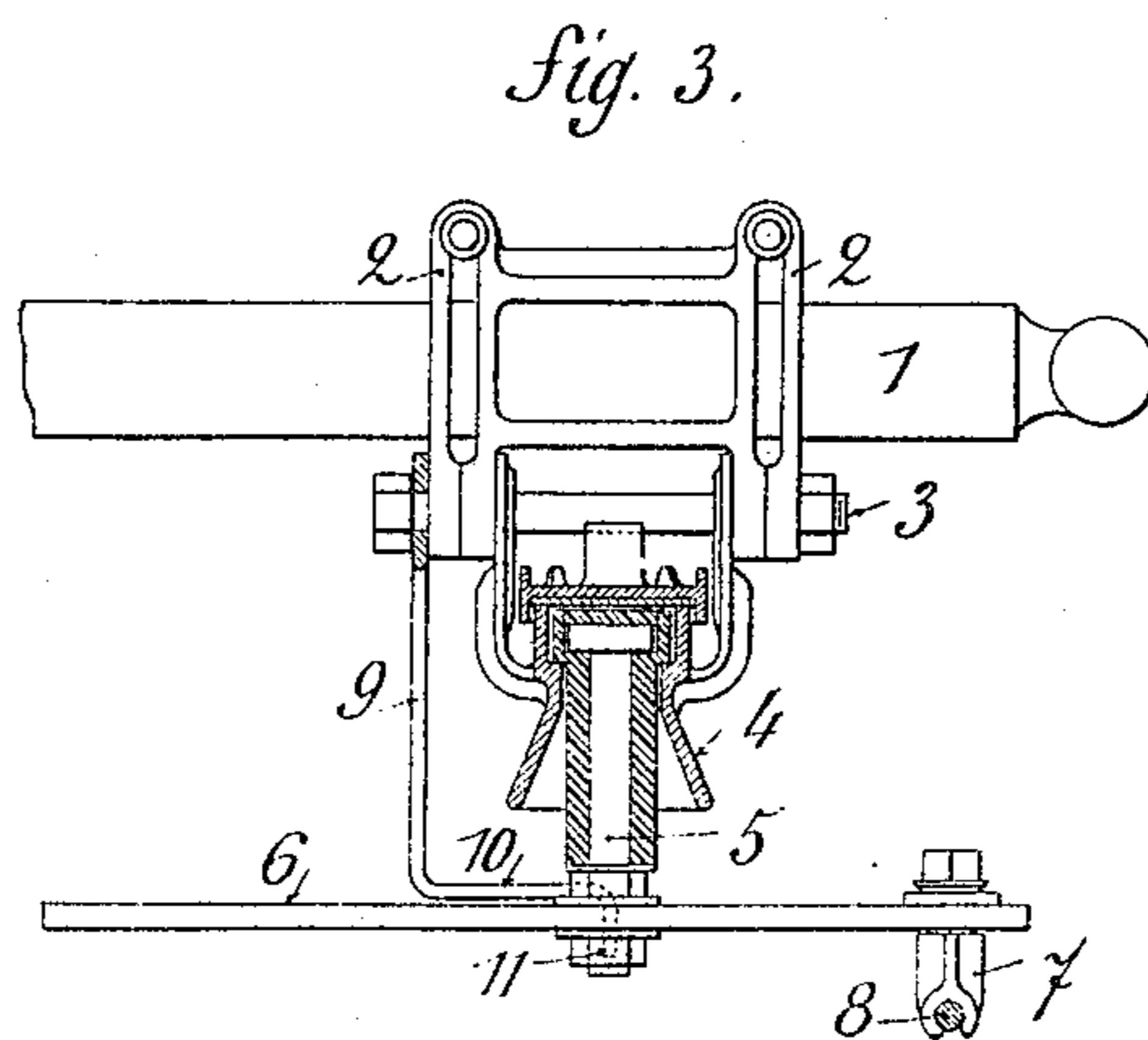
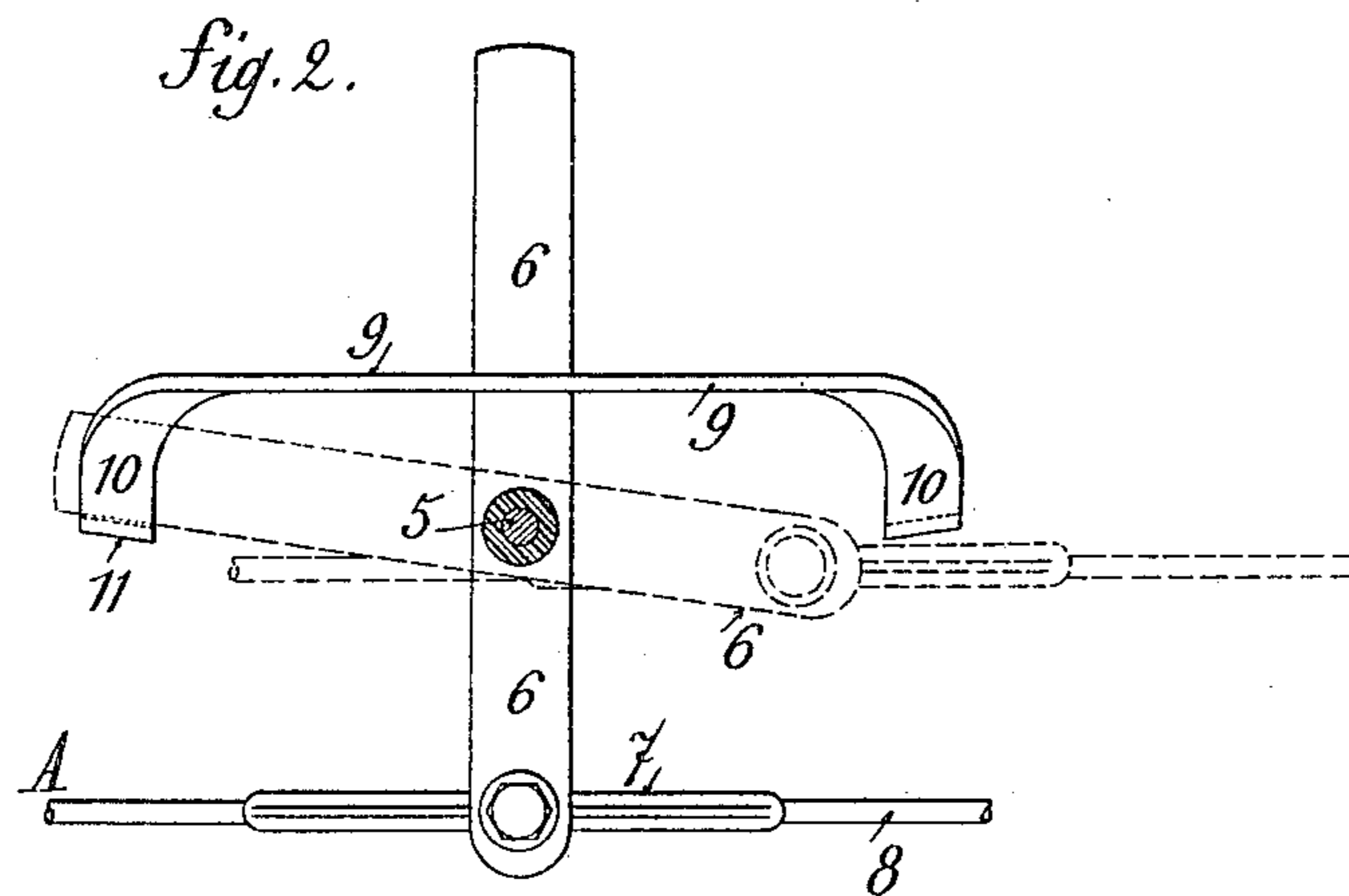
