

No. 775,442.

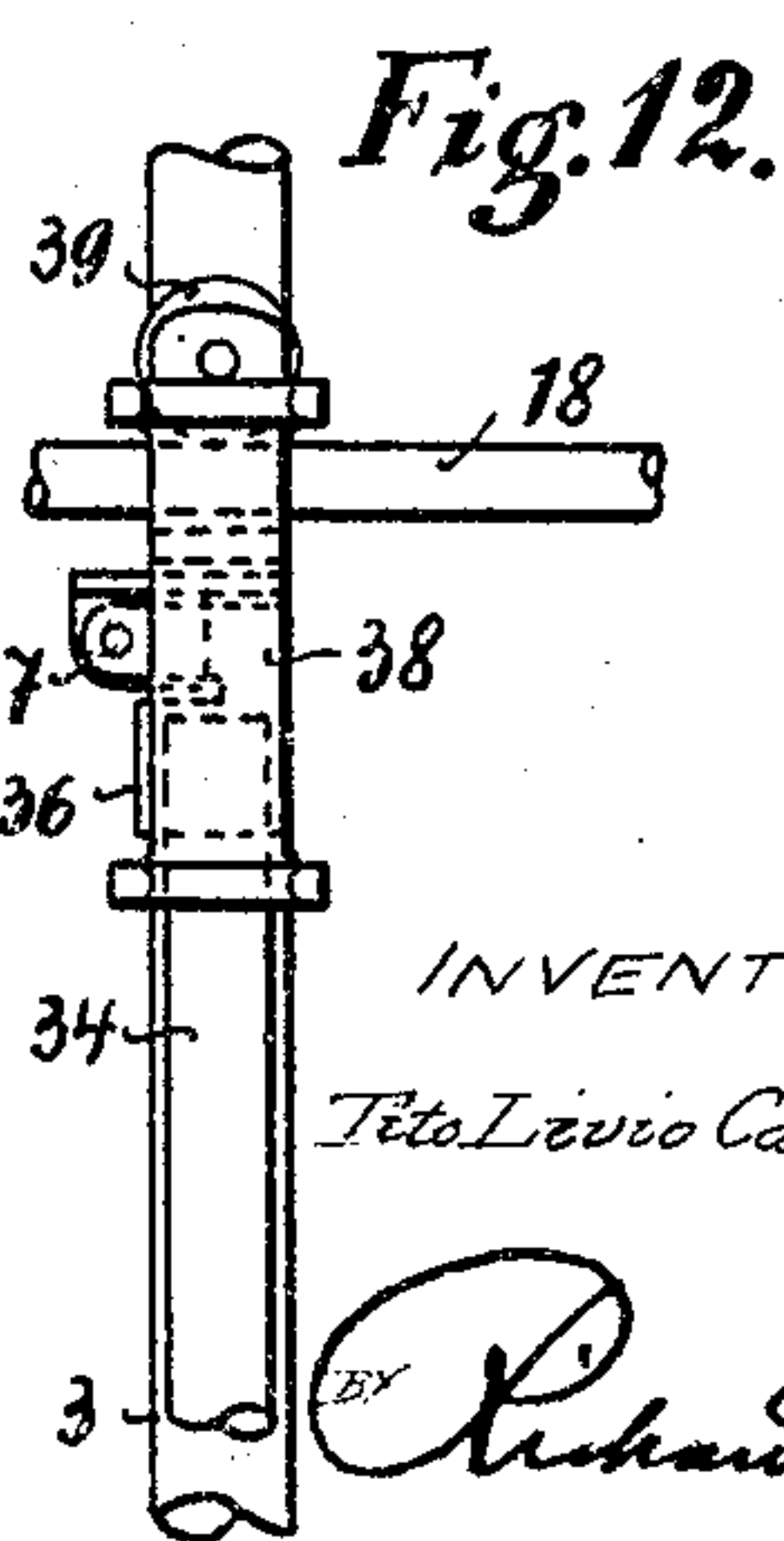
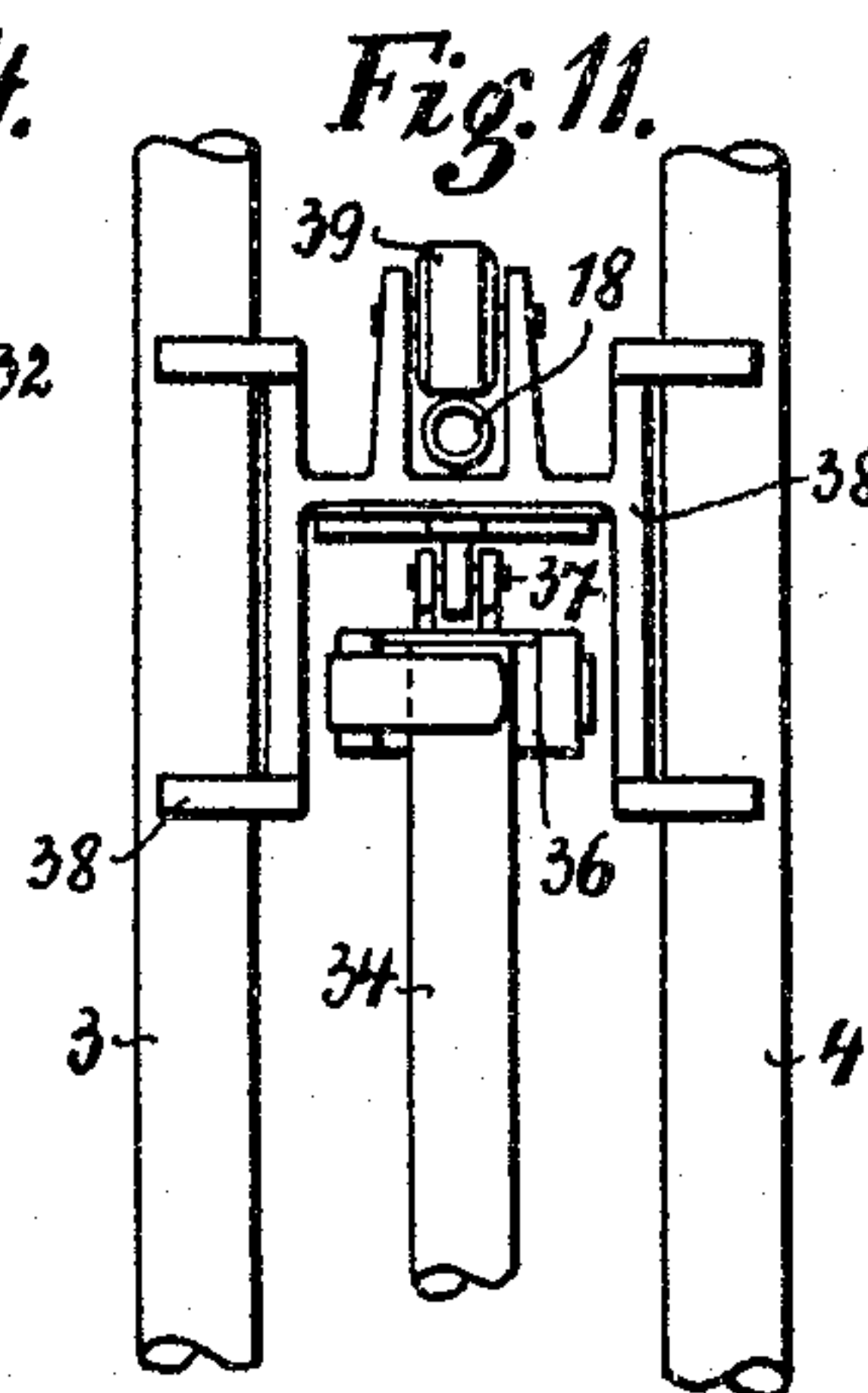
