

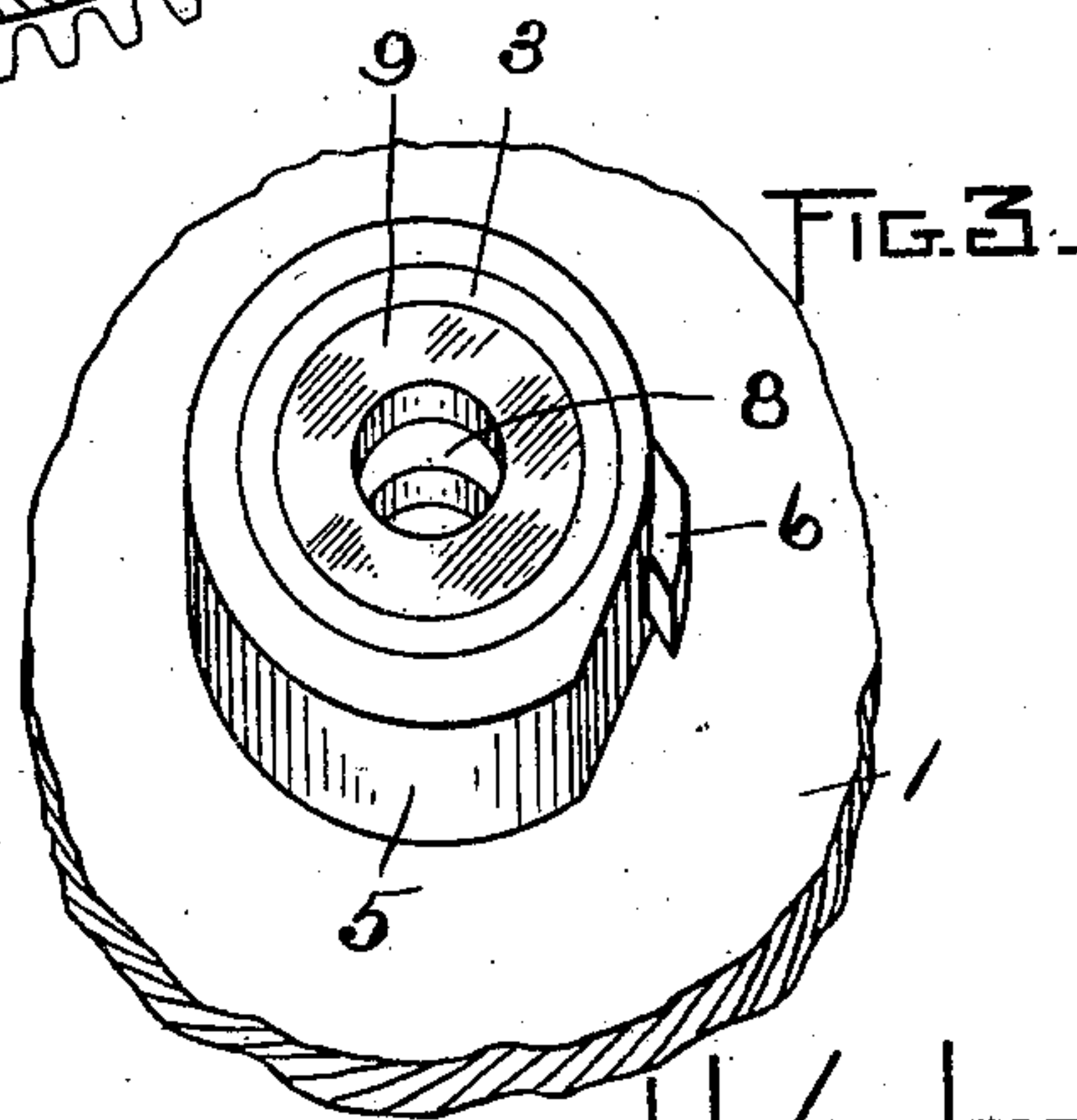
