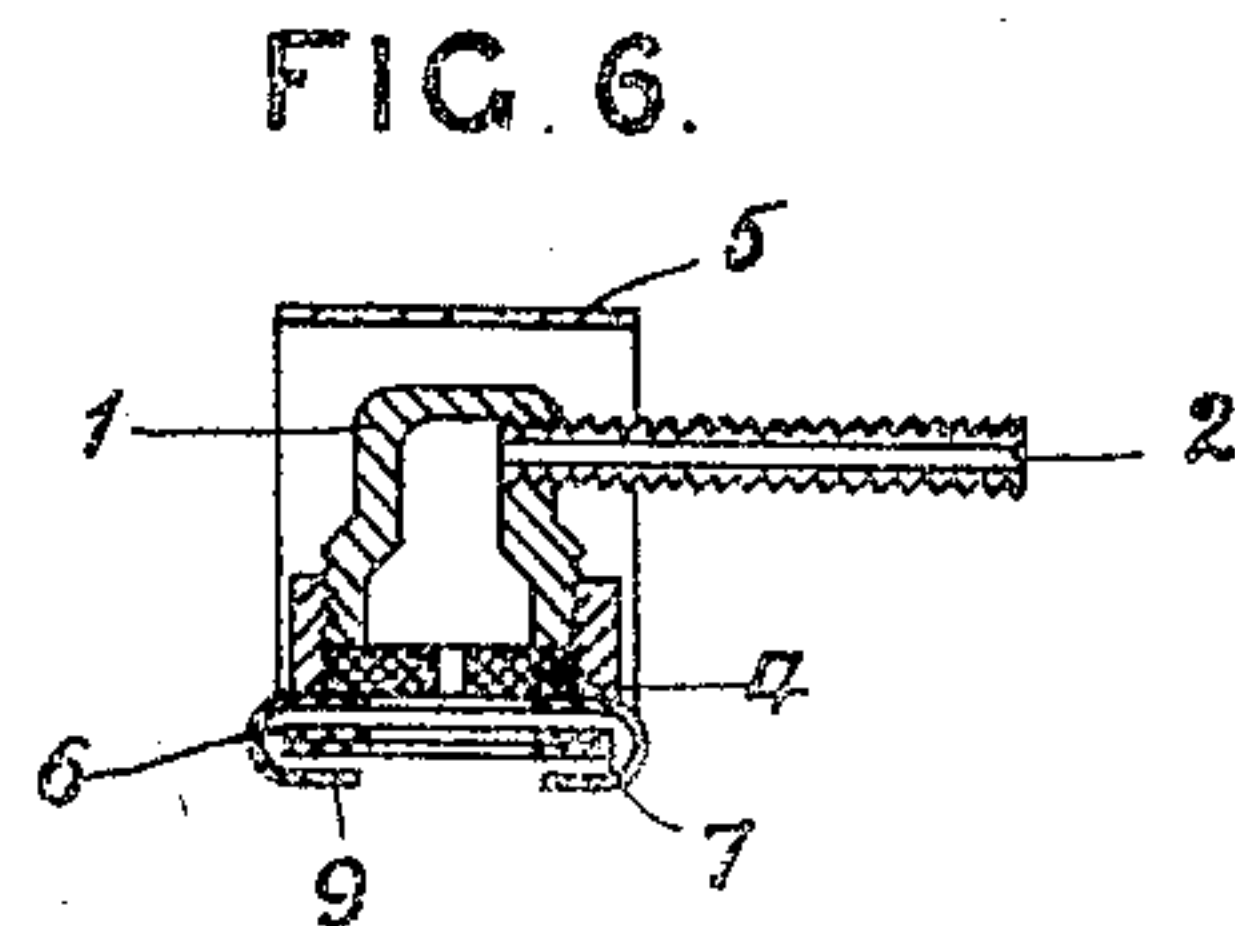
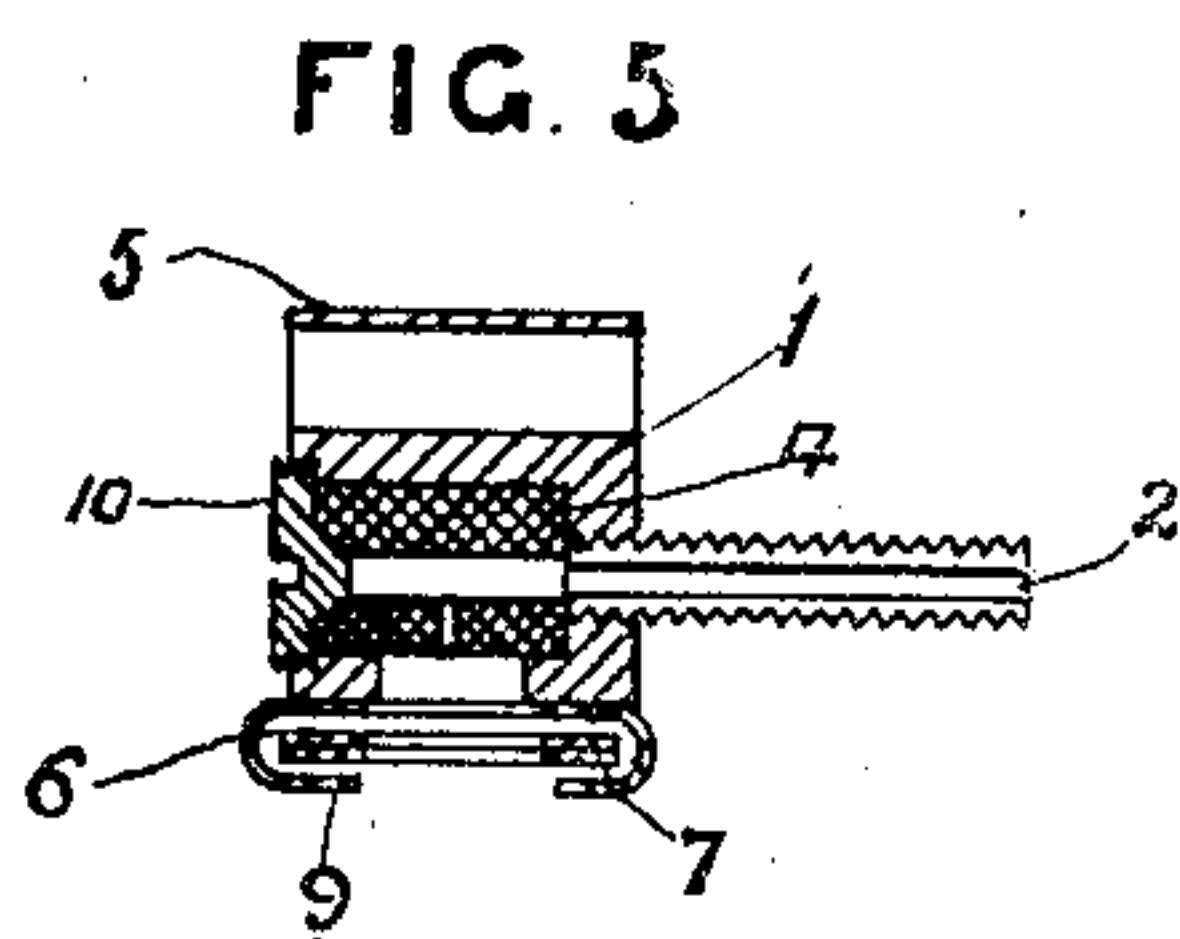
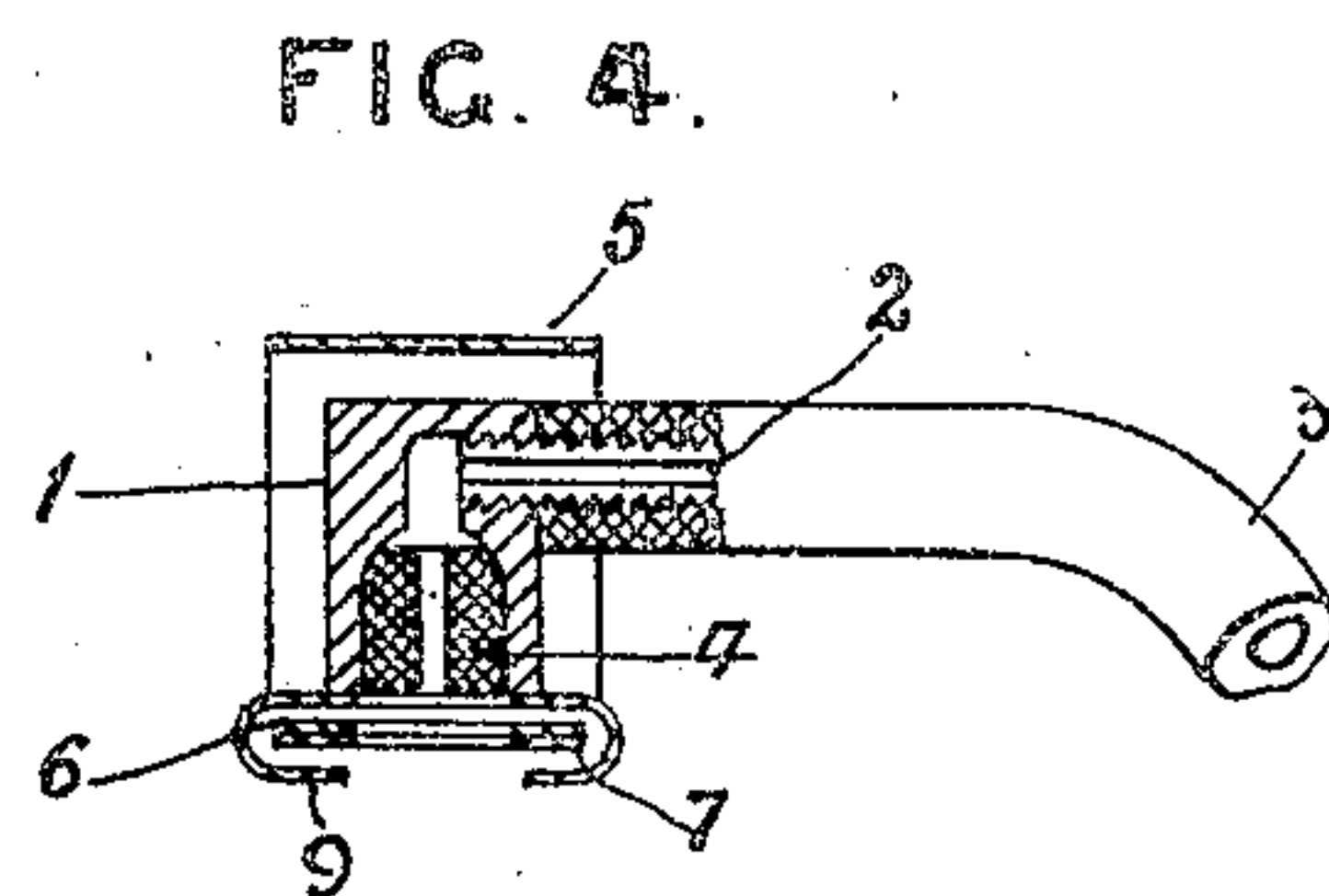
