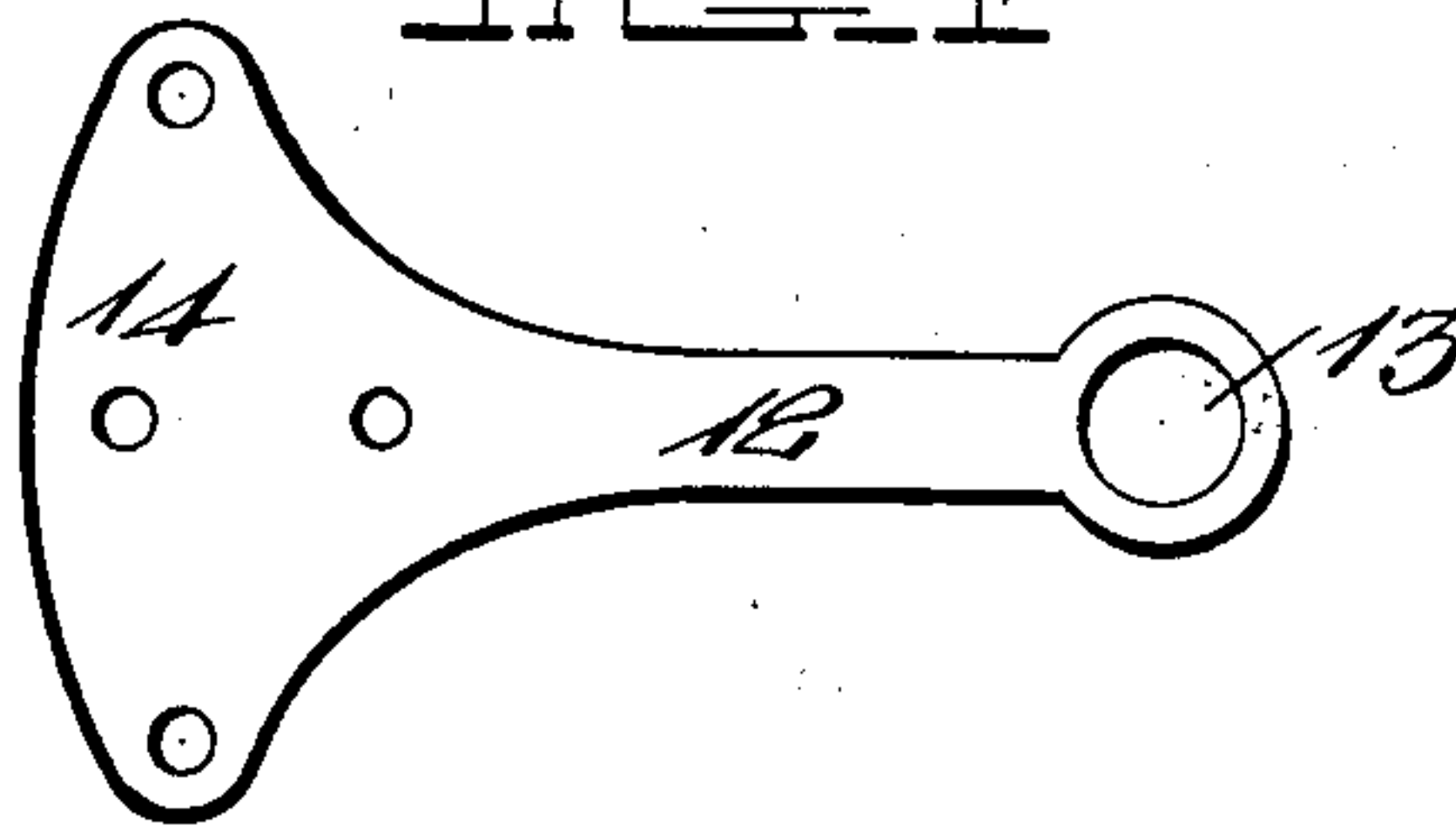


FIG. 4



Witnesses

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# UNITED STATES PATENT OFFICE.

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## WATCH-BALANCE-STAFF SUPPORTER.

943,890.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed August 25, 1909. Serial No. 514,572.

