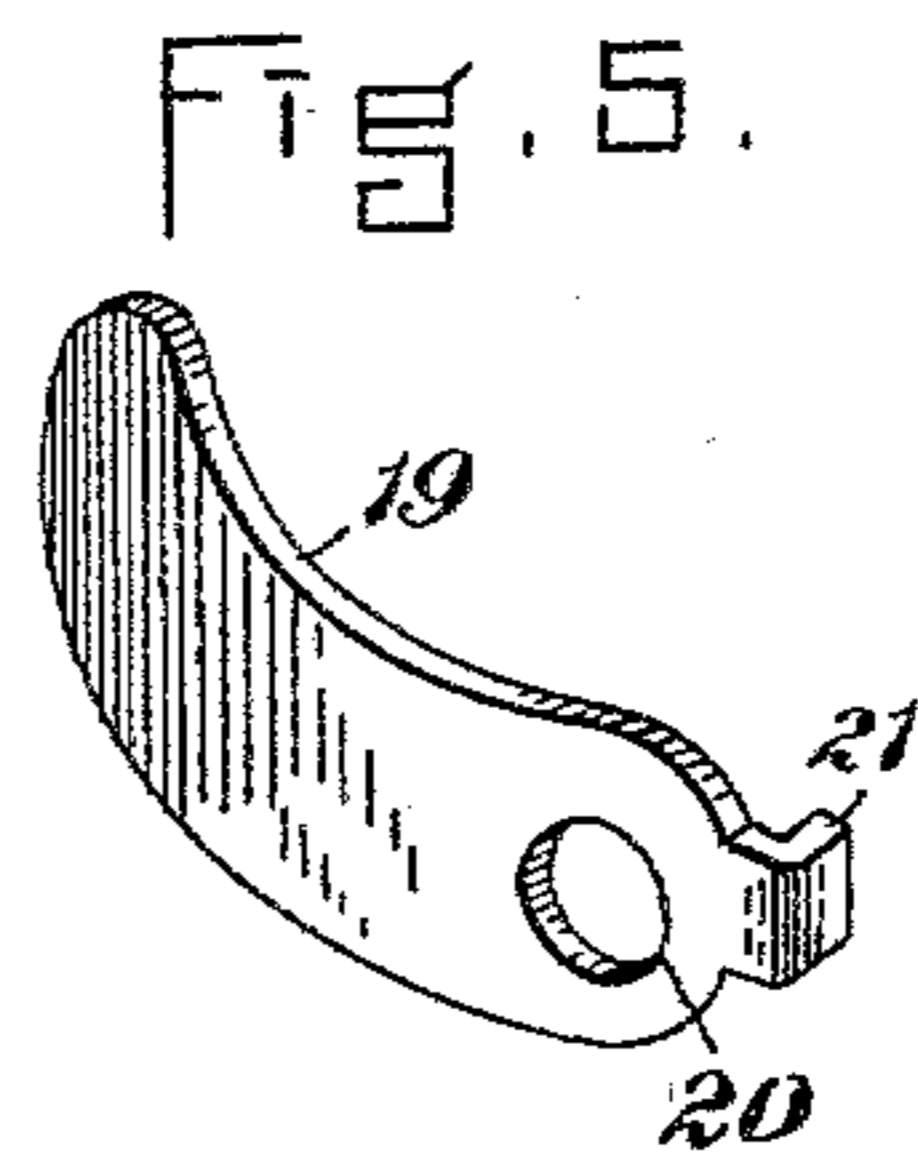
