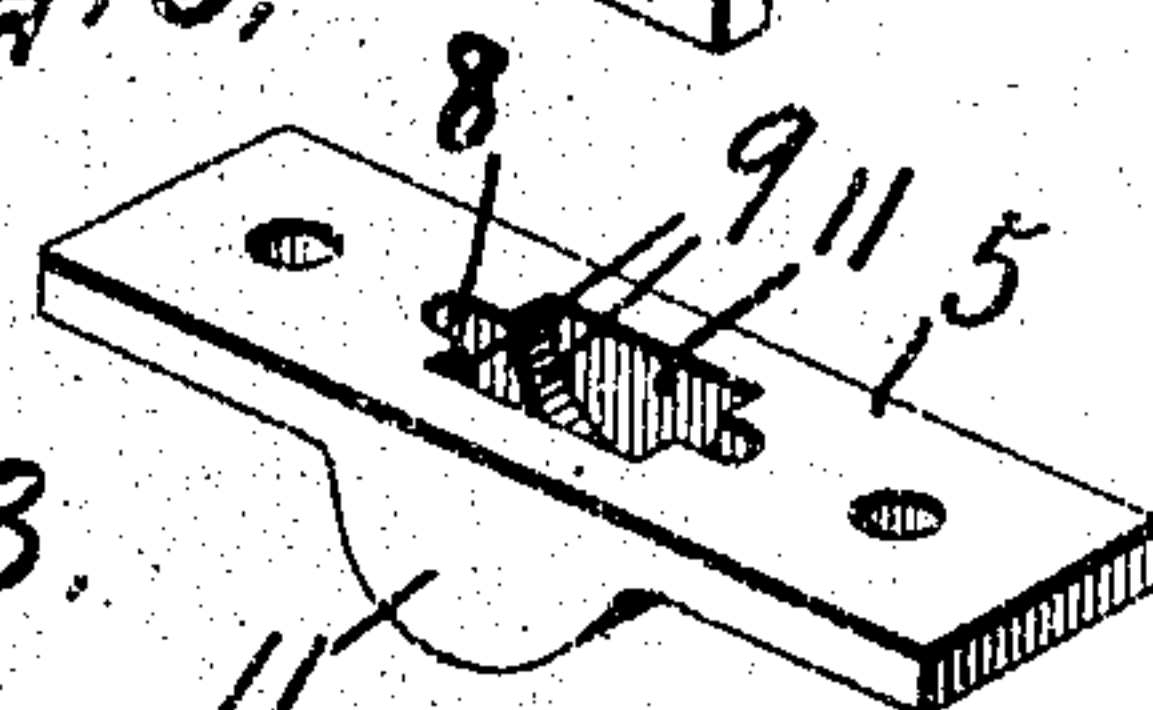
