

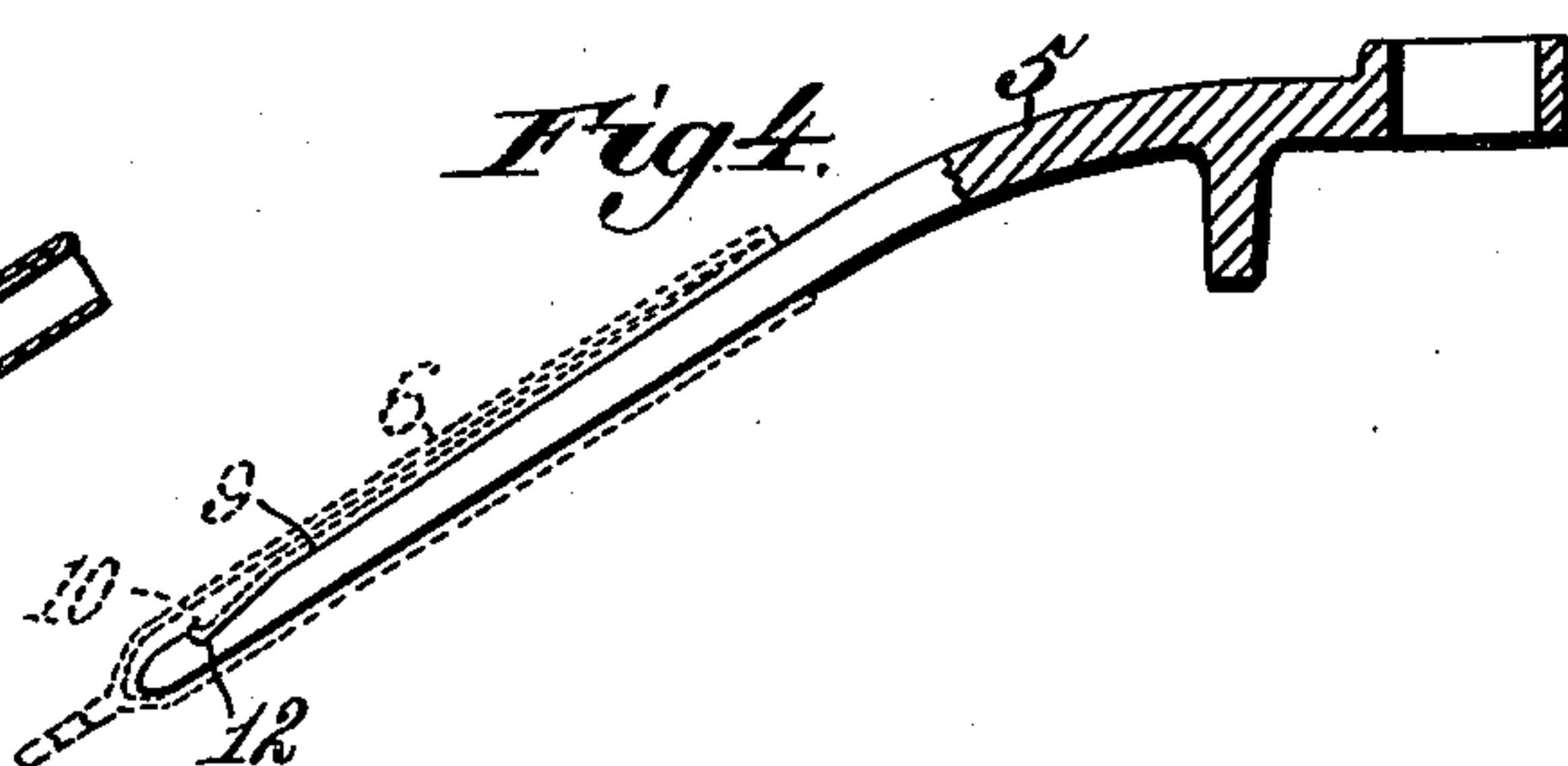
