

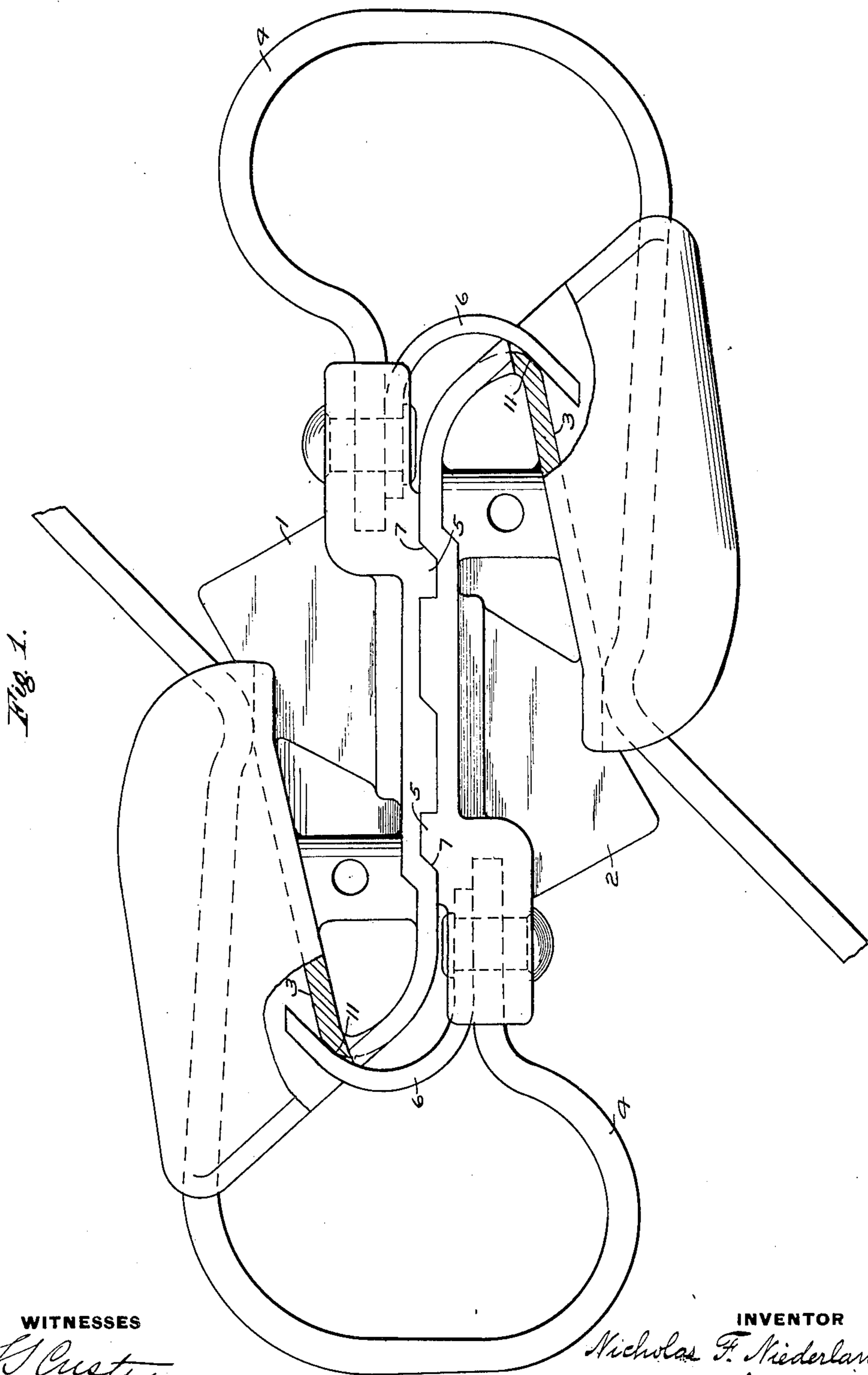
No. 888,189.

PATENTED MAY 19, 1908.

N. F. NIEDERLANDER.
AUTOMATIC TRAIN PIPE COUPLING.

APPLICATION FILED OCT. 18, 1907.

