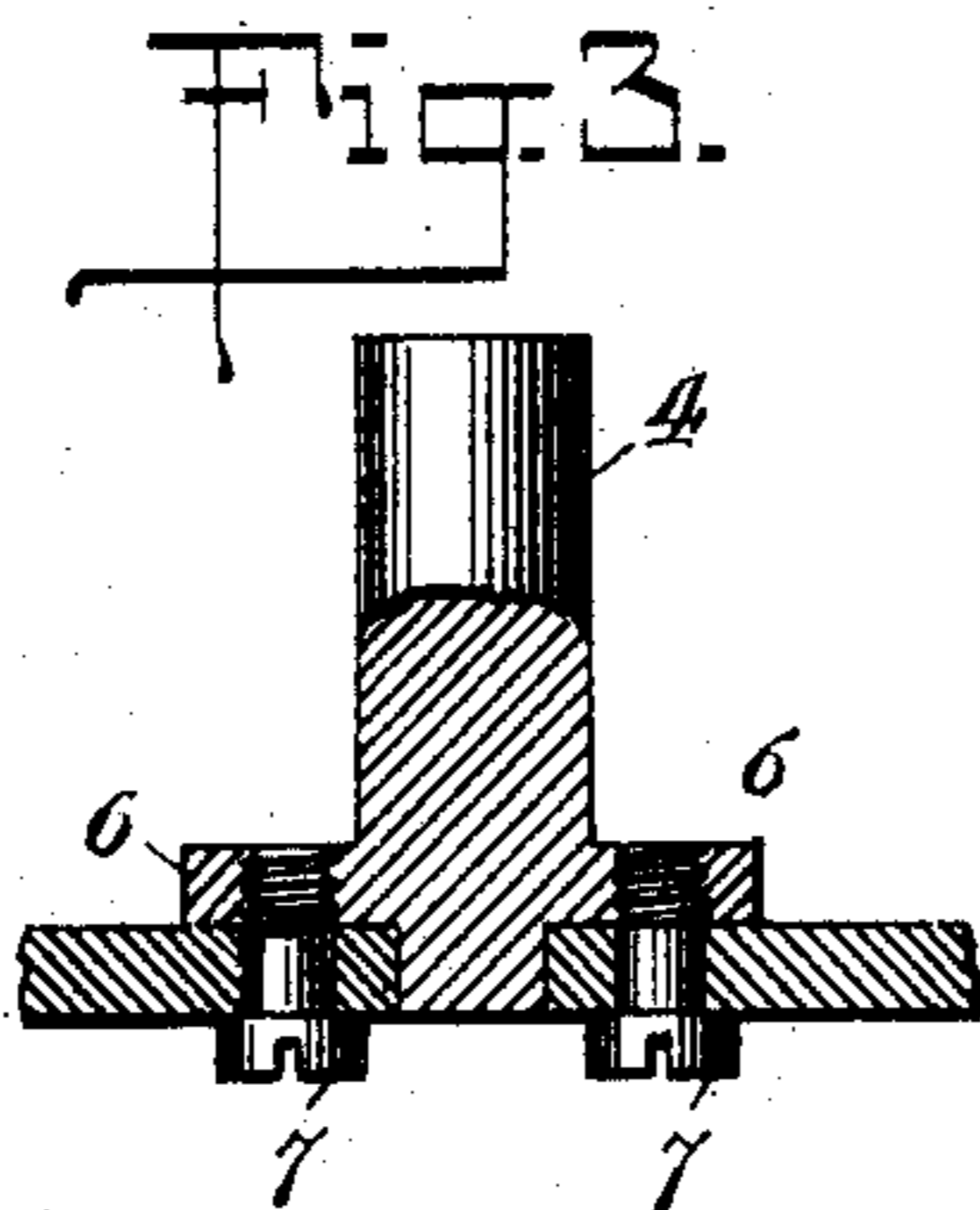
