

No. 779,626.

PATENTED JAN. 10, 1905.

E. H. SCOFIELD.
NON-CHATTERING BRAKE HANGER.

APPLICATION FILED AUG. 25, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

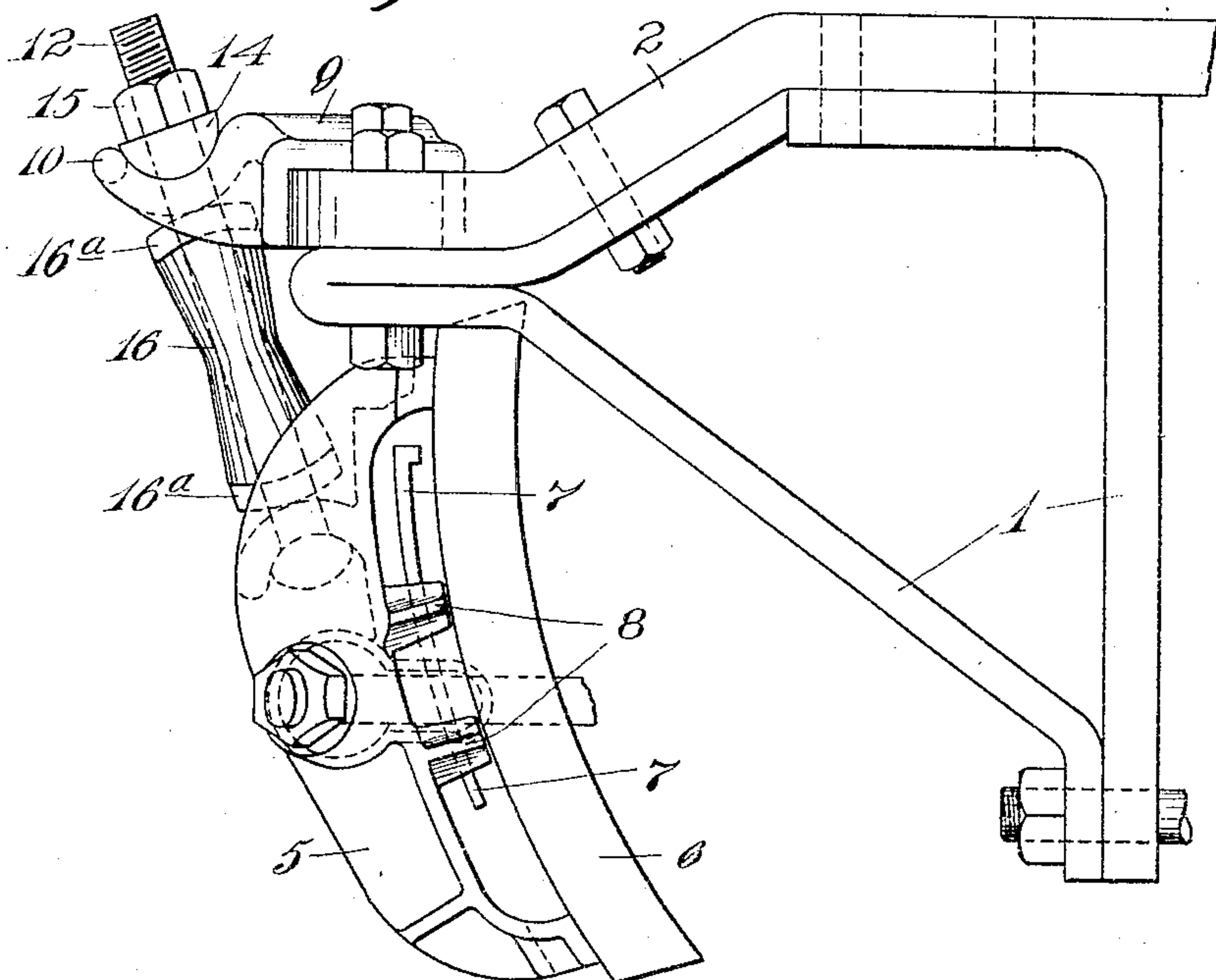
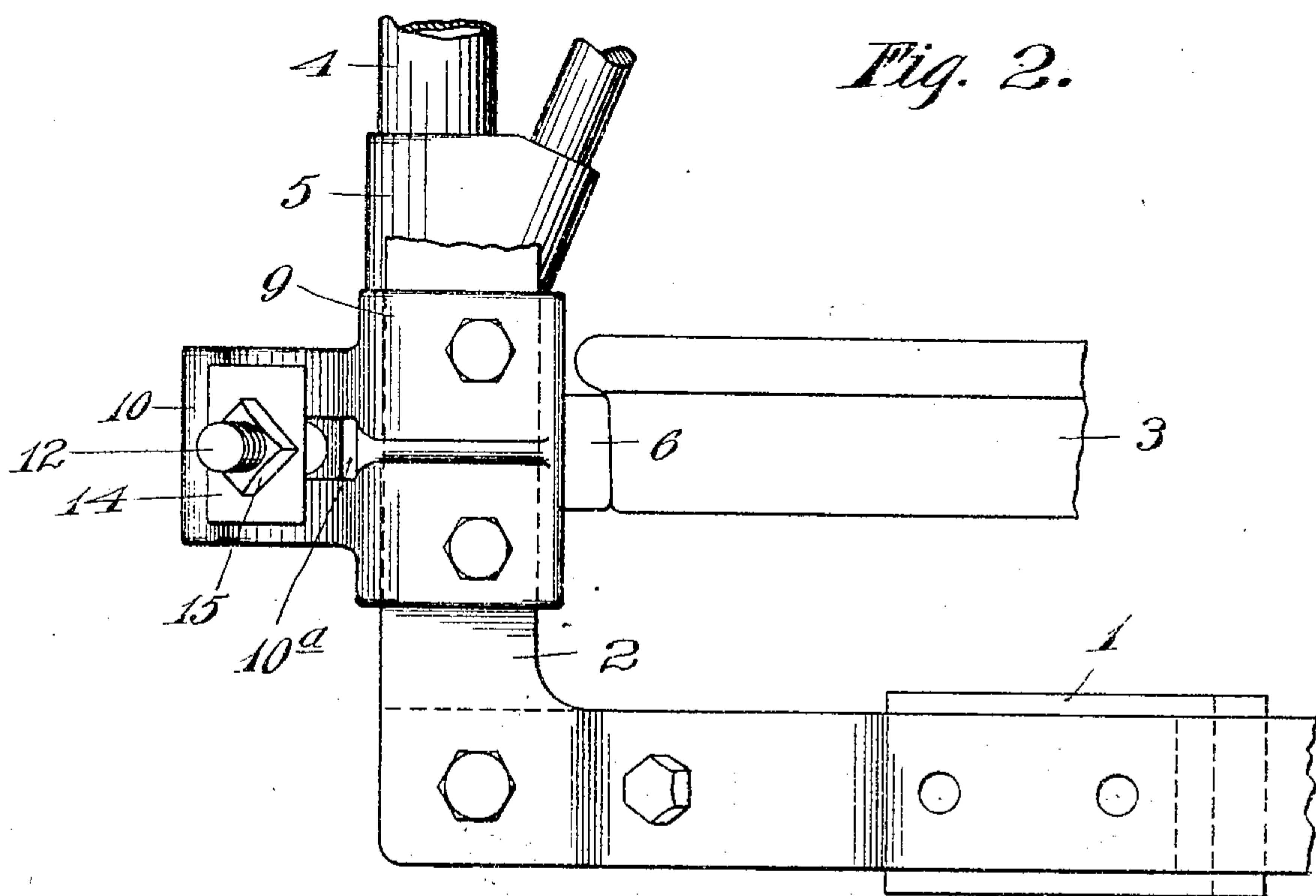