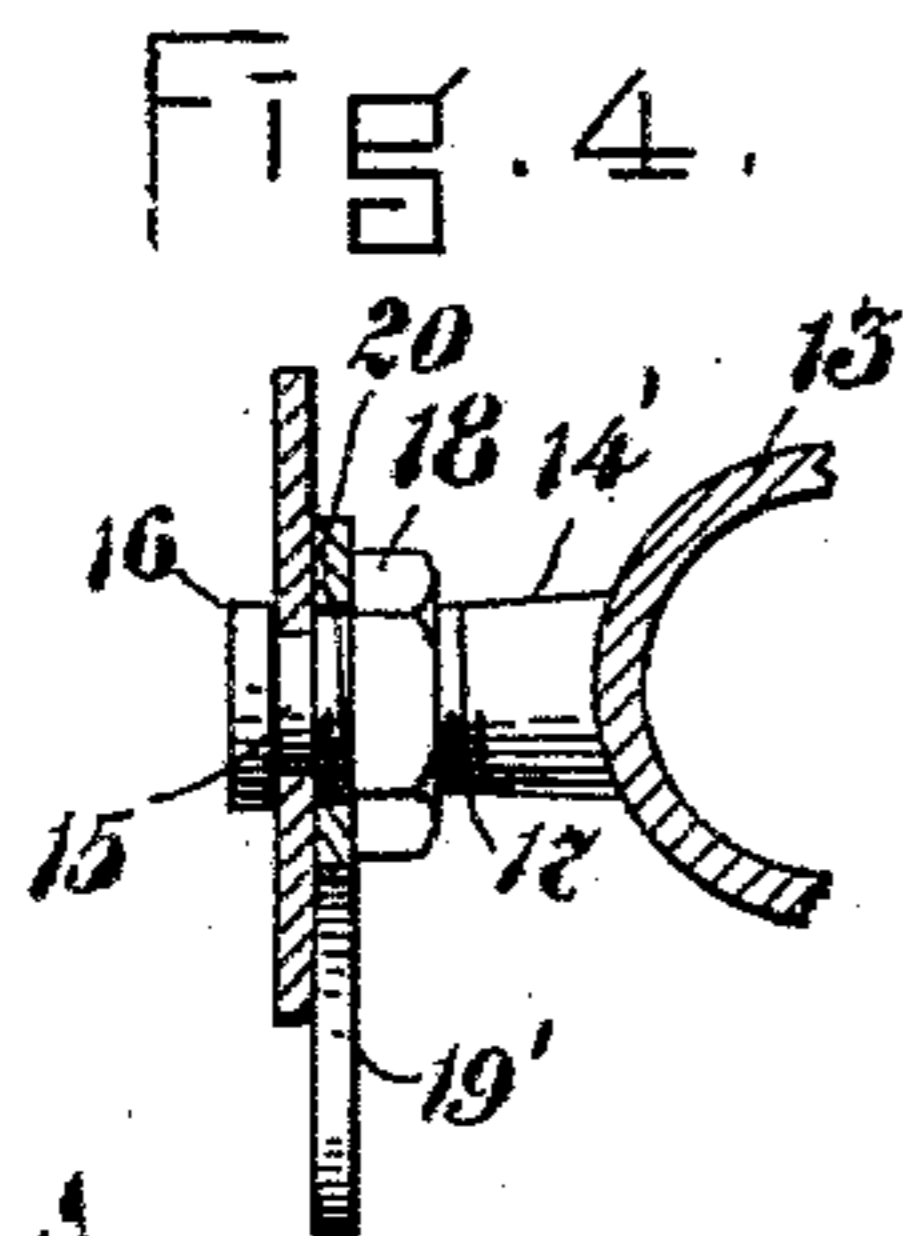
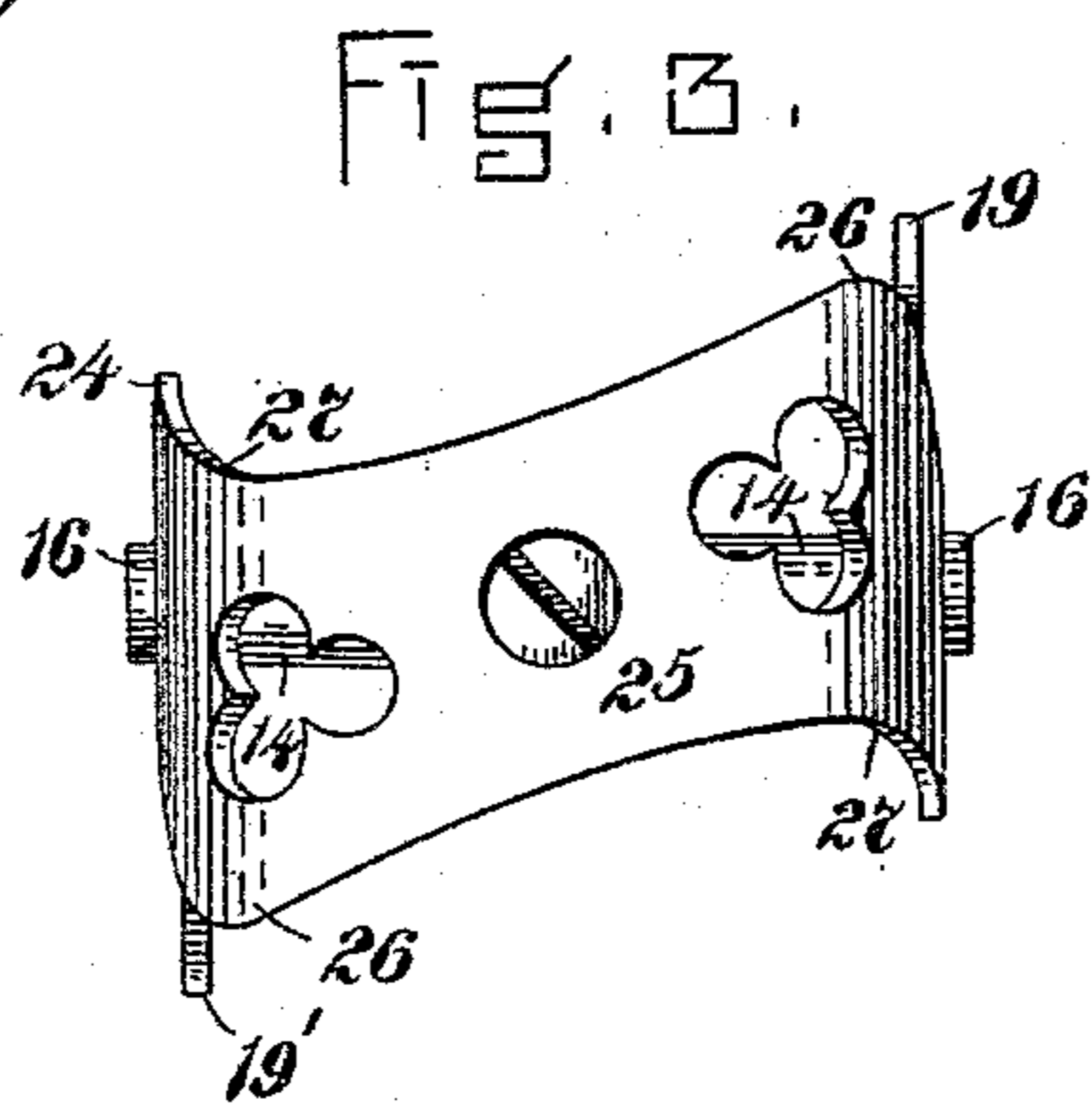
