

(No Model.)

2 Sheets—Sheet 1.

C. B. HILLHOUSE & H. F. PARKER.

LOCK FOR VELOCIPEDES.

No. 583,905.

Patented June 8, 1897.

Fig. 9. Fig. 10. Fig. 11.

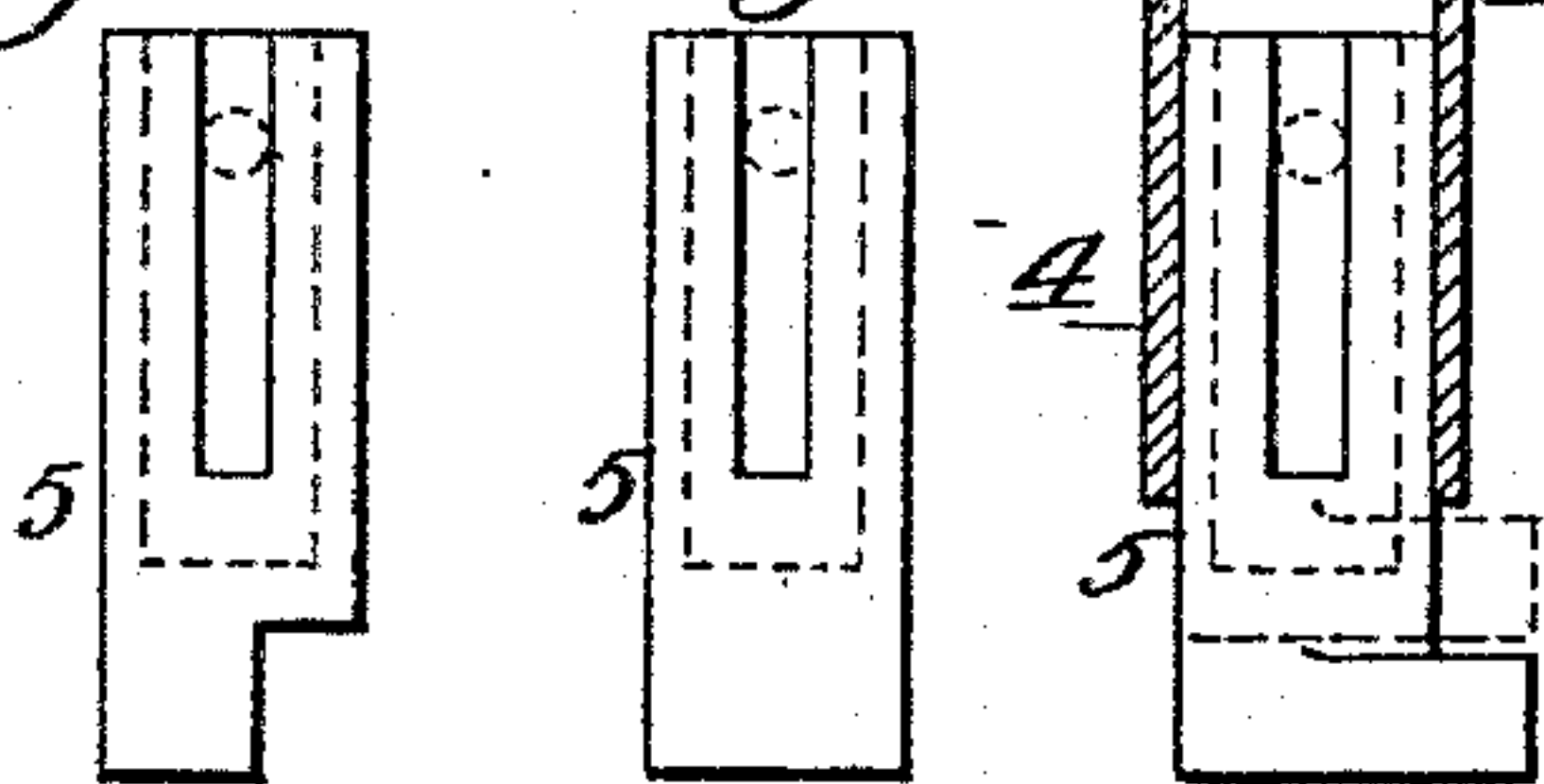


Fig. 12. Fig. 13. Fig. 14.

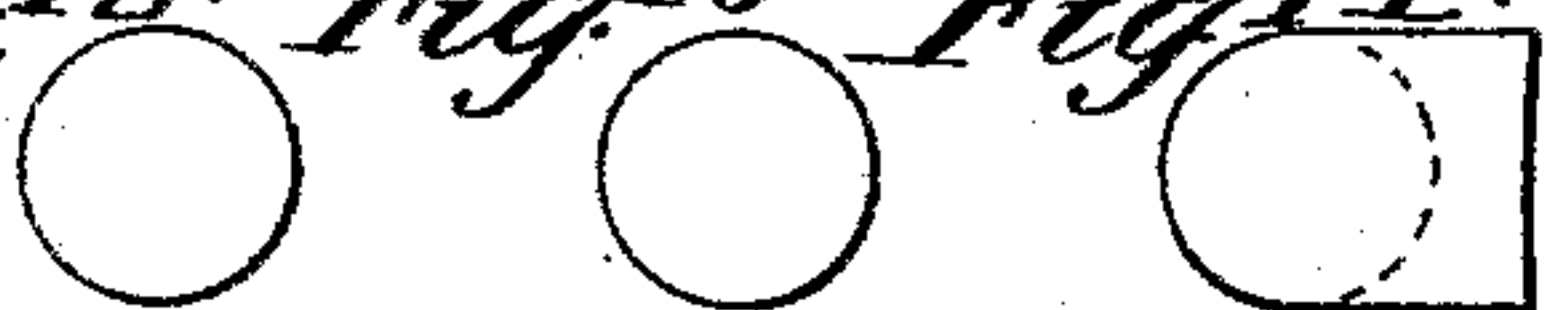


Fig. 15.