6 SHEETS—SHEET 1.



WITNESSES

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Wm. M. Cady

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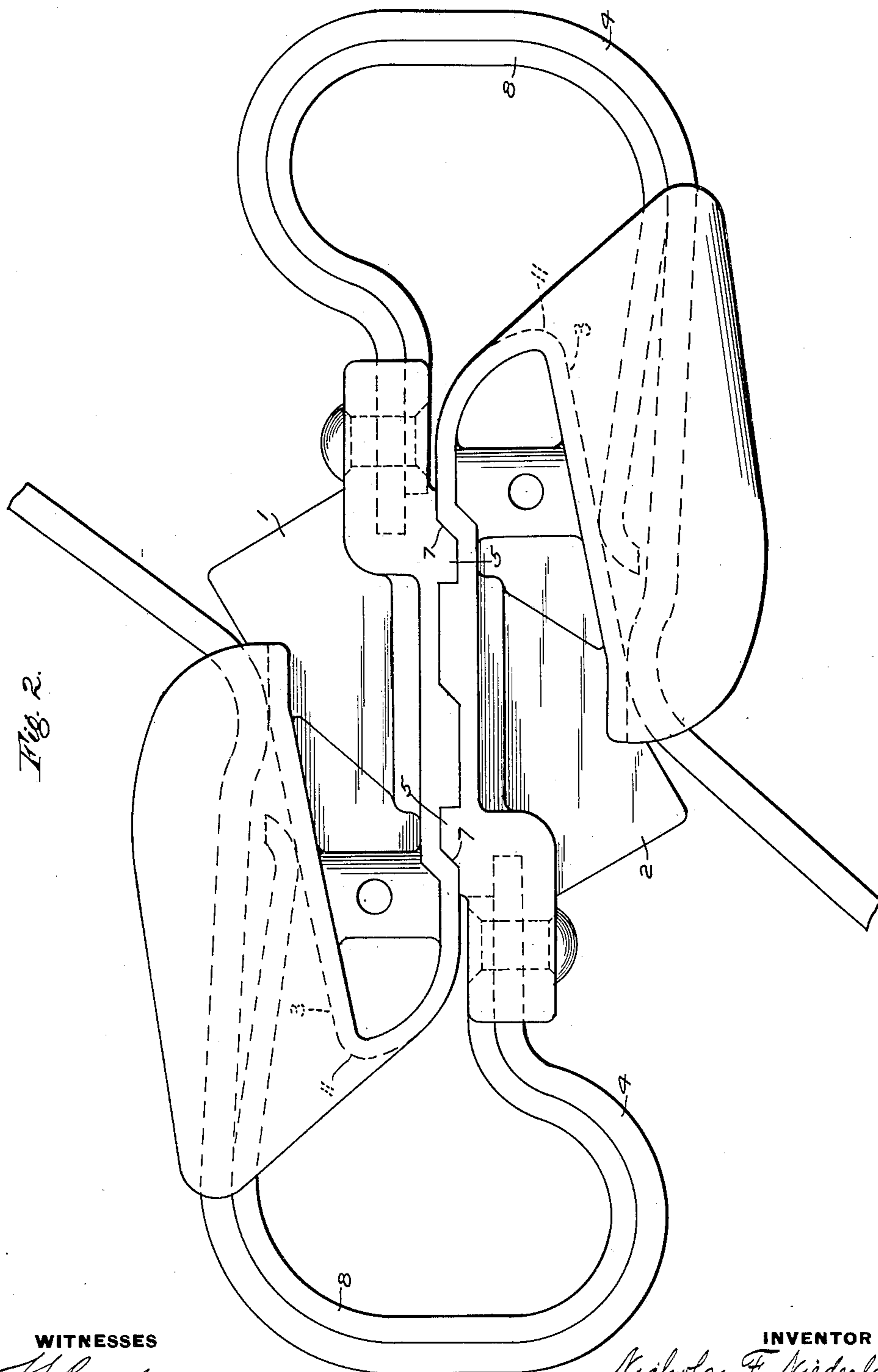
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6 SHEETS—SHEET 2.