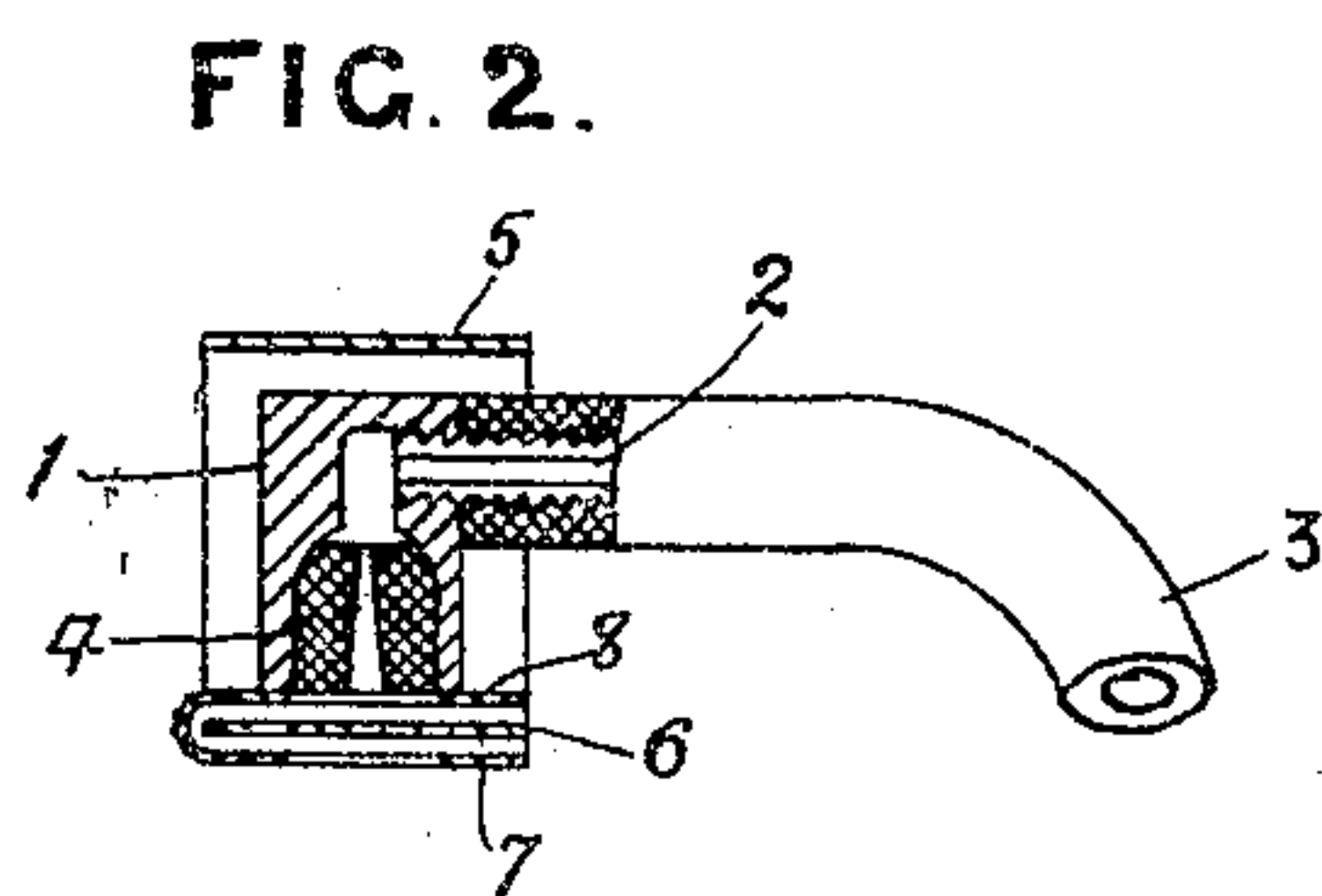
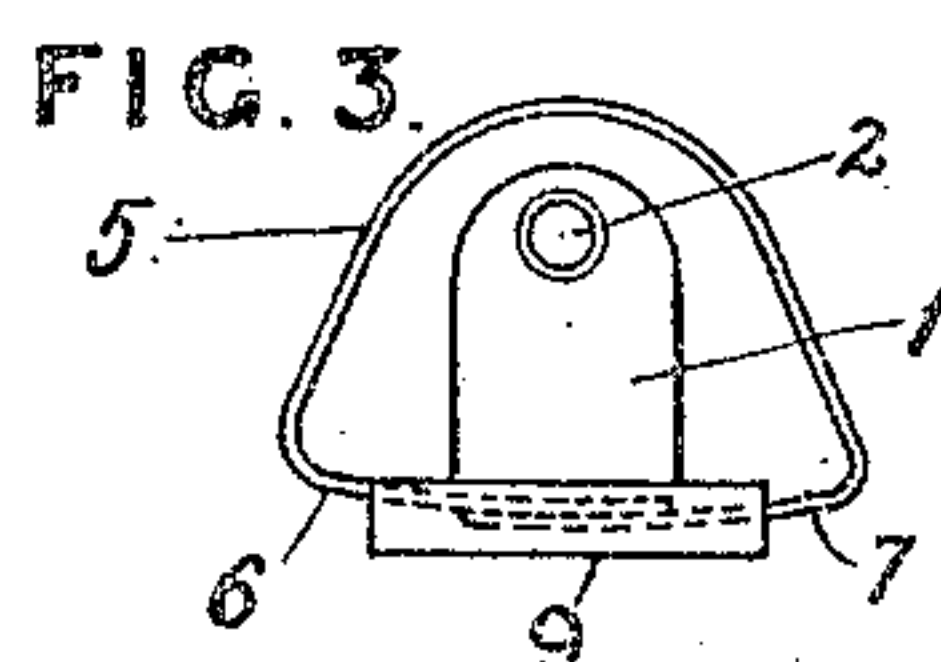
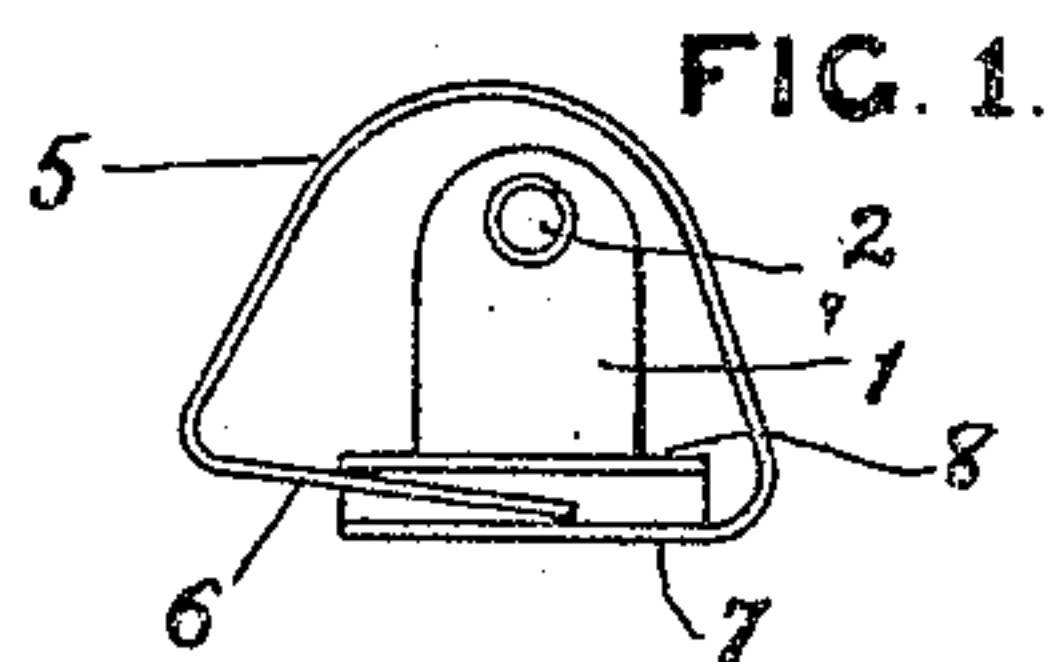