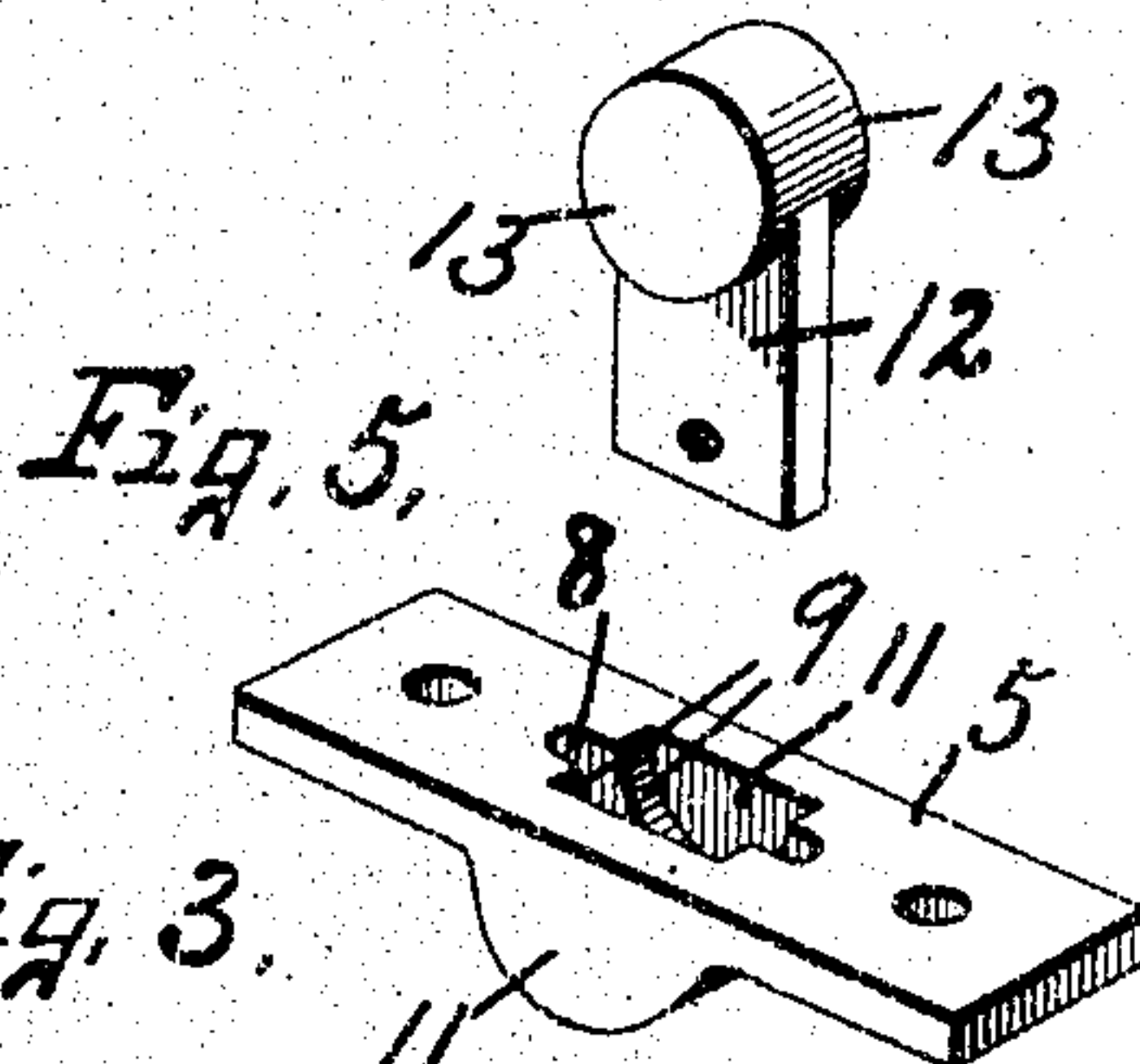
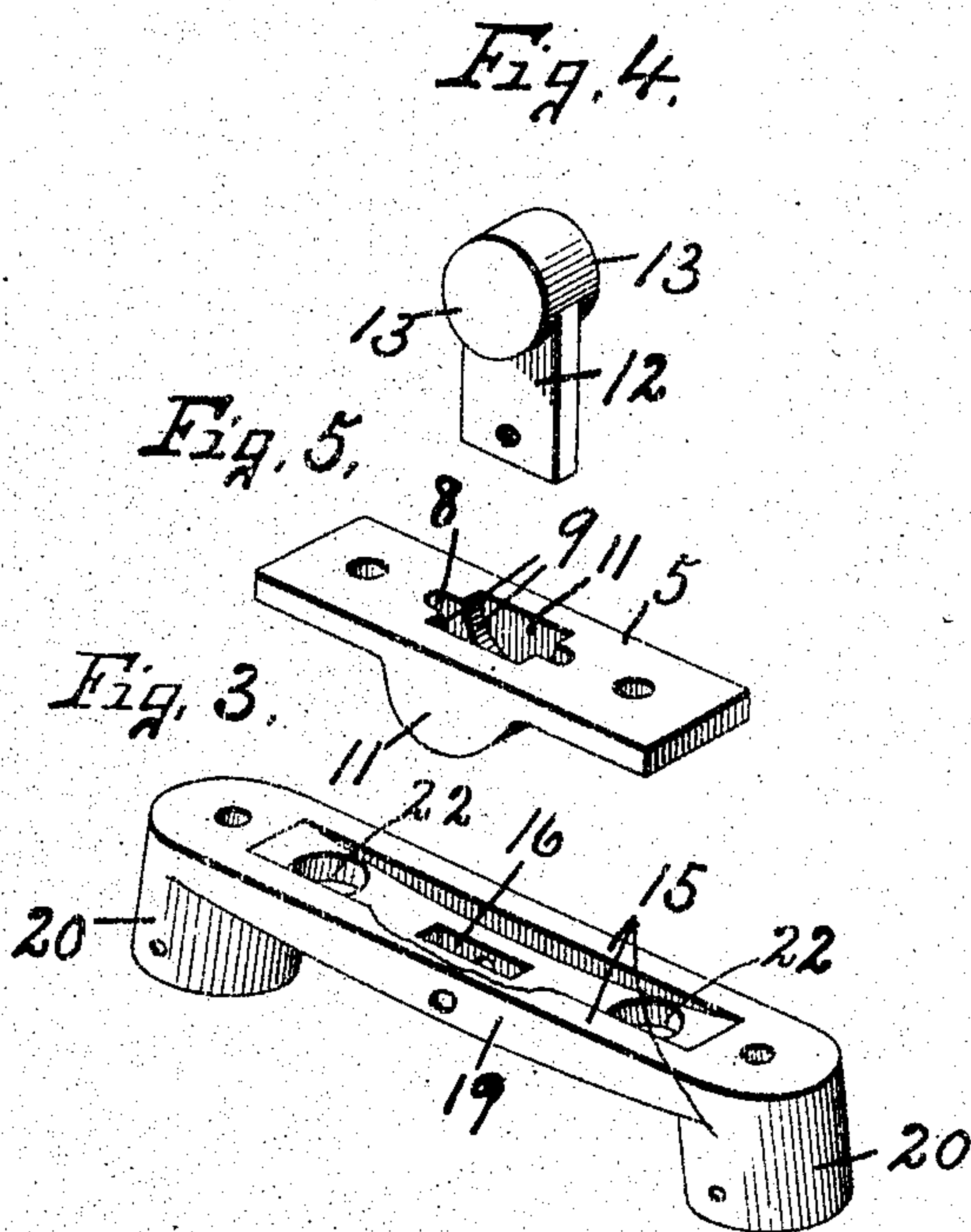
