

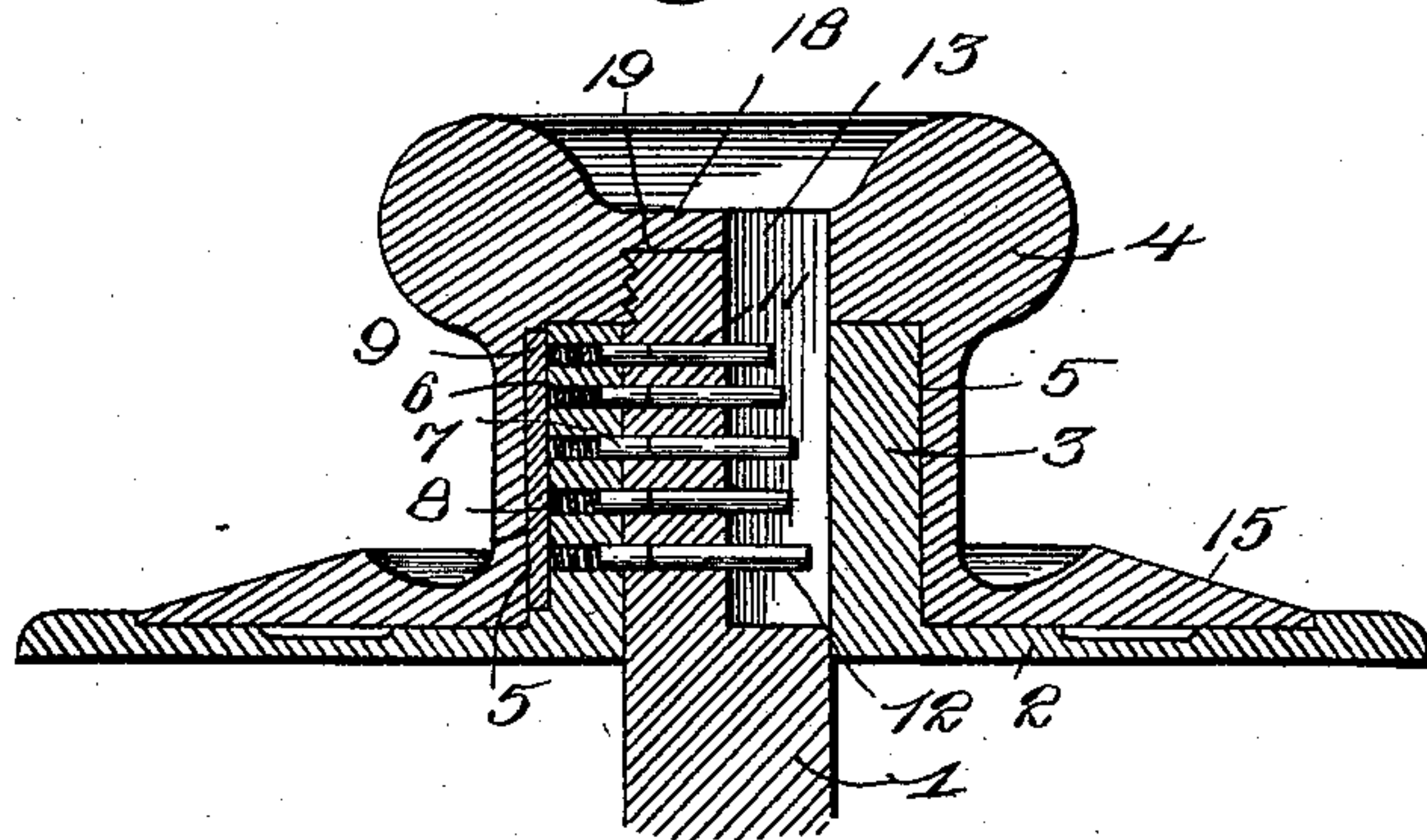
(No Model.)

