

Feb. 18, 1930.

A. E. PETERSON

1,747,841

SUBSTATION APPARATUS

Filed April 20, 1928

FIG. 1

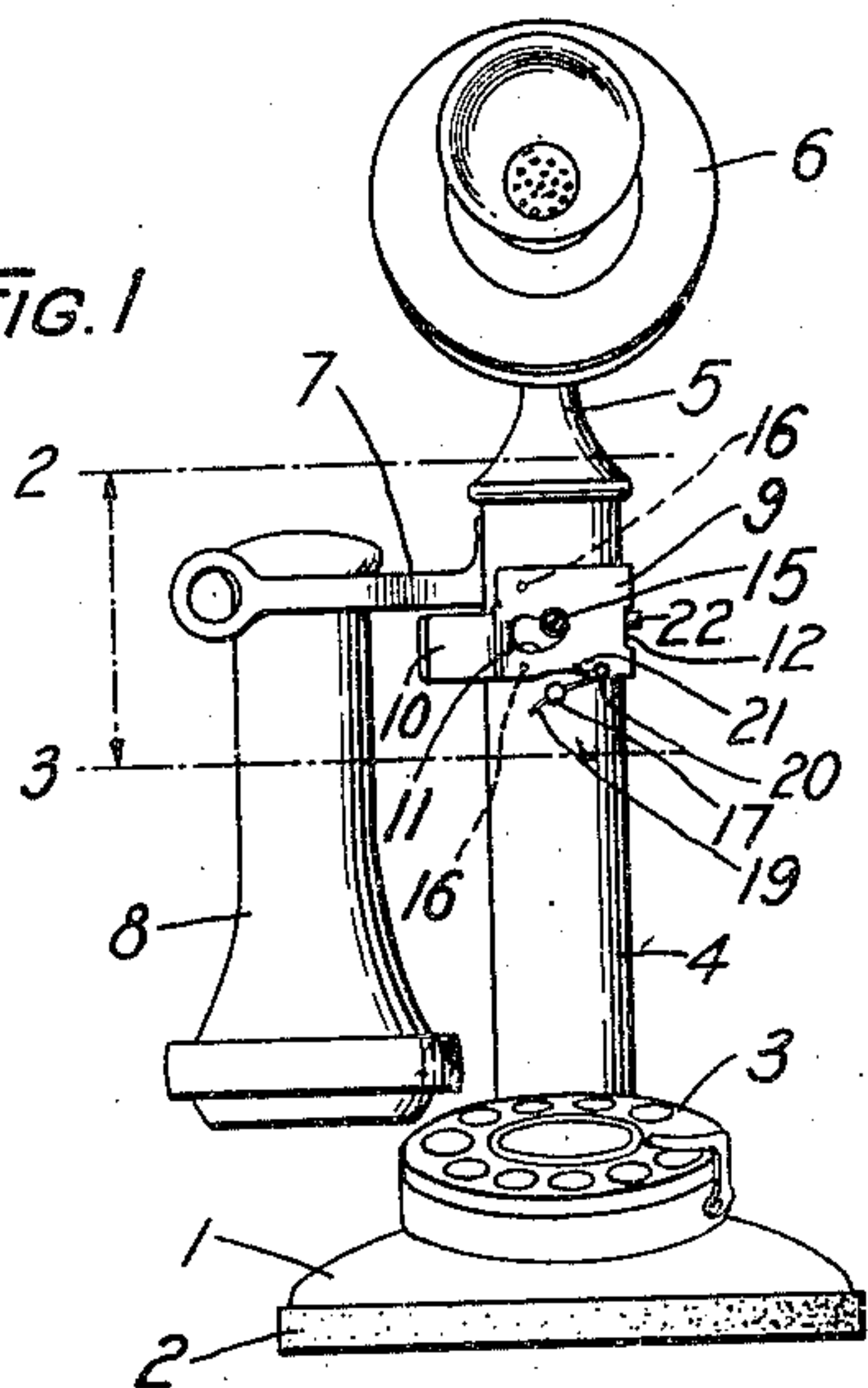


FIG. 2

