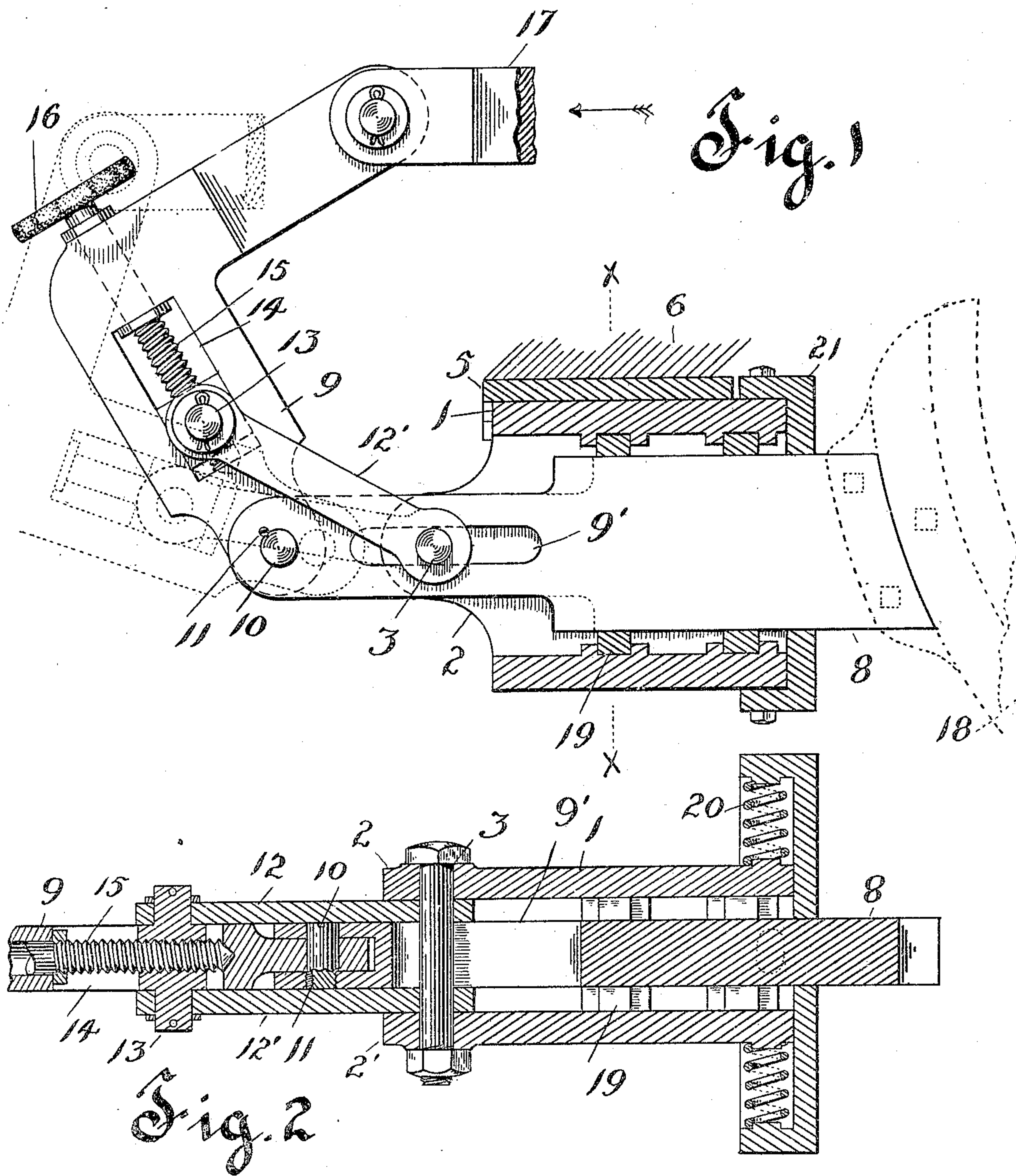


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CAR BRAKE.

APPLICATION FILED FEB. 23, 1904.

3 SHEETS—SHEET 1.



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No. 790,974.

PATENTED MAY 30, 1905.

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3 SHEETS—SHEET 2.