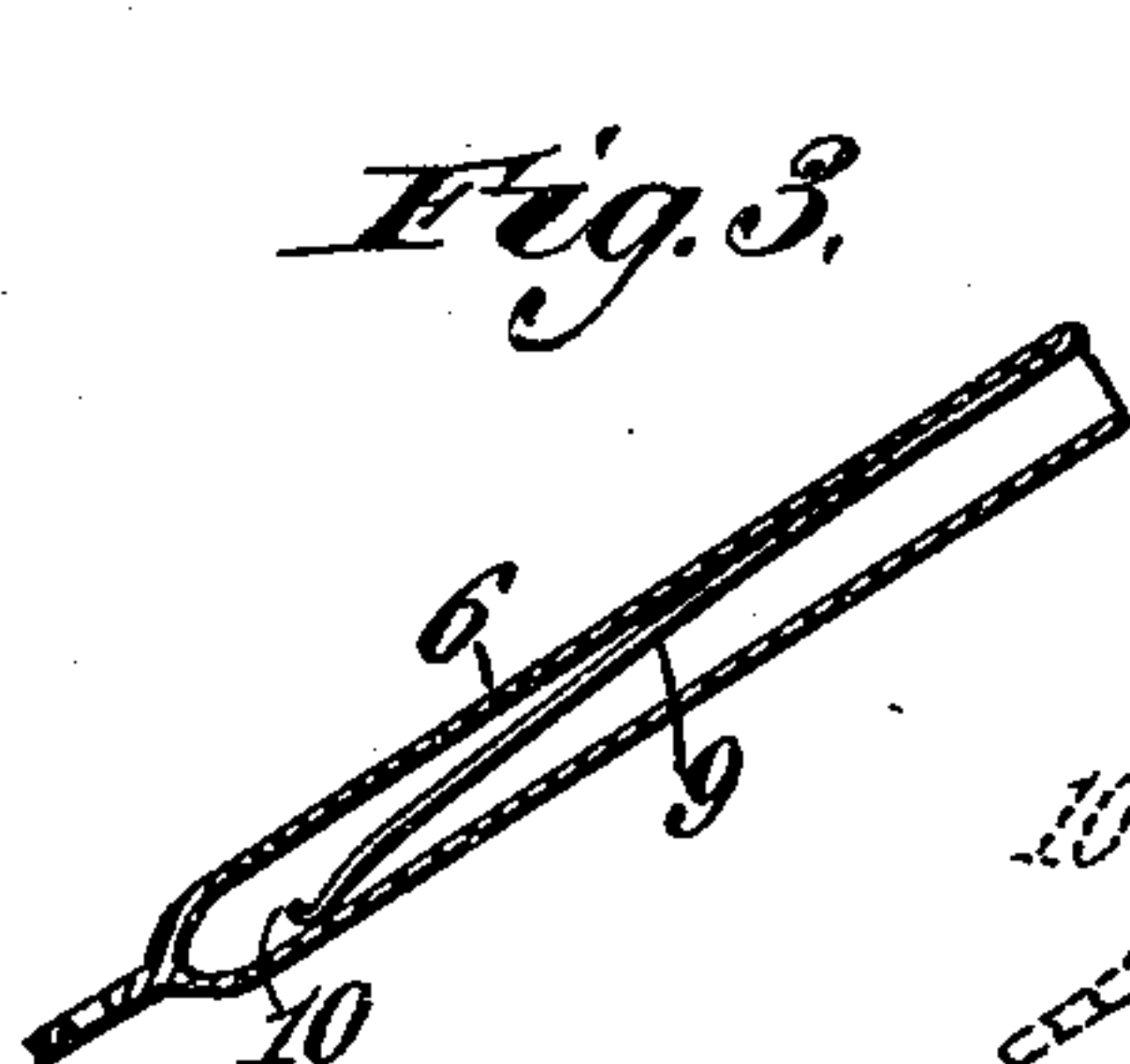