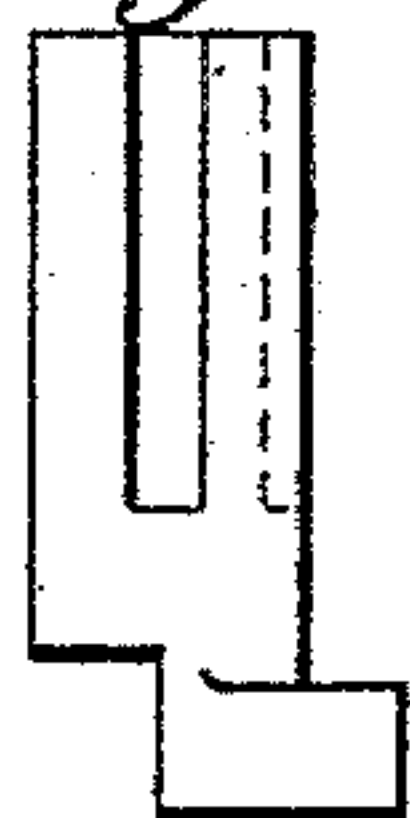


Fig. 2.

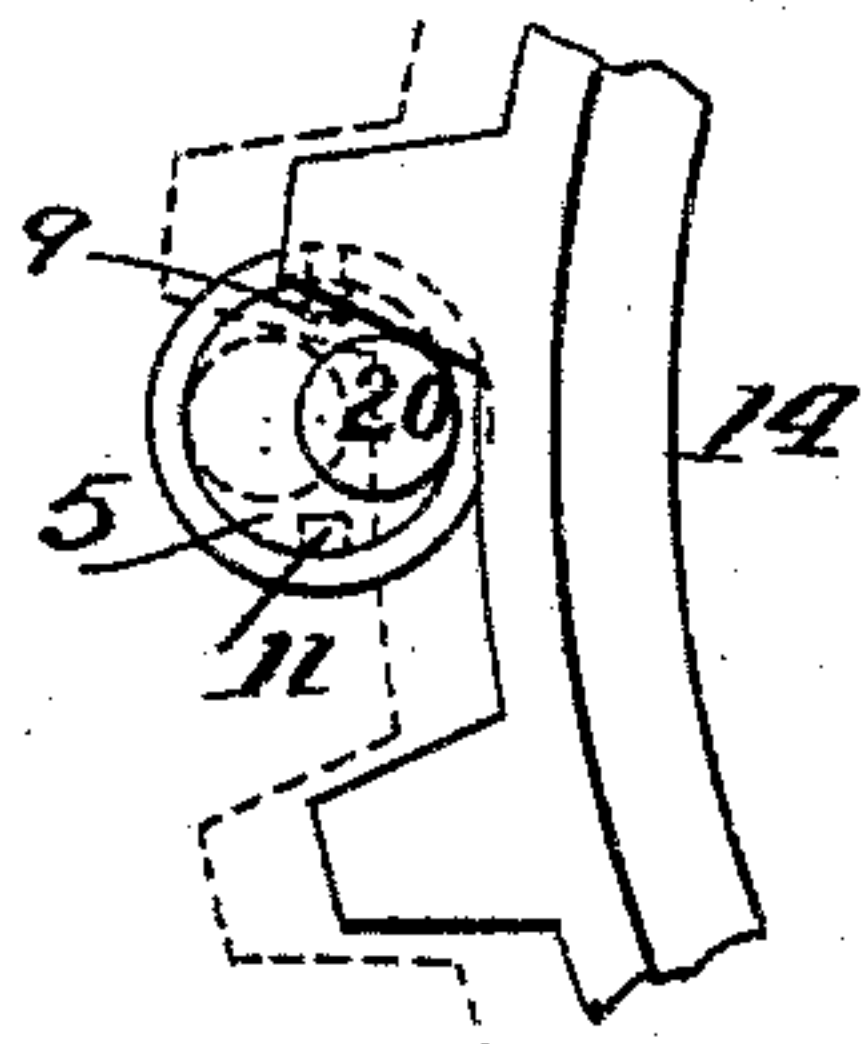


Fig. 16.

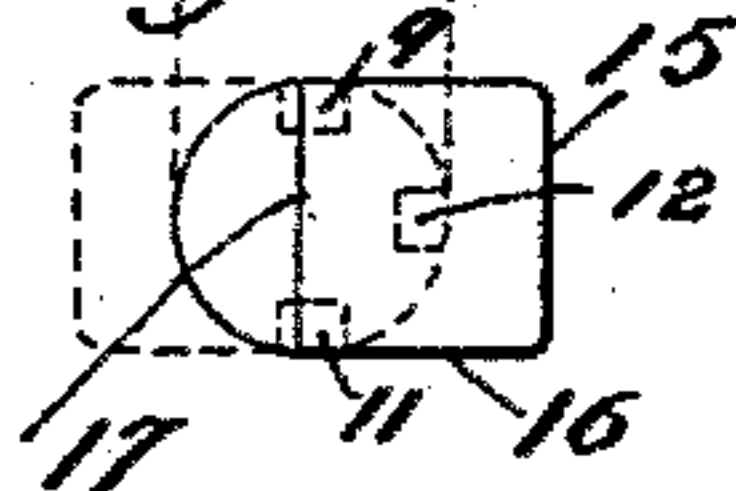


Fig. 1.