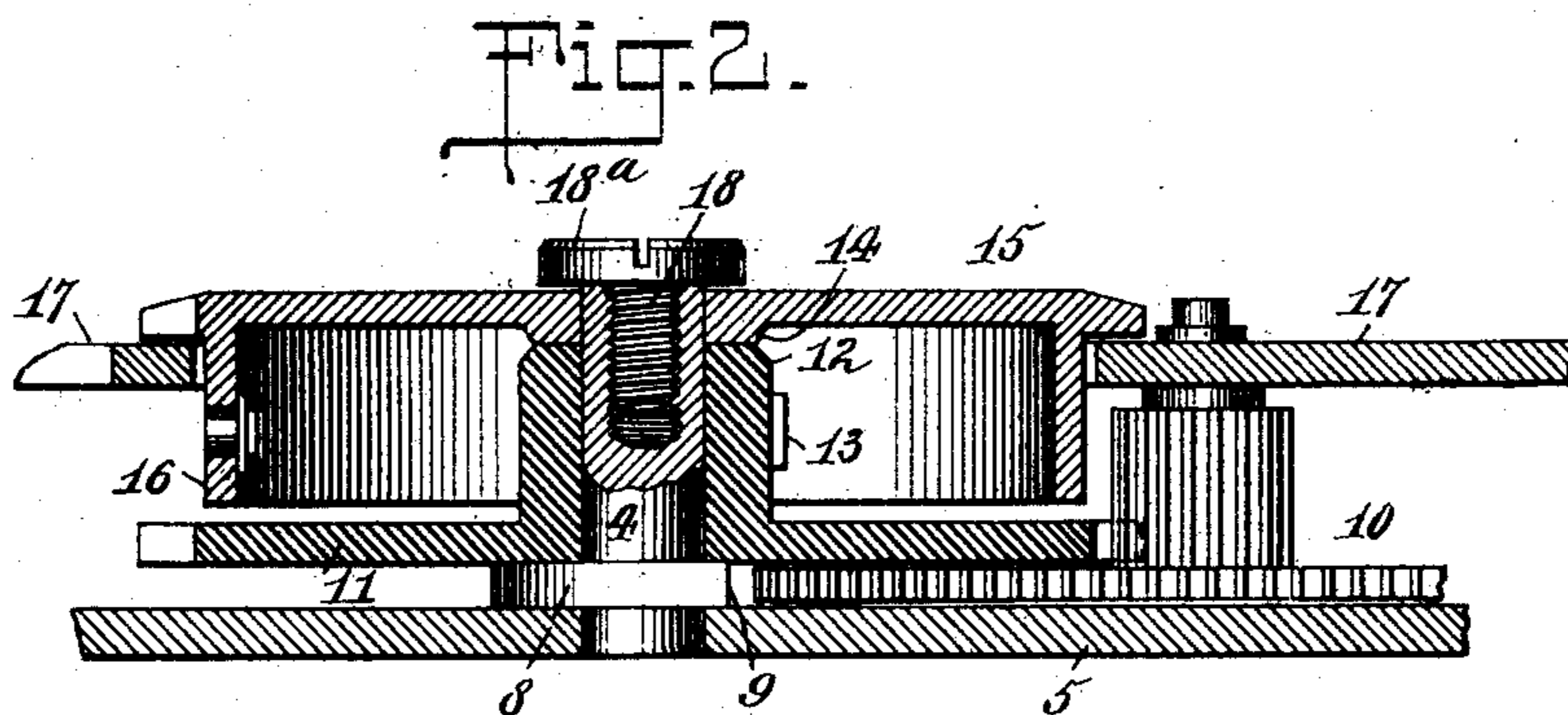