WITNESSES

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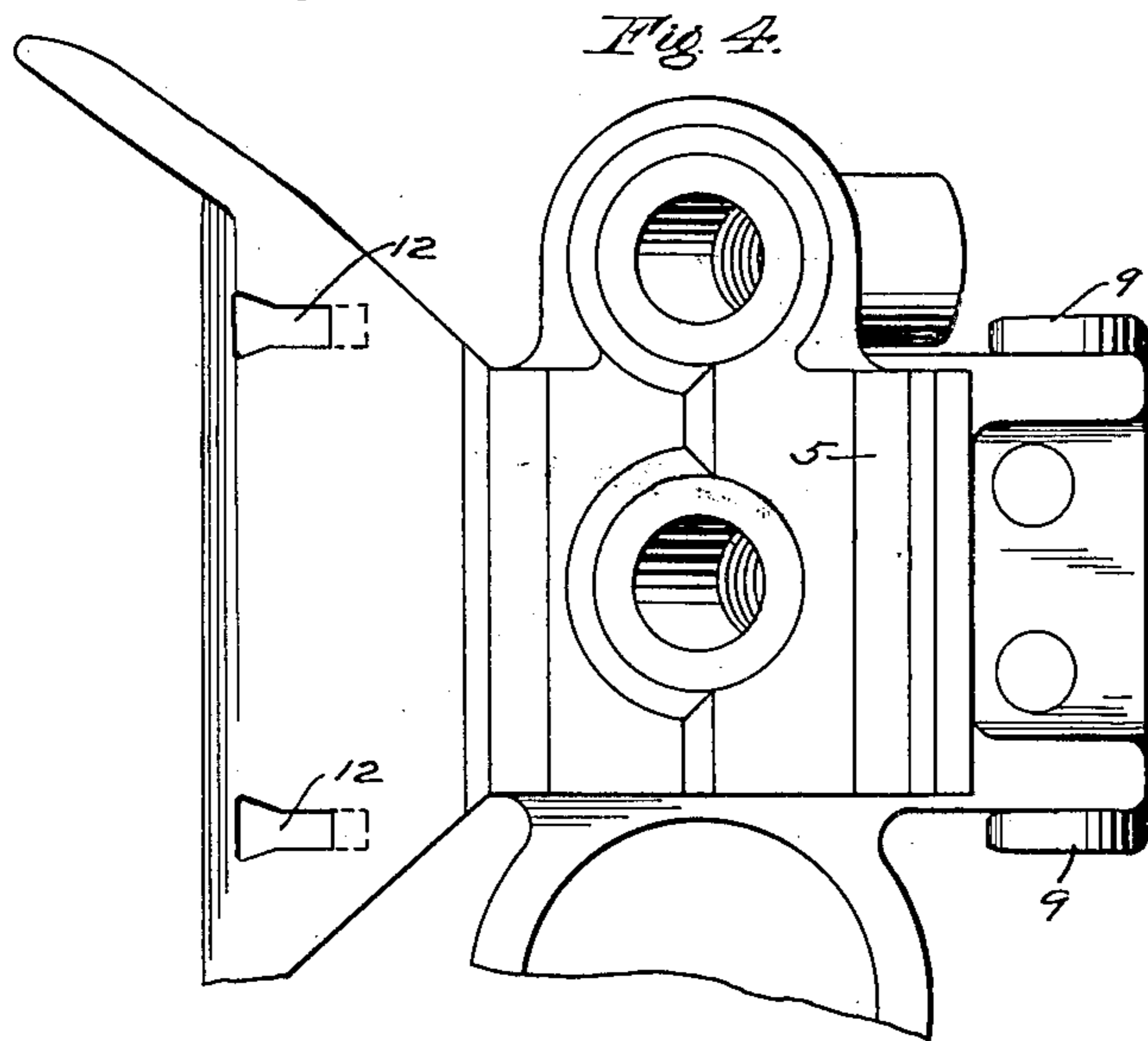