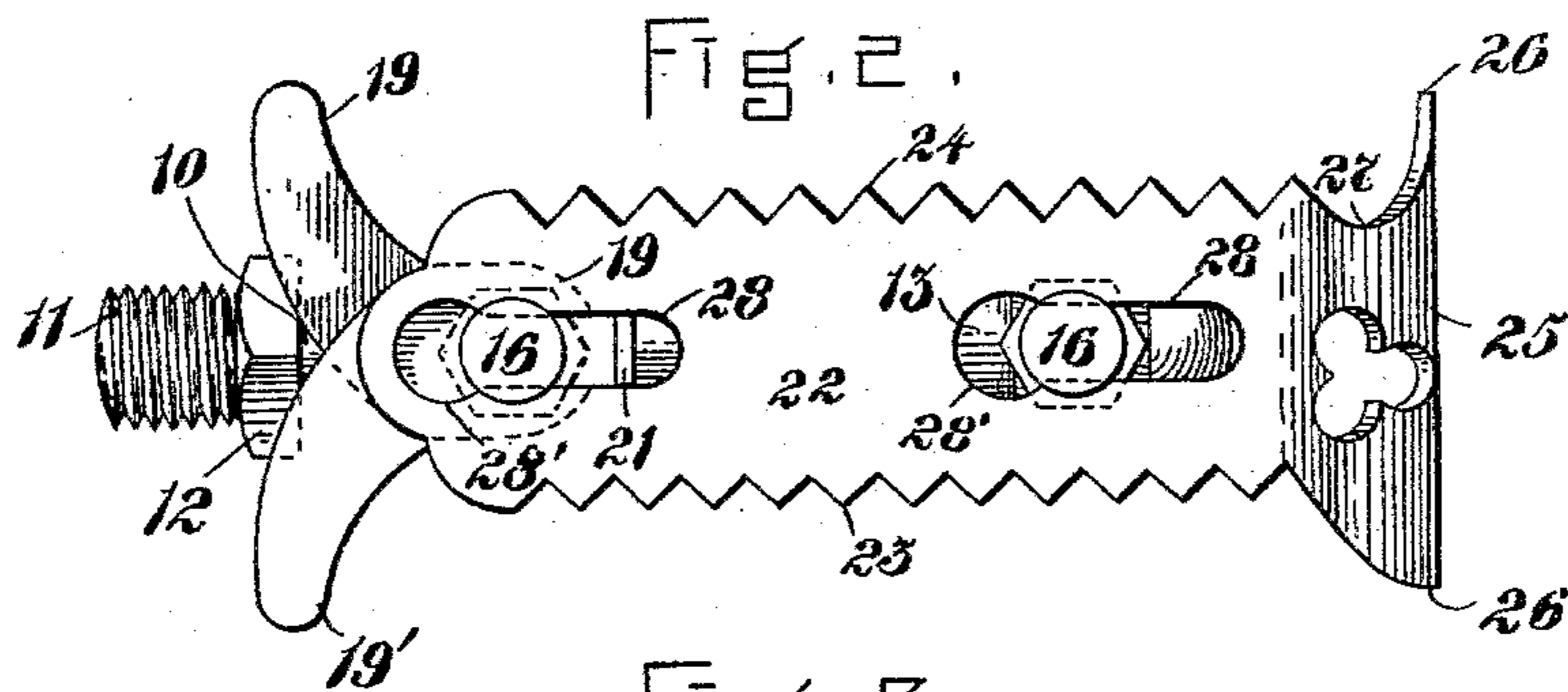