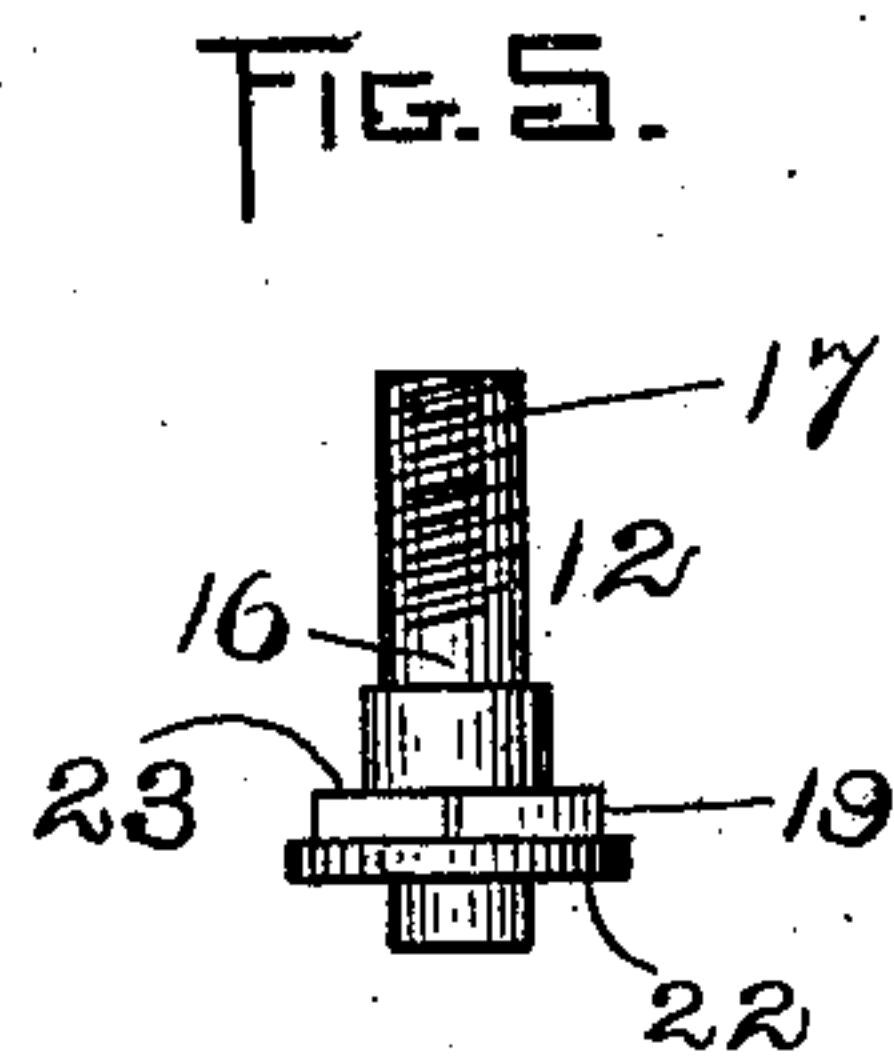
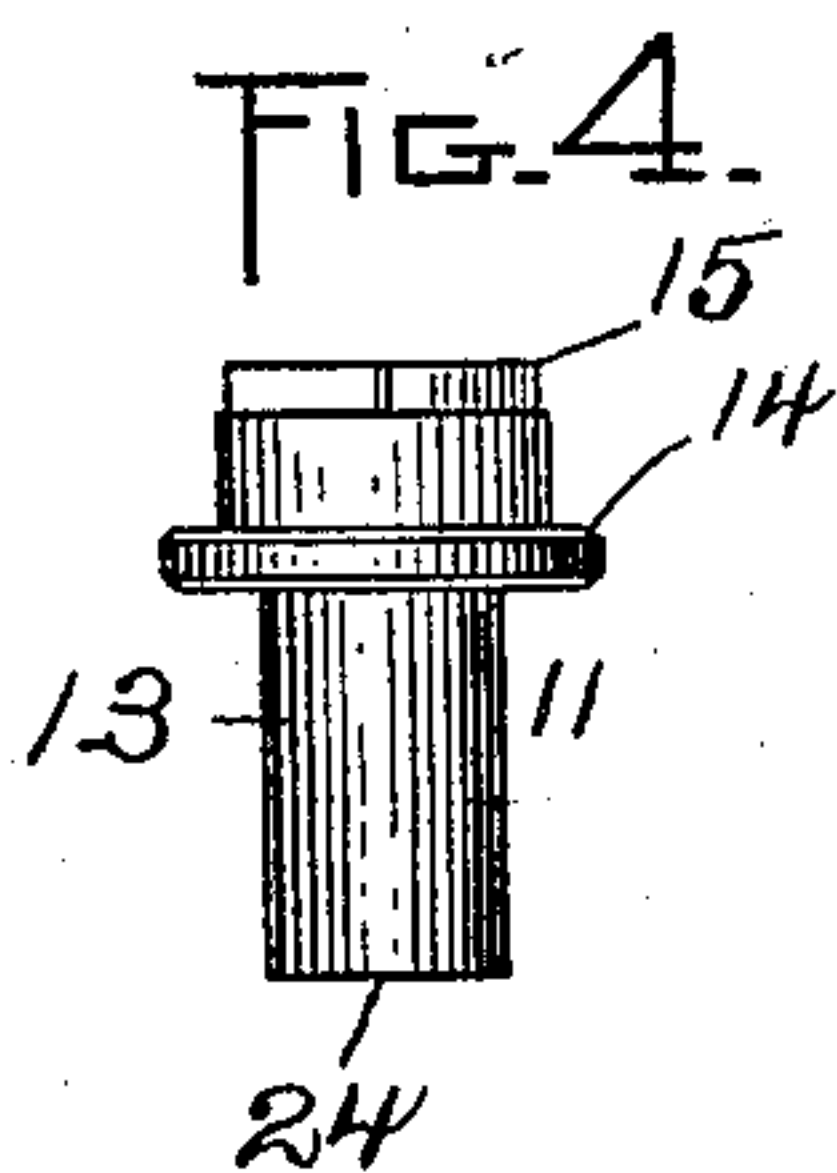
