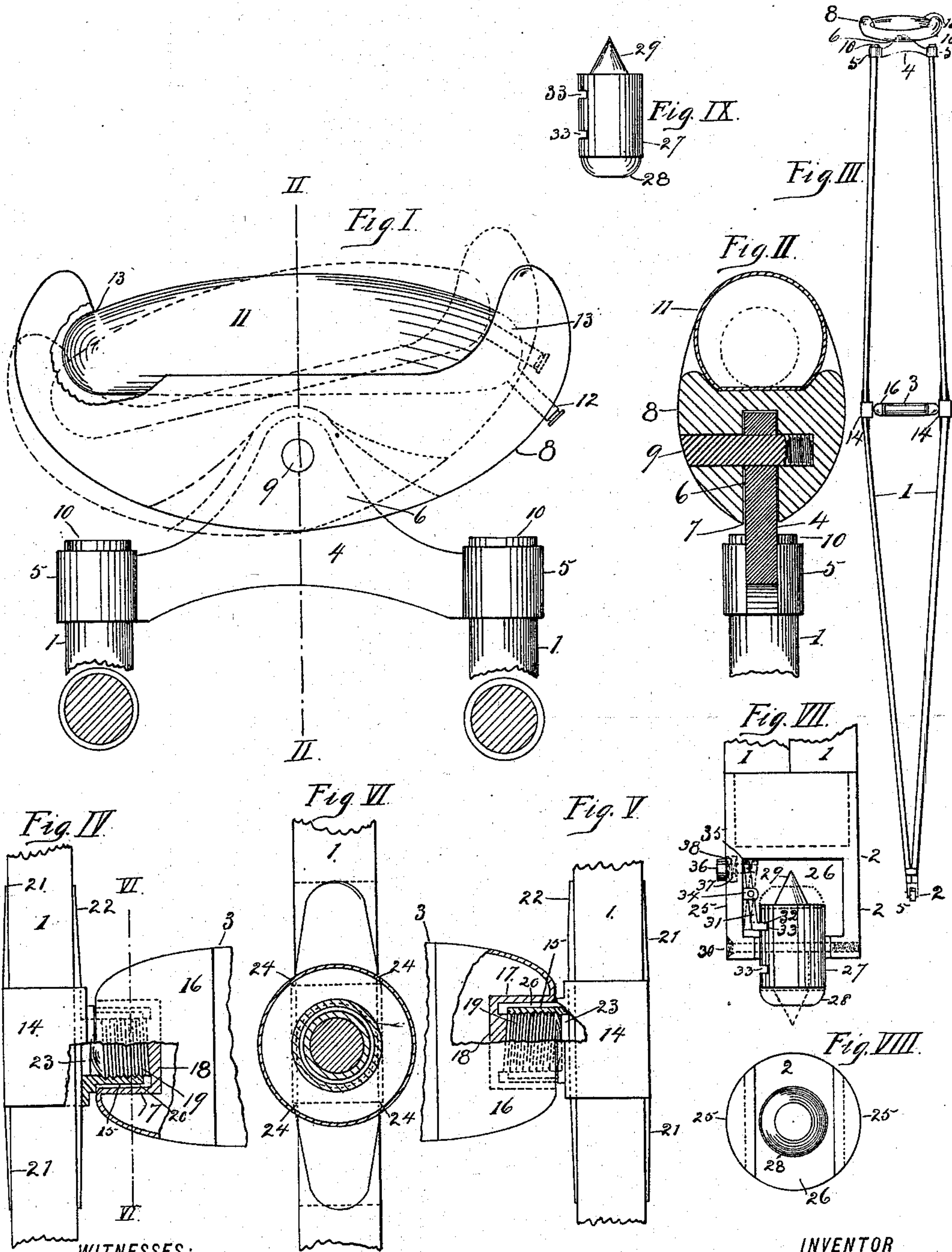


(No Model.)

F. A. LUND.
CRUTCH.

No. 562,333.

Patented June 16, 1896.



WITNESSES:

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CRUTCH.

SPECIFICATION forming part of Letters Patent No. 562,333, dated June 16, 1896.

Application filed January 2, 1896. Serial No. 574,099. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK A. LUND, of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Crutches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in walking-crutches; and it consists in certain features of novelty hereinafter described and claimed.

Figure I is a detail view of top of crutch, showing movement of oscillating arm-rest. Fig. II is a vertical section taken on line II II, Fig. I. Fig. III represents the crutch in elevation. Fig. IV is a detail view of one of the standards, showing one end of the adjustable hand-rest secured thereto. Fig. V represents the opposite standard with the opposite end of hand-rest secured thereto. Fig. VI is a section taken on line VI VI, Fig. IV. Fig. VII is a detail view of bottom of crutch, showing reversible foot-piece with elastic plug and spur. Fig. VIII is a bottom view of crutch. Fig. IX is a detail showing reversible foot-piece.

Referring to the drawings, 1 represents the standards forming the body of the crutch. The standards join each other at the bottom and are secured in the socket of a ferrule 2.

3 represents the hand-rest interposed between the two members of the standards, and 4 a metal bracket having ferrules 5 on its ends in which the upper ends of the standards are secured. The bracket 4 is formed on its upper side into a flattened cone-shaped extension 6, which fits into a corresponding recess 7 on the under side of the arm-rest 8, the arm-rest being secured to the extension by a central screw or pin 9. The recess 7 is made somewhat larger than the extension, so as to permit of a rocking or oscillating movement of the arm-rest, as shown in dotted lines, Fig. I, so that as the crutch swings the arm-rest remains stationary in its contact with the arm.