T. F. OETJEN & V. FOURCHER.  
KNOB LOCKING DEVICE.

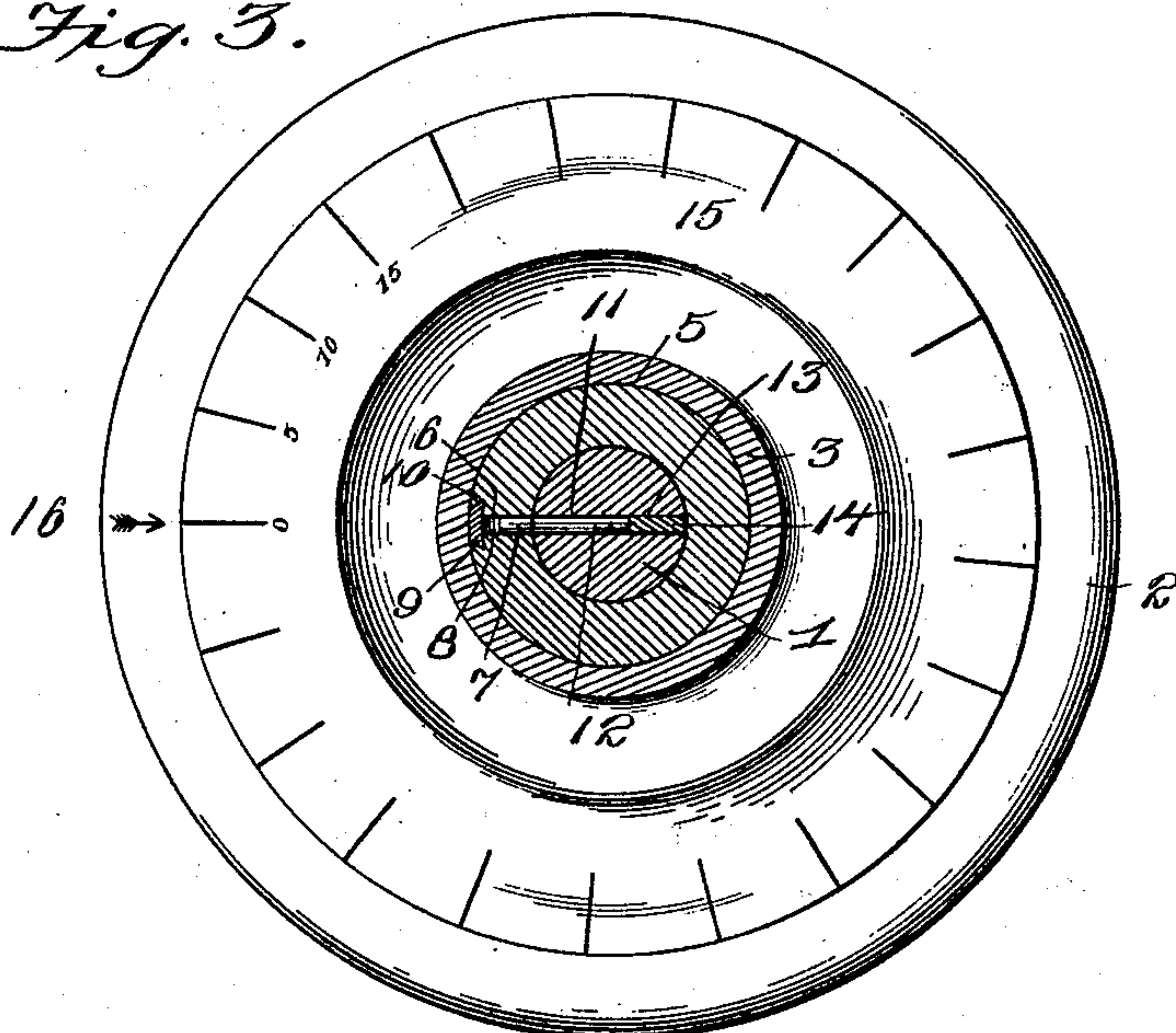
No. 589,021.

Patented Aug. 31, 1897.