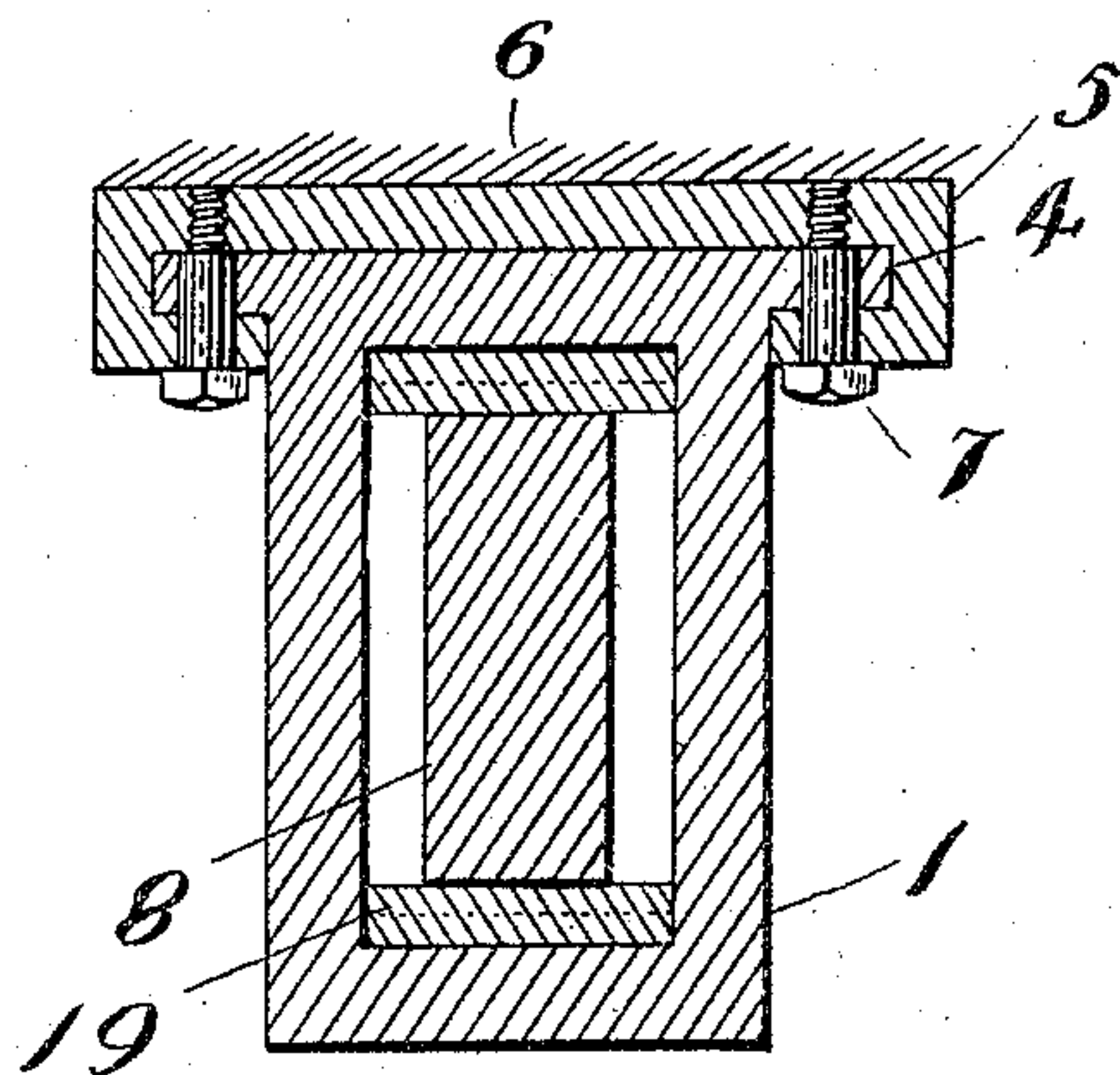


Fig. 3

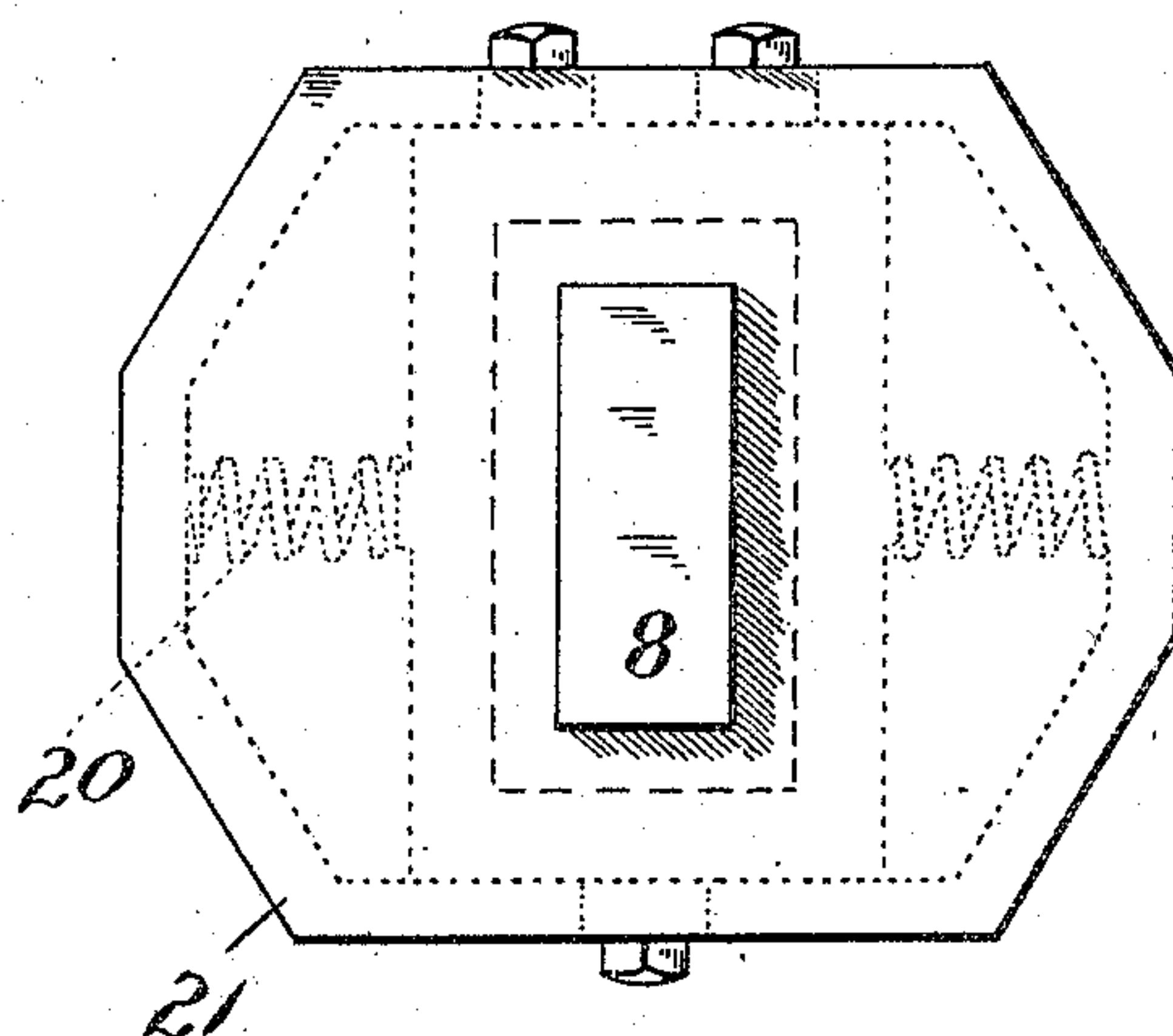


Fig. 4

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3 SHEETS—SHEET 3.