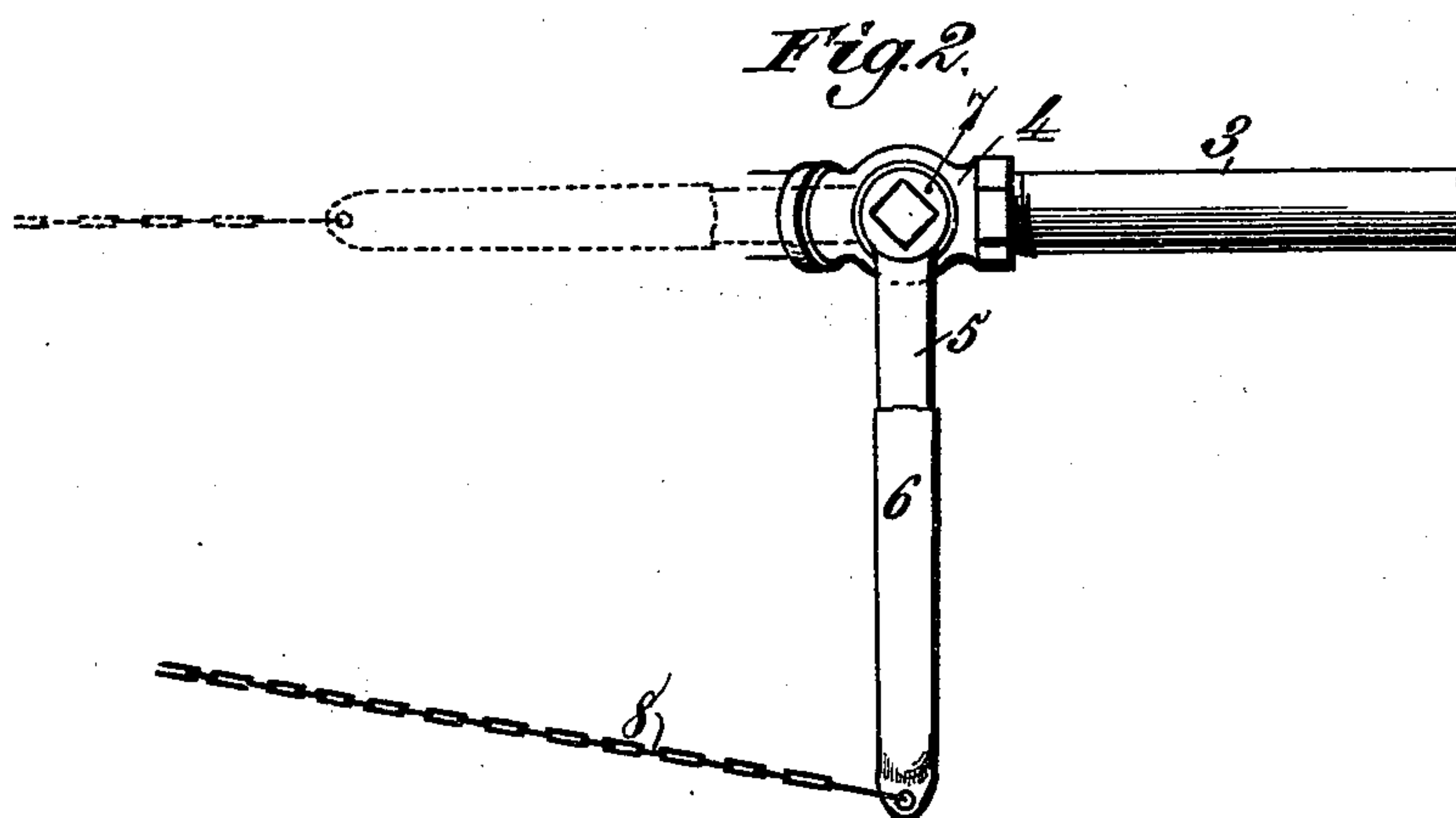