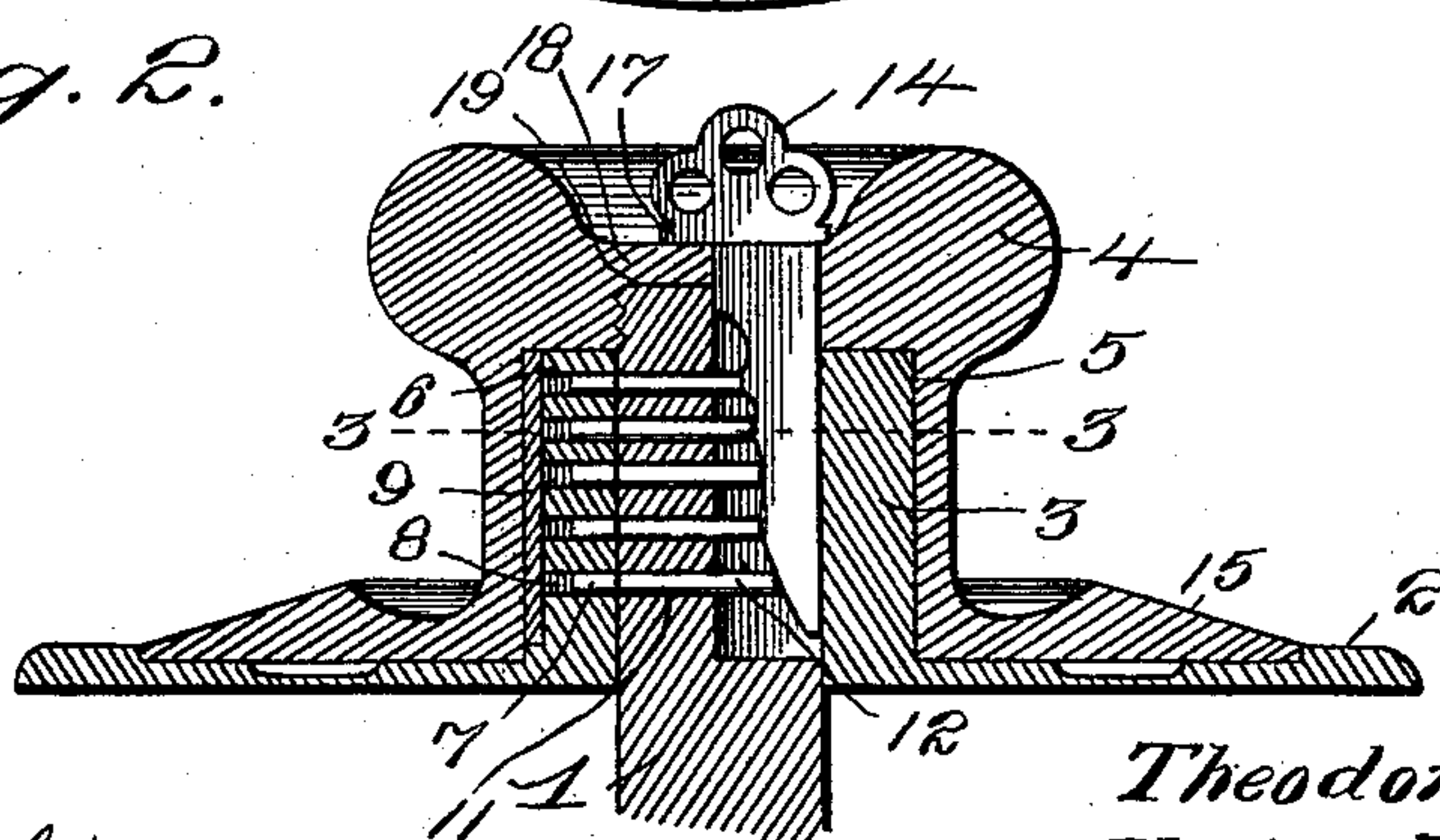
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



Witnesses

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# UNITED STATES PATENT OFFICE.

THEODORE F. OETJEN AND VICTOR FOURCHER, OF AUGUSTA, GEORGIA.

## KNOB-LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 589,021, dated August 31, 1897.

Application filed December 26, 1895. Serial No. 573,322. (No model.)

*To all whom it may concern:*

Be it known that we, THEODORE F. OETJEN and VICTOR FOURCHER, citizens of the United States, residing at Augusta, in the county of Richmond and State of Georgia, have invented a new and useful Knob-Locking Device, of which the following is a specification.

Our invention relates to knobs for combination-locks and similar devices, and has for its object to provide a simple and efficient locking device for such knobs, whereby when not in use the knobs are fixed against movement and can be released only by special manipulation, as by the use of a special key or its equivalent.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is an axial section of a knob constructed in accordance with our invention with the parts shown in the locking position. Fig. 2 is a similar view showing a key in place and the locking device repressed to allow rotary movement of the knob. Fig. 3 is a transverse section on the line 3 3 of Fig. 2.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the spindle of a lock, mounted for rotation in a suitable opening in a fixed plate 2, said plate having a sleeve 3, and 4 represents a knob which is rigidly secured to the outer extremity of the spindle and is provided with a cavity 5 to receive the sleeve 3.

Mounted in transverse radial seats 6 in the fixed sleeve 3 are spring-actuated locking-pins 7, the actuating-springs 8 being arranged in contact with the outer ends of said locking-pins and bearing at their outer extremities against a removable stop-plate 9. In the construction illustrated this stop-plate is dovetailed in cross-section and is fitted in a corresponding groove 10, formed in the outer surface of the sleeve 3, said stop plate or slide being covered by the barrel or cylindrical portion of the knob.