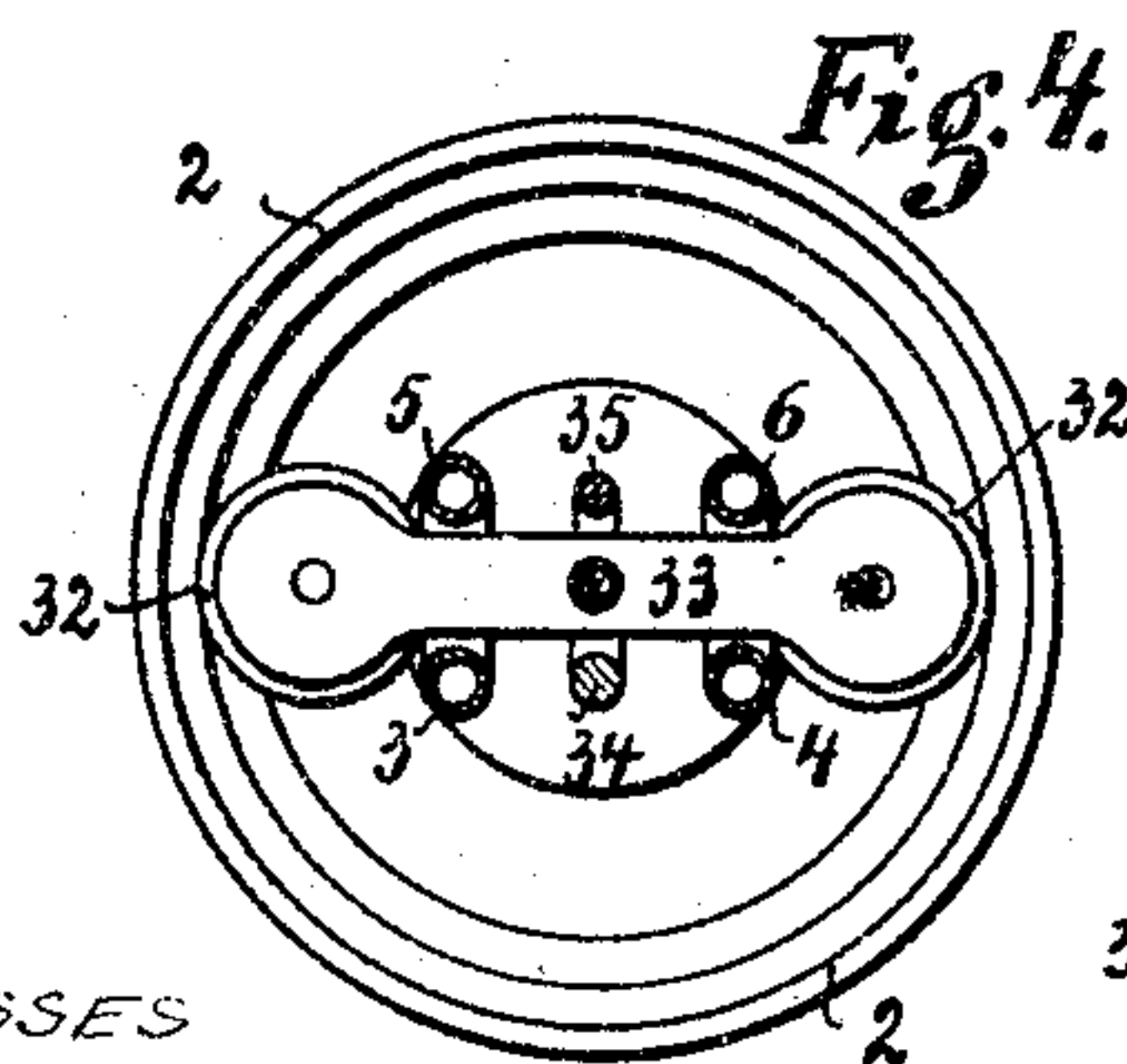
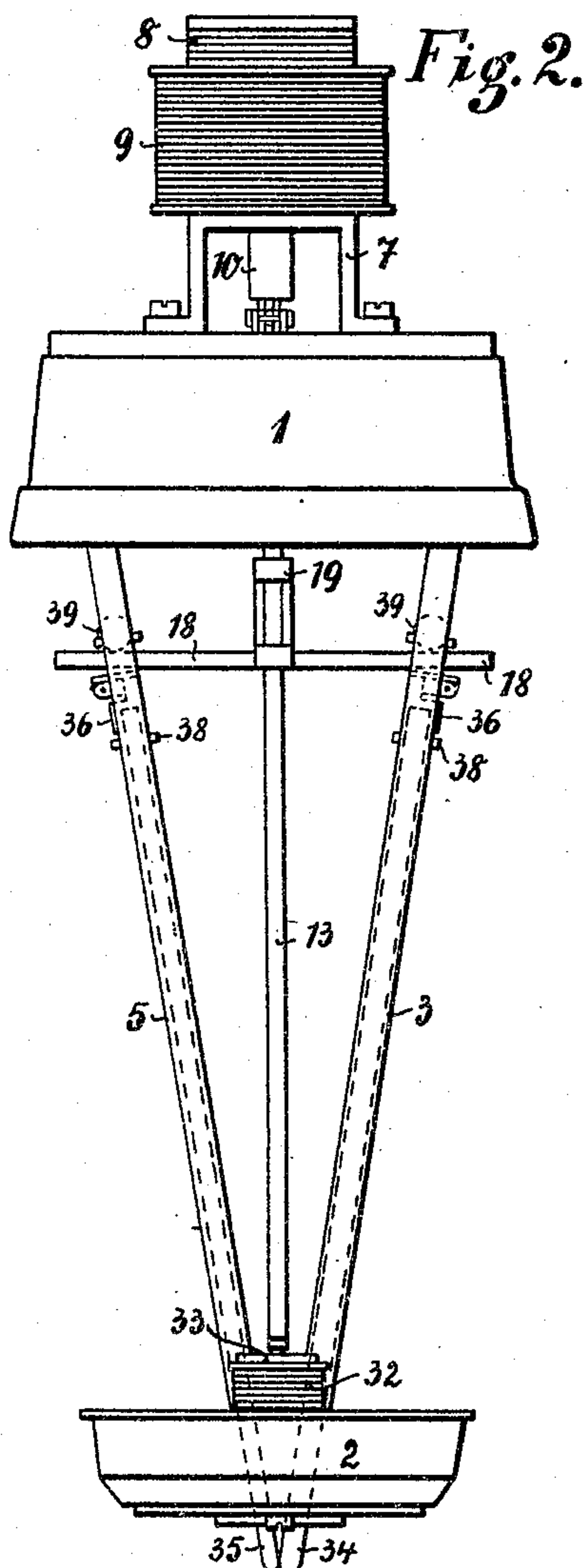