Fig. 2.



Witnesses.

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2 SHEETS—SHEET 2.

Fig. 3.

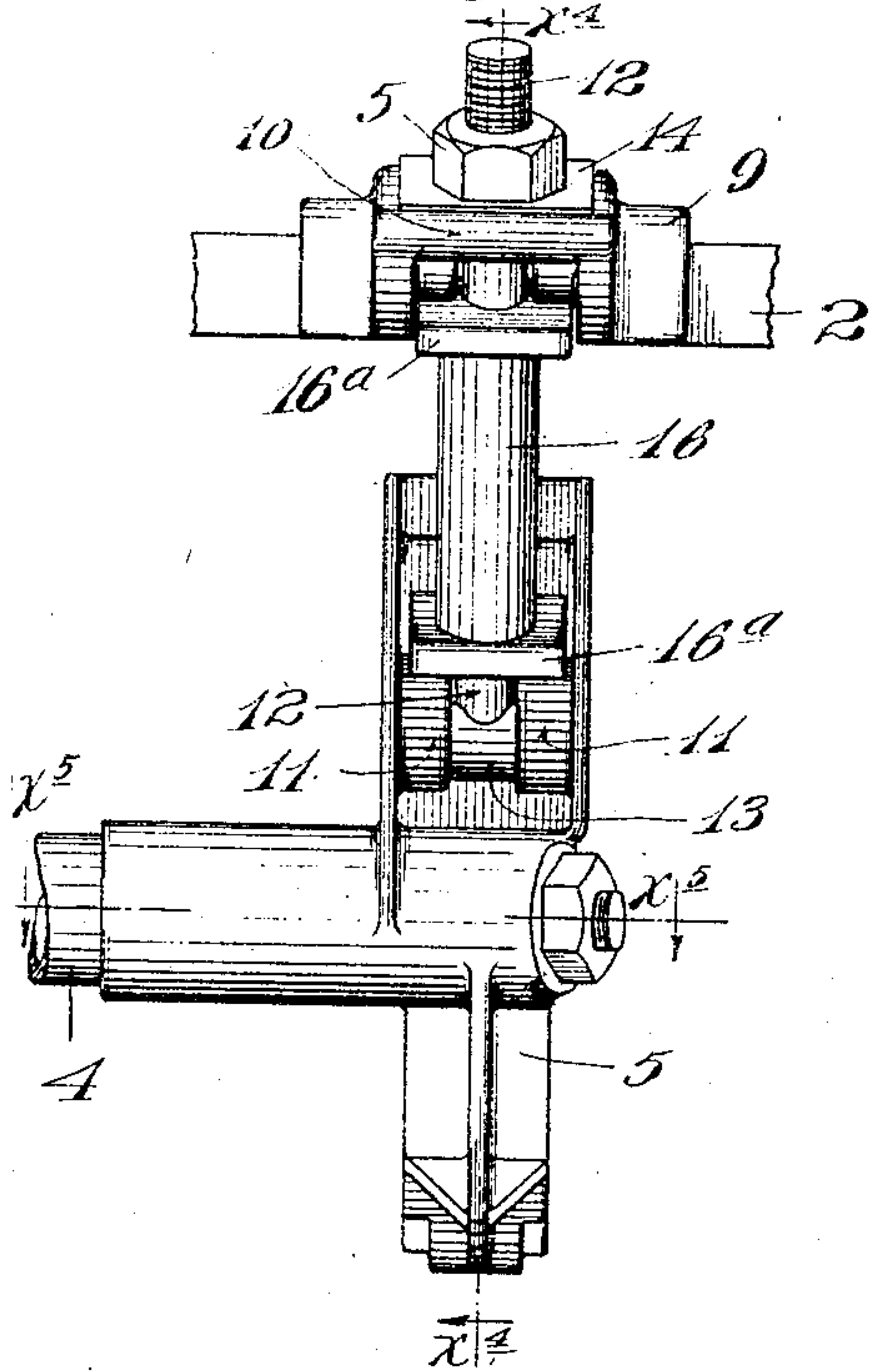


Fig. 1.