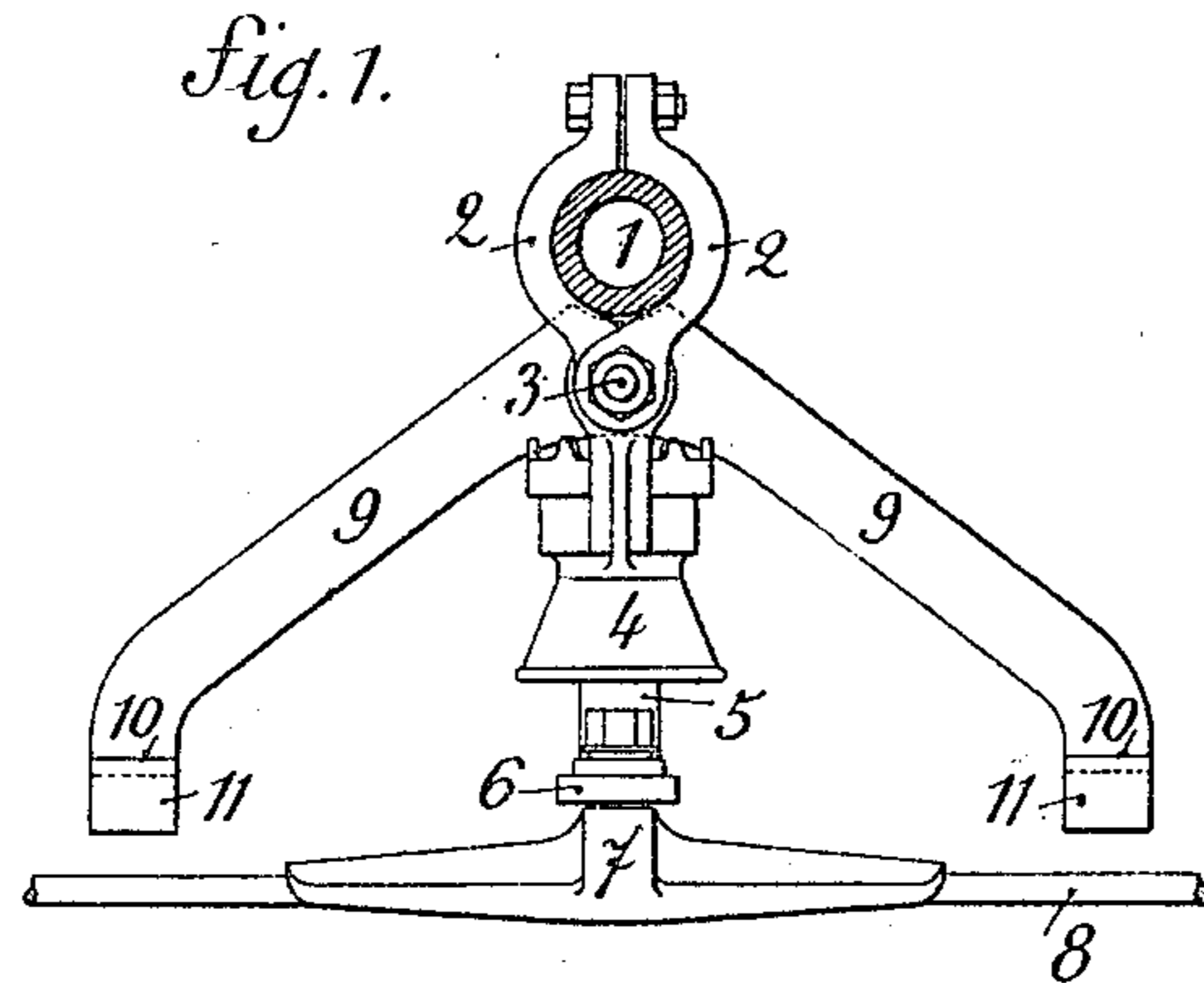