*To all whom it may concern:*

Be it known that I, LOUIS PRISANT, a citizen of the United States, residing at Albany, in the county of Dougherty and State of Georgia, have invented certain new and useful Improvements in Watch-Balance-Staff Supports; and I do 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 relates to improvements in bearings for balance staffs for watches or chronometers.

The object of the invention is to provide protecting means to prevent the pivoted ends of the balance staff from breaking or bending should the watch receive a sudden shock or jar.

Another object is to provide means for preventing damage to the jewels in which the pivots are journaled.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a fragmentary sectional view of a watch case showing the improved mounting of the balance wheel. Fig. 2 is a plan view thereof. Fig. 3 is a sectional view showing the balance wheel in the position which it assumes when the watch is subjected to a shock or severe jar. Fig. 4 is a plan view of one of the springs detached. Fig. 5 is a detail plan view of one of the bearings of the journaling staff. Fig. 6 is a side elevation thereof.

In the embodiment illustrated, side plates 1 and 2, of the watch works are shown having a balance wheel 3, mounted between them, said balance wheel being of any ordinary or suitable construction. The plate 1, is provided in its outer face with a recess 4, having an aperture 5 extending centrally through the inner or bottom wall thereof, the outer wall of said aperture being beveled at 6, for a purpose to be described. A jewel setting 7 is set in said recess 4, and is preferably made circular in form and composed of two members 8 and 9, the inner member 8 having an annular flange 10, which normally rests on the bottom of the recess 4, and the

inner face of which is preferably concave as shown in Figs. 1 and 3. The outer member or cap 9 is preferably made concavo-convex as shown and is secured to the inner member by means of fastening screws as 11, which extend into the member 8 and the heads thereof overlap the edges of the cap 9, and securely hold it in operative position.

A flat spring 12 is secured at one end to the outer face of the plate 1, and the free end thereof projects over the recess 4, and is provided with an aperture 13, having its inner walls beveled to form a seat for the cap 9, of the jewel setting. This spring 12 as is clearly shown in Figs. 1 and 3 lies closely against the outer face of the plate 1, and the cap 9 projects through the aperture therein and lies in approximately the same plane as the outer face of the spring 12. This spring 12 is preferably constructed as shown in detail in Fig. 4 having a broad apertured end 14, through which a plurality of fastening screws as 15 are adapted to be passed for securing the spring to plate 1.

An adjustable setting 16 is mounted in an aperture in the plate 2, and is somewhat different in form from that shown in plate 1, but is designed to perform the same function in the event the watch movement should receive a sudden jar sufficient to exert a strain on the balance staff and jewels. As shown this setting or bushing 16, comprises a frusto-conical tubular member 17, the smaller end of which extends inwardly within the aperture of the plate 2, and the outer or larger end is provided with an annular flange 18, the outer face of which is convex and the inner face is slightly concaved, the outer edge of said flange being adapted to engage the side walls of a recess 19, formed around the aperture in the plate 2, and these side walls act as a bearing to hold the bushing 16 in fixed relation to the balance staff of the wheel 3. The inner or reduced portion of the setting or bushing 16 extends through the aperture 2' in the plate 2 and extends into a cup-shaped shield 20, shown in cross section in Figs. 1 and 3. This shield 20 has a central aperture 21 in the bottom thereof and is provided at its outer edge with an outwardly extending lateral flange 22, which is adapted to fit within the recess 19 and rest on the inner or bottom wall thereof. This shield 20 is designed to form a protector for the balance



staff when said staff is thrown out of its normal position by any undue shock. The setting or bushing 16 is held upon its seat in the recess 2' of plate 2 by a flat spring 23, which is mounted on the outer face of plate 2 preferably by means of fastening screws 24, which pass through one end thereof the free end extending over the recess 19 and engaging the outer face of the member 17 whereby the bushing 16 is held in fixed relation to the balance staff, which position it maintains unless subjected to a jar or shock, the positions which one or both of the settings will assume when subjected to a shock being shown in Fig. 3.