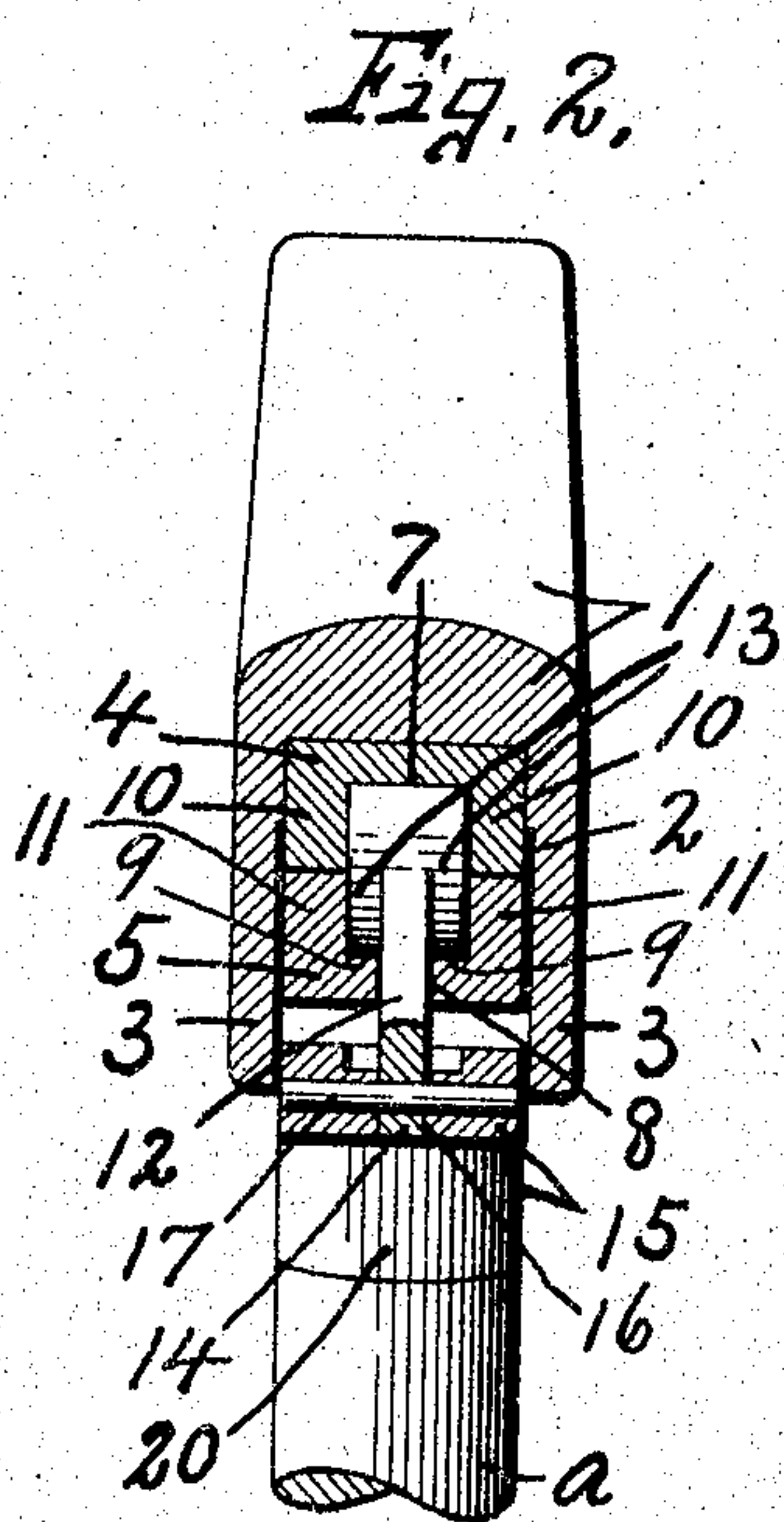