The oscillating movement of the arm-rest,

or rather of the body of the crutch, is limited at the proper point by the arm-rest coming in contact with elastic plugs 10, secured in the ferrules 5, the movement being thus arrested without jar to the user of the crutch.

The arm-rest, which has the proper curvature on its upper side to fit the arm, is provided with a pneumatic cushion 11, having a tube 12 extending through a portion of the arm-rest, through which the cushion may be inflated. The arm-rest is hollowed out into pockets 13 at each of its ends for the reception of the ends of the cushion, the cushion being thus held in its place on the arm-rest, the inflating of the cushion fixing it more firmly in the pockets.

As the pneumatic cushion gradually loses the air forced out under pressure, and thus the length of the crutch is slightly altered, I have found it desirable to provide a hand-rest that is adjustable vertically, the construction of which I will now describe.

14 represents sleeves placed on the standards of the crutch and which are adapted to move vertically on the standards (speaking of the crutch being in an upright position.)

15 represents collars on the inside of the sleeves, said collars being provided on their inner sides with sockets having right and left screw-threads.

The central portion of the hand-rest 3 is formed of cork or other suitable material to form a good grasp for the hand, the hand-piece having metallic caps 16 mounted upon its ends, said caps having central circular cones formed of an outer ring 17, having its side walls extending parallel with the length of the hand-rest, the ring being closed on its inner end by a section 18.

19 represents right and left threaded bolts extending outwardly from the section 18, said bolts extending a short distance beyond the ends of the caps 16, there being an annular recess 20 between the bolts 19 and the inside of the ring 17.

The sleeves 14 are provided on their outer side with integral plates 21, and on their inside with movable plates 22, said plates extending lengthwise of the standards 1, thus

forming an elongated bearing distributed over considerable surface.

23 represents an elastic disk placed within the collars 15 to form an elastic bearing between the movable plate 22 and the inner ends of the bolts 19.

In securing the hand-rest to the standards 1, the movable plates 22 are first inserted in the sleeves 14 and the sleeves are passed over the ends of the standards and slid along to their proper position, the hand-rest being then secured to the collars 15 by screwing the right and left threaded bolts 19 into the internal-threaded collars 15, the free ends of the collars extending into the annular recess 20 and the ends of the bolts coming in contact with the elastic disks 23, the movable plate 22 being forced against the inner sides of the standards, and the outer integral plates and the outer portion of the sleeves themselves being drawn tightly against the outer sides of the standards, thus effectually clamping the standards and holding the hand-rest at any desired position. The position of the hand-rest is quickly changed at will by unscrewing the same a sufficient distance to loosen the plates and sleeves, adjusting them to suit, and then screwing the hand-rest up again.

By locating the bolts 19 in a recess in the caps, I am enabled to form an adjustable hand-rest that leaves no sharp corners or parts exposed that might chafe or injure the hand.

The movable plates 22 are made slightly wider, as shown at 24, than the inner diameter of the sleeves 14, so that said plates cannot slip out of their position in the sleeves while the sleeves remain on the standards.

The ferrule 2 at the lower end of the crutch is provided with legs 25, leaving a central aperture 26. 27 represents a reversible foot-piece having an elastic plug 28 at one of its ends and a spur 29 at its opposite end. The foot-piece 27 is pivoted to the legs 25 by a pin or screw 30. 31 represents a locking-lever having a lug 32 at one of its ends, said lug engaging either one desired of two notches 33 in the foot-piece 27. Thus either the elastic plug or the spur may be quickly set in position to use at the will of the user, according to the surface over which he may be walking.

The locking-lever 31 is pivoted to one of the legs 25, as shown at 34.

35 represents a pin on the opposite end of the locking-lever, said pin extending through the leg, and is provided with an enlarged outer end 36, forming a thumb-piece.

37 represents a coil-spring surrounding the pin 35, said spring being located in a recess 38 in the leg and having its outer end in contact with the thumb-piece 36, the locking-lever being thus normally held in engagement with the foot-piece.

I claim as my invention—

1. In a crutch the standards connected at their upper ends by a bracket having a flat cone-shaped extension, in combination with an arm-rest having a recess into which the extension on the bracket extends, said extension having pivotal connection near its apex with the arm-rest, substantially as set forth.

2. In a crutch the combination of the standards, the movable sleeves on the standards, screw-threaded collars on the sleeves, movable clamping-plates, a hand-rest, caps on the ends of the hand-rest, cores set within the ends of the caps, right and left threaded bolts on said cores adapted to engage the threaded collars and annular recesses surrounding the bolts into which the collars extend, substantially as set forth.

3. In a crutch the combination, of the body of the crutch, a ferrule on the lower end, a reversible foot-piece journaled to the ferrule, notches in the foot-piece, and a locking-lever adapted to engage said notches and lock the foot-piece, substantially as set forth.

4. In a crutch the combination of the body of the crutch, a ferrule on the lower end of the body, legs on the ferrule, a foot-piece pivoted to the legs and adapted to turn between the same, notches on the foot-piece, a locking-lever fulcrumed to one of the legs, a lug on the lever adapted to engage the notches, a pin on the opposite end of the lever, a thumb-piece on the outer end of the pin and a spring adapted to hold the lever in engagement with the reversible foot-piece, substantially as set forth.

FREDRICK A. LUND.

Witnesses:

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