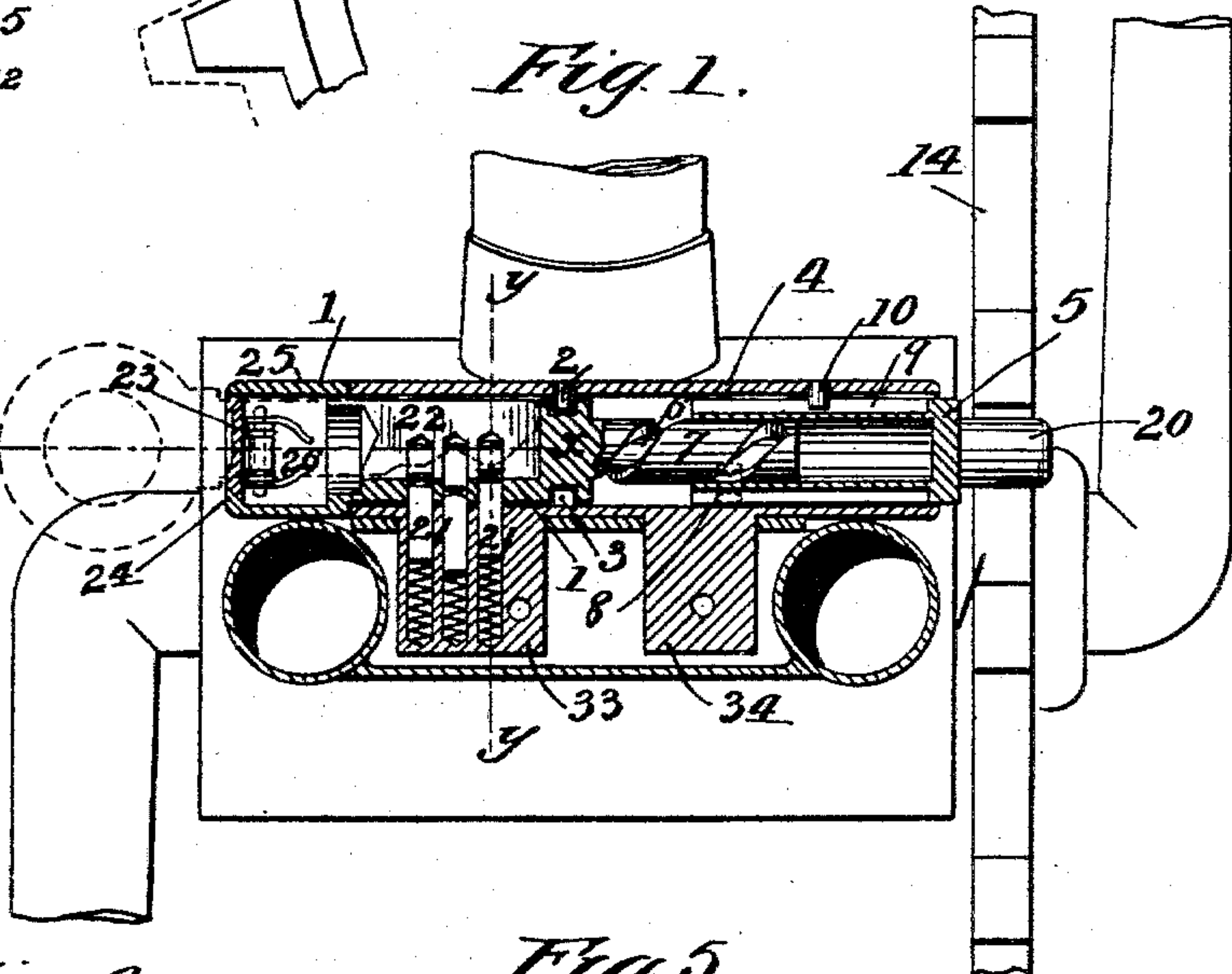


Fig. 6. Fig. 7. Fig. 8.