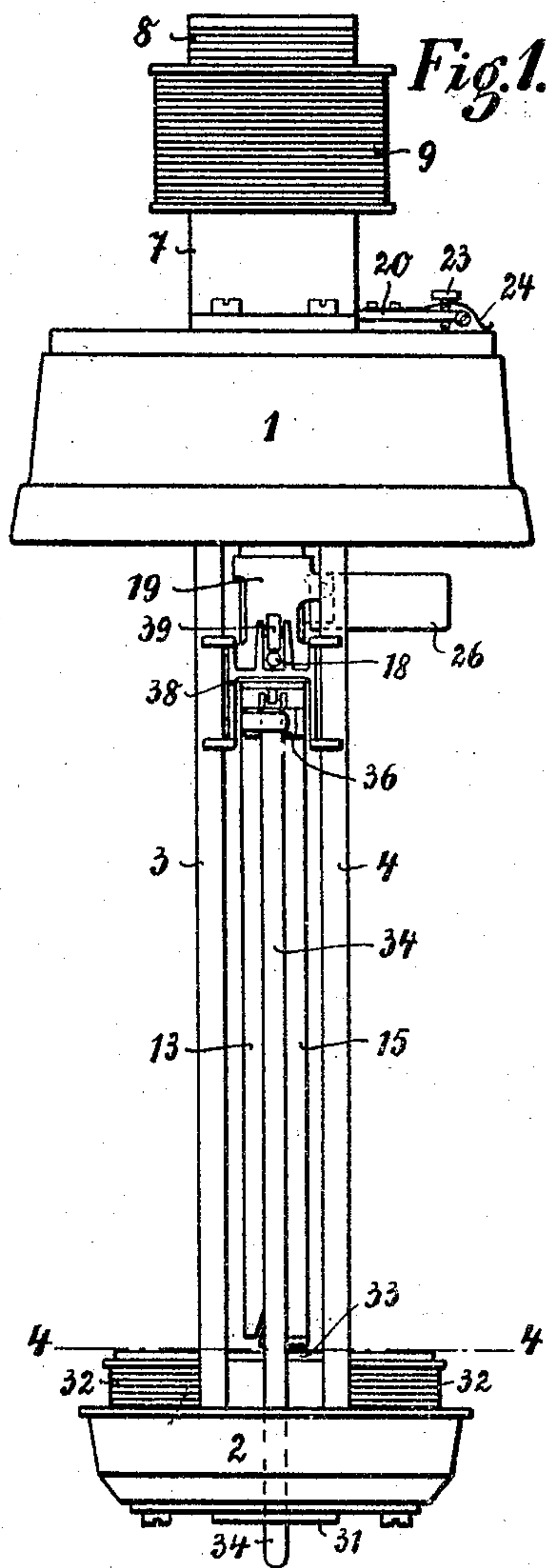
PATENTED NOV. 22, 1904.