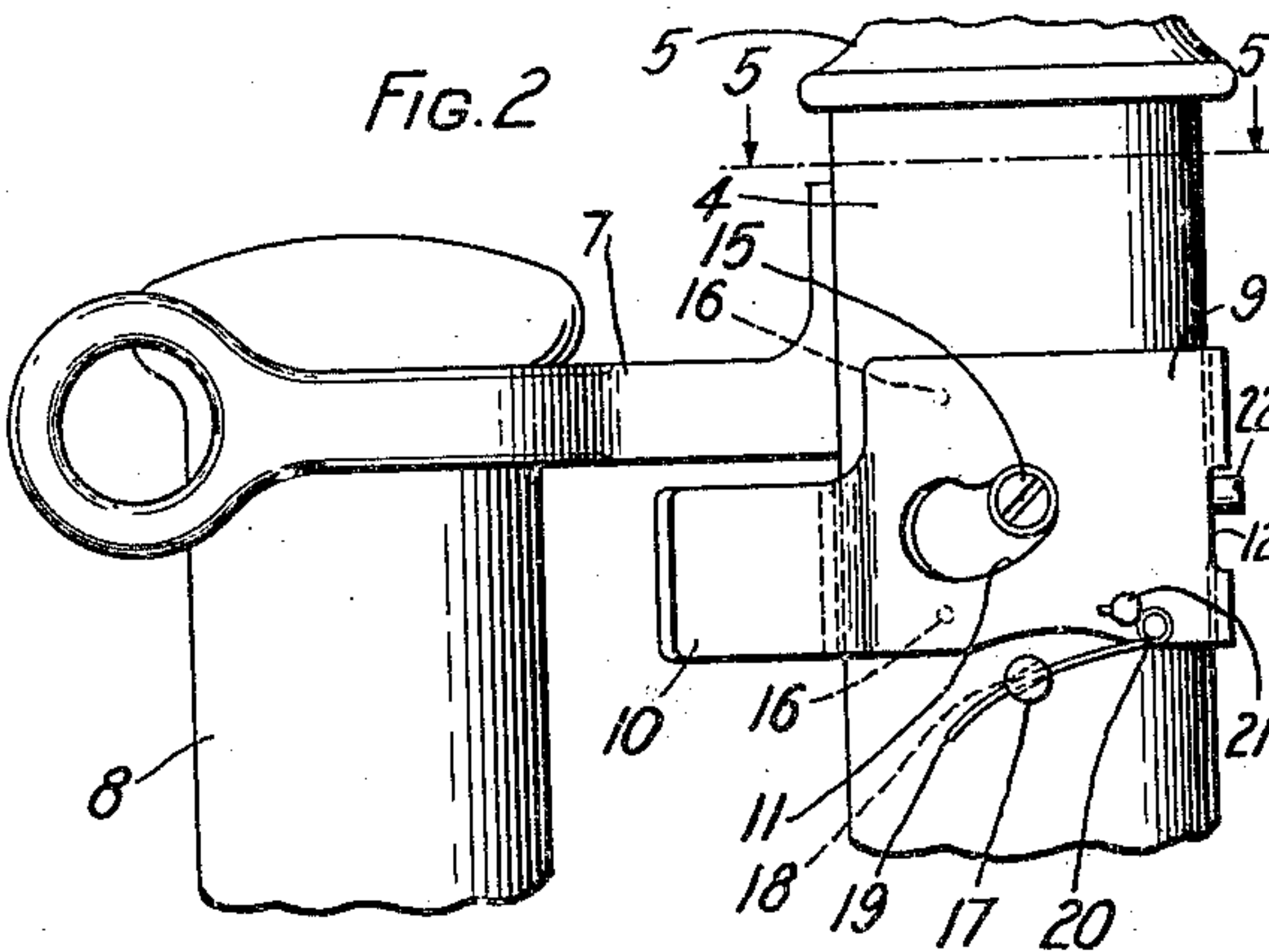


FIG. 3

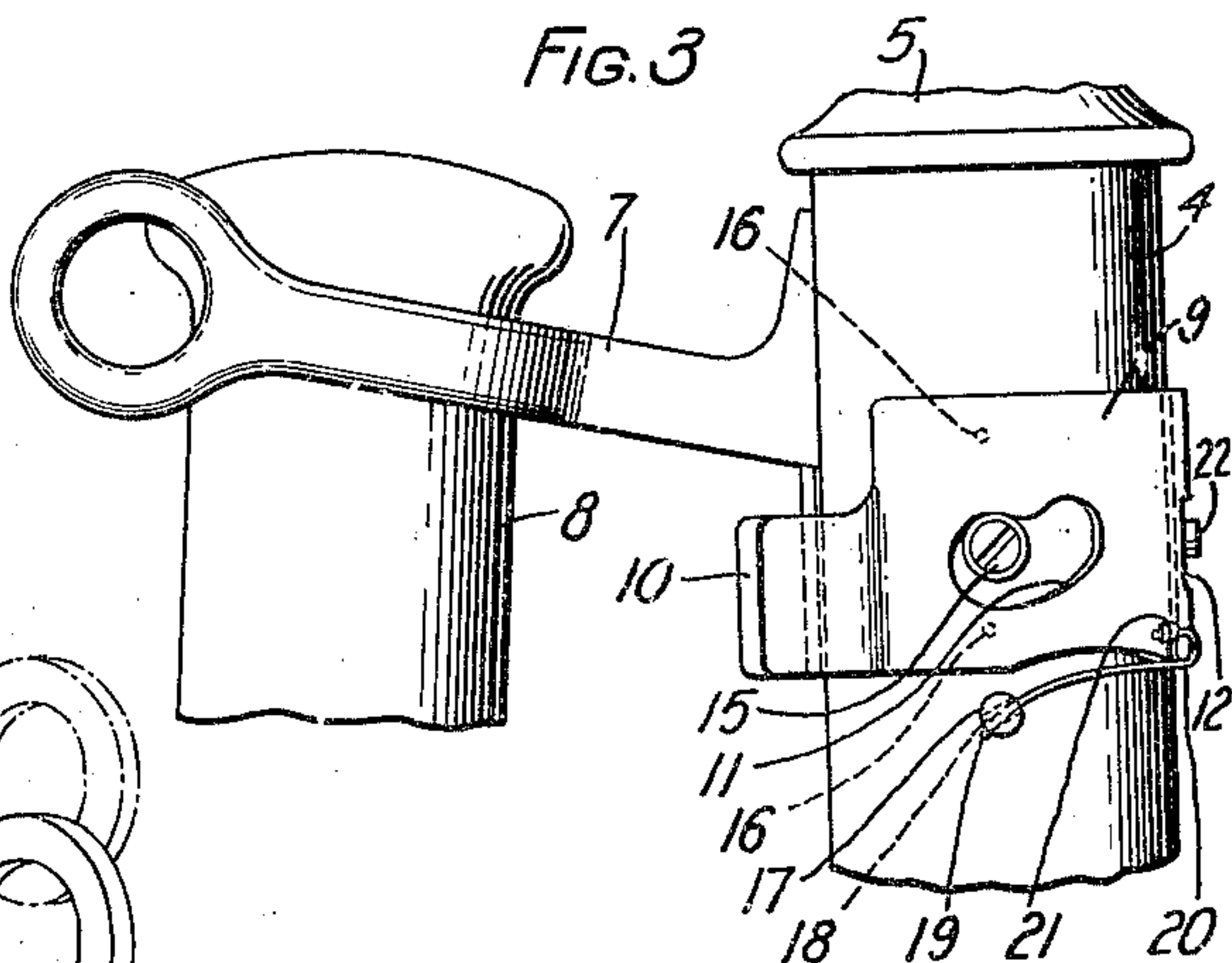


FIG. 4