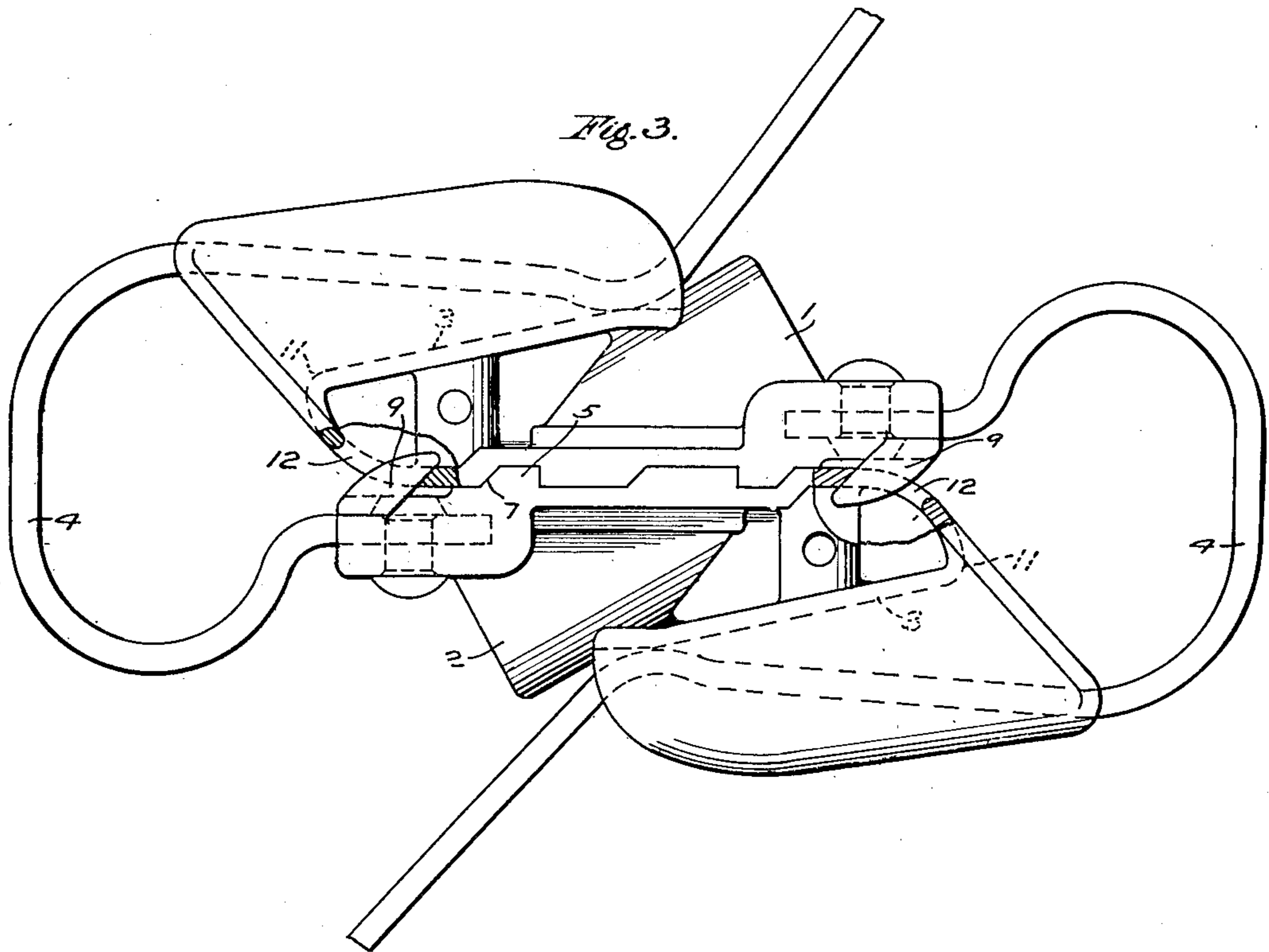
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5 SHEETS—SHEET 3.