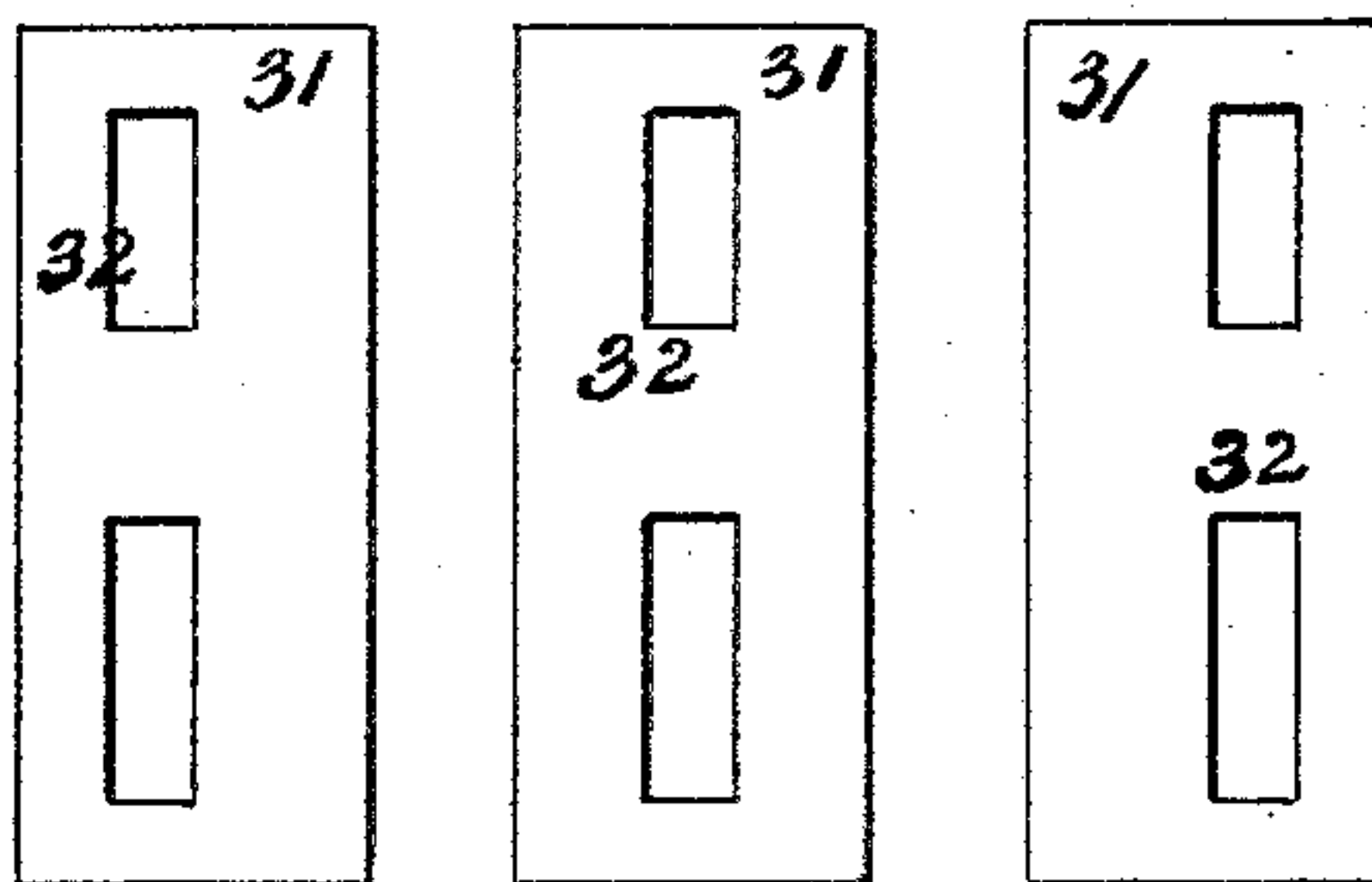


Fig. 3.

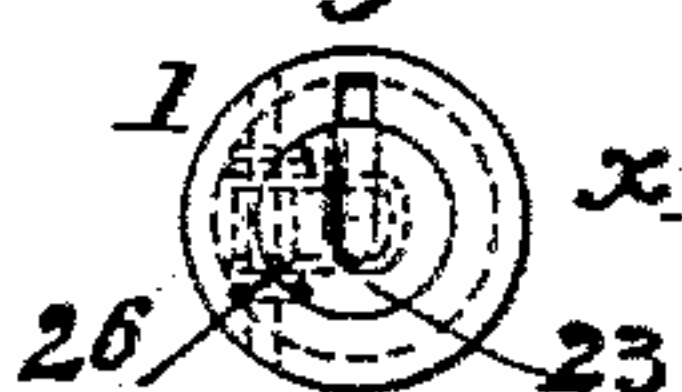