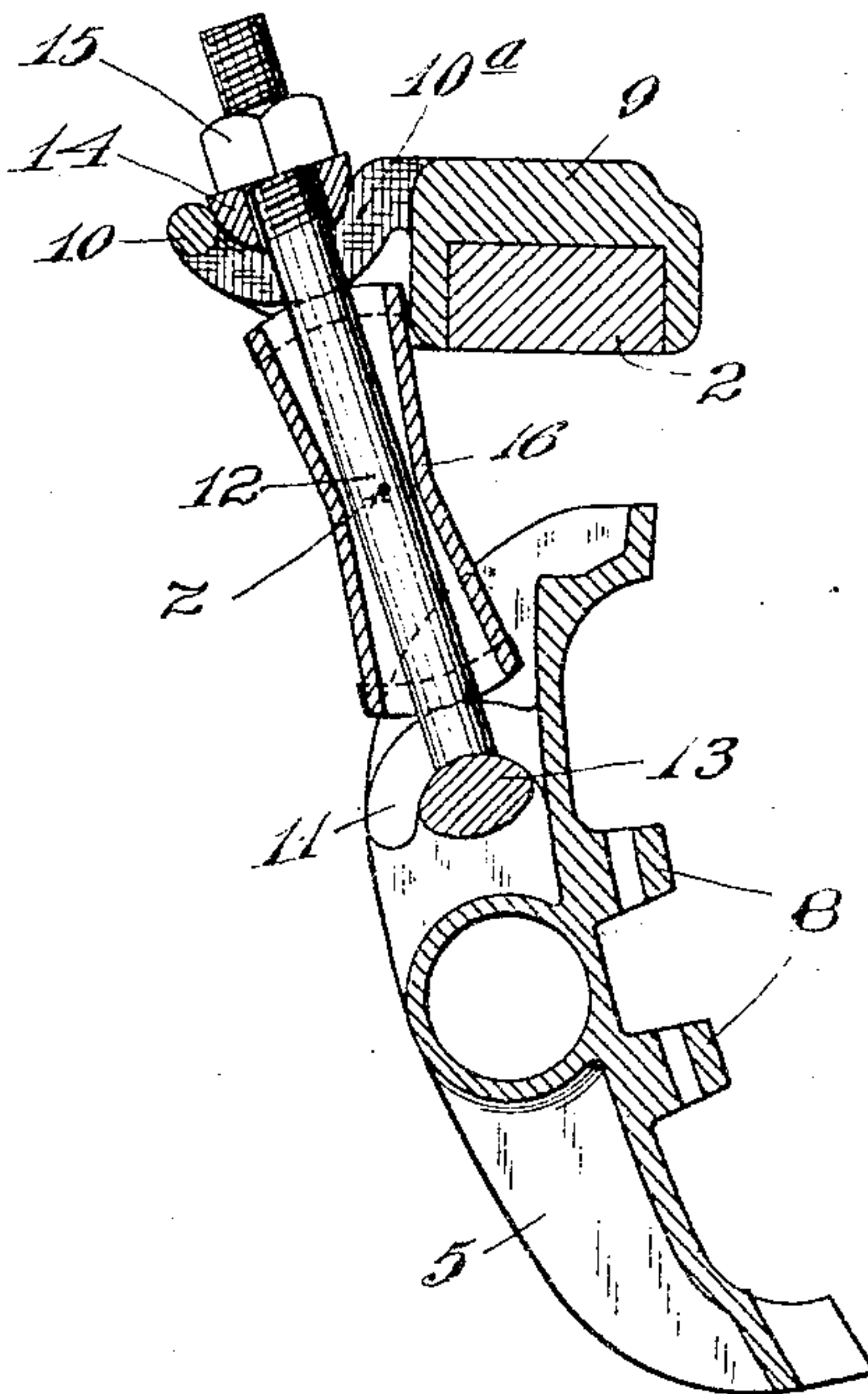