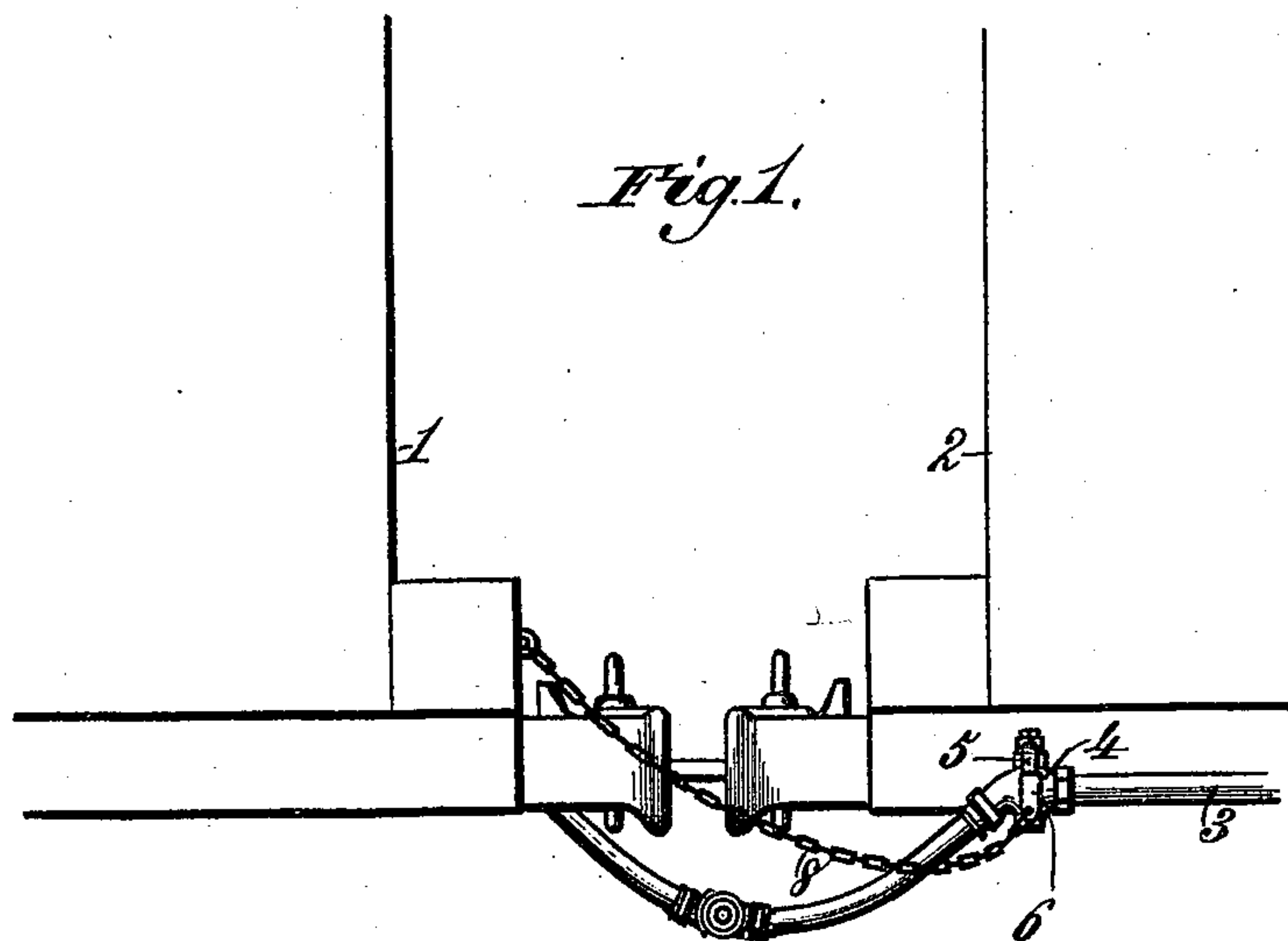
(No Model.)

