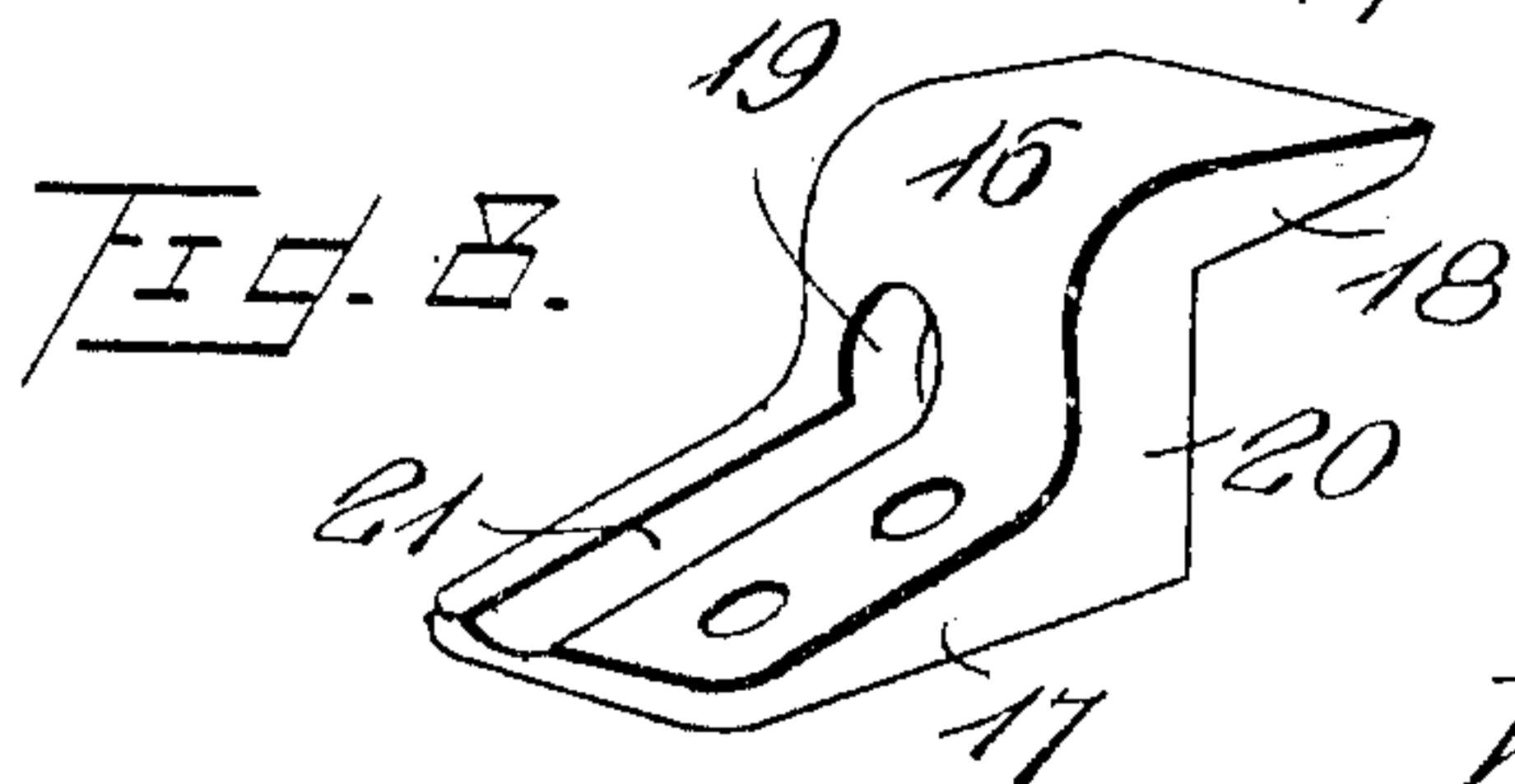