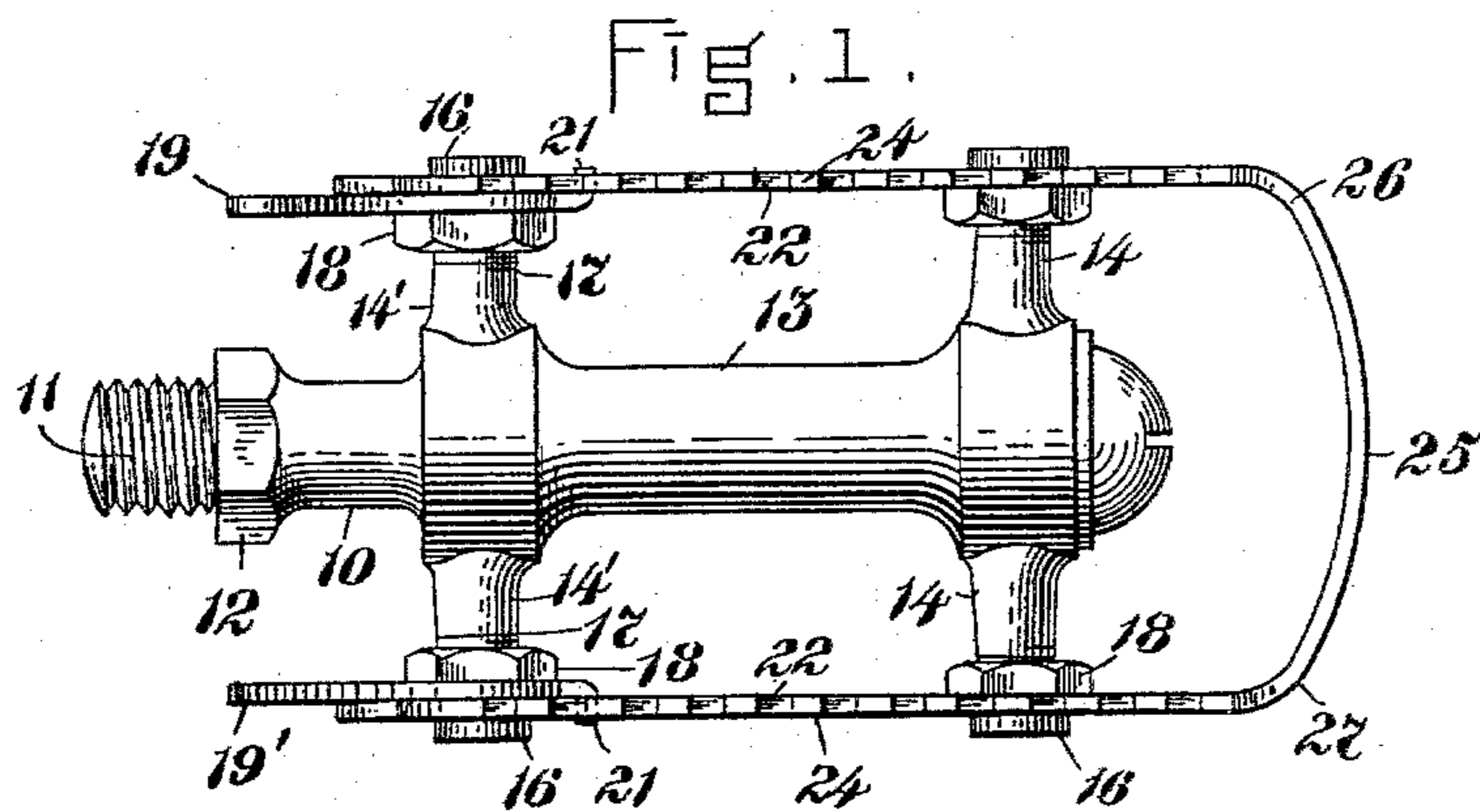