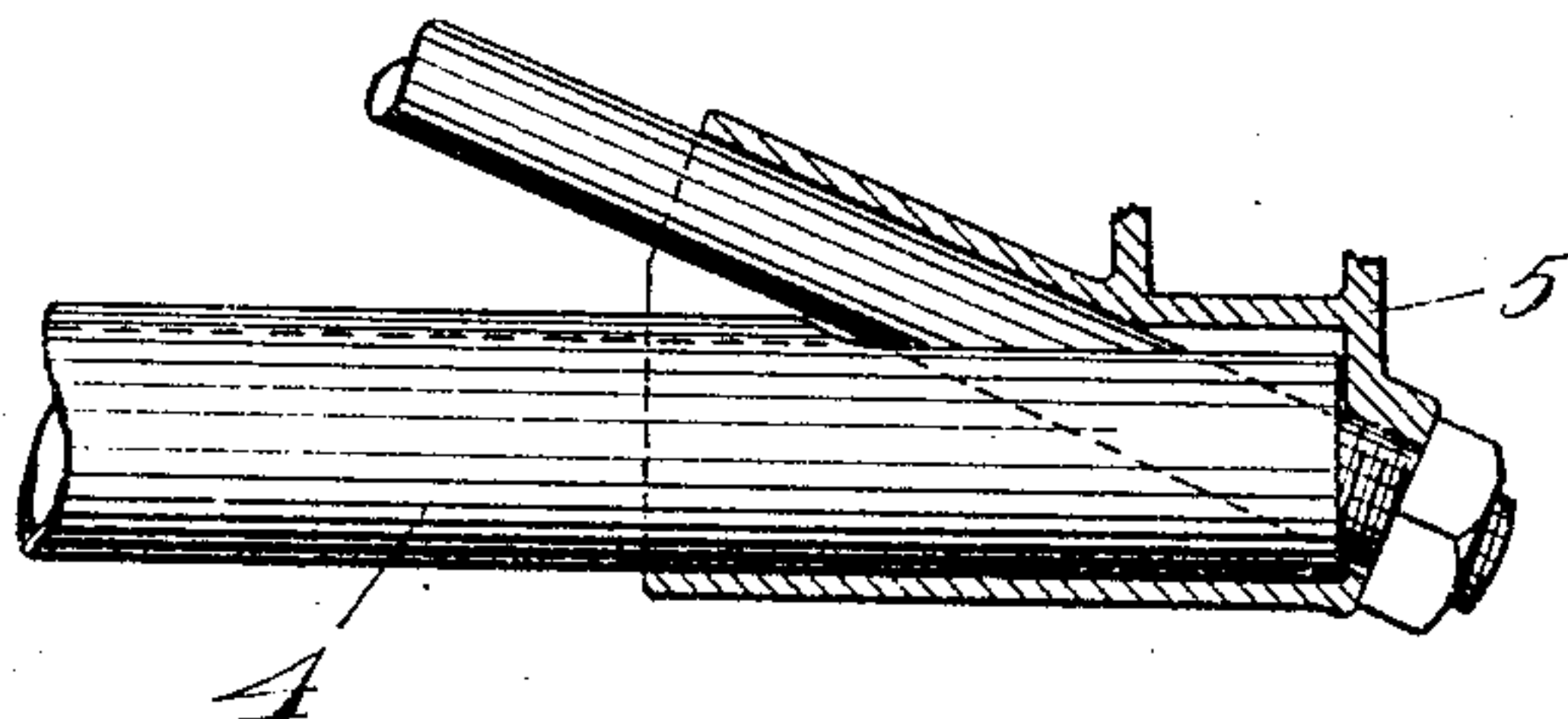