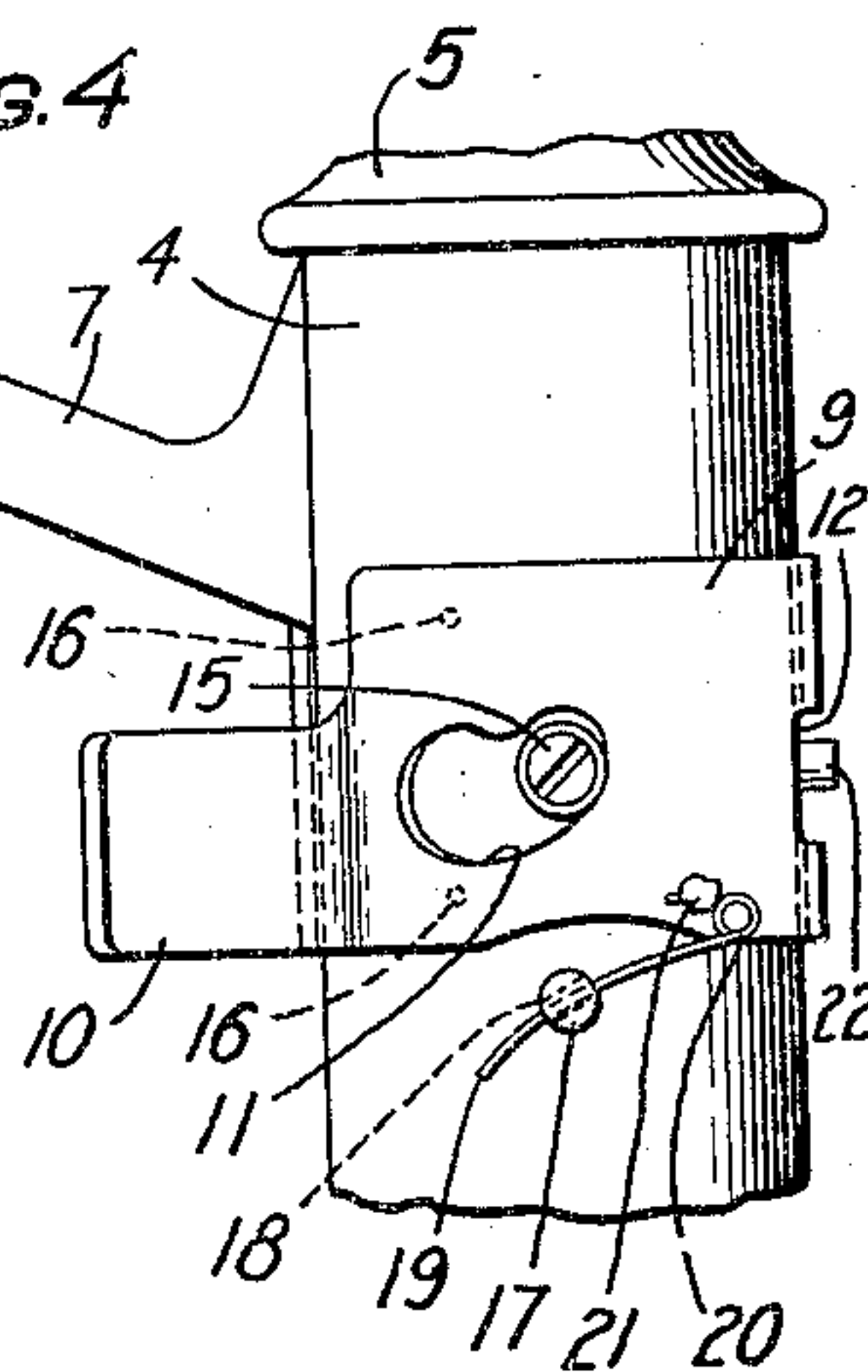
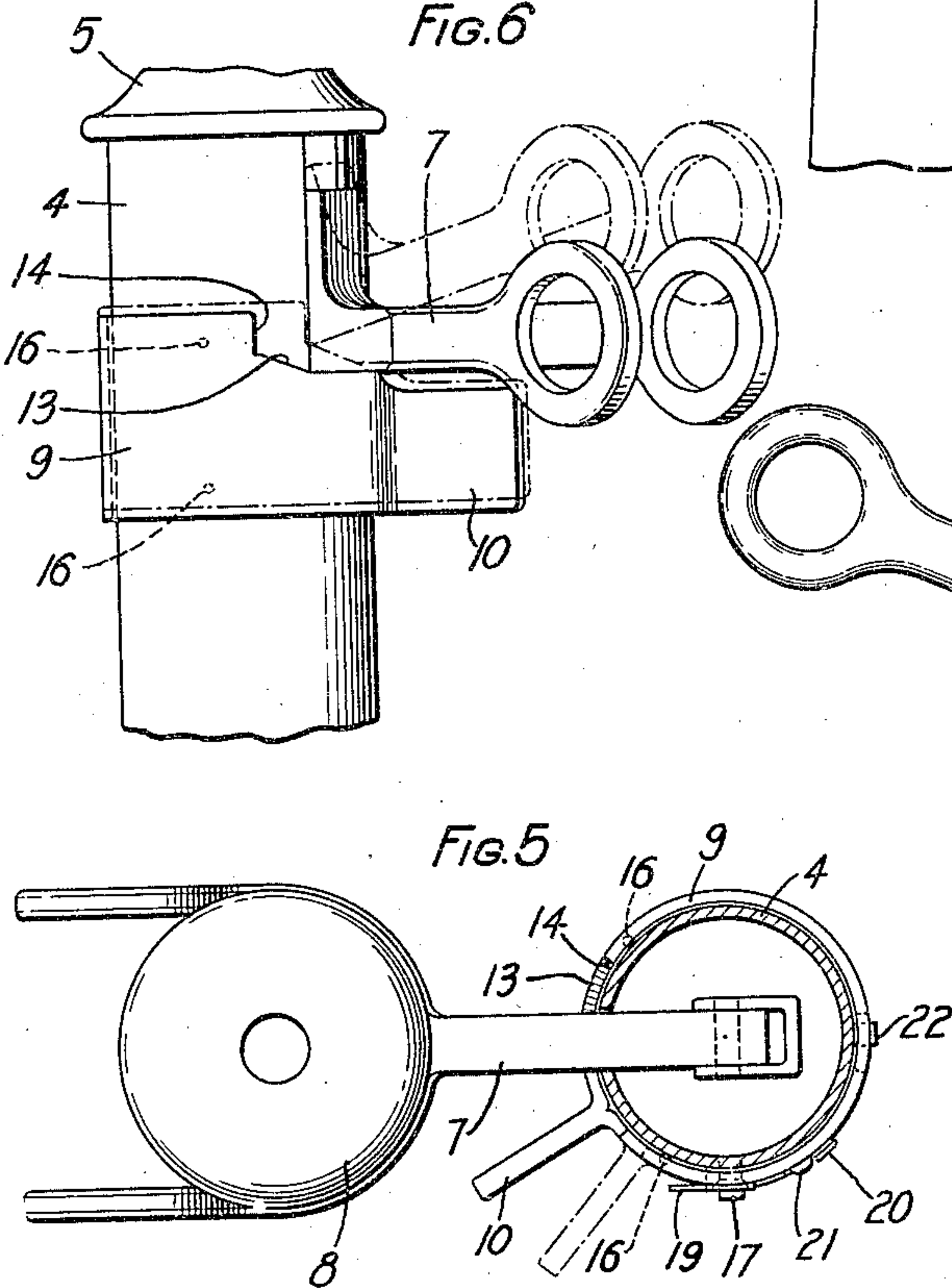