T. L. CARBONE.
ELECTRIC ARC LAMP.

APPLICATION FILED APR. 19, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES

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John A. Percival

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ATTORNEYS

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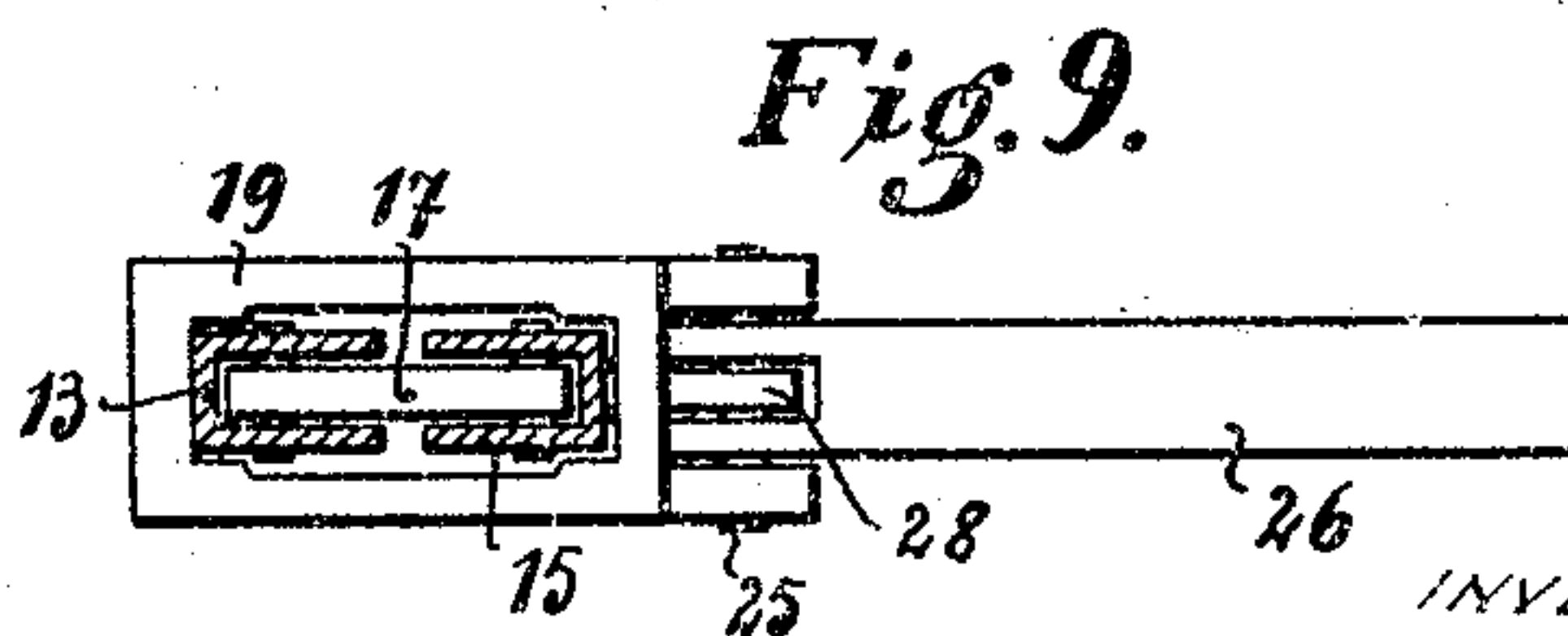
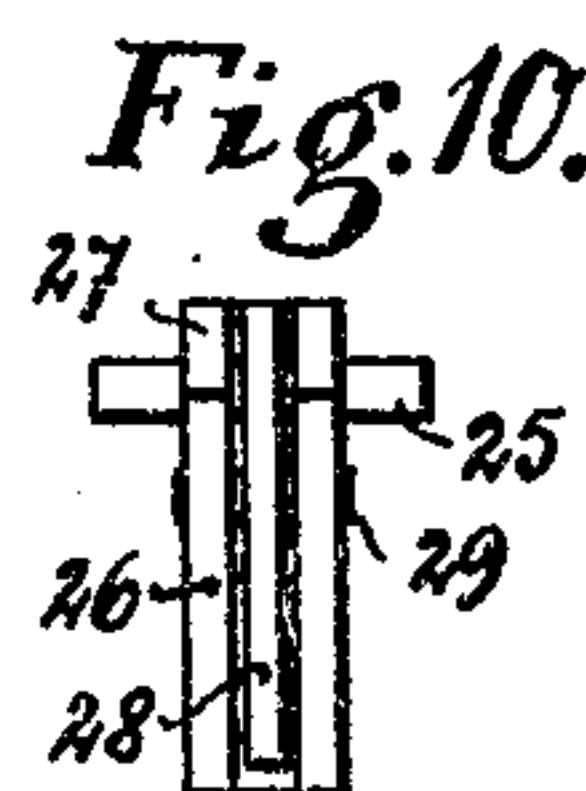
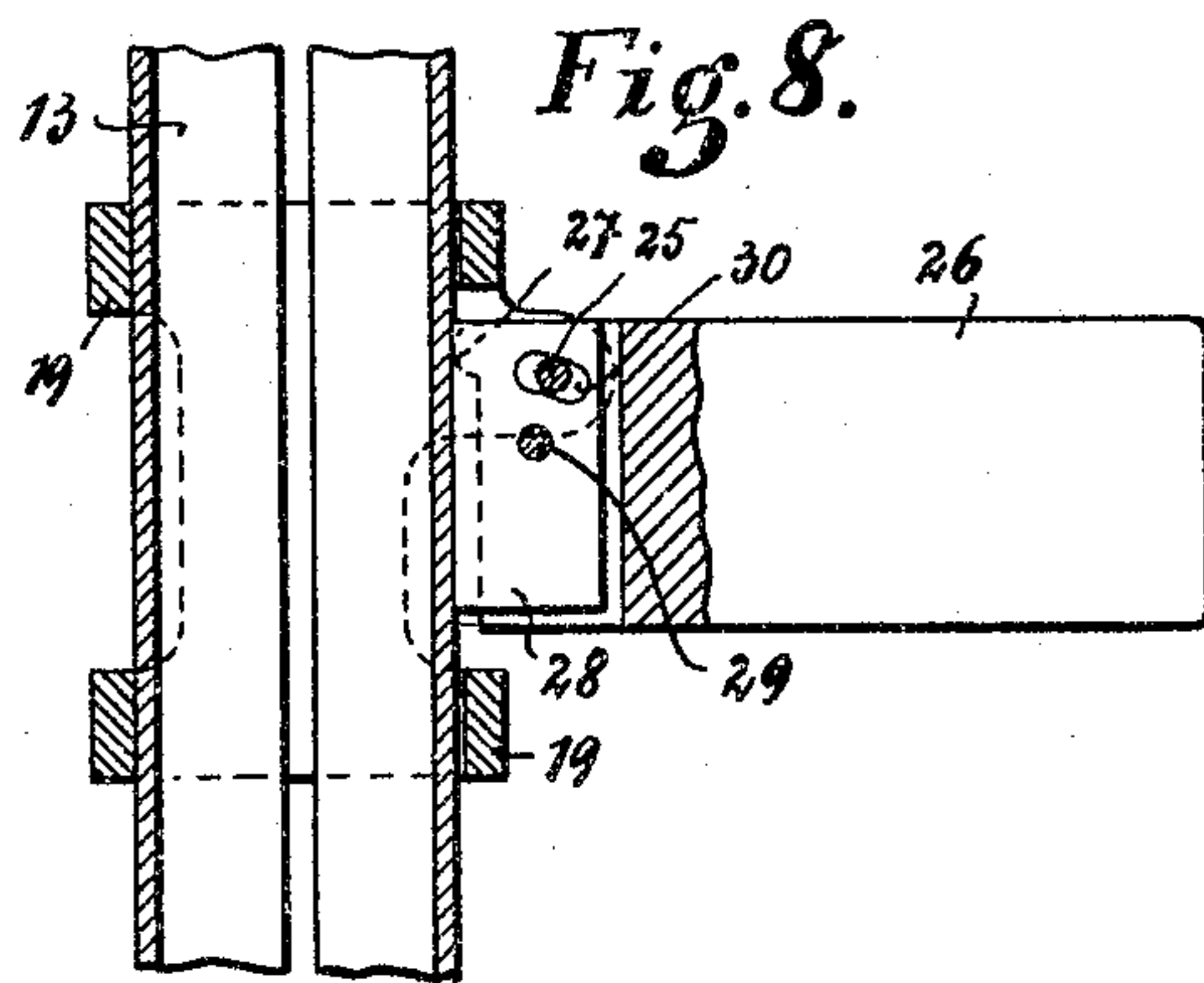