(No Model.)

T. CURLEY.  
PEDAL.

No. 596,743.

Patented Jan. 4, 1898.



WITNESSES.  
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att'y.

# UNITED STATES PATENT OFFICE.

THOMAS CURLEY, OF WALTHAM, MASSACHUSETTS.

## PEDAL.

SPECIFICATION forming part of Letters Patent No. 596,743, dated January 4, 1898.

Application filed November 5, 1895. Serial No. 567,975. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS CURLEY, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain  
5 new and useful Improvements in Pedals; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

10 This invention has reference to improvements in crank-pedals.

One object of the invention is to so construct a pedal that the stops for preventing the lateral play of the foot may be readily removed.

15 Another object is to increase the strength of the stops located at the outer end of the pedal and to so construct them that a shock on the surface of the metal will be better resisted than in those heretofore constructed.

20 Another object is to so construct a pedal that it may be adjusted with reference to the width of the rider's shoe-sole.

Another object is to improve the means for securing foot-plates or foot-supporting portions to the main portion of the pedal.

25 Another object is to improve the construction and to facilitate the operation of the pedal.

30 The invention consists in the peculiar stops and in the manner in which they are mounted.

The invention also consists in the foot-plate.

The invention also consists in the means for removably securing the foot-plates and stops.

35 The invention also consists in the foot-plate, adjustable to increase or to decrease the distance between the stops.

40 The invention also consists in such other novel features of construction and combination of parts as may hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a plan view of the improved pedal. Fig. 2 represents an elevation of the same. Fig. 3 represents an end view thereof. Fig. 4 represents a vertical section showing details of the fastening device and plates. Fig. 5 represents a view of the stop-plate.