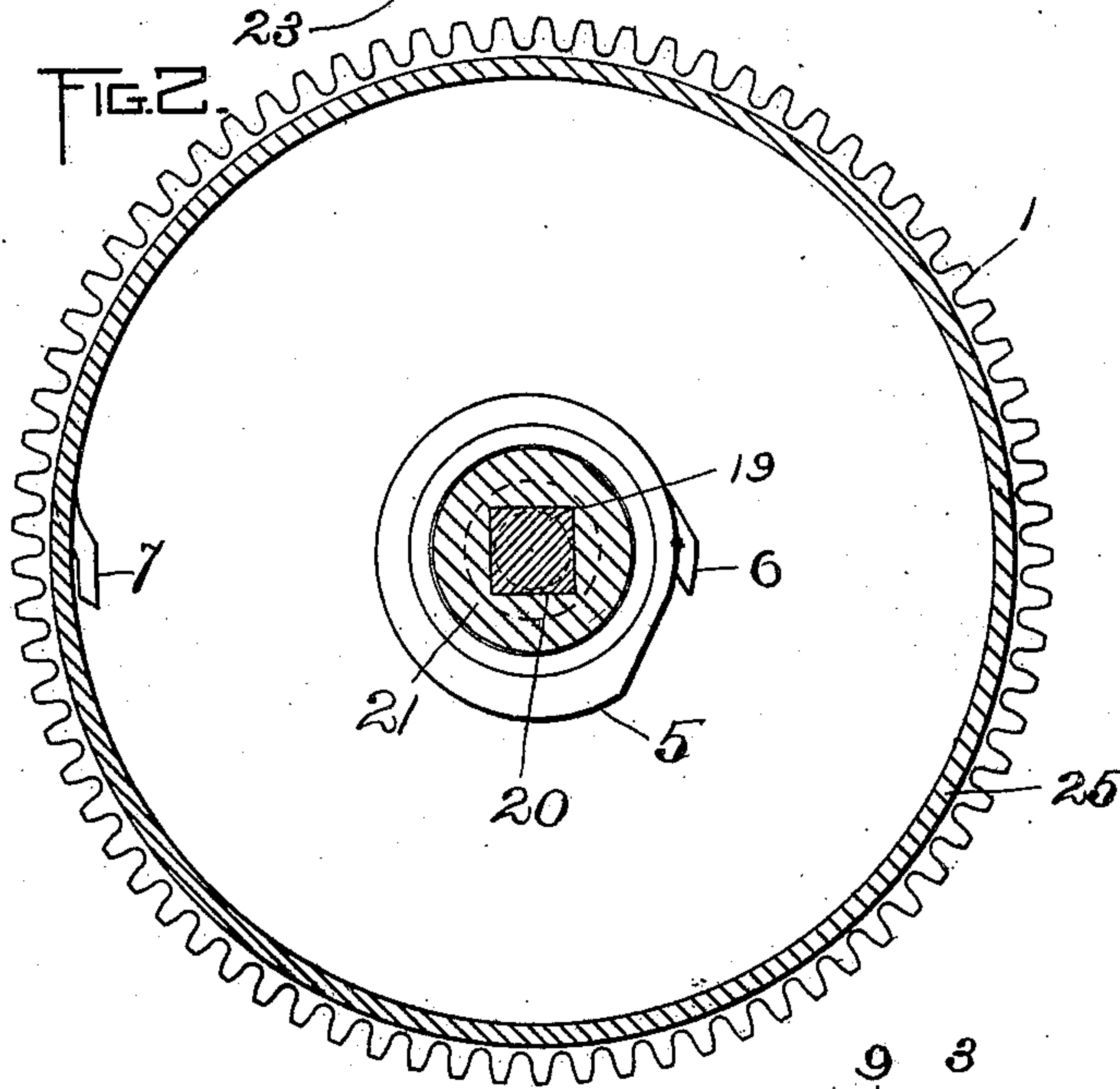