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD H. SCOFIELD, OF MINNEAPOLIS, MINNESOTA.

NON-CHATTERING BRAKE-HANGER.

SPECIFICATION forming part of Letters Patent No. 779,626, dated January 10, 1905.

Application filed August 25, 1904. Serial No. 222,063.

To all whom it may concern:

Be it known that I, EDWARD H. SCOFIELD, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Non - Chattering Brake-Hangers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to non-chattering brake-hangers of the character set forth and claimed in my pending application, Serial No. 190,282, filed January 23, 1904, and has for its object to improve the same in the several particulars hereinafter named.

The invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate my invention, like characters indicate like parts throughout the several views.

Figure 1 is a view in side elevation, showing a portion of a car-truck having supported therefrom by my improved hangers a brake-beam provided at its ends with shoe-equipped brake-heads. Fig. 2 is a plan view of the parts shown in Fig. 1, some parts being broken away and a portion of one of the truck-wheels being indicated in diagram. Fig. 3 is a rear elevation of the parts shown in Fig. 2. Fig. 4 is a vertical section on the line $x^4 x^4$ of Fig. 3; the brake-shoe being removed from the brake-head; and Fig. 5 is a detail in horizontal section taken on the line $x^5 x^5$ of Fig. 3, some parts being broken away.

The numeral 1 indicates the rear portion of one of the truck side frames, and the numeral 2 indicates a transverse tie-bar which rigidly connects the rear portions of the two side frames.

In Fig. 2 the numeral 3 indicates a portion of one of the truck-wheels.

The numeral 4 indicates a trussed brake-beam, to the ends of which are rigidly secured a pair of brake-heads 5, only one of which is shown in the drawings. The brake-heads are provided with detachable shoes 6, which, as

shown, are locked thereto by keys 7, passed through interlapped lugs 8 thereof.

Rigidly secured on the truck-frame and, as shown, directly bolted to the transverse tie-bar 2 thereof in line with the adjacent wheels 3 are strong brake-supporting bearings 9, that are formed with rearwardly-projecting concavo-convex bearing-webs 10, which webs are bifurcated or slotted at 10^a for a purpose which will presently appear. In the drawings only one of the hanger-bearings 9 is shown. On the back of the brake-head 5 and between the side flanges thereof is a rearwardly-projecting centrally bifurcated or slotted concavo-convex bearing-web 11. This bearing-web 11 has its convex surface turned upward, while the bearing-web 10 of the hanger-bearing 9 has its convex surface turned downward.

In my present invention, as in my prior application above identified, I employ brake-hangers which are made up of tension members and compression or thrust members, the said thrust members being interposed between parts on the brake-heads and parts on the truck-frame or other support and the tension members being arranged to hold the said parts together and resist tension strains on the hanger.

My present improved brake-hanger is preferably constructed and arranged as illustrated in the drawings, wherein the numeral 12 indicates the tension member in the form of a bolt having at its lower end a T-head 13, which rests in the concave surface of the bearing-web 11 of the brake-head 5. The tension-bolt 12 passes upward through the slot of the bearing-web 11 and through the slot 10^a of the relatively fixed bearing-web 10. Seated in the concave upper surface of the fixed bearing-web 10 is a pivotal bearing-block 14 of semi-cylindrical form, as shown, having a perforation through which the threaded upper end of the tension-bolt 12 works freely. A nut 15, screwed onto the threaded upper end of the tension-bolt 12, limits its downward movement and resists the weight of the brake-beam and the parts carried thereby. The thrust or compression member of the hanger, in the

form of a sleeve or tubular member 16, surrounds the tension-bolt 12 and at its ends is formed with rocker-like bearing-surfaces 16^a, as shown, afforded by laterally - extended
 5 flanges. The bearing-surfaces 16^a of these flanges bear directly against the convex surfaces of the bearing-webs 10 and 11, respectively, of the hanger-bearing 9 and brake-head 5. In the plane of movement of the
 10 brake-hanger in swinging the brake-shoes to and from engagement with the wheels the thrust-sleeve 16 is flared in both directions from its central portion toward its ends, so that the said sleeve under the brake setting
 15 and releasing movements is free for a rocking movement on the tension bolt or member 12. The point on which the thrust-sleeve 16 will rock with respect to the bolt 12 is indicated by the dot (marked *z*) on Fig. 4. The distance
 20 between the convex bearing-surfaces 16^a at the ends of the thrust-sleeve 16, measured on all-straight line intersecting the imaginary point *z*, is the same, and since the concavo-convex bearing-webs 10 and 11 have parallel
 25 concave and convex surfaces, or, in other words, are of constant thickness, it is evident that the nut 15 may be so tightened as to take up all slack or play between the bolt-head 13, bearing-block 14, thrust-sleeve 16, and
 30 bearing-webs 10 and 11. Hence under rocking movements of the thrust-sleeve 16 on the convex surfaces of said bearing-webs 10 and 11 the adjustment of the parts will not be changed.