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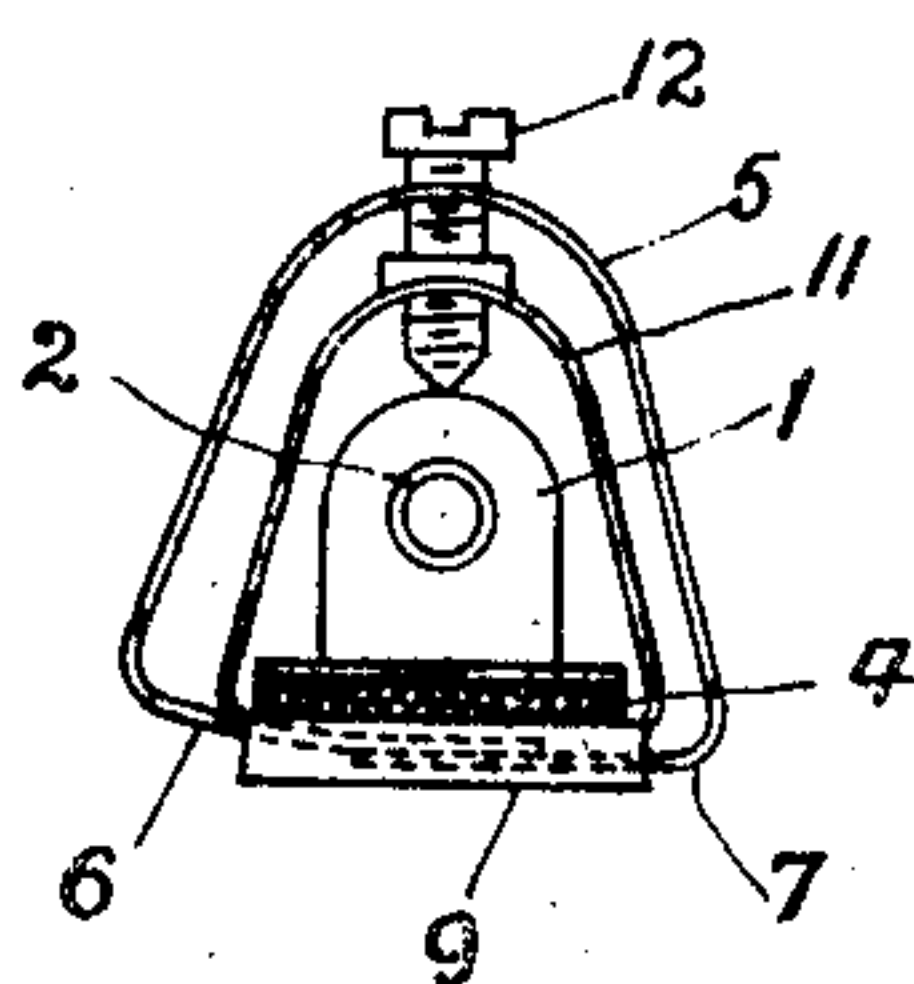
PATENTED AUG. 25, 1908.