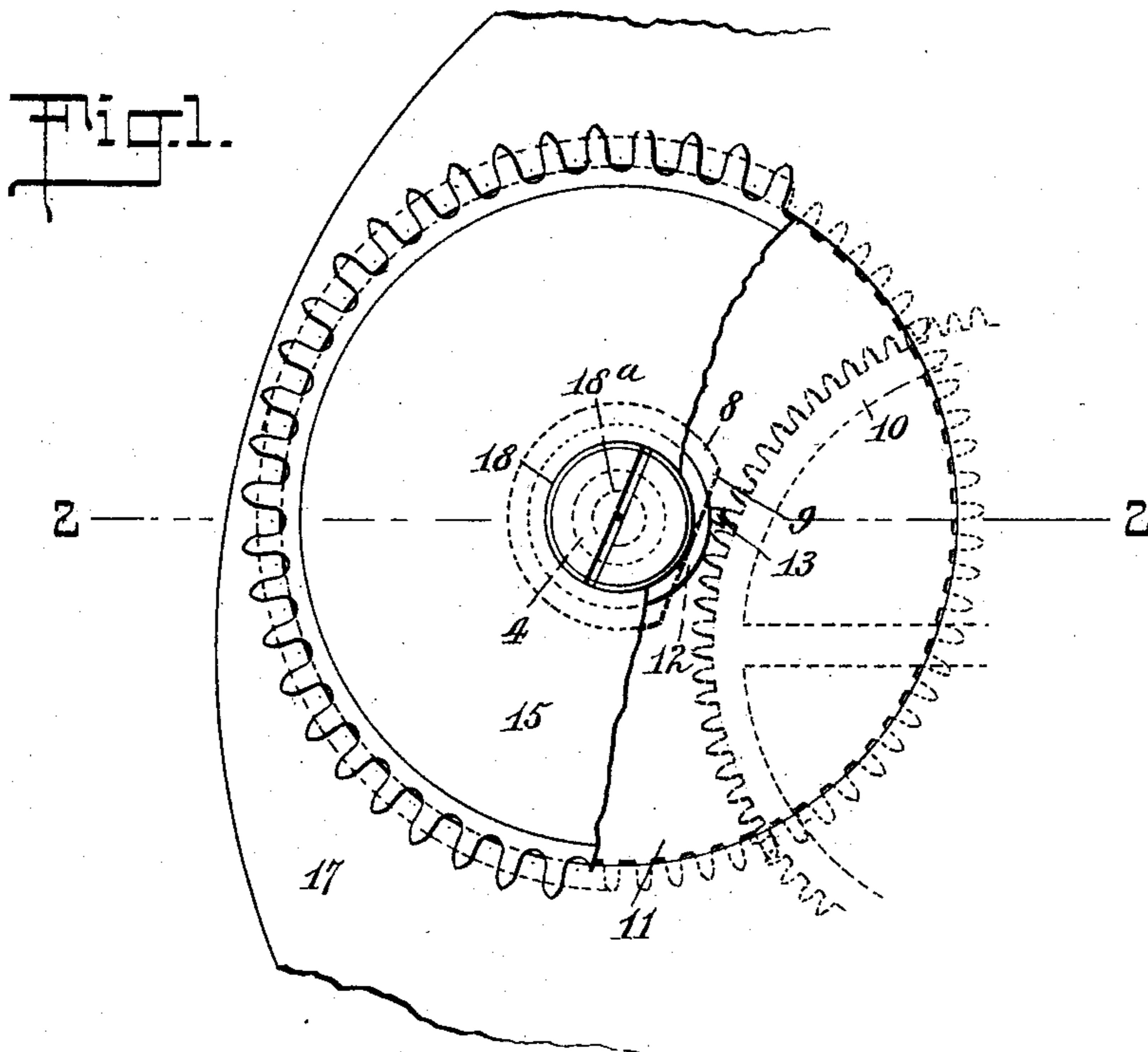