The wheel 3 is provided with a balance staff 25 which is provided at either end with an annular shoulder 26, and with reduced portions 27 and 28 which are adapted to pass through the aperture 5 in the plate 1, and through the aperture 21 in the shield 20, mounted in the plate 2 and are so arranged that should the balance wheel and staff be thrown out of normal position the walls of said apertures will engage the reduced portions 27 and 28 and the shoulders as 26 in whichever direction the shock occurs, said shoulders 26 being arranged a sufficient distance from the inner face of the plate 1, and the shoulder 20, to permit the free operation of the balance wheel 3. The distance between the shoulders 26 and the plate and shield, however, is not great enough to allow the pivots of the balance staff to be thrown out of the jewels against which they bear, as will be hereinafter described. Pivot members 29 and 30 are arranged at opposite ends of the staff 25, and are adapted to engage jewels arranged in the settings 7 and 16. In each setting is arranged an imperforate jewel 31, against which the ends of the pivots 29 and 30 of the balance staff bear, said pivots passing through apertured jewels 32 arranged inside the jewels 31, as is clearly shown in Figs. 1 and 3.

A banking spring 33 carrying the two banking pins 34 and 35, is arranged upon the inner surface of the plate 2, and is adapted to relieve the pallet lever 36, in the event of the derangement of said pallet lever due to the balance wheel being thrown out of position. This banking spring 33, is adjusted by a banking screw 37, as is shown clearly in Figs. 1 and 2.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

I claim as my invention:

1. In a watch movement, the combination with the side plates of a watch work having a balance wheel and its staff mounted therein, one of said plates having a recess in its outer face with an aperture extending through the inner wall thereof, a jewel setting loosely mounted in said aperture and composed of a cylindrical member having an annular flange projecting outwardly from one end thereof, a concavo-convex cap member closing the other end of said cylindrical member, jewels arranged in said cylindrical member for engagement by one end of said staff and a plate spring secured at one end to the outer face of said recessed plate and having an aperture in its free end to fit over said cap to hold said setting yieldingly in operative position.

2. In a watch movement, the combination with the side plates of a watch work having a balance wheel and its staff mounted therein one of said plates having a recess in its outer face with an aperture extending through the inner wall thereof, a jewel setting loosely mounted in said recess and composed of a cylindrical member having an annular flange projecting outwardly from one end thereof, a concavo-convex cap member closing the other end of said cylindrical member, jewels arranged in said cylindrical member for engagement by one end of said staff, a plate spring secured at one end to the outer face of said recessed plate, and having an aperture in its free end to fit over said cap to hold said setting yieldingly in operative position, the inner edge of the aperture in said spring being beveled to form a seat for said cap.

3. In a watch movement, the combination with the side plates of a watch work having a balance wheel and its staff mounted therein one of said plates having a recess in its outer face with an aperture in the bottom thereof, a jewel setting loosely mounted in said recess and composed of two detachably connected members, one of said members being cylindrical and having an annular flange arranged at one end thereof, said flange being concave on its inner face and convex on its outer face, a concavo-convex cap member closing the outer end of said cylindrical member, jewels arranged in said cylindrical member for engagement by one end of said staff, and a flat plate spring secured at one end to the outer face of said recessed plate and arranged in contact therewith, said spring having an aperture in its free end extending over the recess in said plate the inner edge of the spring aperture being beveled to fit snugly over said cap, the end of the cap extending approximately flush with the outer edge of the spring.

4. In a watch movement, the combination of spaced side plates having recesses in their



outer faces, one of said plates having an aperture in the inner wall of said recess, the outer edges of said aperture being beveled, a jeweled setting loosely mounted in said  
5 recess and resilient means for holding said setting in operative position, the other side plate having a large aperture extending through the bottom of the recess thereof, an apertured inverted cup-shaped shield ar-  
10 ranged in said aperture, a jeweled setting arranged in said cup-shaped shield, resilient means for holding said setting in said shield, and a balance wheel arranged between said

plates and having the staff thereof shouldered and provided with reduced extensions 15 adapted to extend through the aperture in one plate and through the aperture in said shield.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 20 nesses.

LOUIS PRISANT.

Witnesses:

SIGO FARKAS,  
M. A. BLUM.