F. S. NICKELLS.  
AIR PUMP OR INFLATOR.  
APPLICATION FILED MAY 4, 1907.

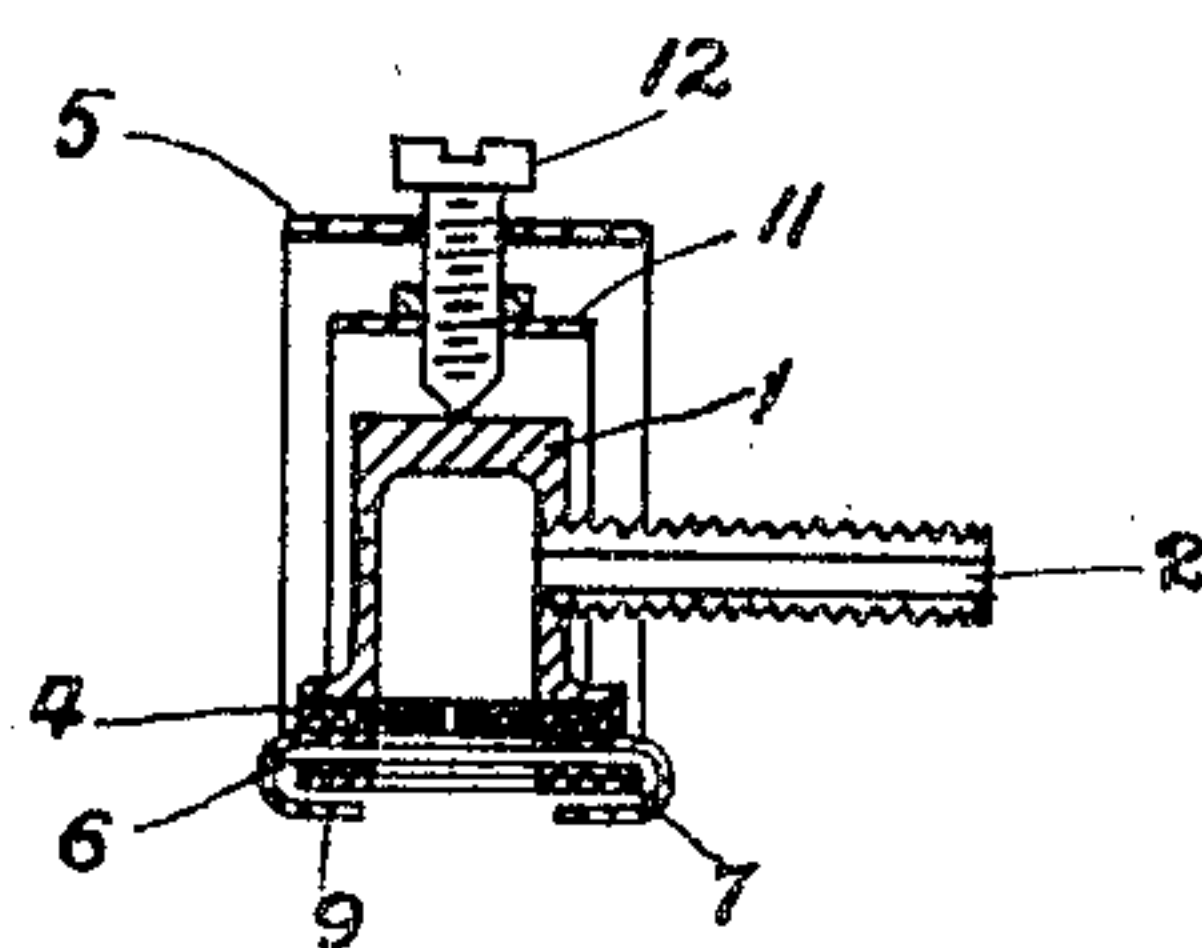
2 SHEETS—SHEET 1.



