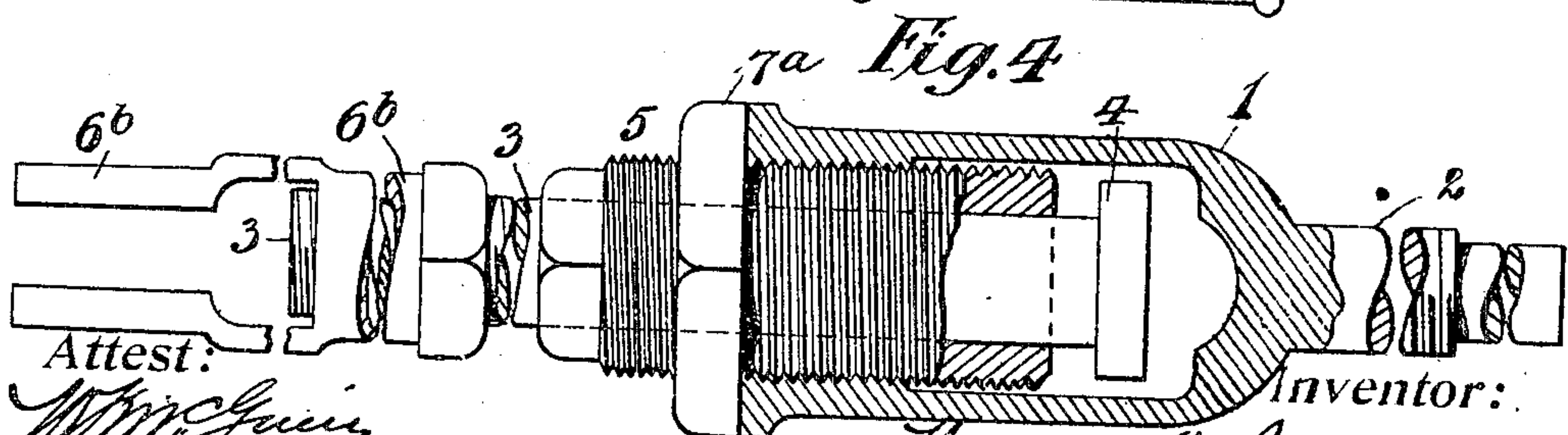