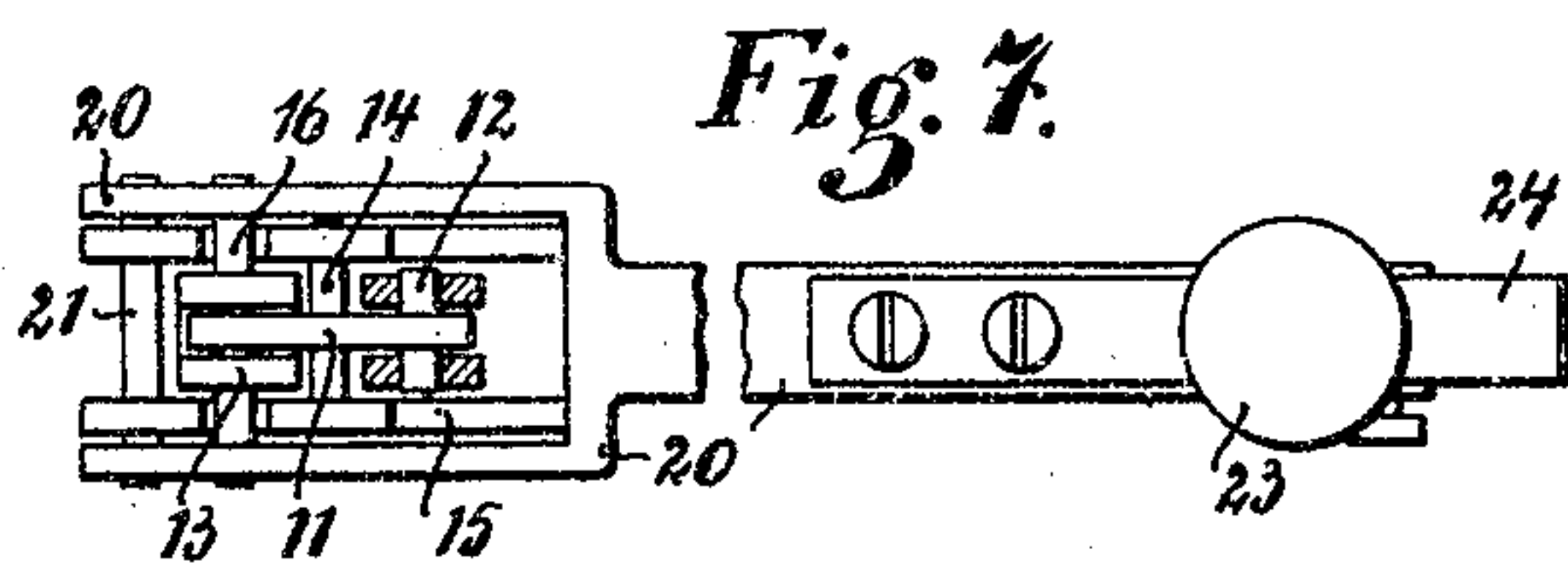
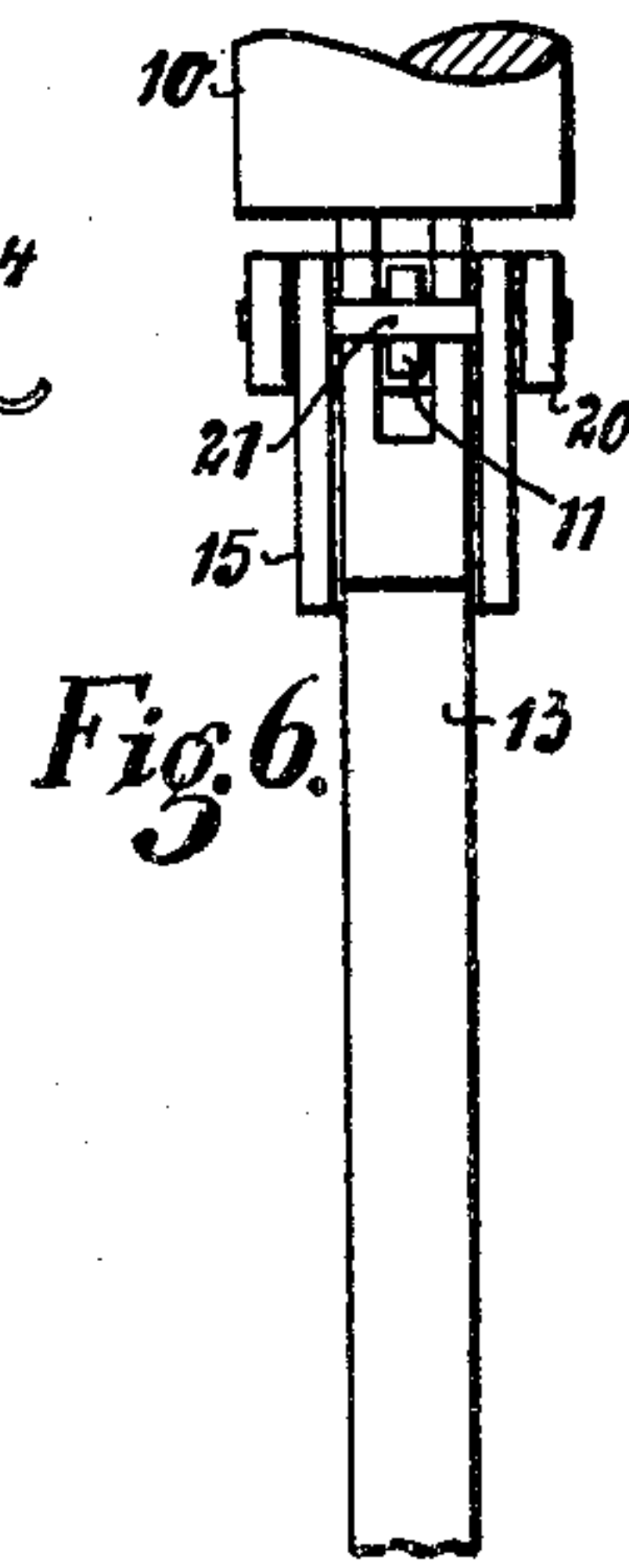
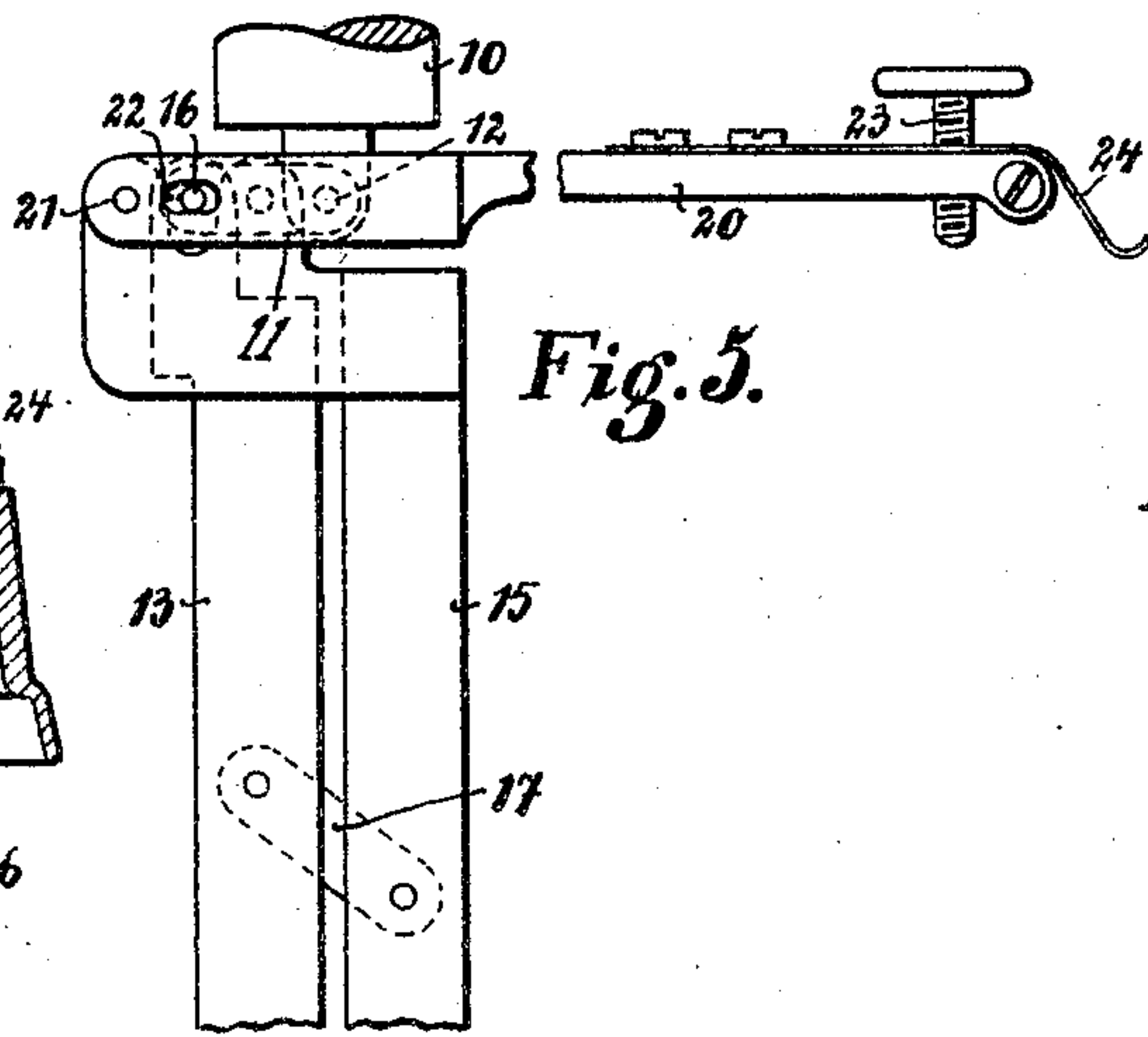
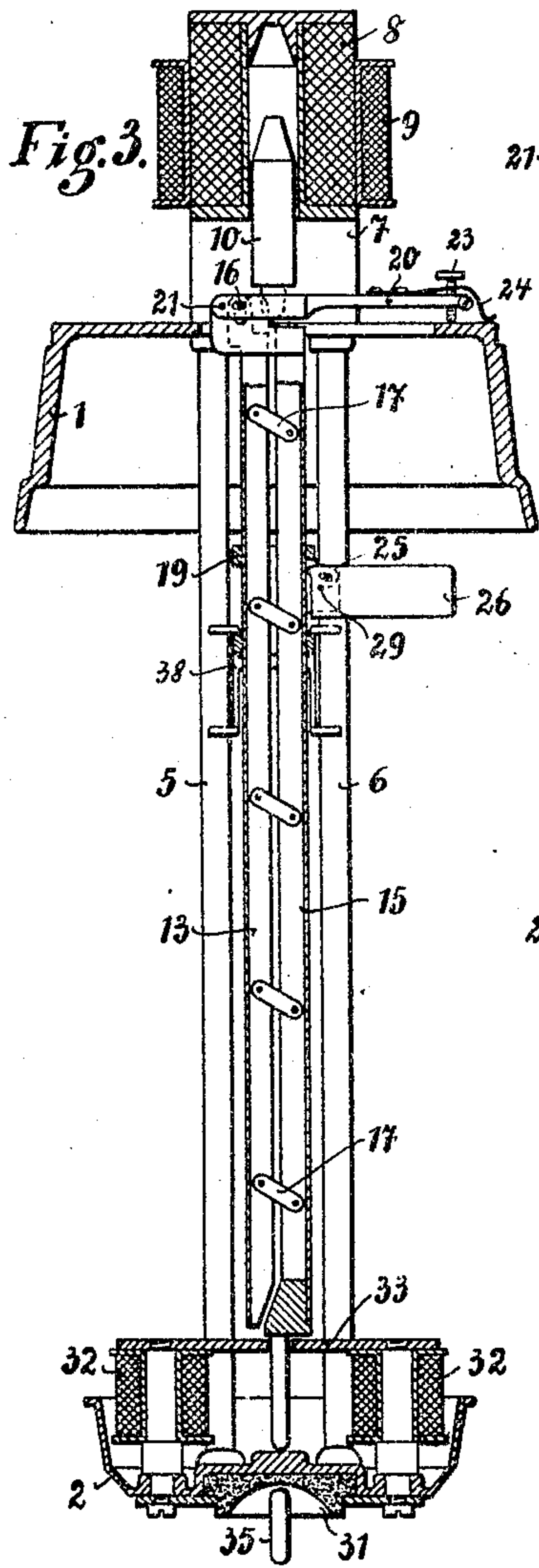
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