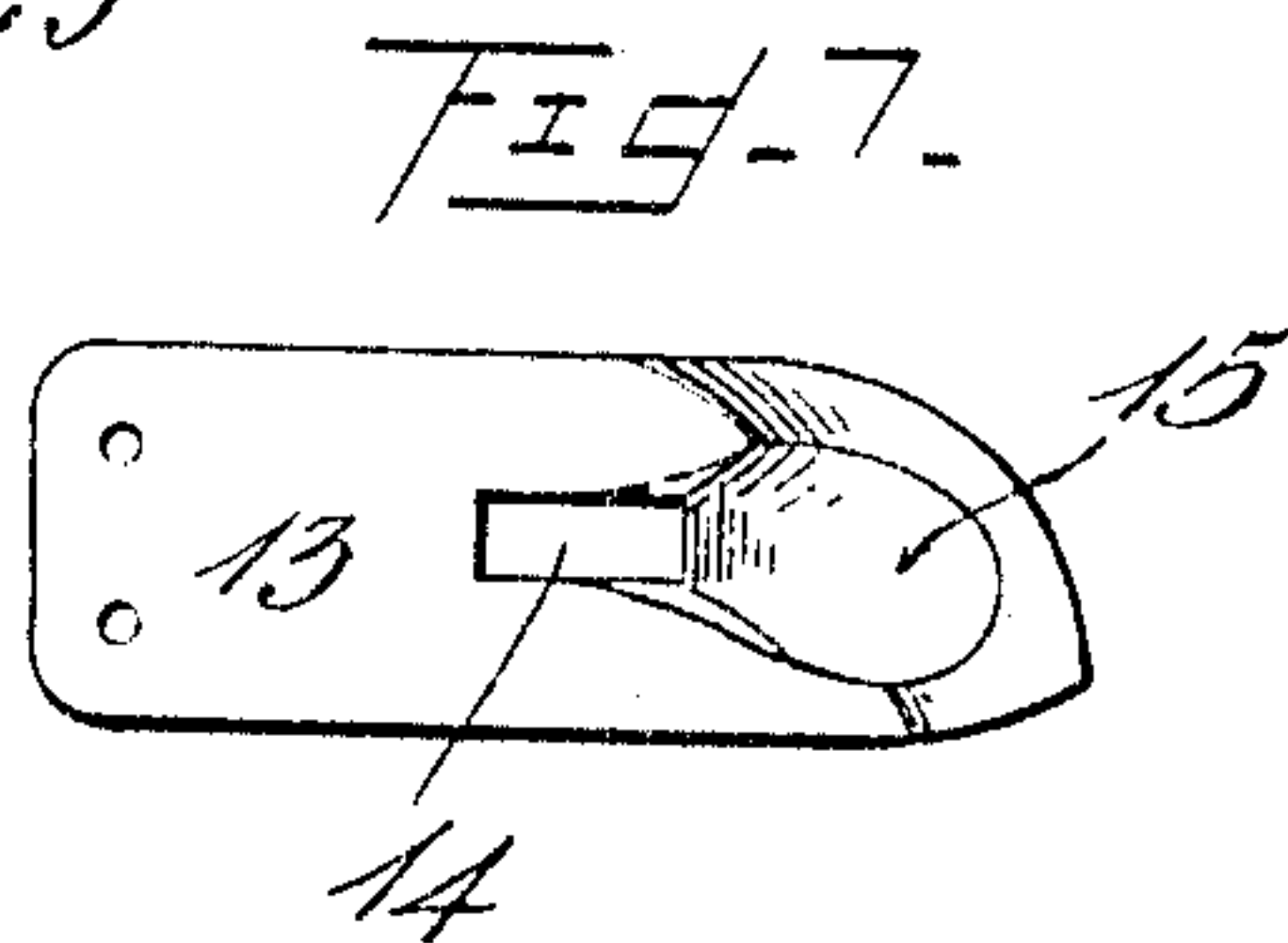
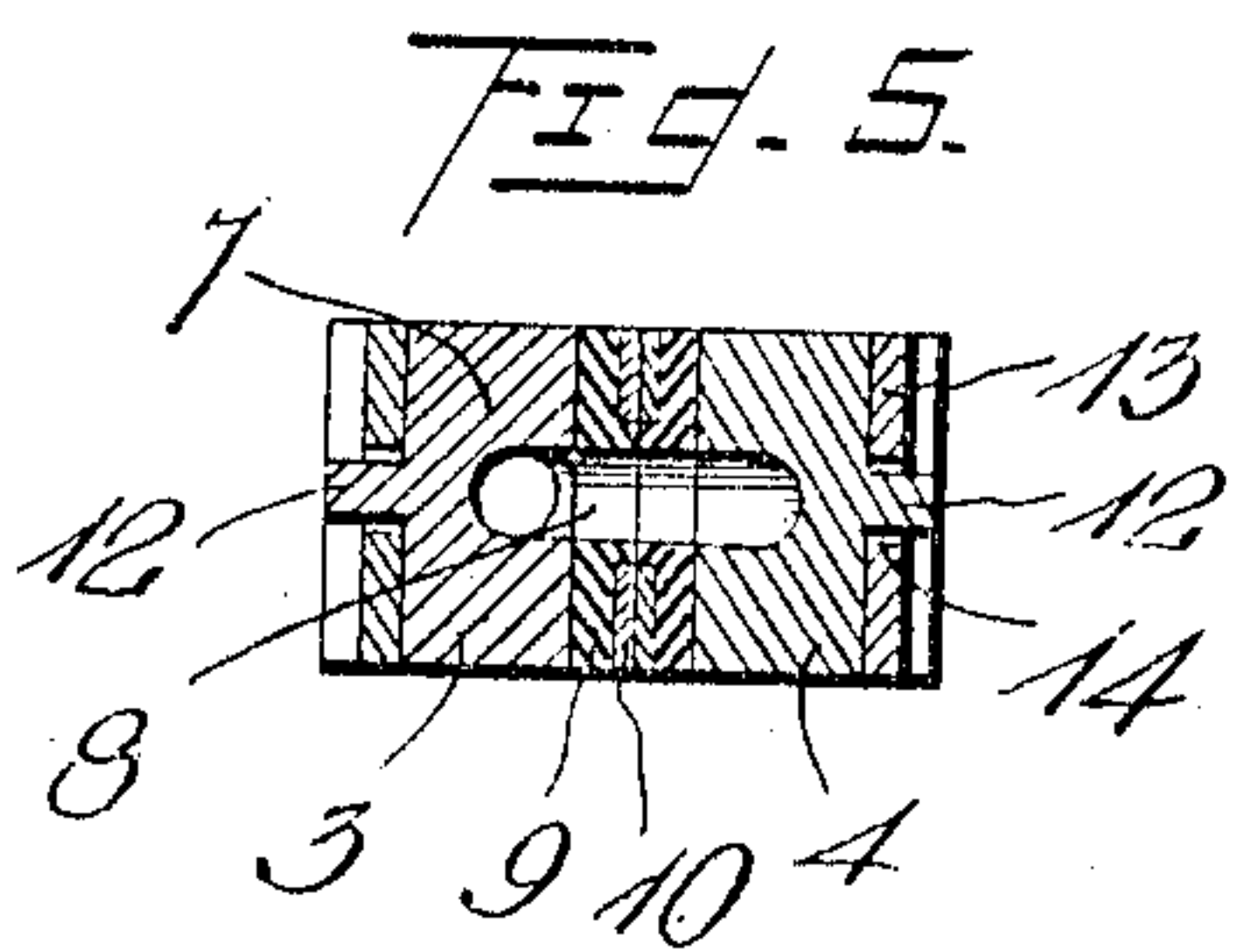