**FIG. 7.**



**FIG. 8.**



WITNESSES

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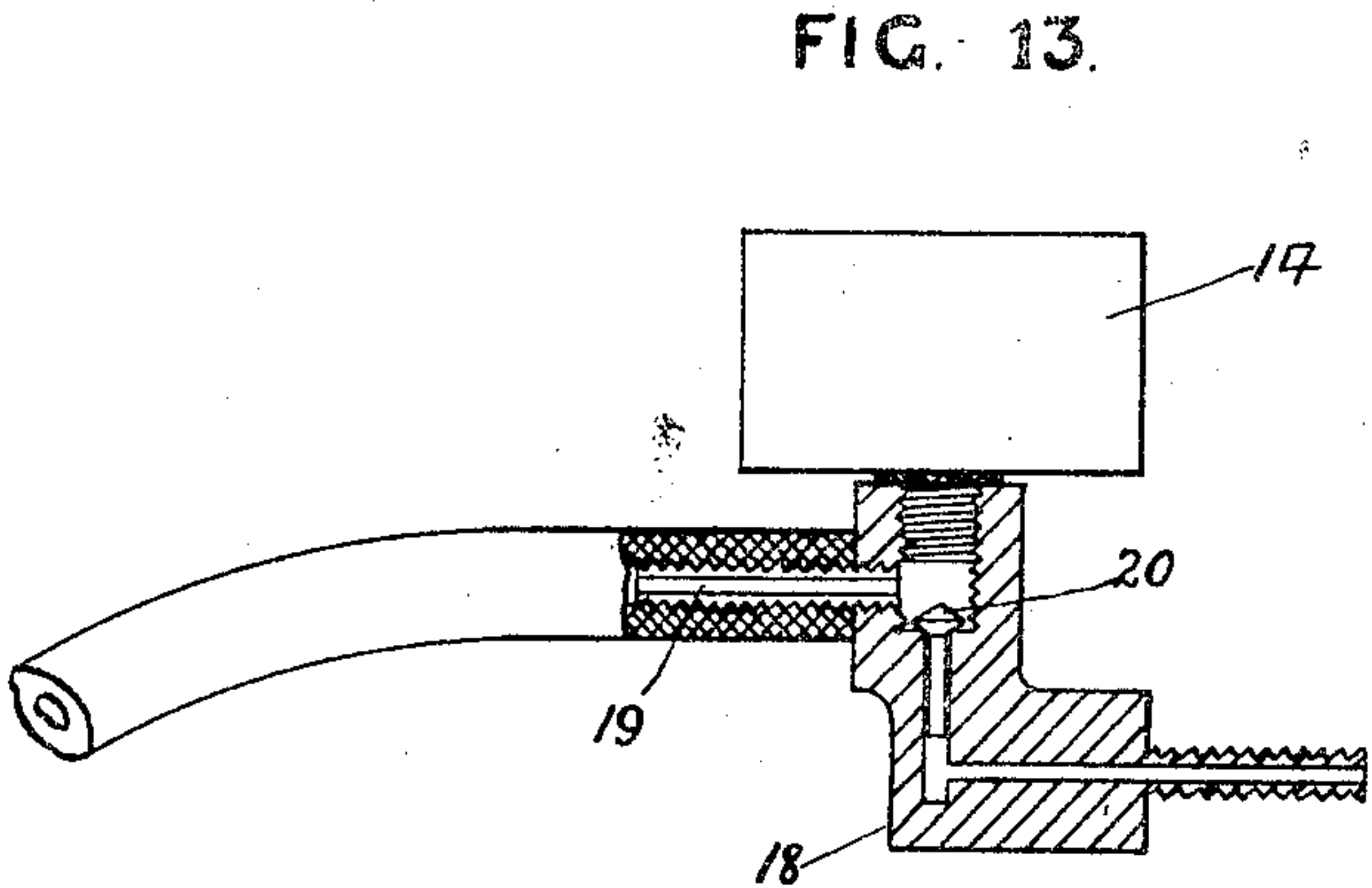