WITNESSES

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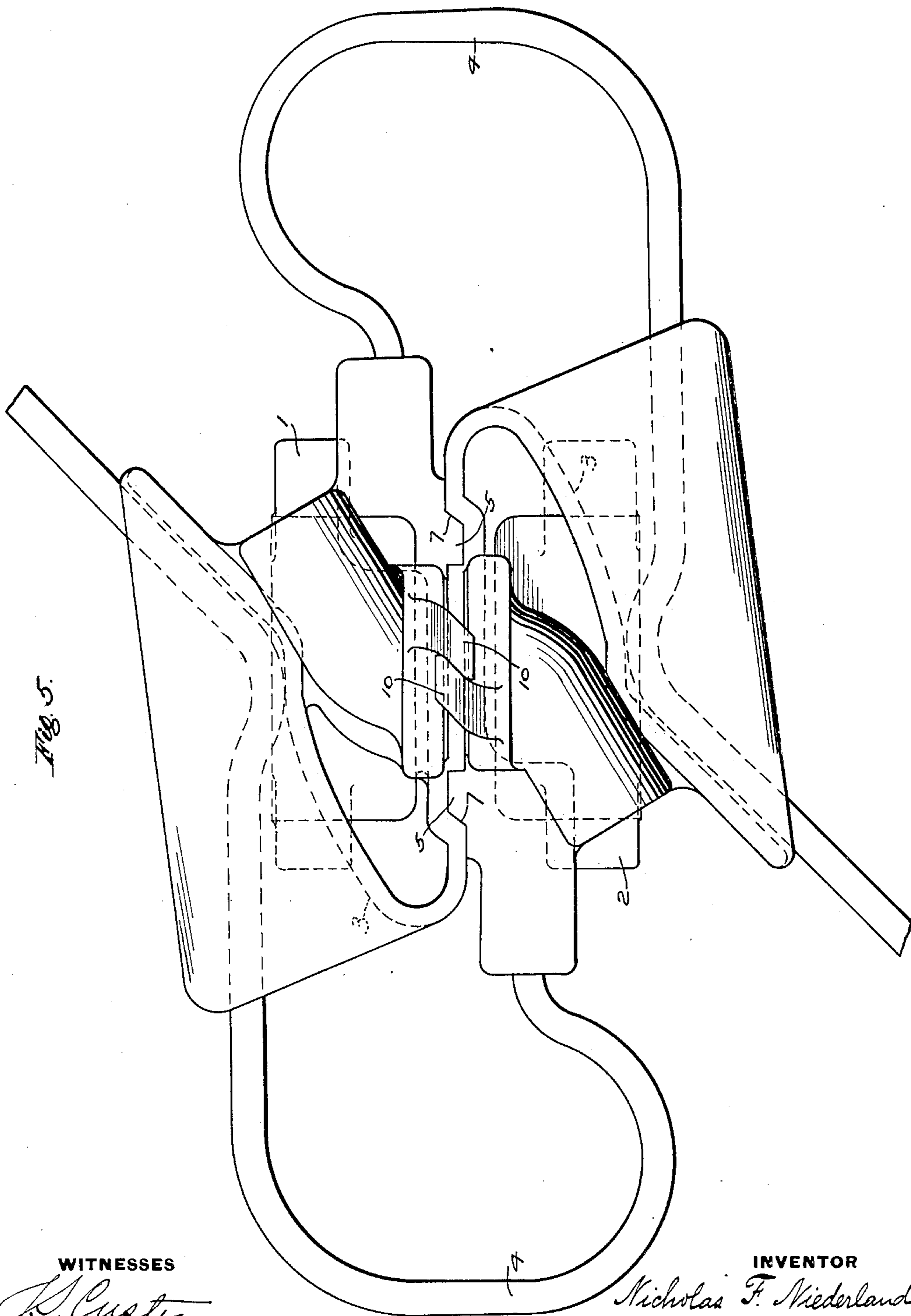
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5 SHEETS—SHEET 4.



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5 SHEETS—SHEET 5.

Fig. 6.