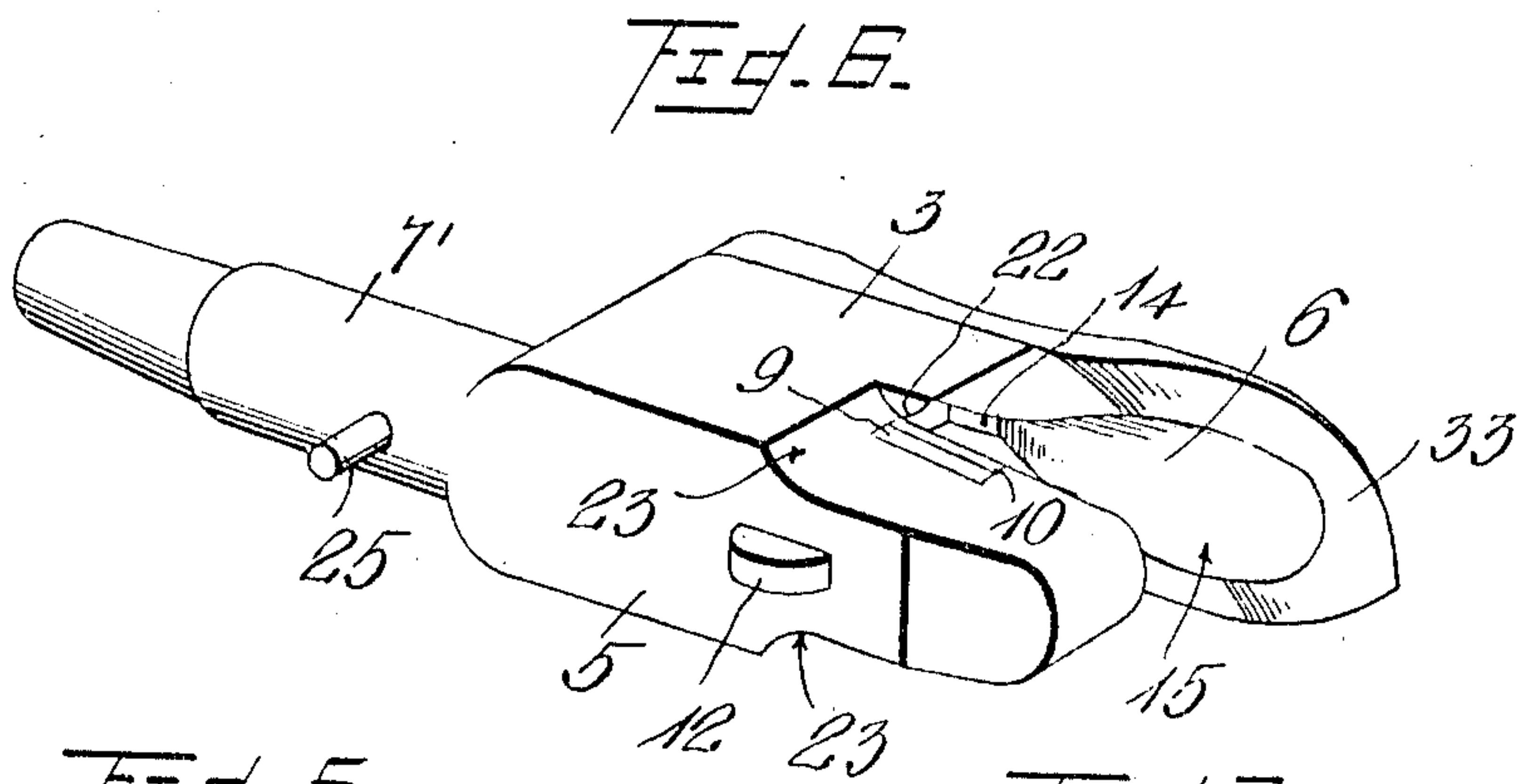