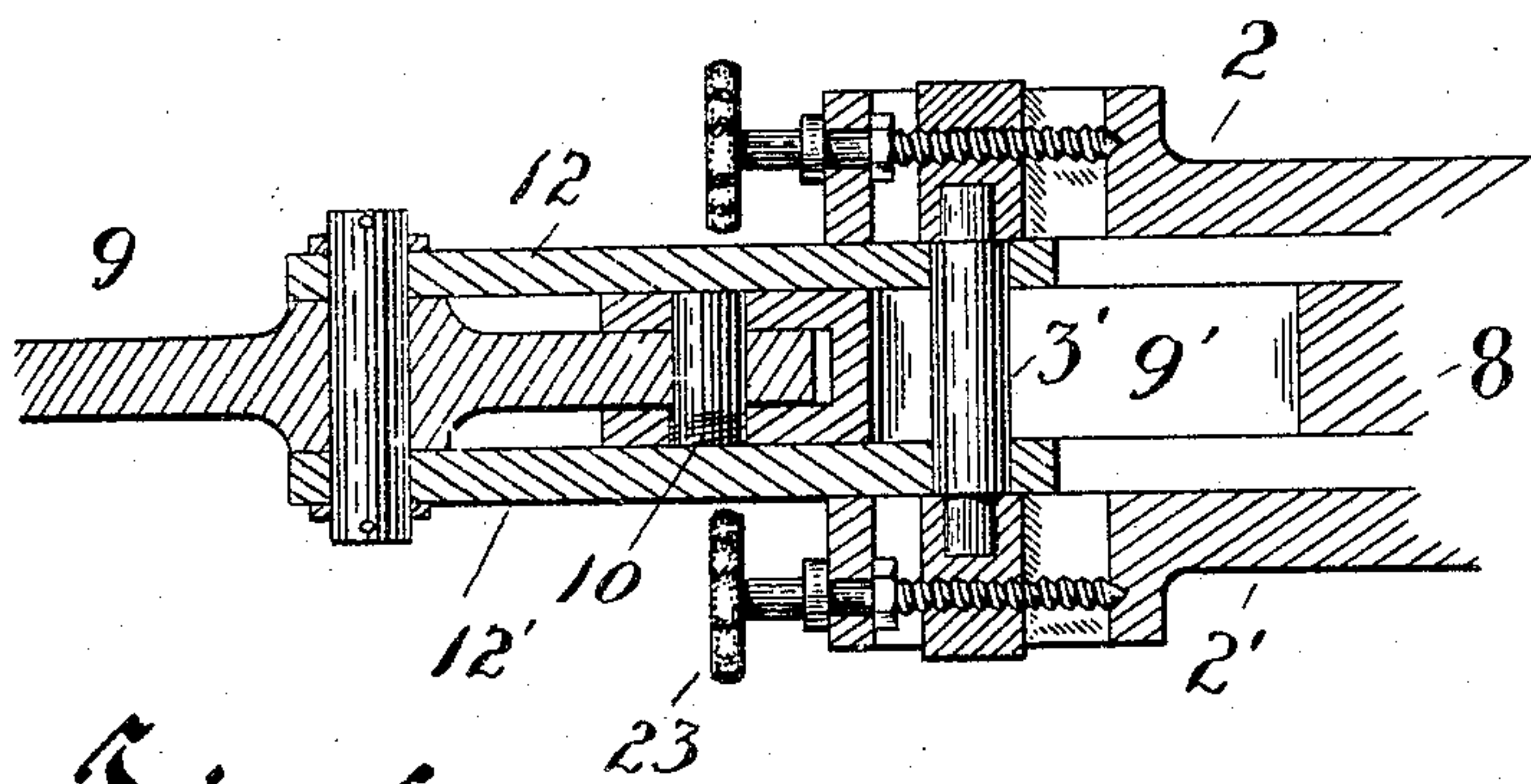
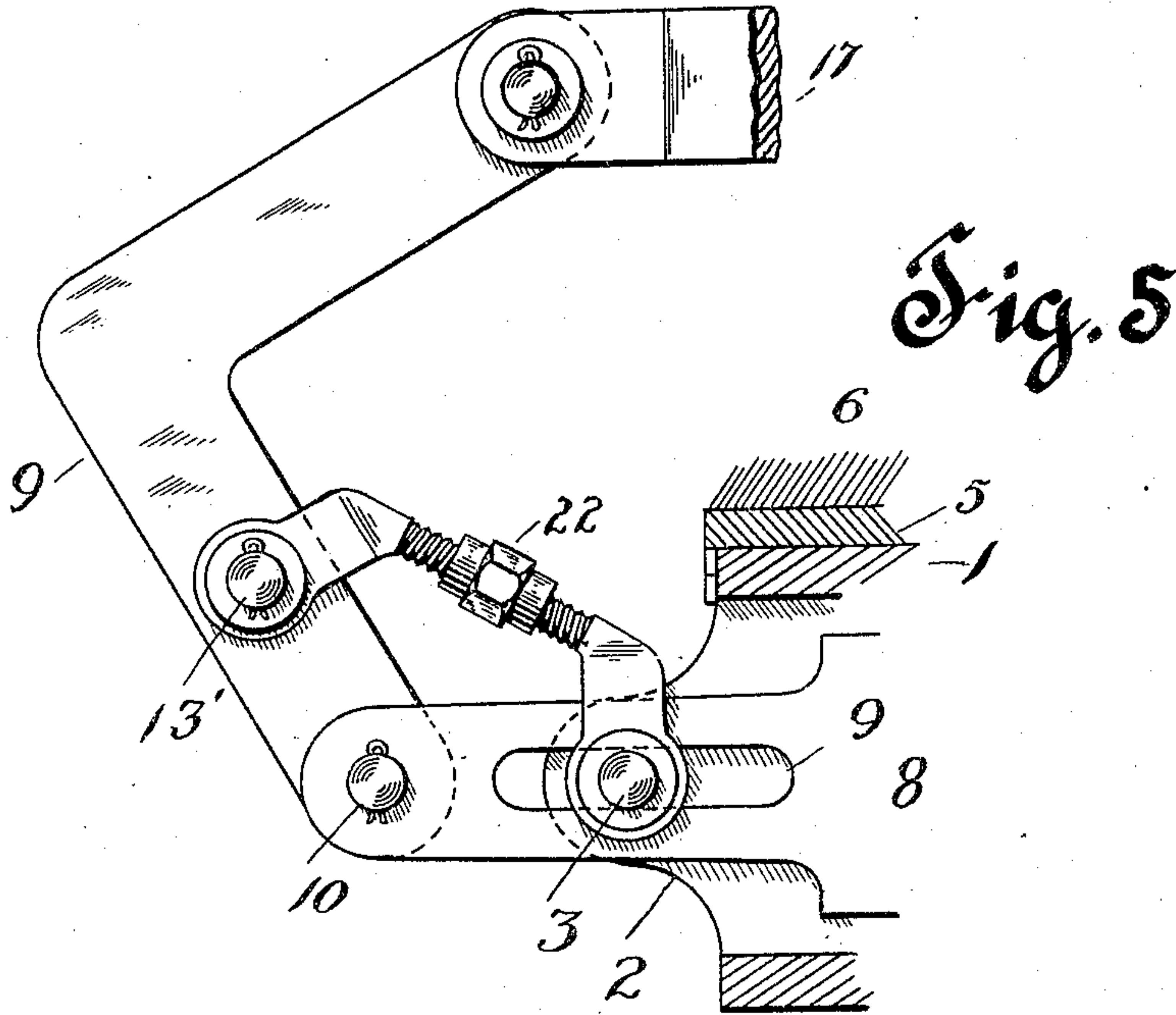