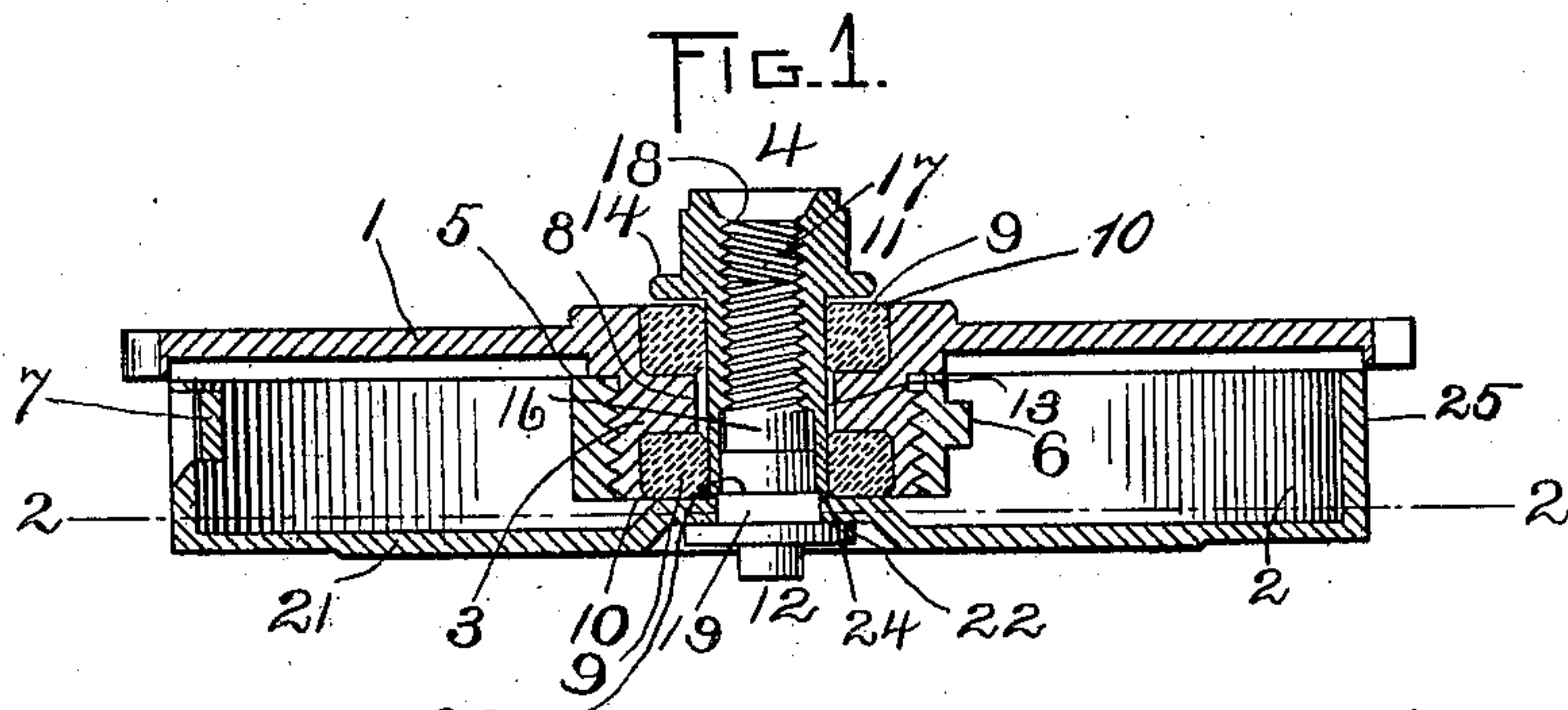
No. 677,689.