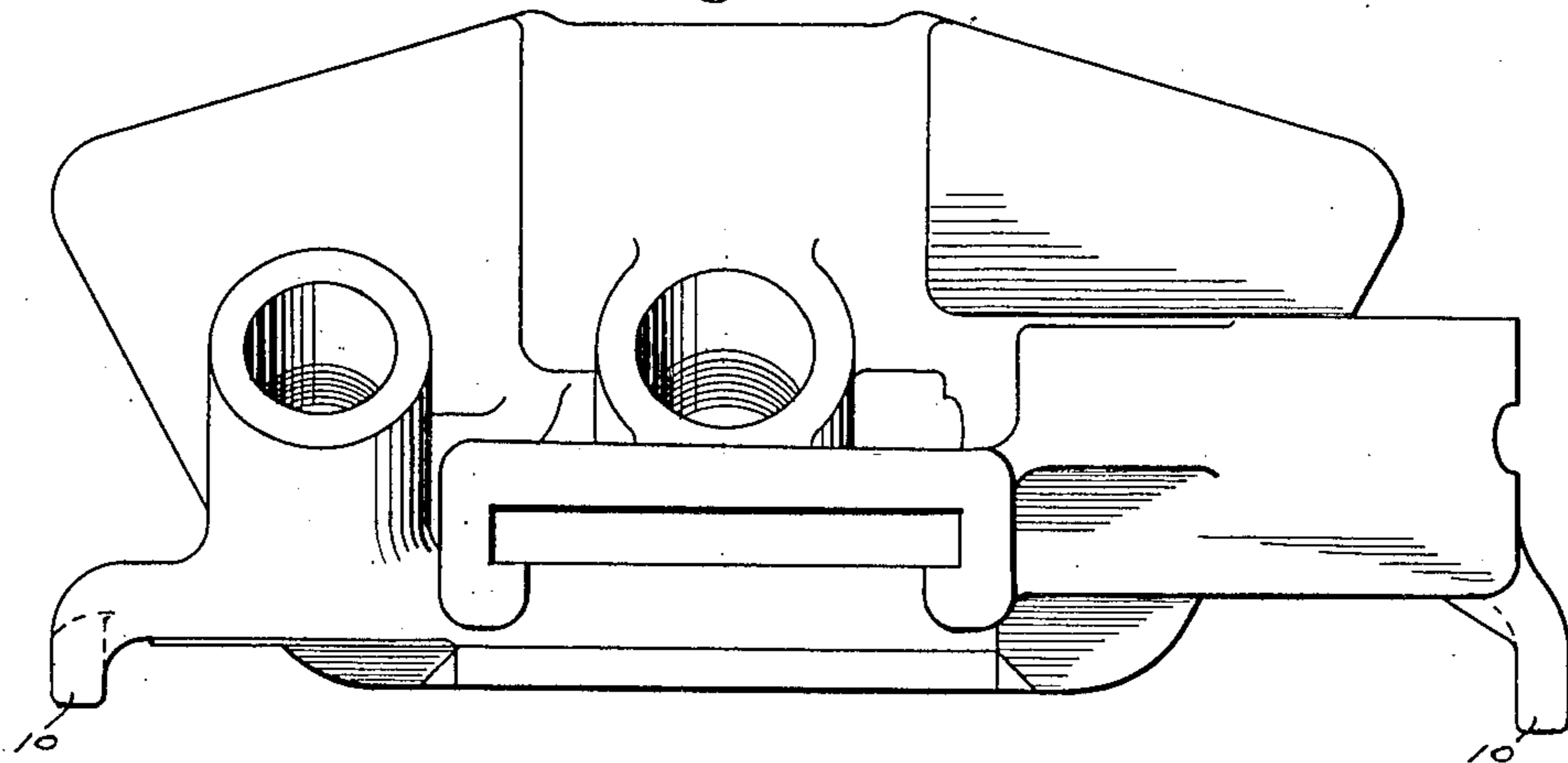
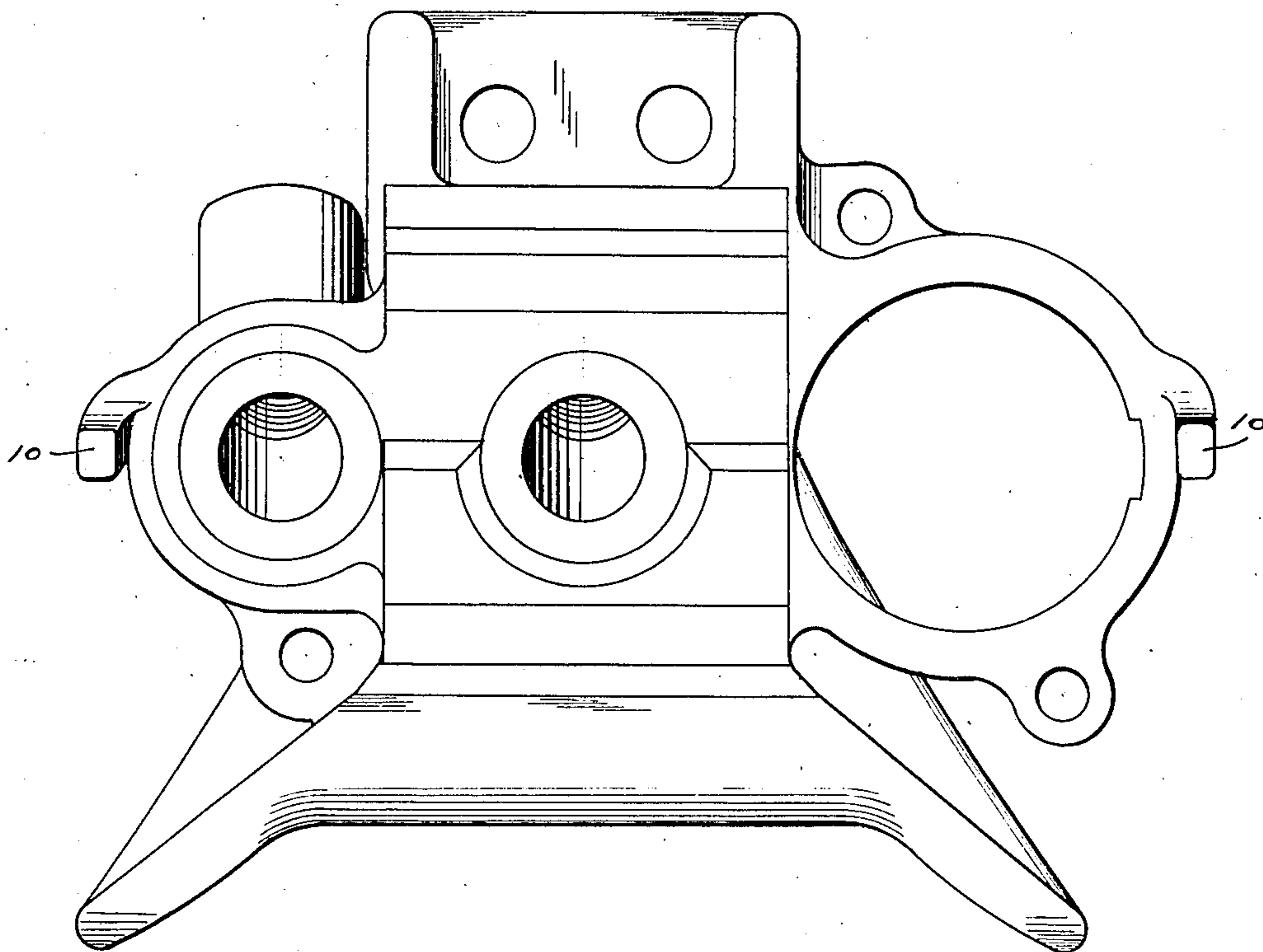