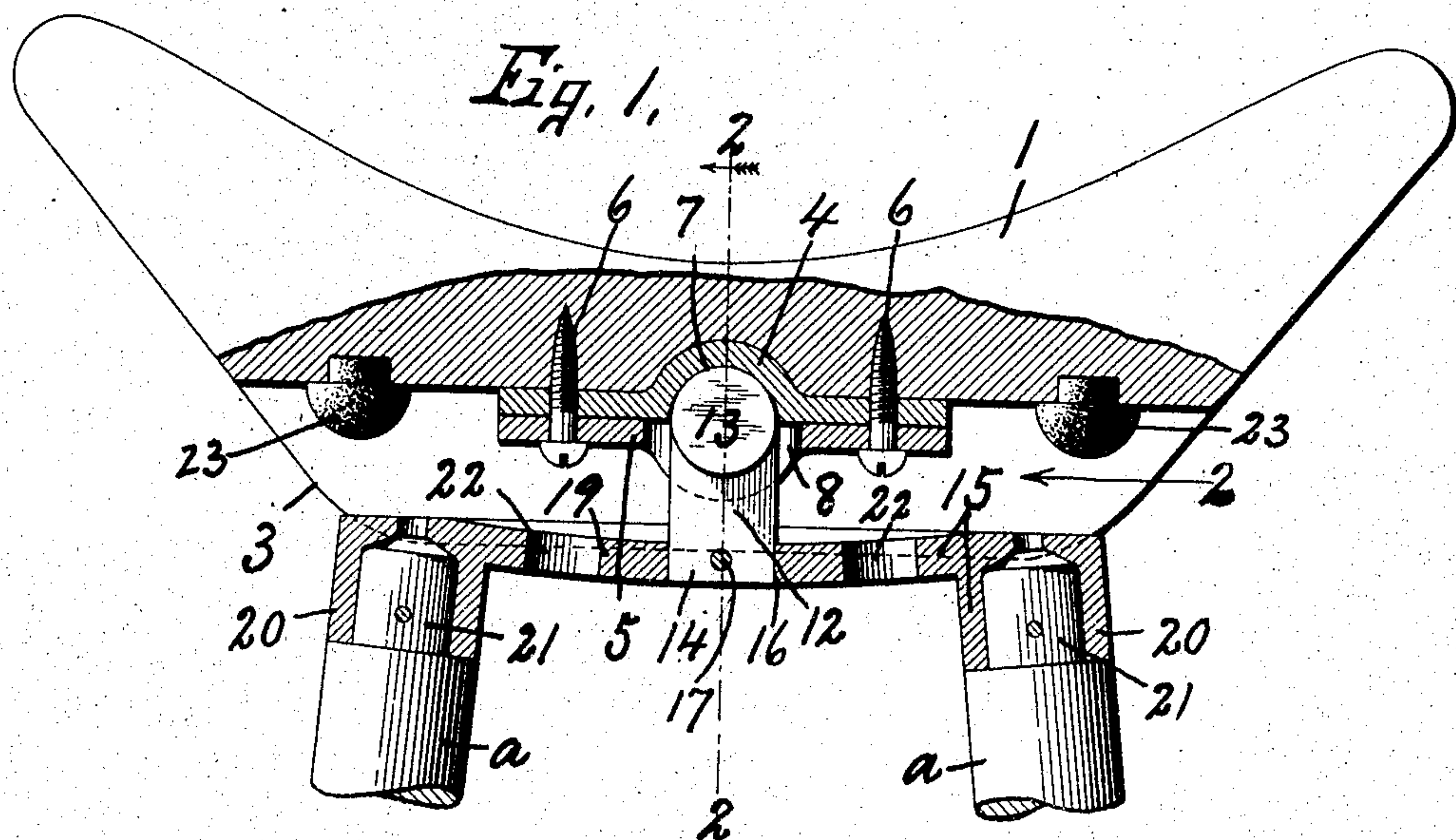