FIG. 5



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SUBSTATION APPARATUS

Application filed April 20, 1928. Serial No. 271,443.

This invention relates to improvements in telephone substation instruments of the automatic type and its object in general is to provide means by which a person by the use of only one hand may dial a call without removing the receiver from its supporting device.

In accordance with the general features of this invention manually operable means are provided for raising the receiver support with the receiver thereon and holding the receiver support in raised position so that the circuit controlled by the receiver support is in operative condition for carrying signals from the calling dial to the switches operative to set up the call connections. The receiver support raising and holding means automatically moves out of holding position, when the receiver is removed from its support, so that when the receiver is replaced upon its support the substation set will be automatically disconnected from the line.

To further describe this invention its application to a desk stand type of telephone instrument is illustrated in the accompanying drawings in which Fig. 1 is a desk stand type of instrument with receiver hook raising and supporting means attached thereto. Figs. 2, 3, 4 and 6 are views illustrating the apparatus in different positions of its operation and Fig. 5 is a sectional plan view of the desk stand instrument taken upon line 5—5 of Fig. 2.

As shown in the drawings, 1 is the base portion of a desk stand having on its lower surface portion a cushion 2. 3 is the usual calling dial which is attached to the base 1, 4 is the pillar, 5 is the neck supporting the transmitter 6, 7 is the receiver supporting member and 8 is the receiver.