TITO LIVIO CARBONE, OF BERLIN, GERMANY.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 775,442, dated November 22, 1904.

Application filed April 19, 1904. Serial No. 203,909. (No model.)

To all whom it may concern:

Be it known that I, TITO LIVIO CARBONE, engineer, a subject of the King of Italy, residing at Berlin, Germany, have invented certain new and useful Improvements in Electric-Arc Lamps; and I do hereby declare that the following is a full, clear, and exact description.

My present invention relates to an arc-lamp with convergent carbons directed downward, the carbons being carried by a sleeve provided with lateral arms and embracing two movably-connected bars. The sleeve is held on the two bars by friction if the bars are moved away from each other by the action of an electromagnet. If the two bars are, on the contrary, moved closer together, then they allow of the sleeve sinking down according as the carbons burn off. The sleeve has an arm and linked thereon a brake-block which constantly presses against the one bar. By this arrangement the sleeve is prevented from sinking too quickly if the two bars are moved together for regulating the length of the arc. The two bars passing through the sleeve are connected with the iron core of an electromagnet by means of a two-armed lever, which moves the two bars away from each other by the action of the electromagnet. One bar has a one-armed slotted lever linked on it, and a pin of the other bar passes through said slot and also through the two-armed lever mentioned before. The one-armed lever has a regulating-screw in its free end, adapted to strike against the frame of the lamp if a certain length of the carbons has burned away, so that a further sinking of the sleeve carrying the carbons becomes necessary. If the free end of the one-armed lever strikes against the lamp-frame, it is swung a little, whereby the two bars are moved together, so that the sleeve sliding on said bars is allowed to sink.