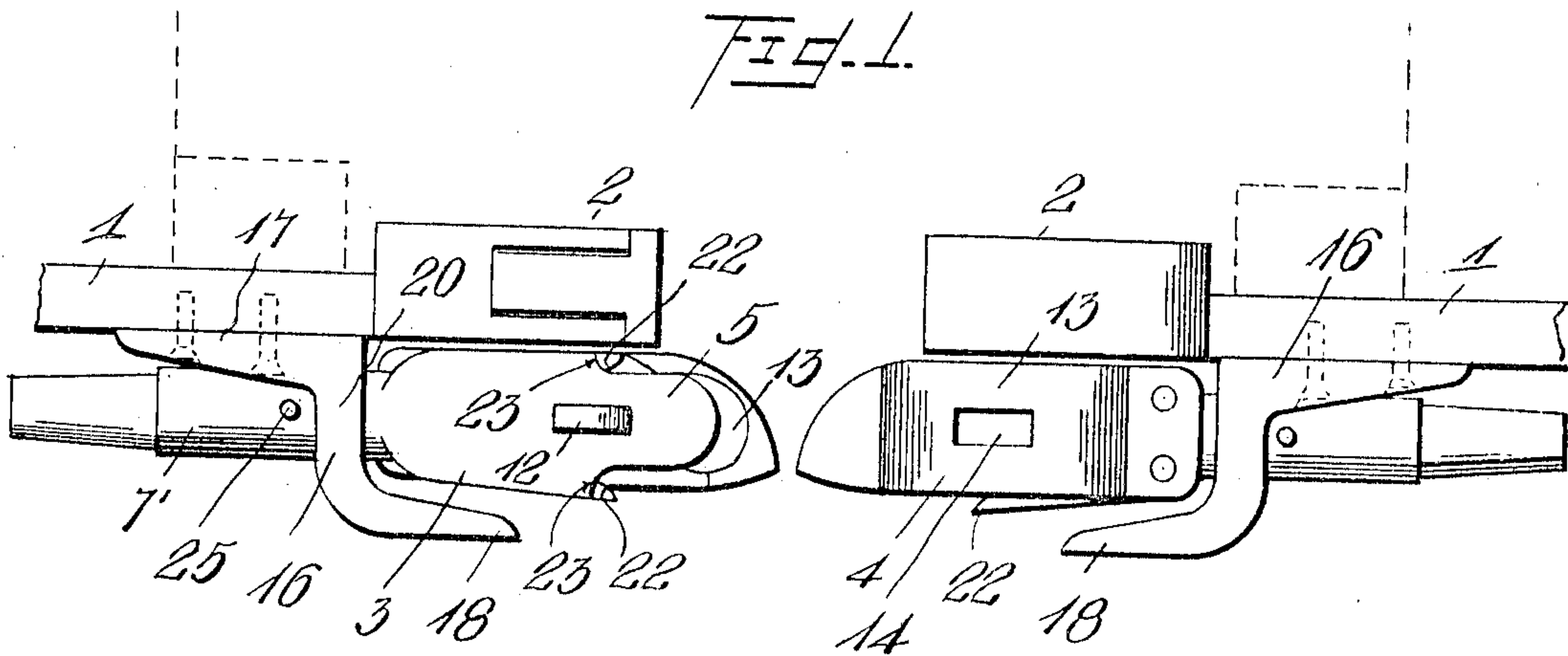