Fig. 7.



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UNITED STATES PATENT OFFICE.

NICHOLAS F. NIEDERLANDER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WESTINGHOUSE AUTOMATIC AIR & STEAM COUPLER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF ILLINOIS.

AUTOMATIC TRAIN-PIPE COUPLING.

No. 888,189.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed October 16, 1907. Serial No. 397,606.

To all whom it may concern:

Be it known that I, NICHOLAS F. NIEDERLANDER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have
5 invented new and useful Improvements in Automatic Train-Pipe Couplings, of which the following is a specification.

This invention relates to automatic train pipe couplings, and more particularly to that
10 class known as side couplings, such as, for example, the construction shown in my prior patent, No. 582,672.

Couplings of this character are brought into engagement by a longitudinal movement, the joint gaskets being kept apart until
15 in alinement, then a lateral movement is permitted, which brings the gaskets together. The pipe sections are pressed together in this position by a yielding resistance means in order to maintain a tight joint. Ordinarily
20 this construction operates satisfactorily, but in cases, as for example, when the coupling sections are subjected to a severe tilting strain, the sections may rock on each other in such a
25 way as to open the joint and permit air leakage, in spite of the yielding resistance device.

It is therefore the principal object of my present invention to provide means to resist the tendency to lateral movement of the
30 coupling sections other than the usual and normal movement effected in coupling and uncoupling.

In the accompanying drawings, Figure 1 is a plan view of an automatic pipe coupling, showing the two half sections coupled together, with one form of my improvements applied; Fig. 2 a similar view with another form of my invention applied; Fig. 3 a similar view with a slightly modified form of my
40 invention applied; Fig. 4 an elevational view of the face of one of the half sections of the coupling as shown in Fig. 3; Fig. 5 a plan view of an automatic pipe coupling, with still another form of my improvement applied;
45 Fig. 6 a side elevation of one of the half sections of the coupling shown in Fig. 5, and Fig. 7 an elevational view of the face of one of the half sections.