35 In my prior application the thrust member of the brake-hanger, which was illustrated in the form of a sleeve, had sliding frictional engagement with the bearing-webs on the brake-head and on the hanger-bearing or relatively
 40 fixed support. All sliding frictional engagement of course has a tendency to interfere with the free movements of the brake-heads to and from operative positions and especially interferes with the release of the brakes. As
 45 is evident, a thrust sleeve or member having rocking or rolling engagement with the co-operating bearing-webs greatly decreases the frictional resistance to the movements of the brake-heads to and from operative positions
 50 and permits all slack or play between the parts of the brake-hanger and the parts to which it is applied to be taken up without increasing the friction to an extent which will interfere with the ready release of the brake. It
 55 is further evident that when all play between the parts of the brake-hanger and the parts to which it is applied is taken up chattering cannot take place between the parts in the brake-setting action. A perfectly non-chattering
 60 brake is therefore provided.

Any dirt or foreign substance which may be caught between the convex rocker-acting surfaces of the thrust-sleeve 16 and of the co-operating bearing-webs will be crushed and

forced out from between the said surfaces, 65 thus making the brake-hanger self-cleaning in its action. In the construction illustrated the flanges which form the bearing-surfaces 16^a at the ends of the sleeve 16 coöperate with the side flanges of the brake-head to hold said
 70 sleeve against rotation around the tension-bolt 12.

From what has been said it will be understood that when the brake-shoe is forced against the downwardly-running surface of
 75 the wheel the braking strain will be taken in tension by the tension bolt or member 12 and that when the said shoe is forced against the upwardly - running portion of a wheel the brake-setting strain will be taken in compression or thrust by the so-called "thrust sleeve or member" 16. It will also be understood that the construction described is capable of many
 80 modifications within the scope of my invention as herein set forth and claimed. In what
 85 I consider the best form of the device the brake-hanger is made up of telescoping tension and compression or thrust members. These members may be arranged in a great
 90 many other different ways without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a brake-head, of a brake-hanger therefor, comprising a rocker,
 95 engaging, under a "rolling" action, with a part carried by said head and with a relatively fixed support, and means holding said parts in operative relation, substantially as described.

2. The combination with a brake-head, of a
 100 brake-hanger involving a pair of parts, one of which receives end thrusts and the other tension strains in the brake-setting actions, and certain of the parts of which are arranged for "rolling" as distinguished from "slid-
 105 ing" engagement, under movements of the brake-head to and from operative positions, substantially as described.

3. The combination with a brake-head having a concavo-convex bearing-web, and a relatively fixed support, having a concavo-convex bearing-web, of a brake-hanger made up of a pair of members arranged, one to receive
 110 tension strains, and the other, end thrusts, which thrust member is interposed between
 115 said bearing-webs and has rolling engagement therewith, and which tension member reacts on said bearing-webs and holds them, and said thrust member, in operative relation, substantially as described.
 120

4. The combination with a brake-head having a concavo-convex bearing-web, and a relatively fixed support having a concavo-convex bearing-web, of a brake-hanger made up of a tension-bolt and a thrust-sleeve, said
 125 thrust-sleeve being interposed between said bearing-webs and having rolling engagement therewith at its ends, and said tension-bolt be-

ing passed through said bearing-webs and said sleeve, and holding the said parts in operative relation, substantially as described.

5 5. The combination with a brake-head having a concavo-convex bearing-web and a relatively fixed support having a concavo-convex bearing-web, said webs being bifurcated, of a brake-hanger made up of a tension-bolt and a thrust-sleeve, said thrust-sleeve being
10 interposed between said bearing-webs, and having rolling engagement therewith, at its ends, said tension-bolt having a T-head seated in the concavity of the web, and with the body

of said bolt passed through said thrust-sleeve and through said bearing-webs, a rocker-block 15 seated in the concavity of said fixed bearing-web, and through which said bolt is passed, and a nut on said bolt above said rocker-block, substantially as described.

In testimony whereof I affix my signature in 20 presence of two witnesses.

EDWARD H. SCOFIELD.

Witnesses:

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F. D. MERCHANT.