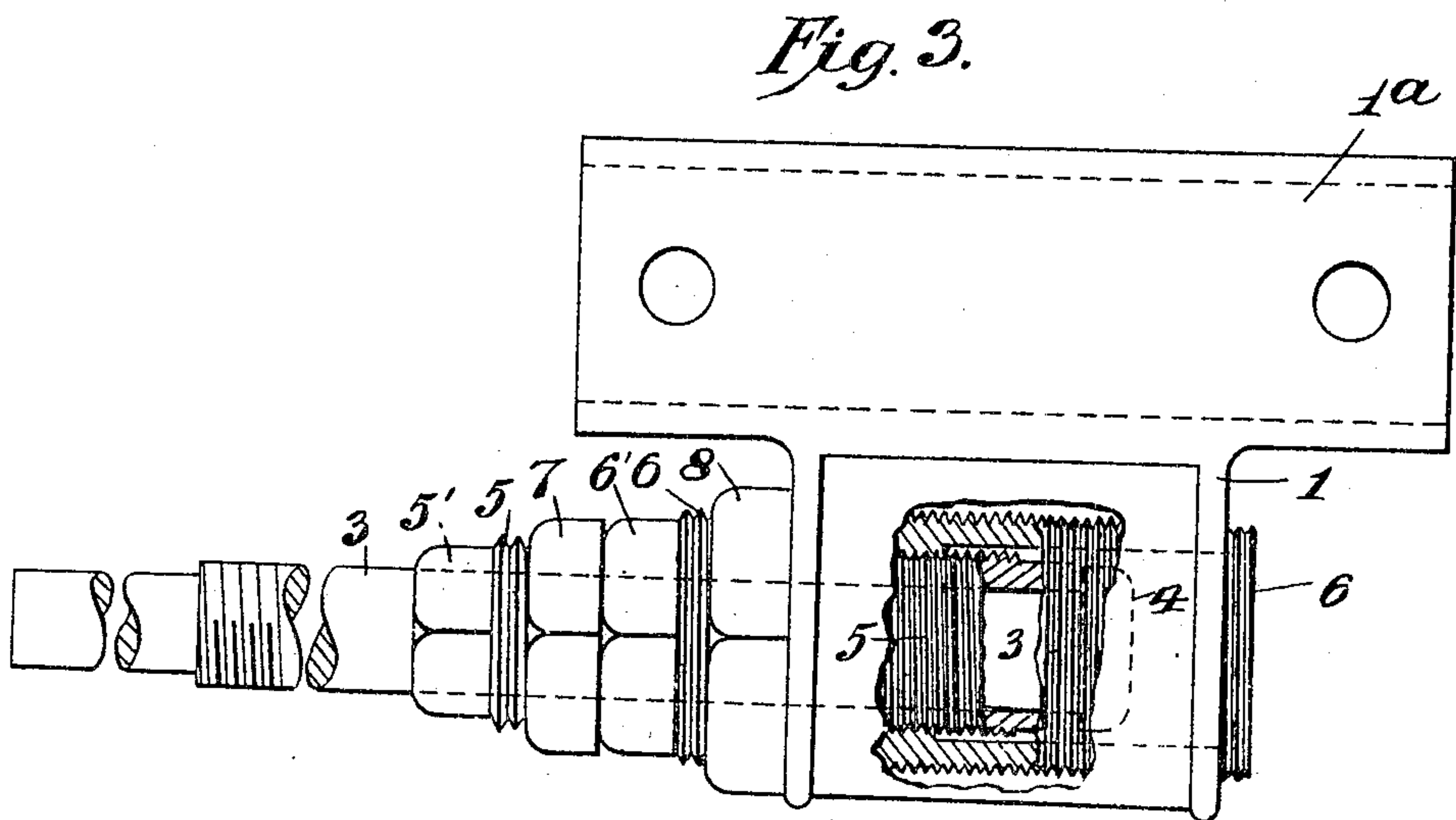
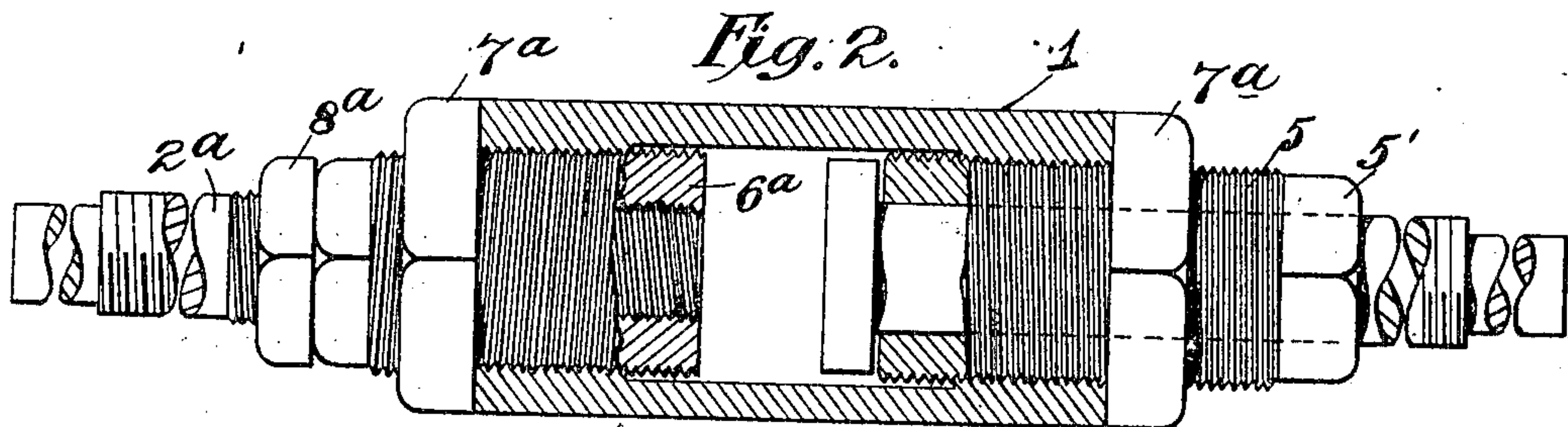