W. J. ELLIS.
AIR PIPE COUPLING.
APPLICATION FILED NOV. 9, 1909.

950,663.

Patented Mar. 1, 1910.
2 SHEETS—SHEET 1.



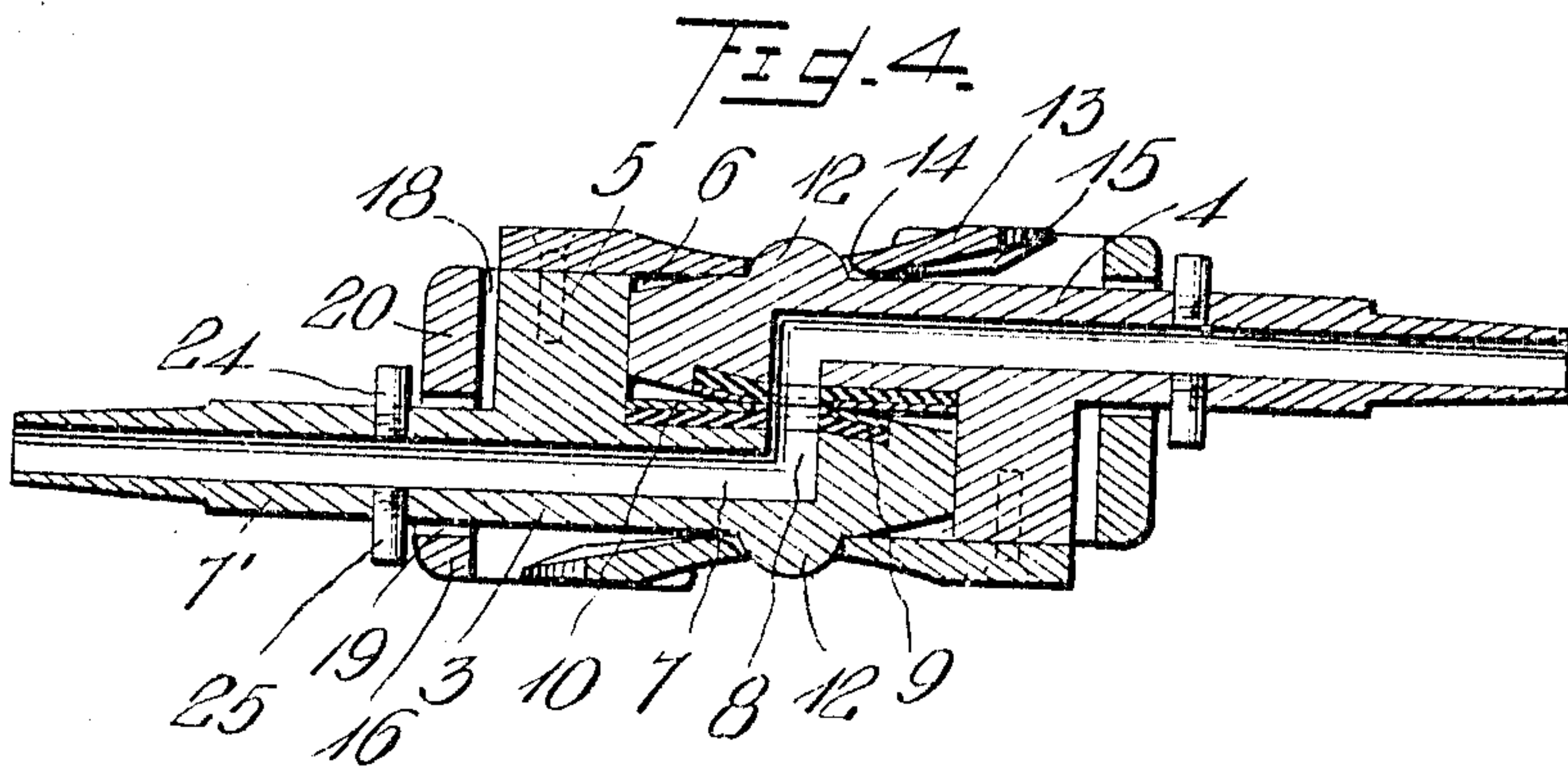
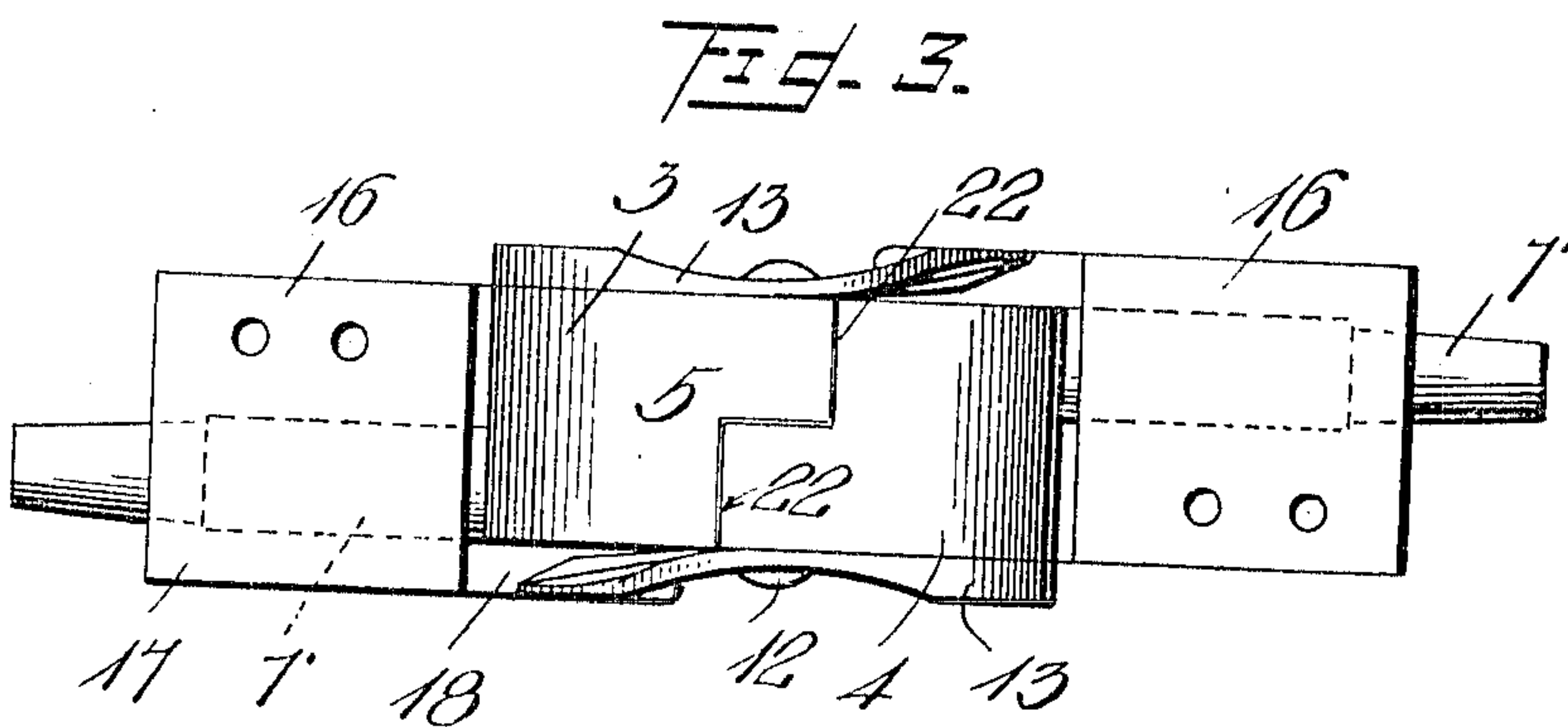
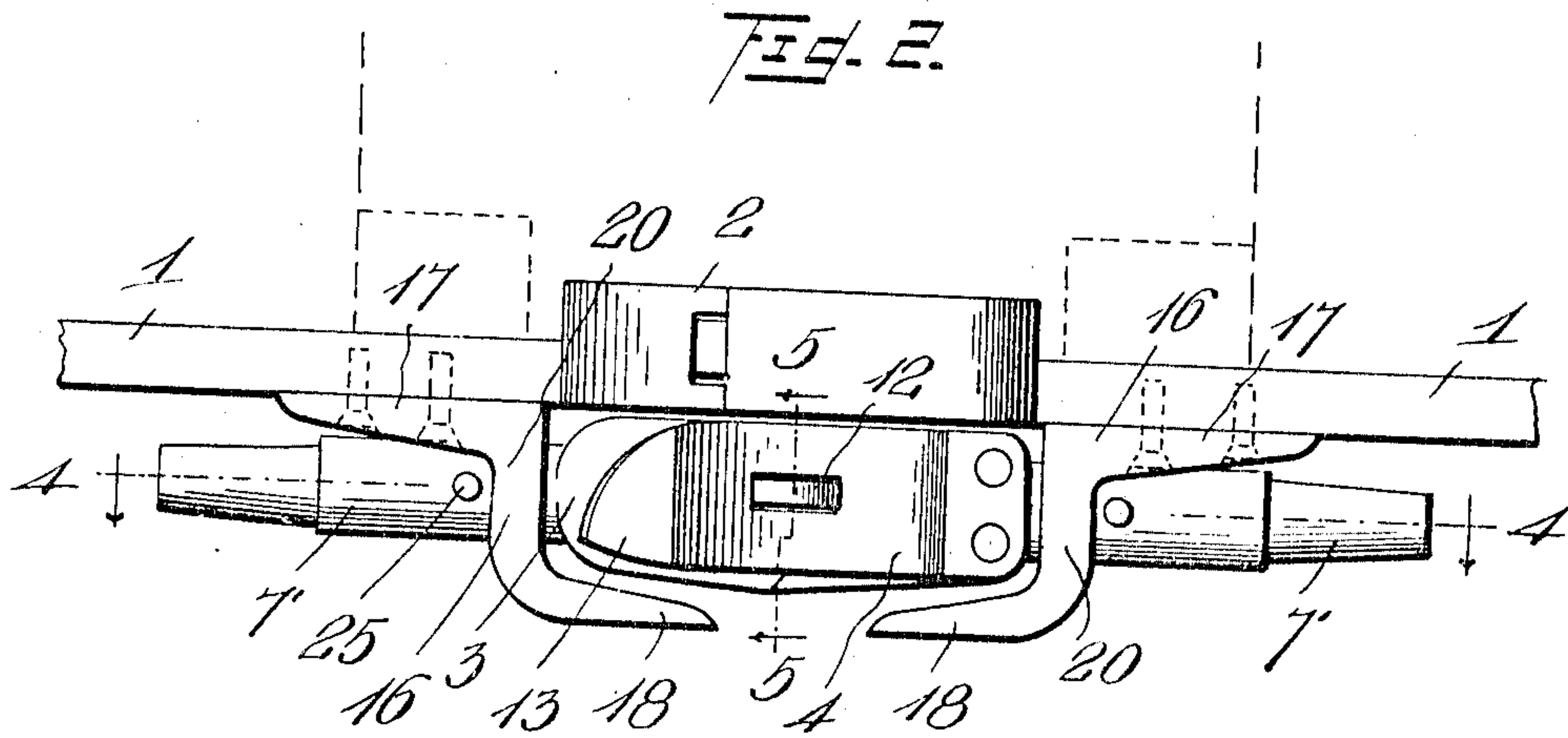
Witnesses
C. C. Duffy
C. C. Duffy