Patented July 2, 1901.

O. OHLSON.
WATCH BARREL.

(Application filed Nov. 28, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

OLOF OHLSON, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO THE
AMERICAN WALTHAM WATCH COMPANY, OF SAME PLACE.

WATCH-BARREL.

SPECIFICATION forming part of Letters Patent No. 677,689, dated July 2, 1901.

Application filed November 28, 1900. Serial No. 37,966. (No model.)

To all whom it may concern:

Be it known that I, OLOF OHLSON, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and
5 useful Improvements in Spring-Barrels for Watches, of which the following is a specification.

This invention relates to the construction of the mainspring-barrels and barrel-arbors of
10 timepieces or other forms of mechanism, particularly watches; and its object is to retain the arbor in endwise engagement with the barrel, such retention serving to prevent injury or wear of the complementary squares of
15 the arbor and barrel.

The invention also has for its object to provide for a jeweled bearing for the barrel-arbor.

The invention consists in certain novel features of construction and arrangement, which
20 I shall now proceed to describe and claim.

Of the accompanying drawings, Figure 1 represents an axial section of a mainspring-barrel, barrel-arbor, and main-wheel structure embodying my invention. Fig. 2 represents a section on line 2-2 of Fig. 1. Fig.
25 3 represents a detail perspective view of the main-wheel hub. Figs. 4 and 5 represent side elevations of the two arbor members detached.

The same reference characters indicate the
30 same parts in all the figures.

Referring to the drawings, 1 represents the main toothed or gear wheel of a watch-movement, and 2 represents a mainspring-barrel detached from said main wheel, the barrel
35 being shown in the drawings without its contained mainspring. The barrel 2 is composed of a bottom 21 and rim or flange 25. The main wheel 1 has a hub 3, provided with an axial hole 8, occupied by the arbor 4. A collar 5, which has a hook 6 for the attachment
40 of the inner end of the mainspring, is screwed on said hub, and the barrel 2 has a hook 7 for the attachment of the outer end of the mainspring.

45 The ends of the axial hole 8 of the main wheel are enlarged to receive two annular jewels 9 9, which form bearings for the arbor 4 and project inwardly beyond the walls of the hole 8, the jewels 9 being held in place
50 by turning the edges 10 10 over the corners of the jewels in the ordinary manner.