Referring to Fig. 1 of the drawings, the
50 coupling comprises the pipe sections 1 and 2, each having an inclined guide surface 3 for directing the sections into proper coupling position. The inner end of each section is provided with a spring 4, and the back of the
55 outer end is inclined to form a sliding bearing

for the spring 4, so that the sections are yieldingly held together as they approach the coupled position, and in that position. This form of coupling is also provided with tongues
5 in each section to engage corresponding grooves in the outer section, for the purpose of preventing the gaskets from rubbing
60 against each other in coupling and uncoupling, as described in my prior patent above referred to.

According to the form of my improvements shown in Fig. 1, I provide curved catch plates 6, the inner faces of which are adapted to engage the foremost nose portion
11 of the inclines 3, said faces being preferably
70 inclined at approximately the same angle as the beveled engaging surfaces 7 of the tongues 5. The catch plates 6 may be secured in position conveniently by the rivet 8
75 which fastens the spring 4 in place. The nose end of the incline 3 may also be beveled to correspond with the inclined surface of the catch plate.

In making a coupling connection, as the sections approach alinement the beveled surface of the tongues 5 engage the corresponding beveled surface of the groove and also the nose of the incline 3 with the catch plate, so that when the parts are in the coupled position, any tendency of the joint to rock and
80 open up is effectively resisted by the engagement of the nose on the inclined surface of the catch plate. It will be noted that while the tendency to tilt or to move laterally is resisted there is no interference with the normal operation of coupling and uncoupling.

According to the construction shown in Fig. 2, I provide each section with a spring plate 8, which may be arranged within the usual spring 4 and having the outer end portion adapted to engage the guide incline of the spring intermediate the nose and the point of contact of the spring 4, so that a lateral opening movement of the joint is resisted, like the construction shown in Fig. 1,
95 as will be obvious.

In Figs. 3 and 4 is illustrated a modified form of my invention similar to that shown in Fig. 1. In this case I provide lugs 9, integral with each of the coupling sections, and
105 adapted to engage corresponding slots 12 in the adjacent section, the contacting surfaces of both slot and lug being preferably at the same angle as the bevels 7 of the tongues 5. Two such lugs are preferably provided on
110

each coupling section. The operation being substantially the same as that of the construction shown in Fig. 1.

Still another construction is shown in Figs. 5 to 7 inclusive, wherein each section is provided with laterally projecting lugs 10, adapted to engage corresponding lugs on the other section, and having the engaging faces thereof beveled at preferably the same angle as the tongues 5.

It will now be apparent that by means of my improvements the coupling joint is securely and firmly maintained, and leakage is thereby prevented, as lateral movement or tilting of the section is prevented. It will also be apparent that the liability of a coupling to open and permit leakage, by reason of the high pressure, such as now frequently employed in high speed air brake systems, will be obviated by means of my improvements.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In an automatic pipe coupling, the combination with two pipe sections adapted to couple by longitudinal movement and yielding resistance means for pressing the sections together in the coupled position, of means on one pipe section adapted to engage the other pipe section in the coupled position, to thereby resist movement of said sections tending to open the coupling joint laterally.

2. An automatic pipe coupling, comprising two sections adapted for longitudinal engagement, a yielding spring device for pressing the sections together in the coupled position, and means attached to one pipe section

adapted to engage the other section and thereby resist lateral movement of the sections other than the normal uncoupling movement.

3. An automatic pipe coupling, comprising a pipe section, adapted to couple with a companion section upon relative longitudinal movement, a spring device attached to the pipe section for yieldingly pressing the contacting sections together, and means secured to each pipe section adapted to engage the companion section to resist relative lateral movement of said heads.

4. An automatic pipe coupling, comprising two pipe sections adapted to couple together upon longitudinal movement relative to each other, a spring device on each pipe section for yieldingly pressing said sections together, and means secured to one pipe section for engaging the companion section to resist relative lateral movement of said heads.

5. An automatic pipe coupling, comprising two pipe sections adapted to be coupled together by a preliminary longitudinal movement and a final lateral movement, a spring device attached to each section for yieldingly pressing the sections together and means secured to each section adapted to engage the companion section and having substantially free movement in the direction of said final lateral movement, but adapted to resist other lateral movement.

In testimony whereof I have hereunto set my hand.

NICHOLAS F. NIEDERLANDER.

Witnesses:

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F. G. WILLIAMSON.