Inventor
W. J. Ellis
by H. B. Wilson & Co.
Attorneys

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Witnesses
E. C. Duffy
C. C. Duffy

Inventor
W. J. Ellis
by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM J. ELLIS, OF ANDREWS, NORTH CAROLINA.

AIR-PIPE COUPLING.

950,663.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed November 9, 1909. Serial No. 526,999.

To all whom it may concern:

Be it known that I, WILLIAM J. ELLIS, a citizen of the United States, residing at Andrews, in the county of Cherokee and State of North Carolina, have invented certain new and useful Improvements in Air-Pipe Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in automatic air pipe couplers for railroad and other cars.

The object of this invention is to provide an improved car coupling which will be adapted to form a conduit for compressed air and other fluids and which is simple in construction and efficient in operation and which will prevent many accidents which so often occur in coupling cars.

By the use of this improved automatic coupler when a train is made up and coupled the parts of the coupler are assembled automatically and the train is ready to pull out without further manipulation of the coupler. When a car is to be cut out or side-tracked, all that is necessary to uncouple this improved coupler is to raise the car-coupler lever when the air pipe coupling may be readily separated by a forward movement of one of the cars, thus saving time and trouble and danger of accidents.

Another object of the invention is to provide a coupler which is cheap to manufacture and which will last indefinitely.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing Figure 1 represents a side elevation of two draw-bars equipped with the coöperative members of this improved coupler and arranged in juxtaposition ready for connection. Fig. 2 is a similar view with the parts in operative position. Fig. 3 is a top plan view with the parts in operative position. Fig. 4 is a longitudinal vertical section taken on the line 4—4 of Fig. 2. Fig. 5 is a transverse vertical section taken on the line 5—5 of Fig. 2. Fig. 6 is a detail perspective view of one of the coupling members detached. Fig. 7 is a side elevation of one of the

springs of the coupling member showing its inner face. Fig. 8 is a perspective view of the plate which connects the coupling member to the draw-bar.

In the embodiment illustrated a portion of a drawbar 1 of ordinary construction is shown on which this improved coupler is mounted. It will be understood that one of these draw-bars is arranged at each end of the car and carries the usual Janney type car coupler 2 at its free end and that it forms no part of this invention.

This improved air-pipe coupler comprises two complementary members 3 and 4 carried respectively by the draw-bars at opposite ends of the car and which are designed for connection with similar members carried by adjacent cars to be coupled. These members 3 and 4 being counterparts of each other, one only will be described in detail. As shown, the member 3 comprises a head 5 having a recess 6 formed at one side thereof with a longitudinally extending hollow member 7 arranged at its other side and having an aperture 8 which discharges or opens into said recess 6. A rubber bushing 9 is arranged around this opening 8 and a plate 10 is preferably arranged thereover with a portion of the bushing projecting beyond the plate around the opening to form an air-tight connection with the bushing of the coöperating member to prevent the air from leaking at the point of connection of the two members. This plate 10 permits the parts to slide on each other without danger of tearing the rubber as would occur if the whole face of the bushing were left exposed.