The arbor 4 is shown as composed of two members 11 12, the member 11 being shown in the form of a sleeve, having a cylindrical stem 13, constructed to properly fit the jewel
55 bearings 9 9, a flange 14 at the upper end of said stem, which overlies the main wheel 1 on the outside thereof, so as to limit the endwise movement of said wheel in the direction of the flange, and a squared end 15, adapted to
60 receive the winding-wheel. The member 12 has a stem 16, adapted to pass up into the sleeve 11, whose interior constitutes a socket for the stem 16, and the latter is provided with an external screw-thread 17, adapted
65 to engage an internal thread 18 formed in said socket, whereby the member 12 is separably or detachably secured to the member 11. To avoid overstrain on the parts, the screw-threads are preferably made double. The
70 member 12 is provided near its lower end with a squared portion 19, adapted to fit a complementary squared aperture 20, formed in the bottom 21 of the barrel 2, whereby the member 11 is locked to the barrel as respects ro-
75 tative movement, and below said squared portion 19 on the member 12 is a flange 22, overlying the barrel-bottom 21 on the outside thereof, whereby endwise movement of the barrel in the direction of said flange is limited. 80
The arbor member 11, immediately below its squared end 15, and the member 12, immediately below its flange 22, are provided with cylindrical journals adapted to fit bearings of the usual character in the movement-plates. 85

To attach the arbor, the member 12 is inserted in place and its square fitted to the square hole in the barrel-bottom and the member 11 is passed through its bearings in the main wheel 1 and screwed upon the stem 16
90 of the member 12 until the lower end of said member 11 abuts against the shoulder 23, formed by the upper termination of the squared portion 19. The lower end 24 of member 11 constitutes a shoulder or abutment, 95
which overlies the bottom 21 of the barrel on the inner side thereof, said head being confined between the flange 22 and shoulder 24. The whole main-wheel, drum, and arbor structure may then be handled as a unit without any
100 danger of disassembling of its parts. It will be noted that if the shoulder 24 were not pres-

ent in its described capacity the main-wheel and barrel structure would still be confined as to endwise movement between the flanges 14 and 22 on the arbor; but by confining the barrel-bottom between flange 22 and shoulder 24 the retention of the complemental squares on the drum and arbor in their proper engagement with each other is assured. Such retention may be said to be the main object of providing the described separable structure of the arbor, for heretofore it has been the practice to omit any equivalent of the flange 22 on spring-barrel arbors, and in handling the spring-barrel for the purpose of assembling it in the watch-movement the square on the arbor would frequently slip out of its aperture in the barrel-head and the structure would be assembled in the movement in this condition, thereby causing injury to the squares. Undue wear of the squares was also likely to occur where any considerable endwise displacement of the arbor with respect to the barrel-head was permitted. In my improved construction the direction of the screw-threads 17 18 is so related to the direction in which the arbor is rotated in winding that the winding movement tends to screw the members 11 12 of the arbor together.

Although the barrel-arbor is shown and described as being composed of two members, I do not limit myself to that specific number, as it is evident that the objects desired could be attained by forming the arbor from an additional number of pieces.

I claim—

1. A spring-barrel and main-wheel struc-

ture, and its arbor comprising two separable members having a threaded engagement, and each provided with a journal adapted to occupy a bearing in the movement.

2. A spring-barrel and main-wheel structure, and an arbor comprising two separable members having a threaded engagement and provided with flanges between which the said structure is held as to axial movement in both directions.

3. A spring-barrel, a main wheel detached therefrom, and an arbor consisting of separable members having flanges outside of said barrel and wheel whereby the arbor is retained in engagement with the barrel and wheel structure as to axial movement in both directions.

4. A main wheel, an arbor comprising two separable members having a threaded engagement and a barrel detached from the main wheel and having a bottom wall held between the two arbor members and non-rotatively engaged with the arbor.

5. A main wheel having an elongated hub provided with jeweled bearings at its ends, a barrel detached from said main wheel, and an arbor held in non-rotative engagement with said barrel and mounted to rotate in said bearings.

In testimony whereof I have affixed my signature in presence of two witnesses.

OLOF OHLSON.

Witnesses:

JOHN W. EKWALL,
E. A. MARSH.