Fig. 6

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UNITED STATES PATENT OFFICE.

JOSEPH C. O'NEILL, OF SAN FRANCISCO, CALIFORNIA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 790,974, dated May 30, 1905.

Application filed February 23, 1904. Serial No. 194,660.

To all whom it may concern:

Be it known that I, JOSEPH C. O'NEILL, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Car-Brakes; 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 improvements in car-brakes; and it has for its objects to produce a brake which will possess all the requisites of strength and durability and which will be especially simple in construction and powerful in operation.

A further object of my invention is to provide means whereby the several parts of the brake can be quickly and readily adjusted to compensate for the wear due to constant use. This adjustment can be readily made by the motorman or operator without the necessity of withdrawing the car from active service or running it into the repair-shop.

There are other objects and advantages of the invention which will be apparent to those familiar with this class of devices as the following specification is gone over.

The objects of my invention I am enabled to accomplish by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the main operative portions of the device, the supporting-box being shown in section, while a portion of the brake-shoe is shown in dotted lines. Fig. 2 is a central longitudinal section of the parts shown in Fig. 1 after they have been turned down into the same plane. Fig. 3 is a transverse section taken in the direction of the line *xx* in Fig. 1. Fig. 4 is a front elevation of the adjustable head of the box. Fig. 5 is a side elevation of a modified form of construction for shifting the position of one of the pivotal points. Fig. 6 is still another modified form of construction for accomplishing the same result with reference to another pivotal point.

Referring now to the above views by numeral, 1 represents a metal box essentially rec-

tangular in form, open at both ends and formed at one extremity with the protruding lugs 2 2', which afford a bearing for the cross pin or pivot 3. This box 1 is cast with an upper projecting flange 4, which is adapted to slide into a similarly-formed guide 5, the latter being secured to the truck-frame 6 of the car. The bolts 7 retain the box in a set position relative to the frame, and by their removal the box can be readily withdrawn for replacement or repair.

Adapted to slide longitudinally within the box 1 is the bar 8, which is formed with the elongated slot 9' to admit the cross-pin 3, while the outer extremity is forked to engage one extremity of the arm 9. This arm 9 and forked end of bar 8 are pivoted together by means of the pin 10, which is threaded at one end and is prevented from accidentally turning or loosening by means of the small set-screw 11.