A tubular member 7' connected with the hollow member 7 projects beyond the rear face of the head 5 and is preferably provided with a reduced free end for insertion within the rubber hose or other pipe not shown. It will be understood that this hose or rubber pipe, not shown, must be made sufficiently long to permit the coupler to have plenty of play to prevent its pulling apart when the train is in motion.

A laterally extending lug 12 is arranged on the outer face of the hollow member 7 and the front and rear ends thereof are beveled or rounded to provide for its ready insertion in and removal from an opening in the spring member of the coöperating coupler member secured to the adjacent car as will be hereinafter more fully described.

A spring plate 13 is secured on the head 5

to close one side of the recess 6 and is arranged diametrically opposite the hollow member 7 disposed on the opposite side of the head. This spring plate 13 may be secured to the head by any suitable means and is provided with an aperture 14 designed to engage the laterally extending lug 12 on the outer face of the complementary coupling member carried by the other car. The free end of this spring plate 13 is preferably beveled or flared outward on its inner face and is provided on its inner face with a recess 15 which tapers toward the aperture 14 and is designed to form a guide for the lug 12 of the complementary coupling and is especially useful for coupling cars of different heights engaging the said lug and forcing the coupler into position to bring the ends of the members thereof together and provide a perfect coupling. This head 5 is connected with the draw-bar 1 by means of a Z-shaped fastening plate 16, one horizontal arm 17 of which is secured to the draw-bar, preferably by means of screws or bolts with the other arm 18 extending outwardly and designed to form a support for said head 5, the extension 7' of the hollow member 7 thereof being passed through an aperture 19 in the vertical portion 20 of the member 16. The lower or outer face of the arm 17 of the Z-shaped plate 16 is preferably grooved longitudinally as shown at 21 to permit the tubular extension 7' to fit therein and to prevent lateral movement of said member.

When two cars are to be coupled, the coupling members carried by the respective cars are arranged in the position shown in Fig. 1 and the movement of the cars toward each other causes the tubular member 7 of one member to engage the recess 6 of the other member and connect them and the laterally extending lugs 12 thereof to engage the apertures 14 in the spring plates 13 as shown in Fig. 2, whereby the air pipes are securely coupled and accidental disengagement thereof prevented, it being understood that the couplers 2 carry all the strain exerted by the cars and when these couplers are disconnected the pull of one car will disengage the couplers 3 and 4.

The heads 5 are preferably provided on their upper and lower faces at one side with beveled lower faces as 22 and at their other sides with oppositely beveled upper faces as 23. These oppositely beveled faces 22 and 23 of each member are arranged side by side as is clearly shown in Fig. 6 of the drawings and the beveled lower face 22 on one coupler member is designed to overlap and engage the outer beveled upper face 23 of the other coupler member, and the beveled upper face thereof underlaps and engages the beveled lower face of the other member to form a tight joint as shown in Fig. 3.

The heads as 5 are held against longitudinal movement in the apertures of the plates 16 by any suitable means, preferably by means of laterally extending stops 24 and 25 which engage the outer faces of the vertical member 20 of the plate 16.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

I claim as my invention:

1. In an air pipe coupling, a coupler head having a longitudinal extension at one side of the front end thereof provided with a longitudinal bore opening through the inner face of said extension, a tubular extension arranged on the rear of said head with the bore thereof communicating with the bore in said head and in said front extension, a rubber bushing arranged on the inner face of said front extension around the opening therein, an apertured metal plate arranged over said bushing with a portion of the bushing projecting beyond the plate around the opening to form an air tight connection with the bushing of the cooperating member, and a member arranged on the opposite side of said head and spaced laterally from said front extension and provided with means for detachably engaging a cooperating coupler member.

2. An air pipe coupling comprising two cooperating members, each provided with a head having a recess extending longitudinally inward from the free end thereof with a spring plate arranged at one side of said recess and having an aperture therein, a hollow member arranged at the other side of said recess and having an aperture opening into said recess, a rubber bushing arranged around said aperture, a laterally extending lug projecting from the outer face of said hollow member and adapted to engage the recess in said spring plate, and means for securing each head to a draw-bar.

3. An air pipe coupling comprising two cooperating members each provided with a head having a recess extending inwardly from the free end thereof with a spring plate arranged at one side of said recess and having an aperture therein, said spring plate also having an outwardly flared recess on its inner face extending outwardly from the aperture in said plate, a hollow member arranged at the other side of said recess and having an aperture opening into said recess, a tubular member extending rearwardly from said hollow member, a Z-shaped plate

adapted for connection to a draw-bar and having an aperture in its intermediate member for the passage of said tubular member and a collateral projection on the outer face
5 of said hollow member for engaging an aperture in the spring plate of a companion head.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM J. ELLIS.

Witnesses:

CHELCEY TATHAM,
RALPH CHAMBERS.