No. 786,921.

PATENTED APR. 11, 1905.

A. L. SMITH.
CRUTCH.

APPLICATION FILED AUG. 22, 1904.



WITNESSES,

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UNITED STATES PATENT OFFICE.

ARTHUR L. SMITH, OF AUBURN, NEW YORK.

CRUTCH.

SPECIFICATION forming part of Letters Patent No. 786,921, dated April 11, 1905.

Application filed August 22, 1904. Serial No. 221,792.

To all whom it may concern:

Be it known that I, ARTHUR L. SMITH, of Auburn, in the county of Cayuga, in the State of New York, have invented new and useful
5 Improvements in Crutches, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in
10 crutches, and refers more particularly to the arm-rest and means for attaching it to the truss-leg.

I am aware that certain patents have been issued showing an arm-rest pivotally connected
15 to the truss-leg so that either part may rock independently of the other; but in those patents with which I am familiar the pivotal pin is passed through the arm-rest, and is therefore more or less exposed, and is either ex-
20 cessively large or else affords but a weak bearing not adapted to receive the severe strains to which a crutch is subjected. Furthermore, in a crutch of this character it is desirable to have the head of the truss-leg and
25 its hinge connection with the arm-rest wholly within the arm-rest to prevent pinching of the flesh or clothing between the arm-rest and head of the truss-leg, which causes more or less abrasion of the clothing.

30 My object, therefore, is to pivotally connect the arm-rest and crutch-leg to each other in such manner that the head of the leg and pivot are wholly within and concealed by the arm-rest.

35 Another object is to afford a broad circumferential and lateral bearing upon which the crutch-leg and arm-rest rock.

A further object is to simplify the structure and work in assembling the parts and at
40 the same time to produce a strong and durable connection between the crutch-leg and arm-rest, so that the parts will have a free action one upon the other, with as little lost motion or rattle as possible.

45 Other objects and uses will appear in the following description.

In the drawings, Figure 1 is a sectional view through the arm-rest and head of the
50 truss-leg, showing particularly the manner of connecting the parts to each other. Fig. 2 is

a sectional view taken on line 2 2, Fig. 1. Figs. 3, 4, and 5 are perspective views, respectively, of the head to which the legs are fastened, the pivotal bearing which is adapted to be secured to said head, and one of the jour-
55 nal-sections in which the pivotal bearing is journaled.

In carrying out the objects stated I provide an arm-rest 1 with a lengthwise channel 2 in its lower face for forming depending
60 lengthwise flanges 3 at opposite sides of the channel. This arm-rest is preferably formed of wood and the channel 2 opens from the bottom upwardly and extends from end to
65 end of the arm-rest, so that its upper wall is disposed in a substantially horizontal plane some distance above the lower edges of the flange 3, which lower edges are nearly paral-
70 lel with the upper wall of the channel 2.