In order to make myself better understood, I have shown on the accompanying drawings, by way of example, one form of my new arc-lamp.

Figure 1 is a front view. Fig. 2 is a side view. Fig. 3 is a vertical central section of the lamp. Fig. 4 is a section on line 4 4 in Fig. 1. Fig. 5 is a detail front view showing

the arrangement of the two bars and the two levers. Fig. 6 is a side view of the same. Fig. 7 is a section on line 7 7 in Fig. 5. Fig. 8 is a detail sectional view of the brake mechanism. Fig. 9 is a plan of the same. Fig. 10 is a side view of the arm and the brake-block. Figs. 11 and 12 are a front and side view of the carbon-clamps and their attachment to the carbon-carrier.

1 is the upper part, and 2 the lower part, of the lamp-frame, said parts being connected by four rods 3 4 5 6, inclined in the direction of the carbons. A bow 7 is mounted on the upper part 1 and carries the spools 8 9. The iron core 10 of this electromagnet is linked to the two-armed lever 11 by the pin 12. The lever 11 is further movably connected with the bar 15 by the pin 14 and with the bar 13 by the pin 16. The bars 13 15 are connected by arms 17 and are separated from each other if the iron core 10 of the electromagnet is lifted and hold then by friction the sleeve 19, provided with lateral arms 18. A one-armed lever 20 is linked to the bar 15 by pin 21. The lever 20 is bifurcated at one end, Fig. 7. A pin 16 passes through slots 22, provided in both parts of the fork, which pin connects the bar 15 with the two-armed lever 11. The free end of the lever 20 is provided with a regulating-screw 23, striking against the plate 1 if a certain length of the carbons has burned away, so that a further sinking of the sleeve 19, carrying the carbons, becomes necessary. The free end of the lever 20 is further provided with a spring 24 in order to make the touch of the screw 23 and the plate 1 as soft as possible. If the screw 23 strikes against the plate 1 while the iron core 10 sinks farther, the two bars 13 15 are moved closer together because of the lever 20, pivoted at 21, lifting the bar 13 with respect to the bar 15, so that the bars 13 15 are compelled by the arm 17 to come closer together. This approach of the bars 13 15 takes place each time the iron core has moved down a certain amount, according as the carbons burn off. As the bars 13 15 approach the sleeve 19, carrying the carbons, becomes free and slides downward. Because of this movement of the sleeve 19 the iron core 10 is again attracted, so that the screw

23 does no longer touch the plate 1. Therefore the bars 13 15 are again carried alone by the iron core 10 by means of the two-armed lever 11. Now the bars 13 15 are again moved
5 away from each other and hold the sleeve 19 by friction.

An arm 26 is eccentrically pivoted on the sleeve 19 by means of a pin 25, said arm having a projection 27 in contact with the bar
10 15, Figs. 7 to 10. A brake-block 28 is movably mounted by a pin 29 on the arm 26. The whole friction-surface of the block 28 is always pressed against the bar 15 by the weight of the arm 26. In order to allow the
15 necessary play of the block 28, the latter has a slot through which the pin 25 passes. As the whole friction-surface of the block 28 is even then in contact with the bar 15 when the bars 13 15 are approached, the downward
20 movement of the sleeve is braked and a very soft play is therefore obtained.

The arc and the spool 8 of the electromagnet are connected in series, while the spool 9 is shunted with the arc.

25 The carbons 34 35 pass through the vaulted lower plate 2, so that the arc is formed under the refractor 31. Two electromagnets 32 are arranged on the plate 2 and have their upper ends connected by a cross-piece 3, provided
30 with a hole which serves as a guide for the lower end of the bar 15.

Each carbon 34 35 is fixed in a spring-clamp 36, Figs. 11, 12, which is eccentrically suspended by means of a pin 37 on a piece 38,
35 sliding on and guided by the rods 3 4 or 5 6, respectively. Each piece 38 rests upon one arm, 18, of the sleeve 19 by means of a roller 39, so that the two sliding pieces can move closer together as the carbons burn away and
40 as the sleeve 19 sinks down.

Having now described my invention and in what manner the same is to be performed,

what I claim, and desire to secure by Letters Patent, is—

1. In an arc-lamp, a frame comprising a 45 base and top piece, inclined bars connecting said base and top, holders sliding on said inclined bars, carrying converging carbons, two parallel bars movably connected together, a sleeve sliding on said bars and having arms 50 on which the carbon-holders are laterally slidable, an electromagnet adapted to move the said parallel bars away from each other and thus holding the sleeve, and means for approaching the bars if a feeding of the carbon 55 becomes necessary, substantially as described.

2. In an arc-lamp two parallel bars movably connected together, a sleeve adapted to slide on, and embracing said bars and having arms carrying the carbons, an electromagnet 60 adapted to move the said bars away from each other and thus holding the sleeve, and means for approaching the bars if a feeding of the carbons becomes necessary, the sleeve having a movable arm and a brake-block linked to 65 the latter, substantially as described.

3. In an arc-lamp, two parallel bars connected together by a plurality of arms, an electromagnet, a two-armed lever connecting said rods with the iron core of the electromagnet, 70 a one-armed lever linked at one end to one of the said bars, embracing with a slot a pin of the other of the said bars, and provided at its free end with a screw adapted to strike against a stop of the lamp, and a sleeve adapted to 75 slide on, and embracing said bars and having arms carrying the carbons, substantially as described.

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

TITO LIVIO CARBONE.

Witnesses:

ARTHUR KRÄTZER,
WILH. GODAU.