No. 812,561.

PATENTED FEB. 13, 1906.

E. GIRAUD.  
OVERHEAD LINE.  
APPLICATION FILED OCT. 31, 1903.



WITNESSES :

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# UNITED STATES PATENT OFFICE.

EMILE GIRAUD, OF PARIS, FRANCE.

## OVERHEAD LINE.

No. 812,561.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed October 31, 1903. Serial No. 179,376.

*To all whom it may concern:*

Be it known that I, EMILE GIRAUD, engineer, a citizen of the Republic of France, residing at 18 Rue Royale, Paris, in the Republic of France, have invented certain new and useful Improvements in Overhead Lines, of which the following is a specification.

This invention relates to divers improvements in overhead lines, and more particularly to high-tension lines, the fall of which, brought about by the breaking of a conductor, is liable to cause serious accidents.

In the accompanying drawings, Figure 1 is a front elevation of my improved insulator. Fig. 2 is a plan view of the insulator as seen in Fig. 1. Fig. 3 is an elevation showing the extremity of an arm to which the device is attached, a portion of the support for the device being shown in section.

The insulator shown in Figs. 1 and 2 comprises a support 1 of well-known type and having fixing-jaws 2 2, pivoted on a stud 3, and a bell 4, in which a vertical bolt 5 is attached, so as to be insulated electrically therefrom. Under the bolt 5 is pivotally mounted a horizontal lever 6, the forward end of which carries a hanger 7, T-shaped, and which is also pivotally mounted. The horizontal branch of the said hanger 7 has a recess to receive the line-wire 8, which is soldered to the same. The said hanger 7 may be similar to that which in the apparatus of this kind now in use is mounted directly on the bolt 5.

On the stud 3 is fixed a contact-piece 9 in the shape of an inverted V, and the ends of which are horizontally bent at 10 on a level with the lever 6. The said ends preferably terminate in a downward projection 11, located in the path described by the rear end of the lever 6 in revolving round the bolt 5.

When the line 8 is stretched tight in all its parts, the tensions exercised on the lever 6 are equal to the left and to the right, and the said lever remains in equilibrium in the posi-

tion shown in full lines in Fig. 2. When the wire breaks in the part A, for instance, the tension of the wire in the opposite part relatively to the insulator causes the lever to rock round the bolt 5 and to take the position shown in dotted lines in Fig. 2, so that it comes in contact with the contact-piece 9 10, which may be connected either with the ground or with any suitable conductor. For instance, when the line comprises several conductors for currents of different phases the lever 6 may meet with one of the said conductors instead of meeting with the arms 9, connected to earth. Hence the said arms may be dispensed with.

I claim—

1. In overhead trolley construction, in combination, a support, an insulating-bell carried therebelow, a line-wire, a lever pivoted at said bell moving in a horizontal plane, a pivotal connection between said line-wire and said lever, said lever having a rear extension beyond said bell, and discharge-arms carried rigidly by said support and lying in the path of said extension to be struck thereby.

2. In an insulator for high-tension lines the combination of an insulating-bell, a vertical pivot or stud fixed underneath the bell, a two-arm horizontal lever pivoted on the said stud, a vertical pivot or stud on the front end of the said lever, a lug on the said stud to receive a wire, and a V-shaped relieving-piece secured outside the bell and having laterally and downwardly extending arms and forwardly-extending and downwardly-bent parts so arranged as to be touched by the rear end of the aforesaid lever.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EMILE GIRAUD.

Witnesses:

AUGUSTUS E. INGRAM,  
MAURICE ROUX.