Encircling the pillar 4 is a ring shaped member 9 having a handle 10, a cam slot 11, a section cut out at 12 and a cam portion 13 and stop portion 14 shown on Fig. 6.

The ring member 9 is loosely fitted to the pillar 4 and is supported thereon by a pin or screw 15 which is secured to the pillar 4 in any suitable manner. Ball bearings 16 may be employed between the ring member 9 and the pillar 4 or any suitable bearing surface and means may be provided to reduce friction between the ring member 9 and the pillar 4.

A second pin 17 is attached in any suitable manner to the pillar 4. This pin is provided with a transverse opening at 18, as shown in dotted lines in Fig. 2, to receive one end of a spring member 19 which is slidable therein. This spring member 19 is coiled at 20 and secured to the ring 9 as shown at 21.

When a call connection is to be established, instead of removing the receiver 8 from its supporting member 7 while the call is being dialed, as is now commonly done when operating this type of instrument, the receiver 8 is left on its supporting member 7 and the ring 9 is rotated about the pillar 4. The ring 9 when rotated about the pillar 4 is raised by reason of the cam slot 11 and pin 15 and is moved to the position shown in Fig. 3 and by dotted lines in Fig. 6, the cam portion 13 engaging the receiver supporting member 7 and forcing it with the receiver 8 thereon to partially raised position as shown in Fig. 3. When this has been done the ring 9 is held in the position indicated in Fig. 3 with the pin 15 in the enlarged and indented portion of the cam slot 11. The spring 19 is drawn up through the transverse opening 18 of the pin 17 and is compressed by the weight of the receiver 8 which still rests on its supporting member 7. Dialing of the call is proceeded with in the usual manner by rotation of the calling dial 3 to the required station numbers. When the dialing operation has been accomplished the receiver 8 is removed from its supporting member 7. As soon as the weight of the receiver 8 is removed from its supporting member 7 the supporting member 7 moves upward to full raised position as shown in Fig. 4 under the action of its own spring member which is located within the pillar 4 and is common to the desk stand type of substation instruments. Release of the weight of the receiver 8 from its supporting member 7 and release of the pressure of the receiver supporting member 7 from the ring 9 allows the spring 19 to slightly raise the ring 9 so that the indented portion of the cam slot 11 is released from the pin 15. The energy stored in the spring 19 also rotates the ring 9 back to normal position so that when the receiver 8 is replaced on its supporting member 7 the

disconnection of the substation set from the line is accomplished in the usual manner.

In some desk stand instruments a push button 22 is provided to disconnect the transmitter from the line while a subscriber is listening, a portion of the ring 9 has therefore been cut out at 12 to clear the transmitter cut-out push button 22. This cut-out section is only provided so that the ring 9 may be used on a desk stand instrument either with or without the transmitter cut-out push button 22.

What is claimed is:

1. In an automatic telephone substation instrument, a receiver supporting member, a receiver supported thereon, and a manually operated automatically restored lifting member attached to the instrument, beneath the receiver supporting member, to partially raise and restrain in partially raised position the receiver supporting member with the receiver thereon.

2. In an automatic telephone substation instrument, a receiver supporting member, a receiver supported thereon, and a manually rotated automatically restored member beneath the receiver supporting member to partially raise and restrain in partially raised position the receiver supporting member with the receiver thereon.

3. In an automatic telephone substation instrument, a receiver supporting member, a receiver supported thereon and a manually operated spring restored cam beneath the receiver supporting member to partially raise and restrain in partially raised position the receiver supporting member with the receiver thereon.

4. In an automatic telephone substation instrument, a receiver supporting member, a receiver supported thereon, and a manually rotated automatically restored cam ring beneath the receiver supporting member to partially raise and restrain in partially raised position the receiver supporting member with the receiver thereon during the dialing of a call.

5. In an automatic telephone substation instrument, a receiver supporting member, a receiver supported thereon, manually operated means beneath the receiver supporting member to partially raise and restrain in partially raised position the receiver supporting member with the receiver thereon during the dialing of a call and spring means to restore said manually operated means to normal position when the receiver is removed from its supporting member.

In witness whereof, I hereunto subscribe my name this 19th day of April, 1928.

ARTHUR E. PETERSON.