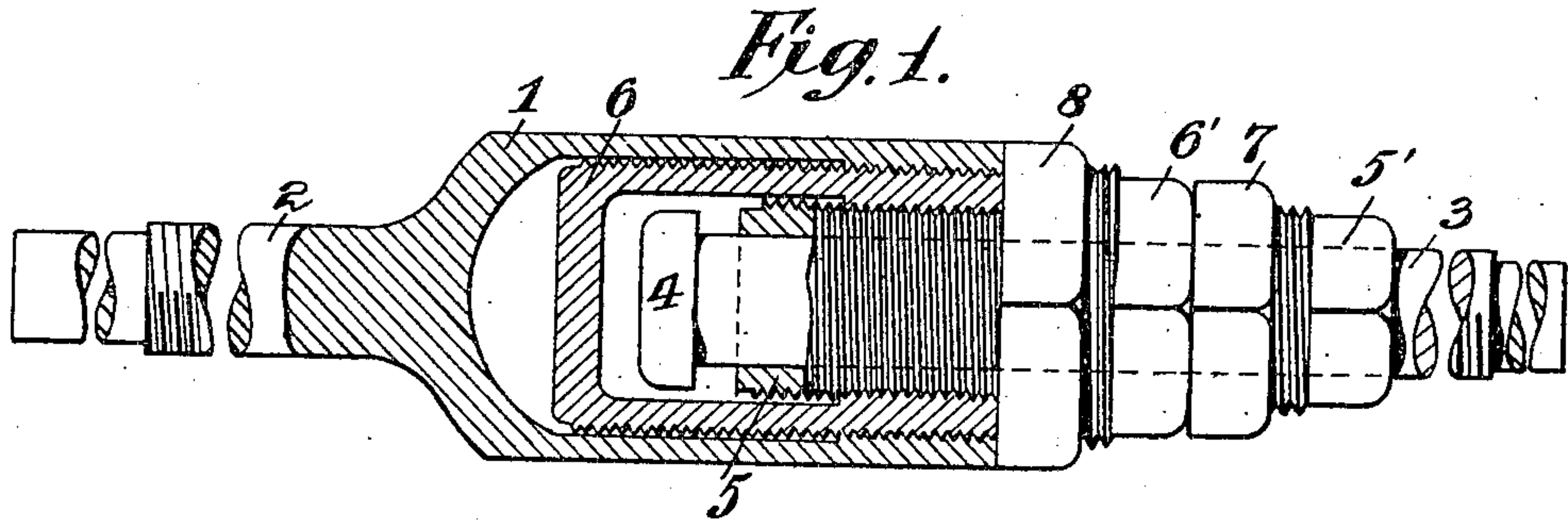