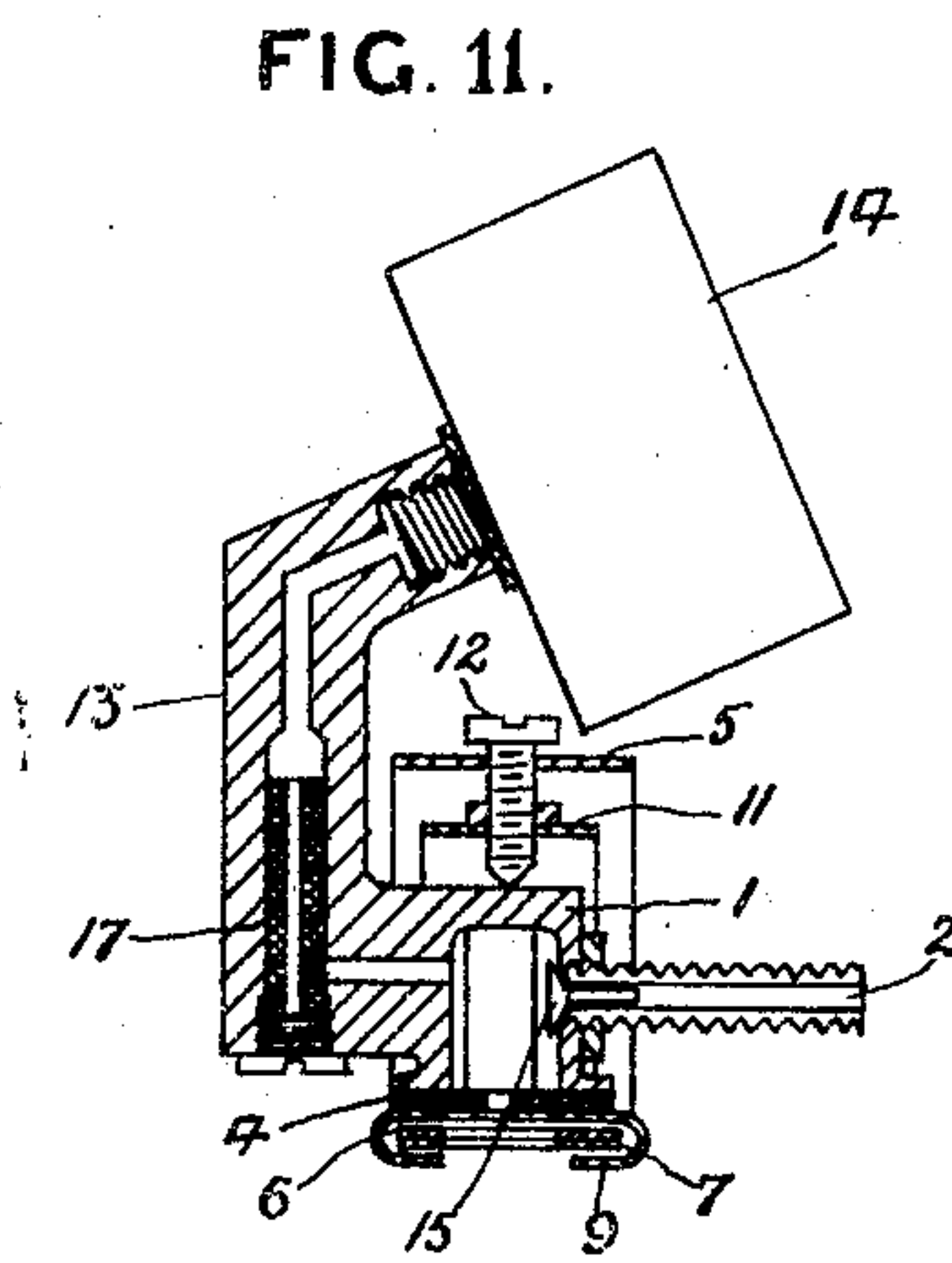
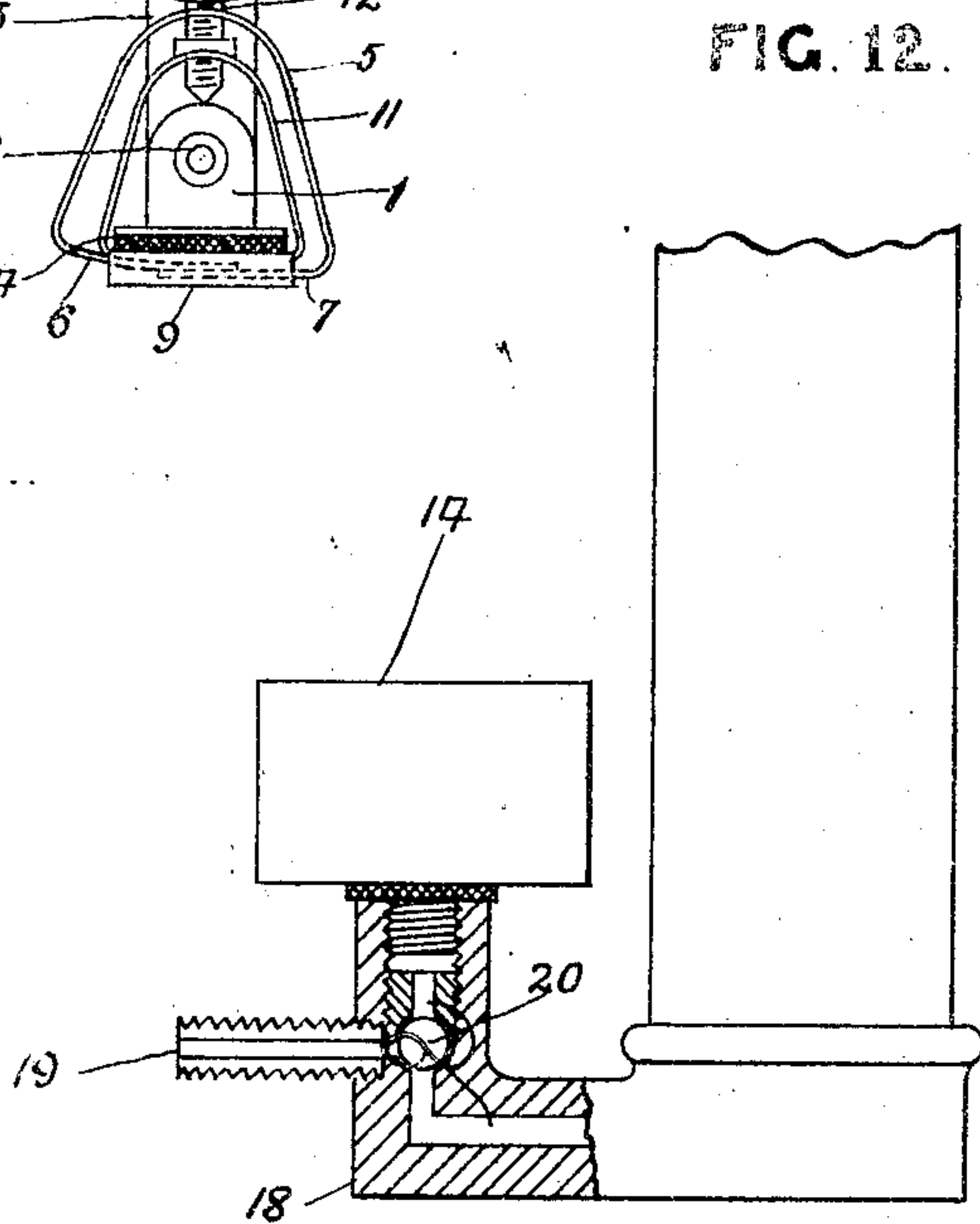