Fig. 4.

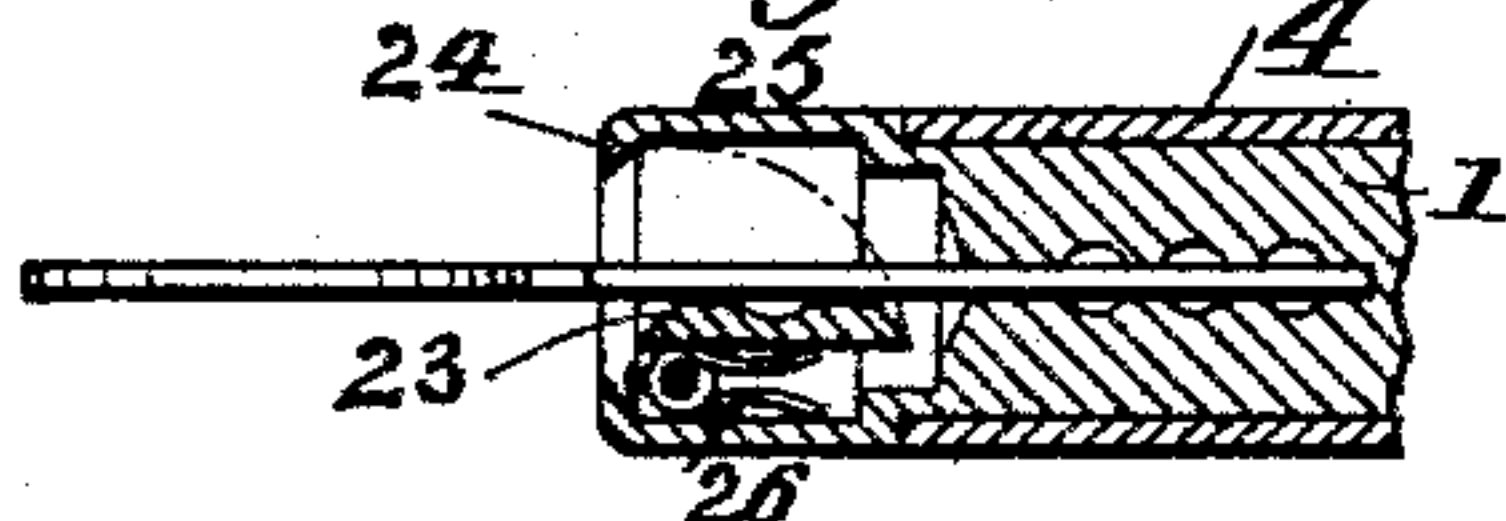
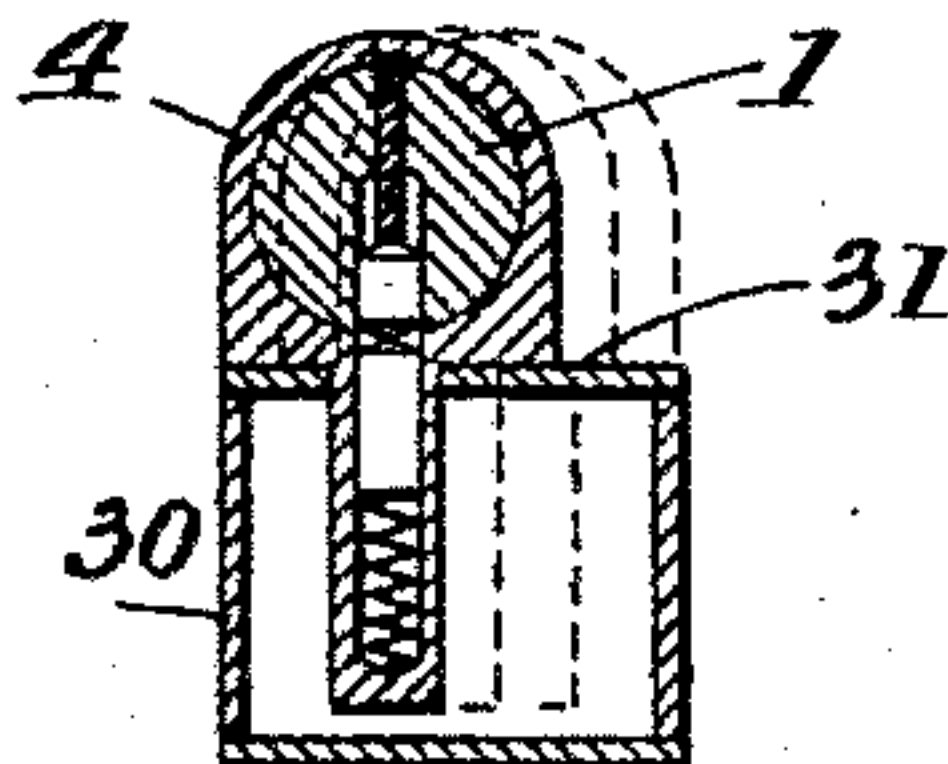