A journal-bearing composed of upper and
70 lower sections 4 and 5 is centrally secured by suitable fastening means 6 to the arm-rest 1 wholly within the channel 2 and above the lower edges of the flanges 3, so as to be wholly
75 concealed within the arm-rest.

The upper journal-section 4 is secured
against the upper wall of the channel 2 and is provided with a semicircular central bearing 7.

The lower journal-section 5 is clamped by
80 the screws 6 against the lower face of the journal-section 4 and has a central elongated slot 8 extending vertically therethrough, said slot having its central portion enlarged laterally for forming opposite semicircular bearings 9,
85 which, together with the semicylindrical bearing 7, forms a complete circular journal-bearing with an elongated slot 8 through the lower section 5.

The semicircular bearing 7 in the upper sec-
90 tion 4 forms the upper wall of a recess which opens through the lower face of said section 4 to form side walls 10 at opposite sides of the bearing 7. In like manner the bearings
95 9 of the journal-section 5 forms the lower wall of a recess extending downwardly from the upper face of the section 5, thus forming side walls 11 at opposite sides of the bearing 9. The slot 8 is of less width than the dis-
100 tance between the flanges 11, so as to leave substantially equal bearings 9 at opposite

sides of the slot. A hanger 12 projects through and is movable in the slot 8 and has its upper end provided with circular bosses 13, which are journaled in the bearings 7 and 9 and constitute a pivotal head upon which the hanger 12 swings or oscillates lengthwise of the arm-rest. The lower end of the hanger 12 has a tang 14, which is riveted, brazed, or otherwise secured to a swinging head 15, carrying the truss-leg or bars *a*. This head 15 has a central elongated opening 16, in which the tang 14 fits snugly and is additionally held in place by a rivet 17, passing through the head 15 and tang 14. The head 15 is formed of metal and consists of a substantially horizontal plate 19, which swings within the channel 2 and has its opposite ends provided with depending nipples or ferrules 20, which are arranged substantially equidistant at opposite sides of the hanger 12 for receiving the doweled ends 21 of the leg-bars *a*.

The plate 19 is provided with vertical openings 22, which are alined with the heads of the screws 6 to permit the insertion of a screw-driver or equivalent tool, whereby the screws 6 may be inserted or removed at will. In order to prevent undue jar or noise incidental to the rocking movement of the head 15, I provide the upper wall of the channel 2 with rubber buffers 23, which are arranged in the path of movement of the ends of the opposite ends of the head 15 to be engaged by said ends when the crutch-leg is swung to the limit of its movement.

The bearing-sections 4 and 5 are of substantially the same width as the distance between the flanges 3 of the arm-rest, which therefore serve to additionally support the bearings against lateral strain. The circular bosses 13 are also closely fitted within the recesses in the sections 4 and 5, which therefore form circumferential and end bearings for the hanger

12 to prevent endwise or lateral movement of said head, and owing to the fact that the plate 19 and other parts of the connection with the arm-rest are arranged wholly within the channel 2 the liability of catching or pinching the clothing between the arm-rest and head of the legs is reduced to a minimum.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a crutch, the combination of an arm-rest having a lengthwise channel in its lower face, a journal-bearing secured to the upper wall of the channel, a swinging hanger journaled in said bearing and a crutch-head secured to said hanger.

2. In a crutch, the combination of an arm-rest having a channel in its lower side, a journal-bearing secured to the arm-rest within the channel and provided with an elongated slot through its lower side and with bearings at opposite sides of the slot, a hanger extending through the slot and provided with circular faces riding in the bearings at opposite sides of the slot and a crutch-head secured to the lower end of the hanger.

3. In a crutch, the combination of an arm-rest, a metal plate secured to the lower side of the arm-rest and provided with an elongated slot and bearing-faces at opposite sides of the slot, a hanger extending through the slot and having its upper end provided with circular bosses seated in said bearings, and a crutch-head secured to the lower end of the hanger.

In witness whereof I have hereunto set my hand this 10th day of August, 1904.

ARTHUR L. SMITH.

Witnesses:

JAMES LYON,
LOUIS H. SCHMITZ.