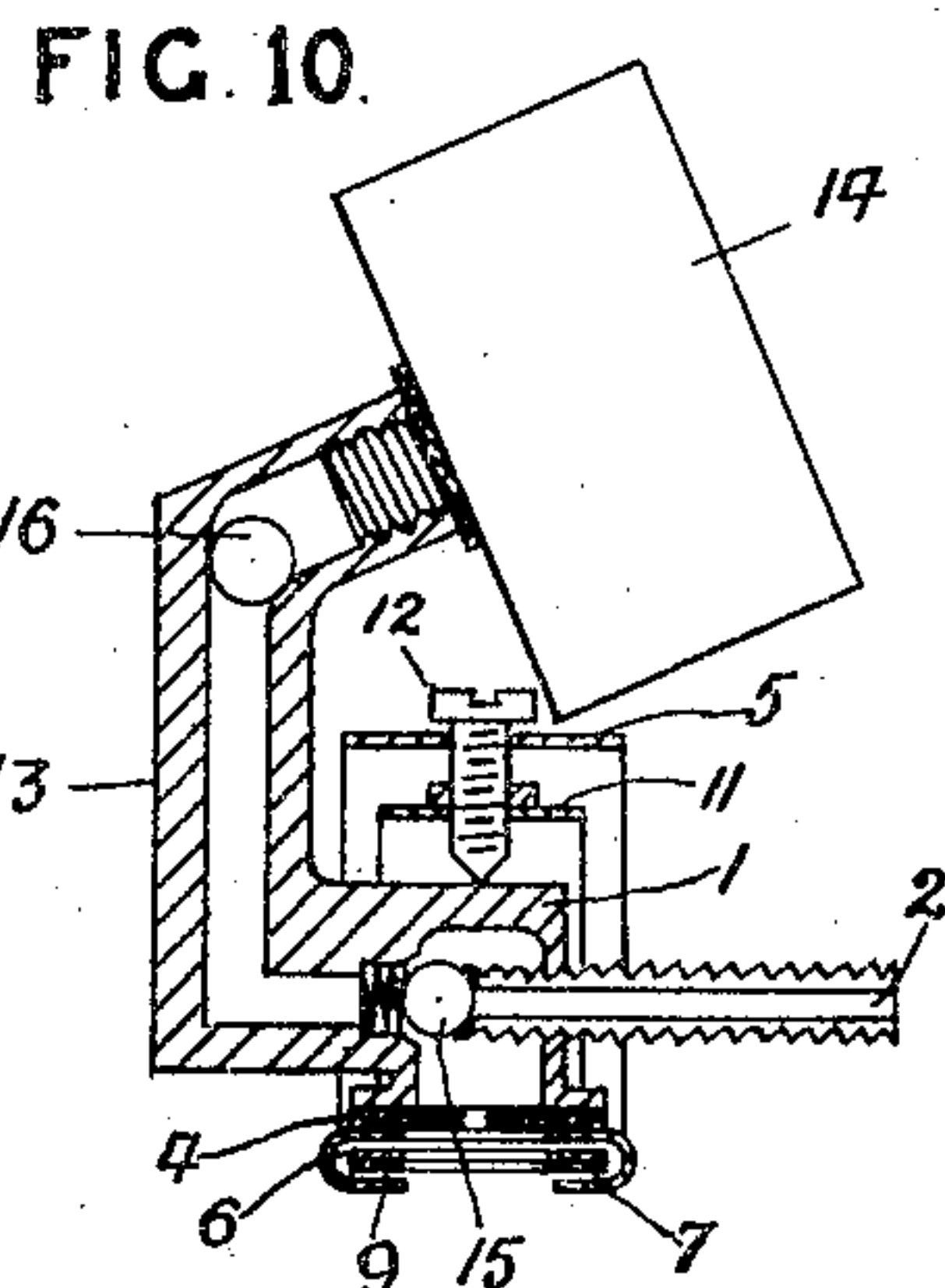
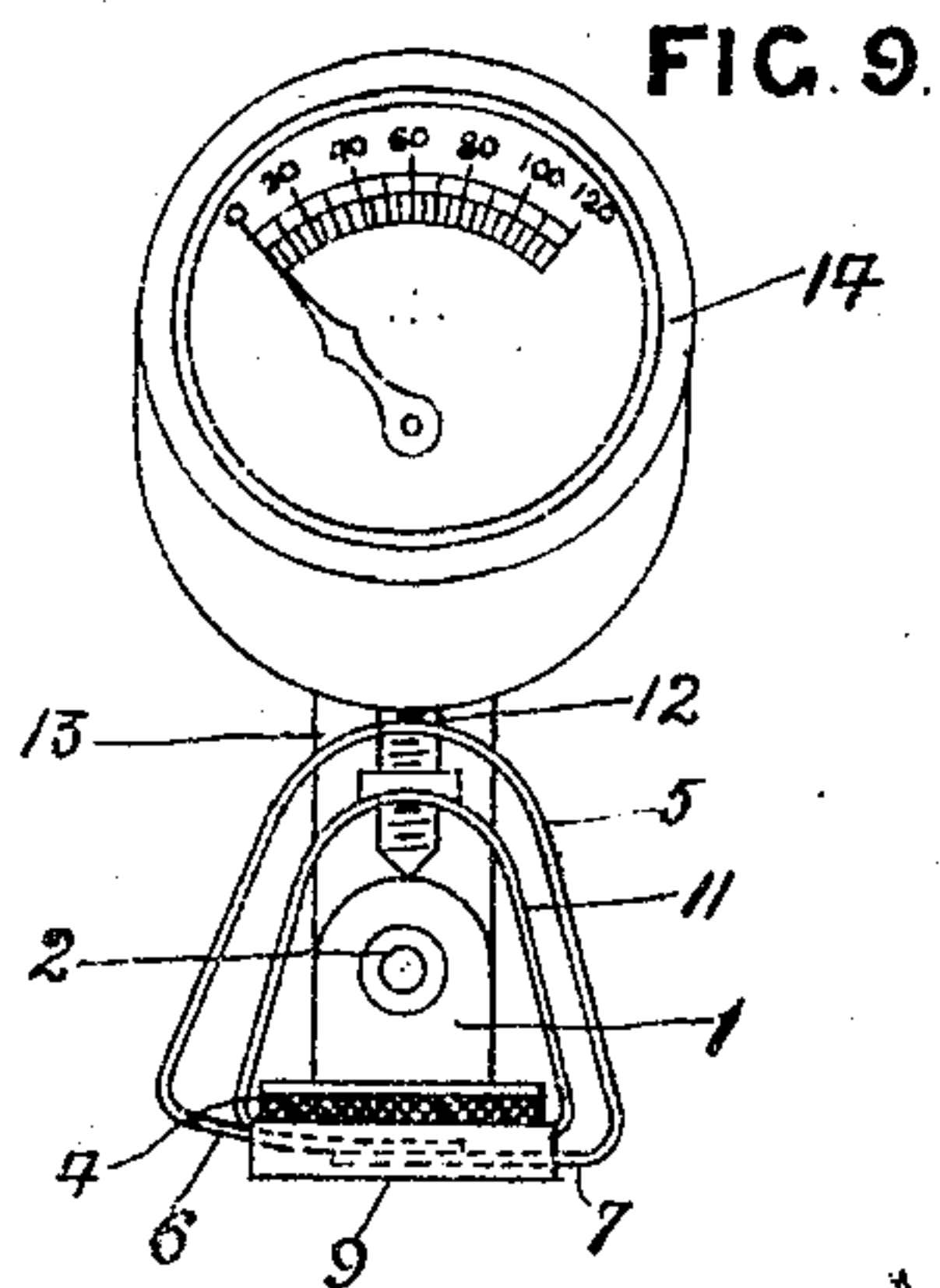
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