Fig. 5.



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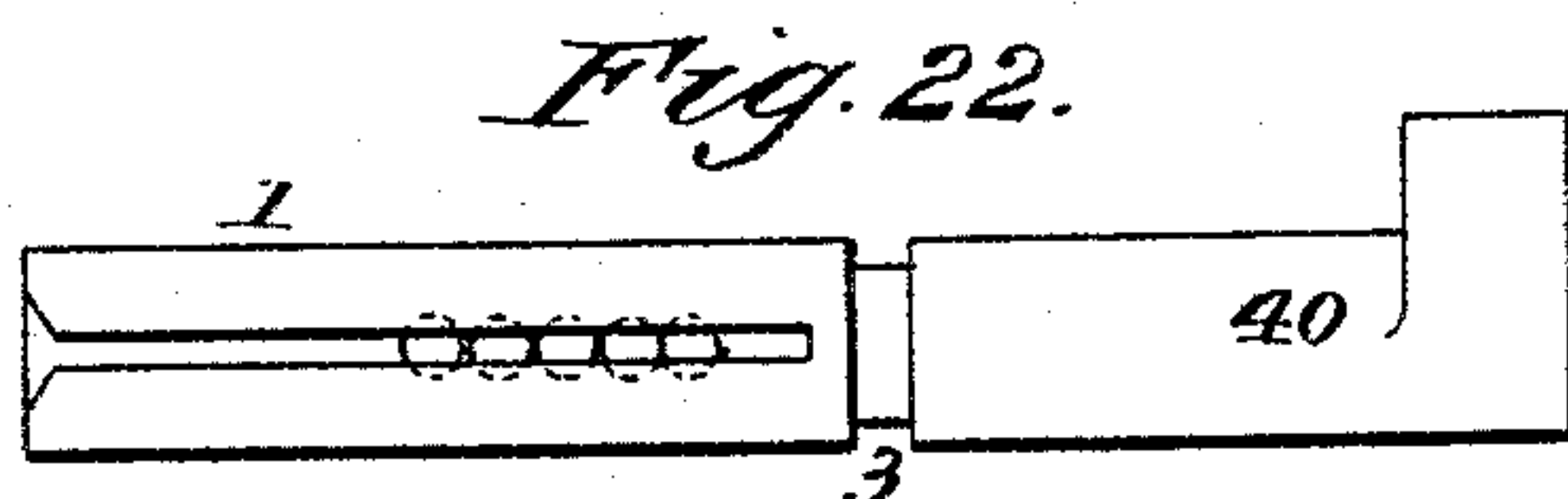
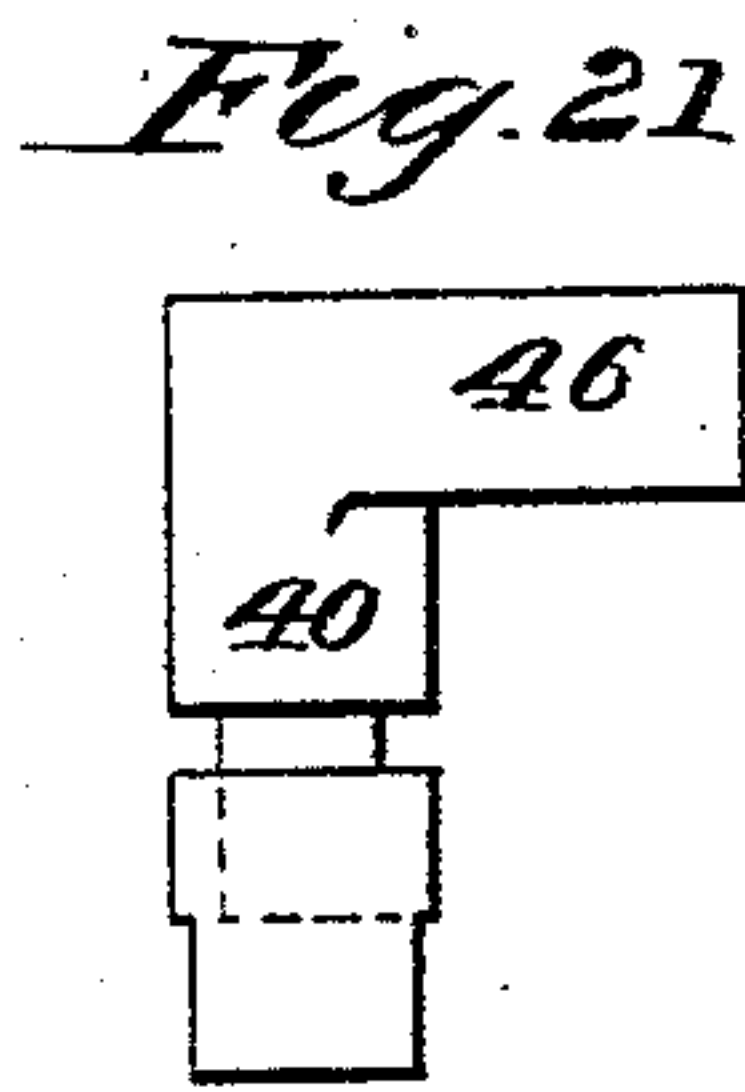
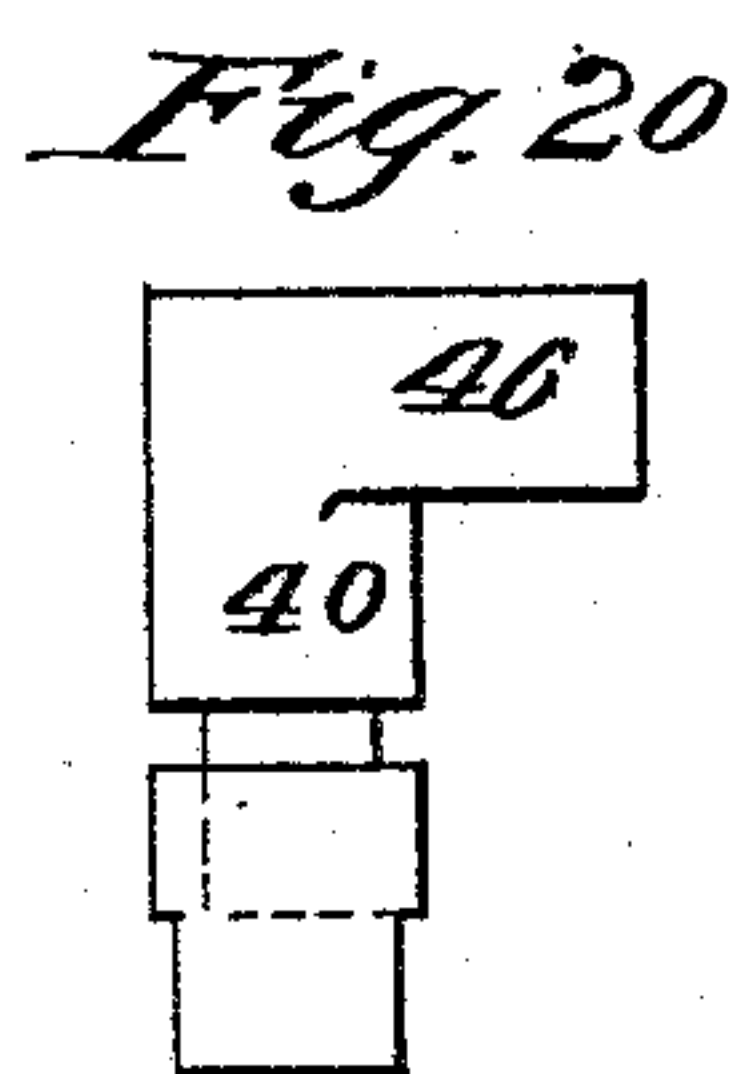