J. R. IDE.

VALVE OPERATING LEVER FOR AIR BRAKE PIPES.

No. 548,059.

Patented Oct. 15, 1895.



Witnesses.  
*Robert Everett.*  
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*Atty.*

# UNITED STATES PATENT OFFICE.

JOHN ROBERT IDE, OF SALISBURY, NORTH CAROLINA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO CHARLES PRICE AND THOMAS F. YOUNG, OF SAME PLACE.

## VALVE-OPERATING LEVER FOR AIR-BRAKE PIPES.

SPECIFICATION forming part of Letters Patent No. 548,059, dated October 15, 1895.

Application filed April 15, 1895. Serial No. 545,810. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ROBERT IDE, a citizen of the United States, residing at Salisbury, in the county of Rowan and State of North Carolina, have invented new and useful Improvements in Valve-Operating Levers for Air-Brake Pipes, of which the following is a specification.

This invention relates to automatically-operated valve devices particularly designed for mixed railway-trains some of the cars of which are not provided with air-brakes and other cars of which are equipped with air-brakes thrown into action by the release of the air-pressure in the air-brake or train pipe. Where a train is made up in this manner, if the train accidentally separates or uncouples the air-brakes are applied to the forward cars, while the brakes of those cars in the rear section of the train having no air-brakes will not be applied, in consequence of which the front section to which the engine is attached will slack up or stop and the rear separated section of the train will rush into and collide with the front section of the train, thereby occasioning serious damage and sometimes disastrous results.

It has heretofore been proposed to avoid the objections stated and prevent a collision between the two sections of a separated train by providing valves in the air-brake or train pipe at the ends of cars and connecting with each valve a lever made in two sections, the inner section having a wedge-shaped extremity and the outer section having a chain connection with an adjacent car and comprising spring-arms which grip the inner lever-section and are opened to release their grip and permit the lever-sections to separate when the lever, as a whole, is swung in the direction required to close the valve by the action of the chain when the two adjacent cars separate or uncouple.

The prior devices are complicated and more or less expensive, and the two members or sections of the valve-lever depend for separation on the action of the wedge-shaped extremity of one lever-section upon the spring-arms of the other lever-section. This is objectionable, chiefly because of the expense involved in the construction of the lever and the uncertainty

of the parts properly operating when the emergency for their correct action arises.

The chief object of my invention is to provide a more simple and economical valve-operating lever of such construction that it will readily separate when swung to close the valve by the tightening of the chain if the train accidentally separates into sections.

The invention also has for its object to provide novel, simple, efficient, and comparatively inexpensive devices or mechanism whereby the air-pressure in the train-pipe of the front section of a separated train will be maintained, while the air-brakes of one or more cars equipped with air-brakes in the rear separated section of the train will be set owing to the release of the air-pressure by the breakage or disconnection of the train-pipe in such manner that the front section of the train can escape from the rear section and thereby avoid a collision and prevent disastrous results.

To accomplish these objects my invention consists, essentially, in the combination, with an air-brake or train pipe and a valve arranged therein, of a valve-operating lever composed of two sections, one of which is in the form of a sleeve slidable lengthwise upon the other, and a flexible device connected with the lengthwise sliding sleeve and adapted to be attached to a part of an adjacent car.

The invention also consists in certain other features of construction and combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation showing the end portions of two cars with my invention applied thereto. Fig. 2 is a detail top plan view showing by full lines the normal position of the lever when the valve which it operates is in its open position and by dotted lines the position of the lever when it has been swung into position to close the valve for the purpose of preventing the escape of the compressed air from the pipe-section in which the valve is arranged. Fig. 3 is a sectional view of the sliding sleeve-section of the lever. Fig. 4 is a detail sectional view of the main body-section of the lever with the sliding sleeve-section indicated by dotted lines.



In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

5 The numerals 1 and 2 indicate portions of two railway-cars, 3 a portion of the air-brake or train pipe, and 4 a valve arranged in the air-brake or train pipe and comprising an ordinary rotatable plug adapted to be oper-  
10 ated for opening or closing the same to govern the passage of compressed air through the pipe.

The valve-plug is adapted to be operated by a lever composed of two sections 5 and 6.  
15 The section 5 may be of cast metal and is provided with a head 7 designed to detachably or otherwise engage the plug of the valve. The section 6 is in the form of a flattened sleeve, oblong in cross-section, and adapted  
20 to slide lengthwise on the lever-section 5. The outer extremity of the sleeve constituting the lever-section 6 is attached to one end of a chain 8, the other end of which is in practice secured to some part of an adjacent car,  
25 all in such manner that if the two cars separate or uncouple the chain will be tightened, and the valve-operating lever will be swung into a plane approximately parallel with the line of motion of the cars, so that the draft of  
30 the chain on the lever-section 6 will slide the latter lengthwise from the lever-section 5. By this means the valve 4 will be closed and the brakes on the front car or cars will not be set, while the air-pressure in the portion of  
35 the air-brake or train pipe carried by the rear car or cars will be released by the breakage or disconnection of the train-pipe and the brakes will be set. Consequently the rear section of the separated train will be retarded  
40 in its motion, or entirely stopped, while the front section, to which the engine is attached, can escape, thereby entirely avoiding the danger of a collision and possible disastrous results arising from the rear section rushing  
45 into and colliding with the front section of the train.