FREDERICK SEPTIMUS NICKELLS, OF LONDON, ENGLAND.

## AIR-PUMP OR INFLATOR.

No. 896,933.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed May 4, 1907. Serial No. 371,842.

*To all whom it may concern:*

Be it known that I, FREDERICK SEPTIMUS NICKELLS, a subject of the King of Great Britain, residing at 2 Old Dover road, Blackheath, London, S. E., England, have invented new and useful Improvements in or Connected with Air-Pumps or Inflators, of which the following is a specification.

This invention has reference to a device for connecting an inflator or air pump to the valve of a pneumatic tire so as to obtain a perfectly air tight connection in a simple and expeditious manner and to provide means for registering or indicating the pressure of air in the tire.

The invention is also applicable for other purposes where it is desired to make an air tight connection or union when forcing air under pressure and at the same time register or indicate the pressure of air in the article into which air is being forced.

The invention is illustrated upon the accompanying drawings, in which—

Figure 1 is a front view of a connection or union. Fig. 2 is a sectional view of Fig. 1 showing a portion of the tubing by which the union or connection is attached to the pump or inflator. Fig. 3 is a similar view to Fig. 1 showing the clip portion of the connection or union with two jaws only. Fig. 4 is a sectional view of Fig. 3 showing a portion of the flexible tubing as shown by Fig. 2. Figs. 5 and 6 are sectional views showing modified forms of the union or connection. Fig. 7 is a front view and Fig. 8 a sectional view of same showing a further modified form of the union or connection. Fig. 9 is a front view of a combined connection or union and register or indicator. Fig. 10 is a sectional view of Fig. 9. Fig. 11 is a similar view to Fig. 10 slightly modified. Fig. 12 is a part sectional view showing a register or indicator formed with the bottom portion of the pump or inflator. Fig. 13 is a part sectional view of an indicator or register for attaching to the end of a pump or inflator.

In carrying this invention into practice I provide a small chamber 1 having a branch inlet 2 to which the flexible connection 3 of a pump or inflator is secured. Fitting into the outlet of this chamber is a rubber plug or cushion 4 or equivalent, having a small bore or hole which may taper inwardly if desired as shown by Fig. 2. This chamber 1 fits between the bowed portion of a clip or connecting device 5 made of spring steel, or metal

reinforced with a flat spring. The ends of this clip are bent inwards to form jaws 6, 7, sufficient metal being left on the one jaw to allow it to be bent over to form a socket into which the jaw 6 fits as clearly shown by Fig. 1. The chamber 1 is fixed onto or secured to the turned over part or third jaw 8, the bore or outlet of the said chamber fitting over an opening formed in the said jaw 8. Corresponding holes or openings, sufficiently large to enable the stem of a valve to pass freely through, are also formed in the jaws 6 and 7.

To fit the connection or union on to a valve stem, the bowed portion of the clip 5 is compressed until the hole in the jaw 6 coincides with the holes in the jaws 7 and 8. The valve stem will then freely pass through these holes and bed against the rubber plug 4, and on releasing the bowed portion of the clip the jaws will spring apart, thereby firmly gripping the valve stem and making a perfectly air tight connection between the valve and the pump or inflator.

At Figs. 3 and 4 I have shown the spring clip 5 with two jaws 6, 7 only. In this case the chamber 1 is attached to an independent cross piece or base 9 which embraces the edges or sides of the jaws and forms a kind of socket into which the jaws fit.

In the modification shown by Fig. 5 instead of inserting the rubber plug or cushion 4 by way of the outlet, into the chamber 1, I form a hole in one end of the chamber through which the plug or cushion 4 is inserted. A cap or cover 10 screws into and seals this opening. The branch inlet 2 screws into the opposite end of the chamber 1 and the plug or cushion 4 is provided with an outlet communicating with the outlet in the chamber as clearly shown.

At Fig. 6 I have shown the chamber 1 made in two parts. The upper portion screws into the lower portion and bears upon a rubber washer or cushion 4 provided with a small opening resting upon the independent cross piece or base 9. The stem of the valve beds against this washer when the connection is fitted on to the valve.

In the modification shown by Figs. 7 and 8 I have made the chamber 1 detachable or loose resting upon a rubber disk or cushion 4. This disk or cushion rests upon the cross piece 9, and on one side of this cross piece sufficient metal is left to bend over and form the loop 11, the end being connected by



soldering or otherwise to the opposite edge of the cross piece. In order to hold the chamber 1 firmly on its seating 4, a screw 12 passes through a hole formed in the top of the bowed portion of the clip 5 and screws through the top of the bow or loop 11, bearing upon the top of the chamber 1; by which means the said chamber can be firmly held on its seating or easily released when it is desired to renew the seating 4.

At Figs. 9 and 10, I have shown my connection or union in combination with a gage or indicator for registering the pressure of air contained in the tire or other article being inflated. In this case a hollow arm or branch 13 is formed with the chamber 1, and into the end of this arm a pressure gage or indicator 14 is fitted. In the interior of the chamber 1, I fit a ball or other valve 15 which is held against the orifice of the branch inlet 2 by a spring or equivalent. By this means when air is being forced through the inlet 2 this valve closes the passage to the gage or indicator, thereby making the said gage or indicator inoperative; but on the reverse action of the pump piston the valve closes the orifice of the branch inlet 2, allowing the pressure of air in the tire or other article being inflated to be registered on the gage or indicator. A valve 16 is also inserted in the passage of the branch or arm 13 to prevent any shock to the gage or indicator when disconnecting the pump.

In the method shown by Fig. 11 the valve 15 only comes into operation on the backward movement of the pump piston, closing the orifice of the branch inlet 2, a rubber valve 17 or equivalent being inserted in the passage of the branch or arm 13 to prevent any shock to the gage or indicator when disconnecting the pump.

At Figs. 12 and 13 I have shown an arrangement for attaching the gage or indicator 14 to the end of the pump instead of to the connection or union. In the method shown by Fig. 12 an arm or branch 18 is formed on the end of the pump, having an

outlet branch 19 to which the usual flexible connection from the pump to the tire valve is secured. A ball or other valve 20 is inserted in the passage of the arm 18, which valve closes the passage to gage or indicator when forcing air into the tire but allows a free passage through the outlet 19. On the reverse action of the pump piston this valve 20 closes the passage to the pump, allowing the pressure of air in the tire to be indicated on the gage. The method shown by Fig. 13 is very similar to that shown by Fig. 12, only in this case the arm or branch 18 is made detachable from the pump end.

What I claim as my invention, and desire to secure by Letters Patent, is:—

1. A valve connection for inflation valves for air pumps comprising a chamber having an inlet to which the pump is connected and an outlet having a flexible cushion for the stem of the valve to bed against, a socket connected to the chamber and a spring jaw adapted to enter said socket to hold the device on the stem.

2. A connection for air pumps comprising spring controlled jaws adapted to engage the stem of a valve, one of said jaws having a socket adapted to receive the other jaw.

3. A connection for air pumps having spring controlled jaws, one jaw having a socket into which the other jaw engages, in combination with a gage for indicating the pressure of air contained in the article being inflated.

4. In combination in inflators a pressure gage attached to the inflator, a valve in the passage between the gage and the inflator for alternately closing the passage between the inflator and the gage and the inflator and the article being inflated as set forth.

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

FREDERICK SEPTIMUS NICKELLS.

Witnesses:

H. W. DENTON INGHAM,  
CHAS. S. RUTLEDGE.