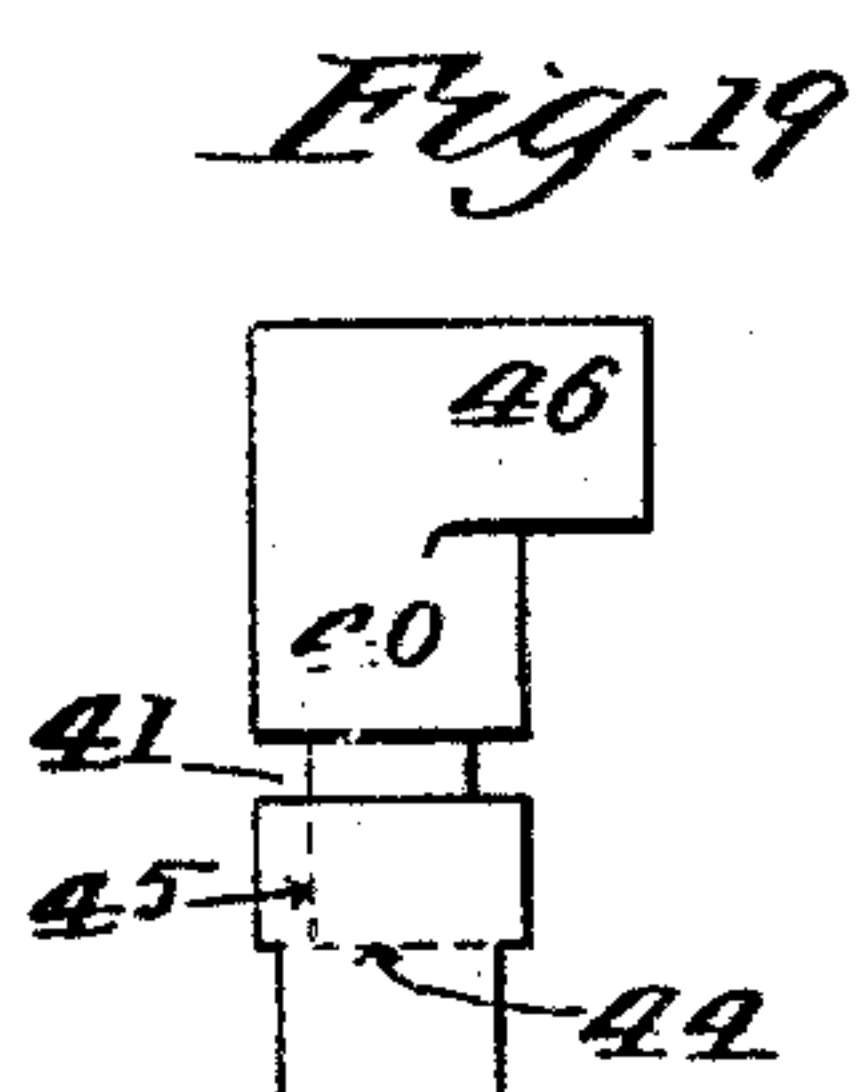
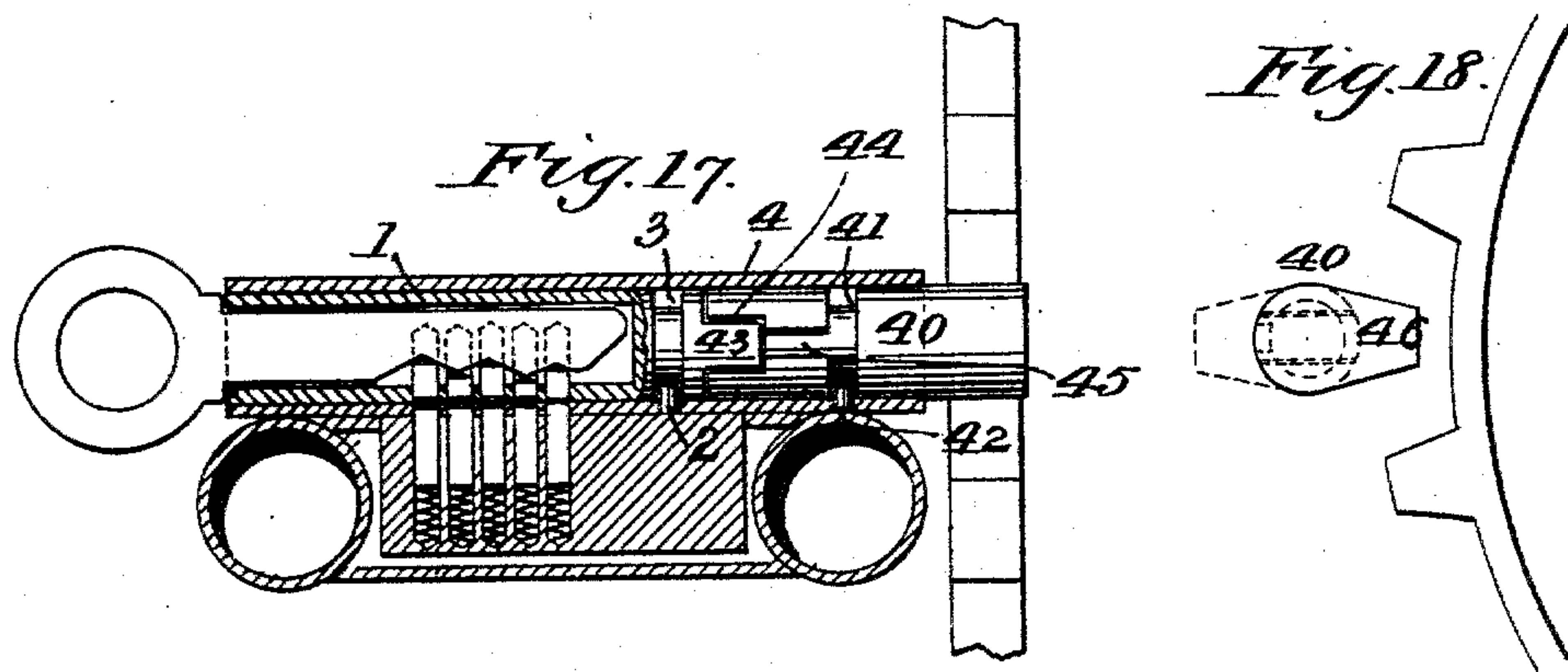
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LOCK FOR VELOCIPEDES.