Mounted in radial seats 11 in the spindle, in planes corresponding with the planes of

the locking-pins, are tumbler rods or pins 12 of different lengths, all of said seats 11 communicating with a key-socket 13, adapted for the reception of a key 14, which is shown in operative position in Fig. 2. This key may be of any suitable configuration to cause such relative projection or movement of the tumbler rods or pins as to bring their outer extremities flush with the surface of the spindle, and this outward movement of the tumbler-pins, by reason of the alinement of the seats 11 with the pins 7, causes the repression of the locking-pins against the tension of their actuating-springs 8 until the inner extremities of said locking-pins are likewise flush with the surface of the bore of the sleeve 3. Hence when the key is in position in the socket provided for its reception the locking-pins 7 are held out of engagement with the sockets 11 and the knob and spindle are free to rotate in adjusting the combination of the lock of which said spindle forms a part. When, however, the key is withdrawn, the locking-pins are extended by their actuating-springs into engagement with the seats 11 and the knob and spindle are thereby locked against rotary movement and manipulation of the combination-lock is prevented.

The knob may be provided with the usual graduated flange or dial 15, adapted to cooperate with a fixed index 16 on the stationary plate 2, but this portion of the mechanism has no bearing upon our invention, inasmuch as the improved knob-attaching device may be employed in connection, as above indicated, with the spindle of the combination-lock mechanism, or in connection with any other lock or latch spindle or arbor to provide for communicating rotary motion to a spindle forming a member of the lock or latch mechanism, or lock said knob and spindle against rotary movement to prevent tampering with the lock or latch except when the proper key is inserted to adjust the tumblers, as above described. The insertion of the key is limited by the contact of shoulders 17 thereon with the outer wall 18 of the countersink or counterbore 19, in which the extremity of the spindle is secured.

It will be understood that in operation the



insertion of the key in the kerf or seat provided for its reception causes the longitudinal movement of the tumbler-pins to repress the locking-pin out of engagement with the  
5 seats of the spindle, and as said tumbler-pins are of unequal length a key of irregular configuration is necessary in order to move each tumbler-pin the exact distance necessary to disengage the locking-pin in alinement with  
10 which it is mounted. The movement of a tumbler-pin through a less distance than that above specified by the use of the wrong key will leave the alined locking-pin still in engagement with the seats of both the sleeve  
15 and the spindle, and in the same way the movement of a tumbler-pin through too great a distance will cause it to project into the seat of the alined locking-pin, and thus cause the tumbler-pin to operate as a lock to prevent independent movement of said parts.  
20 The locking and tumbler pins are of equal cross-sectional area, and either is adapted to fit in a seat of the other, whereby a nice adjustment of the tumbler-pins by means of the  
25 key provided for the purpose is necessary in order to release the spindle.

The construction of the apparatus as above described is such that if strained by violent twisting the cylindrical portion of the knob  
30 will twist off and become detached before the pins will be sheared.

The improved knob may be applied to any safe of the ordinary construction in place of the usual form employed in connection there-  
35 with.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit

or sacrificing any of the advantages of this invention. 40

Having described our invention, what we claim is—

1. The combination with a spindle and a fixed inclosing sleeve having registering seats, and spring-pressed locking tumbler-pins  
45 mounted in the registering seats, of a hollow knob fixed to the outer extremity of the spindle and having a cylindrical inwardly-extending portion inclosing and concealing said sleeve, substantially as specified. 50

2. The combination with a spindle, of a fixed sleeve surrounding and fitting said spindle, said spindle and sleeve being provided with registering transverse seats, a longitudinal cross-sectionally dovetailed stop-plate  
55 slidably fitted in a seat formed in the outer surface of the sleeve in communication with the transverse seats, and adapted to close the outer extremities of said transverse seats, locking and tumbler pins mounted in the  
60 transverse seats, the actuating-springs of the locking-pins being seated at their outer ends against said stop-plate, and a hollow knob fixed to the outer extremity of the spindle and having an inwardly-extending cylindrical portion fitting and inclosing said sleeve  
65 and concealing the stop-plate, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures  
70 in the presence of two witnesses.

THEODORE F. OETJEN.  
VICTOR FOURCHER.

Witnesses:

JOHN S. WHITE,  
H. E. FOURCHER.