No. 837,483.

PATENTED DEC. 4, 1906.

T. E. LUTZ.
COMBINATION ADJUSTMENT.
APPLICATION FILED SEPT. 27, 1906.



Attest:
W. M. Jones
G. P. Hutchins

Inventor:
Theodor E. Lutz
by *H. H. H. H. H.* Att'y

UNITED STATES PATENT OFFICE.

THEODORE E. LUTZ, OF GALION, OHIO.

COMBINATION ADJUSTMENT.

No. 837,483.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed September 27, 1906. Serial No. 336,451.

To all whom it may concern:

Be it known that I, THEODORE E. LUTZ, a citizen of the United States of America, and a resident of Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Combination Adjustments, of which the following, taken in conjunction with the drawings, is a full, clear, and concise specification.

My invention relates to adjustable connections for the operating pipe lines or rods by means of which railway-track appliances—such as switch-points, signals, &c.—are operated; and it consists of a device for insertion in said line or for connecting adjacent sections thereof which may be readily adjusted to vary either the effective length of the operating-line or the extent of movement of the moved element, or both.

The invention also involves features of improvement in the construction and relative arrangement of parts, as will be hereinafter fully described, and more particularly pointed out in the accompanying claims.

Several forms of my invention are shown in the accompanying drawings, wherein—

Figure 1 is a side elevation, with parts in central section, of a connection adjustment embodying my invention. Fig. 2 is a modified form. Fig. 3 is a modification of the device of Fig. 1 for direct application to the operated track appliance, and Fig. 4 is a connection adjustment of simplified form.

Referring to the above drawings, it will be understood that the device as a whole is intended to be connected by its ends to the adjacent ends of two sections of the operating pipe-line and that the means whereby such connection is made is entirely immaterial to the present invention. It will also be manifest that it is immaterial which section of the pipe-line be the moved or operated element and which the moving or operating element.

The device comprises a main cylindrical casing 1, which forms the support and preferably, also, the inclosure for the adjustable parts. The casing of Figs. 1, 2, and 4 has a reduced portion or tang 2 extending from it in substantial alinement with its body portion, which tang is adapted to be connected, as above mentioned, with either the moved or the moving element, and the other parts are adjustably mounted in axial alinement with the tang 2, so that when the device is installed the connected elements form a continuous straight line, and the connection adjust-

ment being thus very easy of instalment is likewise unlikely to cramp or bind or to wear unevenly, inasmuch as it is subjected only to endwise strains.

The bolt 3 has its head 4 contained within a chamber within the casing 1, and the tang end of the bolt extends without the casing for attachment with either the moving or the moved element, as above explained. The head 4 is confined within the chamber of the casing by means of a tubular screw-plug 5, which surrounds the body of the bolt and, with its inner end, provides an adjustable abutment for limiting the movement of the bolt-head within the casing. A second tubular screw-plug 6 forms the opposite abutment for the head 4, and the two plugs may be adjusted relatively to each other and may be also bodily adjusted with respect to the tang 2 of the casing.

In Fig. 1 the two plugs are connected so that they may be conveniently turned in unison, the one being contained within the other, and the bolt-head or lost-motion chamber, formed between the interior end wall of the hollow plug 6 and the inner end of the plug 5, is adjusted or varied in length by screwing one part upon the other. In this manner by varying the amount of lost motion of the head 4 in its chamber the stroke or extent of movement of the moved element is adjusted. The bodily adjustment of the two plugs, and hence of the bolt-head chamber, is effected by utilizing the screw-thread connection between the casing 1 and the outer abutment-plug 6, and thereby the effective length of the device may be lengthened or shortened. The means for turning and adjusting the screw-plugs consists of the hexagonal or angular terminals 5' and 6' of the plugs 5 and 6, and it will be observed in the form of Figs. 1 and 3 that the said operating-terminals are both located at the same end of the casing, where their ready manipulation is facilitated. A lock-nut 7 may be employed for binding the plugs together, and another lock-nut 8 may be employed for securing the outer plug to the casing. In the form shown by Fig. 2 the tubular screw-plugs 5 and 6^a are relatively adjustable to vary the length of the bolt-head chamber between them by reason of their threaded engagement with the casing, the threads of each plug being preferably of opposite pitch, as indicated. The tang of the casing in this figure is formed of a

threaded bolt or rod 2^a, screwed into the tubular abutment-plug 6^a and locked therein by means of a jam-nut 8^a. By means of this last-mentioned connection the length of the operating-line may be adjusted, and it will be observed that the operating parts are all brought into axial alinement. The means whereby the several plugs may be turned, however, are located at the opposite ends of the casing. Jam-nuts 7^a are also provided for locking the two abutment-plugs against turning in the casing.

The principle of adjustment of Fig. 1 is illustrated in Fig. 3 as adapted to be applied directly to the operated track device, and the casing 1 instead of having an axial tang, such as 2 of Fig. 1 or 2^a of Fig. 2, is provided with a lateral flange 1^a, which is adapted to be fastened to the tie-rod of a switch-point or to any other track device. The construction and arrangement of the bolt and screw-plugs, however, are similar to that of Fig. 1 and are designated by the same reference characters.