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UNITED STATES PATENT OFFICE.

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LOCK FOR VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 583,905, dated June 8, 1897.

Application filed February 21, 1896. Serial No. 580,192. (No model.)

To all whom it may concern.

Be it known that we, CHARLES B. HILLHOUSE, residing at the city, county, and State of New York, and HENRY F. PARKER, residing at the city of Brooklyn, county of Kings, and State of New York, citizens of the United States, have invented certain new and useful Improvements in Locks for Velocipedes, of which the following is a specification.

Our invention relates to improvements in that class of locks which are designed to prevent the unauthorized use of bicycles or other velocipedes and which are incorporated in the frame of the machine.

The aim of this invention is to adapt the arrangement of lock-bolt set forth in the patent of Georgiana R. Hillhouse, No. 554,222, to fit all sizes of sprocket-wheels.

To this end the invention consists in certain novel features hereinafter pointed out in the appended claims.

Referring to the drawings, Figure 1 is a transverse sectional elevation through the rear lower brace, showing a portion of the frame of a bicycle and the lock in section. Fig. 2 is an end view at the bolt end, and Fig. 3 is an end view of the lock end, of Fig. 1. Fig. 4 is a horizontal section at $x x$, Fig. 1. Fig. 5 is a cross-section at $y y$, Fig. 1. Figs. 6, 7, and 8 are detail plan views of plates that may be substituted for one another in Fig. 5. Figs. 9, 10, and 11 are plan views of different bolts that may be substituted for one another in Fig. 1; and Figs. 12, 13, and 14 are end views, respectively, of Figs. 9, 10, and 11. Fig. 15 is a plan view, and Fig. 16 an end view, of a single bolt combining the features of Figs. 9, 10, and 11. Fig. 17 is a sectional elevation of a lock having an oscillating or rotary bolt in lieu of a reciprocating one and having the feature of offset bolt-head applied thereto similarly as in the preceding figures. Fig. 18 is an end view of Fig. 17. Figs. 19, 20, and 21 show plan views of different bolts that may be substituted in Fig. 17 to fit different sizes of sprocket-wheels. Fig. 22 shows the bolt and cylinder in one piece, the whole being rotary.

The rotary cylinder 1, Fig. 1, guided by pin

2 in groove 3 in the case 4, actuates the bolt 5 longitudinally by means of the screw-thread or spiral groove 6 on the shank 7 or extension of the cylinder by engagement with a pin 8 in the bolt, while the bolt is guided by its groove 9 receiving the pin 10 of the case 4. Grooves 11 12 may also be added, and these grooves extend to open at the inner end of the bolt, and the thread 6 opens at the extremity of the shank 7, so that the bolt 5 may be screwed off and others substituted by rotating the cylinder 1 far enough beyond its normal rotation in locking and unlocking the bolt with the sprocket-wheel 14.

Separate bolts may be used for different-sized sprocket-wheels, as illustrated in Figs. 9 to 14, inclusive. A single bolt, however, may perform the same service, constructed as in Figs. 15 and 16, with surfaces 15 16 17 at different distances from the axis of the bolt and grooves 9 11 12 at three sides, either of which may engage with the pin 10, Fig. 1.

The preferred form of construction for a single bolt is illustrated in Figs. 1 and 2. This has two adjustments, which is deemed usually sufficient, and, as indicated by dotted lines in Fig. 2, may be set with the eccentric end 20 near or far from the wheel 14, according to size of "gear" used. Two grooves are provided at 9 and 11 for engagement with the pin 10. The feature of the preferred form thus shown is that the eccentricity of the head 20 is kept within the diameter of the body of the bolt, and the case 4 may thereby extend out as far as shown in Fig. 1, the bolt retiring fully within the same when drawn back.

The pin-tumblers 21 are actuated by the insertion of the key into the keyhole 22 in the manner usual to pin-tumbler cylinder-locks, and by a complete rotation of the cylinder 1 the bolt 5 is locked in and locked out.

To prevent access of dust, &c., a self-closing lid 23, Figs. 1, 3, and 4, is pivoted, closing outward against the jamb 24 within the enlarged extension 25 of the cylinder by means of a spring 26. The end of the key will press the lid open while entering, as shown in Fig. 4.

In order to further promote the range of

adjustment of the bolt toward and from the wheel 14, the lock-case 4 may be mounted on a cross-brace 30, having an interchangeable top plate 31, each of a series having differently-located slots 32, as illustrated in Figs. 6, 7, and 8, for the reception of the lugs 33 34, by means of which the case is suitably secured to the said brace.

In Fig. 17 the cylinder 1 is rotatively guided by its groove 3 on the pin 2, as before described, but the bolt 40 is also rotative and guided by its groove 41 on the pin 42 in the case 4. The bolt 40 is connected to the cylinder 1 by the tongue-and-mortise connection 43 44, and a longitudinal outlet-groove 45 is provided which coincides with the pin 42 when the bolt is rotated to an abnormal position, so that the bolt may be removed and others having different dimensions of offsets 46, Figs. 19, 20, and 21, may be substituted to suit different-sized gears. In Fig. 18 the offset is shown in its locked position and the dotted lines represent its unlocked position. When a wheel is sent out with size of gear to order, a proper bolt selected from different sizes may be inserted, constructed as in Fig. 22, integral with the cylinder.

Having thus fully described our invention,

what we claim, and desire to secure by Letters Patent, is—

1. In a bicycle, the combination with a sprocket-wheel interchangeable for wheels of different diameters, of a lock-bolt having an eccentric engaging-head and means of adjusting said head so as to present different engaging surfaces to the wheel when in a locked position, whereby said bolt may be used to engage the peripheries of wheels of different diameters.

2. In a locking mechanism, a bolt having a removable head provided with a formation for engaging a surface lateral to the axis of the bolt, said head having a tongue-and-groove engagement with the surrounding lock-case, the groove part of which is open at one end to allow the tongue to slide out when the bolt is thrown to an abnormal position and the head to be removed from the bolt, thereby allowing one bolt-head to be interchanged for another of different formation.

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Witnesses:

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