Situated on either side of the bar 8 and turning on the cross-pin 3 are the twin links 12 12', the opposite or outer extremities of which engage with opposite protruding extremities of the sliding pin 13. This pin 13 is arranged to slide in a slot 14, formed in arm 9, and by means of the screw 15, which is threaded through it, is capable of adjustment to or from the pivot 10. In order to facilitate the turning of the screw 15, I have provided the outer hand-wheel 16.

Now assuming that the box 1 is stationary relative to the truck-frame and that the arm 9 is connected to suitable brake-levers by means of the connecting-rod 17, it will be manifest that as the rod 17 is thrust or operated in the direction of the arrow in Fig. 1 the parts will assume the relative positions shown by means of dotted lines, thereby forcing the bar 8 ahead and the terminally-supported brake-shoe 18 against the wheel. This action of the bar is readily understood when it is considered that the distance between the pivots 3 and 13 is constant. The distance traveled by the shoe is small compared with that traveled by the rod 17; but it will be observed that the power derived from this arrangement of parts varies in an inverse pro-

portion. As the brake-shoe wears from continued use the pivot 13 will approach, when the brake is set, the horizontal line through pivots 3 and 10. Now although the power derived increases as this line is approached still the distance traveled diminishes correspondingly, and should the line be finally reached the effect of the brake would evidently be lost. Now to regulate or compensate for this wear of the shoe I have employed the adjustable pivot 13. It is manifest that as the shoe wears a few turns of the wheel 16 will increase the distance between pivots 10 and 13, and thereby provide for an increased action of the brake. This adjustment can be readily made by the motorman when occasion requires without the necessity of withdrawing the car from active service.

In order to relieve the box 1 of the wear consequent upon the action of the bar 8, I have provided the steel shoes 19, which are arranged to fit in channels cast in the box and can be readily removed for purposes of replacement.

In the practical operation of this class of brakes provision must be made for the lateral play of the wheels. Now in order to make a corresponding lateral play of the bar 8 possible I have provided the shifting head 21, which encircles the bar 8 and is held in the normal position shown by means of the compression-springs 20. It is evident that this arrangement permits of considerable lateral play of the bar 8, which latter carries the brake-shoe.

In the modification shown in Fig. 5 I have provided the turnbuckle 22 instead of the adjustable pivot 13 and by the use of which it will be readily seen the pivot 13' can be adjusted to or from the horizontal line above referred to.

As still another means for accomplishing the adjustment above referred to I have arranged the pivot 3' capable of adjustment relative to the box 1. I accomplish this by forming the box with an elongated slot into which the opposite extremities of the pin 3' are guided, and by means of the hand-wheels 23 the adjustment can be readily effected.

Having thus fully described my invention, the objects and advantages of the same will, it is thought, be readily understood.

Although I have described the best form of construction, still it will be understood that I wish to be protected in the matter of me-

chanical equivalents when such are substituted.

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

1. A car-brake consisting of a suitable box adapted to be supported by the truck-frame, a bar slidable in said box, and adapted to carry the brake-shoe, an arm pivoted to said bar and connected to suitable operating-levers, one or more links connected to said box by a suitable pivot, the opposite ends of said links being connected to said arm by means of a secondary pivot and means for adjusting the distance between said secondary pivot and the pivotal point between said bar and said arm for the purpose set forth.

2. A car-brake provided with a suitable box supported by the truck-frame, a bar slidable in said box, and adapted to carry the brake-shoe, an arm pivoted to said bar, and connected to the operating-rods of the brake, toggle-arms connected to said box and to said primary arm, and means for adjusting the relative position of one of said pivotal points, and a head on said box adapted to guide said bar and permit of lateral play relative to said box, substantially as and for the purpose set forth.

3. A car-brake provided with a suitable box supported by the truck-frame, a bar slidable in said box, and adapted to carry the brake-shoe, an arm pivoted to said bar, and connected to the operating-rods of the brake, toggle-arms connected to said box and to said primary arm, and means for adjusting the relative position of one of said pivotal points, and one or more removable shoes within said box, and adapted to relieve said box of the wear consequent to the sliding action of said bar, for the purpose set forth.

4. A car-brake provided with a suitable box a bar slidable in said box, and carrying the brake-shoe, an arm pivoted to said bar and connected to the operating-rods of the brake, said arm being connected to said box by means of one or more pivoted links, and a guide secured to the truck-frame and adapted to receive and support said box, substantially as and for the purpose set forth.

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

JOSEPH C. O'NEILL.

Witnesses:

GEORGE PATTISON,
CLARA M. KELSO.