In Fig. 4 the stroke adjustment is made by screwing the plug 5 into the casing 1, and the length of line is varied by screwing the tubular member or jaw 6^b upon the bolt 3, which is threaded for this purpose. The head of the bolt plays between the end of the abutment-plug 5 and the bottom or end wall of the casing 1, and the screw-plug 5 is locked to the casing by means of a jam-nut 7^a.

In all of the foregoing forms it will be observed that the two adjustments of stroke and length of line are both combined in a single unitary device which can be readily located at any point in the operating-line without disturbing or offsetting the connected pipe-sections. It can be substituted for the ordinary turnbuckles to serve the same purpose and also the additional function of adjusting the throw of the operated device. It is also to be noted that the cavity or chamber in which the bolt-head plays is slightly larger in diameter than the opening of the screw-threaded passage in which the screw-plug is located, and likewise the head of the bolt, which is preferably integral with the body thereof, is of less diameter than the said screw-threaded passage, so that in cases of extreme separation of the plugs the bolt-head will not be likely to encounter the tops of the threads, so as to mar them. The casing 1 may be formed as a complete inclosure for the adjustable parts, or, if required, may be made of skeleton form, with openings in the sides through which the adjustable parts may be inspected and oiled. Other forms of locking means for the screw-plugs may also be employed within the scope of my invention.

Having described my invention, what I claim, and desire to secure by United States Letters Patent, is—

1. As a connection adjustment for the

operating-lines of track appliances, a device comprising a hollow casing provided with a connection-tang extending in substantial alinement therewith, a tubular abutment-plug adjustable within said casing and forming a lost-motion chamber therein, in combination with a bolt passing through said plug having its head within said chamber and a screw-thread connection independent of the parts forming the chamber, for varying the effective length of the said device.

2. In a connection adjustment for the operating-lines of track appliances, a main casing, a headed bolt contained therein, adjustable screw-plugs forming opposite abutments for the head of the bolt within the casing and adapted to define the extent of movement of the moved element, in combination with a screw-threaded connection adjustable independently of the adjustment of said abutments for varying the effective length of the operating-line.

3. In a connection adjustment for operating track appliances, a main casing having a lost-motion chamber adjustable within the same and a screw-threaded passage of less diameter leading thereto, in combination with a tubular plug threaded into said passage, a bolt passing through said plug and a head on said bolt of less diameter than said threaded passage, contained within the said chamber.

4. A connection adjustment for the operating-lines of track appliances, comprising in a unitary structure, a headed bolt adapted to be connected with one of the elements of the operating-line, adjustable abutments on opposite sides of said head adapted to determine the extent of movement of the moved element, in combination with a main casing supporting said abutments and having a tang adapted to be connected with the other element of the line, and a screw-threaded connection between said bolt and tang, independent of the adjustment of said abutments, for varying the effective length of the operating-line.

5. In a connection adjustment for the operating-lines of track appliances, a headed bolt and abutments on opposite sides of the head thereof adapted to be adjusted for varying the extent of movement of the moved element, in combination with a casing and means for bodily moving said adjusted abutments with respect to the casing, to vary the effective length of the operating-line.

6. In a device of the kind described, a headed bolt, two connected plugs forming adjustable abutments for the head of said bolt, a casing and means for adjustably securing said casing to one of said plugs.

7. In a device of the kind described, a main casing, a headed bolt therein, a tubular screw-plug forming an adjustable abutment for the head thereof, a second tubular screw-

plug forming an opposite abutment for said head and operating-terminals located at the same end of said casing for respectively rotating said plugs.

5 8. In a device of the kind described, a headed bolt, a tubular abutment member adapted to receive the head of said bolt, and a second tubular abutment member surrounding said bolt, adapted to be screwed
10 into the first-mentioned member to confine the head therein, in combination with a screw-threaded connection for varying the effective length of said device.

9. In a device of the kind described a

headed bolt, a tubular abutment member 15 adapted to receive the head of said bolt, a second abutment member surrounding the bolt and screwed into the other, in combination with a casing screwed over said first-mentioned abutment member. 20

In testimony whereof I have signed my name to the specification in the presence of two subscribing witnesses.

THEODORE E. LUTZ.

Witnesses:

C. H. HENKEL,
BERTHA GREBE.