W. B. MEHL.
WATCH BARREL.
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978,613.

Patented Dec. 13, 1910.



WITNESSES:

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WALTER BIRD MEHL, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO THE KEYSTONE WATCH CASE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

WATCH-BARREL.

978,613.

Specification of Letters Patent.

Patented Dec. 13, 1910.

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To all whom it may concern:

Be it known that I, WALTER BIRD MEHL, 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 Watch-Barrels, of which the following is a specification.

This invention relates to an improvement in watch movements, and more particularly to the construction and arrangement of parts comprising the safety-barrel, the object of the invention being to reduce the friction between the moving parts so far as possible, while at the same time providing them with sufficient bearing to retain them in their properly relative positions.

A further object of the invention is to so construct and arrange the several parts that they may be readily assembled or taken down.

With these and other ends in view the invention consists in certain novel features and combinations of parts as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a plan view of a part of a watch movement constructed in accordance with the invention. Fig. 2 is a sectional view of the safety-barrel and its operating mechanism taken on the line 2—2 of Fig. 1. Fig. 3 is a detached view of a modified form of stud for use in connection with the safety-barrel.

Referring to the drawings it will be seen that the device consists of the stud 4, one end of which is retained in the hole or opening formed in the dial plate 5, the extreme end of the stud 4 being riveted or flanged as illustrated in Fig. 2, or as illustrated in Fig. 3, the stud may be provided near one end with the flange 6 for the reception of the ends of the screws 7, the latter passing through the dial plate 5, in order to hold the stud in position thereon. If the stud be formed as illustrated in Fig. 2 it will also be provided with a flange 8, resting on or against the dial plate 5, one side or edge 9 of the flange 8 being cut away to accommodate the center wheel 10, as shown in Fig. 2, or as shown in dotted lines, Fig. 1. On this stud is mounted the main wheel 11, provided with the hub 12 on which is formed a hook or lug 13 for the attachment to one end of the main spring (not shown)

said main wheel 11 having its bearing on the stud 4 and on the flange 8 thereof. On the upper end of the hub 12 rests the hub 14 formed on the underside of the ratchet wheel 15, said ratchet wheel being formed integral with the main spring barrel 16, this ratchet wheel and barrel having their bearing on the stud 4 and upper end of the hub 12, the teeth of the ratchet wheel overlying, but out of contact with, the top plate 17, as clearly illustrated in Fig. 2.

Into the stud 4 is threaded the retaining screw 18 whereby to prevent the accidental detachment of the ratchet wheel 15 and main wheel 11, a slight clearance, however, being allowed between the head 18^a of said screw and said ratchet wheel 15, whereby to permit of the free running of the ratchet wheel and main wheel.

It will be noted that while the teeth of the ratchet wheel 15 overlie the top plate 17, they clear the same, and that there is also a clearance provided between the barrel 16 and the opening in the top plate 17 through which this barrel is extended, the bearing for said ratchet wheel 15 and barrel 16 being wholly upon the stud 4, and the upper end of the hub 12 of the main wheel 11.

By this construction and arrangement of parts it will be understood that the friction between said parts is reduced to a minimum, while at the same time they are provided with sufficient bearing to retain them in their proper positions; furthermore, in order to take down the several parts it is necessary only to remove the screw 18 from the stud 4, whereupon the ratchet wheel and barrel may be easily and readily removed from the stud 4 in case it be necessary to remove or renew the main spring (not shown) in the barrel.

In practice it has been found that this construction and arrangement of parts is far more efficient than in the several older types of safety barrels wherein the same have been provided with a bearing in the opening formed in the top plate, or wherein the teeth of the ratchet 15 rest upon or come in contact with the upper side or surface of the top plate 17, in that the friction between said parts is materially reduced, and avoids the necessity of using oil between the top plate and teeth on the ratchet wheel and also between the barrel and the edge of the opening in said top plate.

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

1. In a watch movement, the combination
5 with a dial plate and a top plate, of a stud
one end of which is tightly secured to said
dial plate, a main wheel provided with a
hub mounted on said stud, a combined
ratchet wheel and spring-barrel, said ratchet
10 wheel mounted on said stud and bearing on
the hub of said main wheel, said spring-bar-
rel and teeth of the ratchet wheel clearing
said top plate, and a retaining screw thread-
ed into the opposite end of said stud for re-
15 taining said ratchet wheel in position, a
clearance being provided between the head
of said screw and said ratchet wheel, sub-
stantially as described.

2. In a watch movement, the combination
20 with a dial plate and a top plate, of a stud,
one end of which is tightly secured to the
dial plate and provided with a flange, a

main wheel provided with a hub mounted
on said stud and resting on the flange of the
latter, a combined ratchet and spring-barrel, 25
said ratchet being provided with a hub in
which is fitted said stud, said hub resting on
the end of the main wheel hub, said spring-
barrel projecting through an opening
formed in said top plate, but clearing the 30
edge of said opening, the teeth of said
ratchet wheel over-lying, but clearing said
top plate, and a retaining screw threaded
into the opposite end of said stud for retain-
ing the ratchet wheel in position, the head 35
of said screw clearing said ratchet wheel,
substantially as described.

Signed at Waltham in the county of Middlesex and State of Massachusetts this 29th day of July A. D. 1909.

WALTER BIRD MEHL.

Witnesses:

W. C. COOK,

R. SCHMIEDTZEN.