The ordinary air-brake or train pipe is of such length that the draw-heads of two cars can separate about eighteen inches before  
50 breaking or disconnecting the pipe connection between the cars. The chain 8 will therefore be constructed of such length that the valve will be closed before the air-brake or train pipe breaks or separates. Inasmuch  
55 as the sleeve constituting the lever-section 6 pulls the lever-section 5 and closes the valve and then slides lengthwise from the lever-section 5 no parts of the lever will be broken if the train separates or uncouples.

60 When the valve 4 is open for the passage of the compressed air through the air-brake or train pipe, the valve-operating lever stands at right angles or obliquely to the line of travel of the train, and when the cars separate or uncouple the lever is shifted into a  
65 line approximately parallel with the line of motion.

In order to entirely avoid the possibility of jars or vibrations causing the lever-section 6 to slide off of the lever-section 5, I provide  
70 the sleeve with an internal spring-catch, composed of a leaf-spring 9, secured at one end to the lever-section 6 and provided at its other or free end with a projection 10, adapted to  
75 spring into engagement with a notch 12 in the outer end portion of the lever-section 5 when the lever-section 6 is slid lengthwise on the lever-section 5. The spring-catch is so constructed that it will yield and permit the lever-section 6 to be slid lengthwise from the  
80 lever-section 5 when the chain 8 is tightened by the separation or uncoupling of the cars.

The spring-catch described and shown for preventing accidental shifting of the sleeve  
85 off of the lever-section 5 is well suited for the purpose in hand; but I do not wish to be understood as confining myself to the exact construction shown, as other devices for the same purpose can be employed without altering the  
90 spirit of my invention.

My invention provides very simple, efficient, and economical means for closing the valve in the air-brake or train pipe and preventing  
95 loss of air in the pipe on the cars attached to the engine if the train separates or uncouples, thereby preventing the brakes from being applied to the front cars while the brakes on the rear car or cars will be applied, as hereinbefore stated.

In my improved construction I entirely  
100 avoid the necessity of using spring-arms which require to be spread apart by the action of a wedge or cam for the purpose of causing a valve-operating lever to separate or divide into sections when the cars break apart  
105 or uncouple.

Having thus described my invention, what I claim is—

1. The combination with an air-brake or train-pipe, and a valve arranged therein, of  
110 a valve-operating-lever composed of two sections, one of which is in the form of a sleeve slidable lengthwise upon the other, and a flexible device connected with the lengthwise sliding sleeve and adapted to be attached to  
115 a part of an adjacent car, substantially as and for the purposes described.

2. The combination with an air-brake or train-pipe, and a valve arranged therein, of  
120 a valve-operating lever composed of two sections, one of which is in the form of a sleeve slidable lengthwise upon the other, a catch carried by one of the lever sections and adapted to spring into engagement with the other lever section for preventing the acci-  
125 dental displacement of one relatively to the other, and a flexible device connected with the lengthwise sliding sleeve and adapted to be attached to a part of an adjacent car, substantially as and for the purposes described.  
130

3. The combination with an air-brake or train-pipe, and a valve therein, of a valve-operating-lever composed of sections, one of which is in the form of a sleeve, slidable



lengthwise upon the other, a spring-catch for preventing the accidental disconnection of the sleeve, and a flexible device connected with the sleeve and adapted to be attached  
5 to part of an adjacent car, substantially as and for the purposes described.

In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

JOHN ROBERT IDE.

Witnesses:

W. L. YOUNG,  
S. E. SLOAN.