50 Similar numbers of reference designate corresponding parts throughout.

This invention has particular reference to improvements in that class of pedals wherein

the foot-supporting portions are mounted at opposite sides of the hub, which is considerably shorter than the foot-plates, whereby the arms for supporting the foot-plates are brought nearer together and access may be had to that portion of the shaft between the hub and the crank-arm. Foot-plates have been heretofore constructed for this class of pedals from flat plates having a central foot-supporting edge and horns or stops at the ends. These horns or stops were subject to injury from blows on their flat sides and the end of the hub was unprotected between the outer ends of the foot-plates. The striking of the stops or end portions of the plates would cause them to bend or break, while the striking of the hub end would often result in bending the pedal-shaft. When the plates were bent or broken, it has usually been necessary to remove the plates from the pedals for the substitution of new plates, and this required considerable labor, as the plates were generally secured to the arms by inserting the arms through perforations in the plates and riveting the ends of the arms down. Again, the plates being permanently secured to the arms, it was necessary to carry several sizes of entire pedals in stock, for in this class of pedals the foot is designed to be held by the forward foot-plate both from lateral movement and from being pushed too far forward, the sole of the shoe forming a wedge which is pushed forward until it strikes the stops.

In carrying my invention into practice it has been my desire to overcome these objections, first, by so constructing the pedal that the old-style foot-plate could be readily removed and another substituted, being either a new foot-plate or one of different size; secondly, that the distance between the stops could be regulated without removing the foot-plates; thirdly, by so constructing the stops at the outer portion of the pedal that they could better withstand sudden shocks; fourthly, to better protect the pedal-shaft and strengthen the pedal, and, fifthly, to provide securing devices for the foot-plates and stops which could not be lost and would not be likely to loosen.

In the drawings, 10 designates the pintle or shaft on which the pedal is rotatable. This shaft has the screw-threaded end 11, by means

of which the shaft may be secured in a threaded perforation of the crank-arm, and a wrench-shoulder 12, for engagement by a wrench to turn the shaft when screwing it into the crank-arm. The shaft has also suitable cones for the ball-bearings.

On the shaft 10 is mounted the hub 13, having the usual raceways, between which and the cones on the shaft are antifriction-balls. From the hub extend the arms 14 and 14', having the reduced portions 15 15 and the enlargements or buttons 16 16 beyond the reduced portions and forming the ends of the arms. Adjacent to the reduced portions 15 the surfaces of the arms are furnished with the screw-threads 17 17, and on these threads work the nuts 18 18.

The horns or stops 19 and 19' each has a perforation 20, of a shape and diameter to closely fit the screw-threaded portion of an arm 14', and in axial line with this perforation is an outwardly-turned finger 21.

The foot-plates 22 22 have the serrated edges 23 and 24 and are connected by the buffer-piece 25, curved around the end of the pedal and furnished with the stops 26 26 and the depressed portions 27 27, diagonally disposed and following the curve of the plate. In the foot-plates are formed the slots 28 28, of a diameter very slightly greater than that of the reduced portions 15 of the arms and of a length sufficient for the adjustment of these plates. At the ends of these slots are the enlarged portions 28' 28', of a diameter to allow for the passage of the heads or buttons 16 16.

In assembling the parts the stops 19 and 19' are first placed on the arms 14 14'. The foot-plates 22 22 are now engaged with the arms 14 14' by slipping the enlarged portions 28' of the slots 28 over the heads or buttons 16 16 and then slipping these plates along until the reduced portions of the arms 14 14' enter the slots 28 and the fingers 21 21 of the stops 19 become engaged in the slots 28 at the inner ends of the foot-plates. The nuts 18 are then screwed outward on their arms and serve to press the foot-plates against the buttons or heads 16, while the stops 19 and 19' are pressed against the inner surface of the foot-plates,

being held from swinging on the arms by the finger 21 engaging in the slot of the foot-plate. By simply loosening the nuts the foot-plates may be adjusted to increase or diminish the length of the pedal and the distance between the stops to accommodate the same to the user's shoe. Should the foot-plates or the stops become broken they may readily be removed and new plates substituted.

It is obvious that by the addition of the slots 28, with their enlarged portions, to the old-style plate the same may be adapted to be removably secured to the arms 14 14' of this pedal.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a pedal, the combination with a hub having arms extending laterally therefrom and furnished intermediate their lengths with reduced portions, and nuts working on screw-threaded portions of the arms, of a stop-plate mounted on one of said arms and having an outwardly-turned finger, and a foot-plate having slots for engaging the reduced portions of the arms, with one of which slots the finger of the stop-plate is engaged.

2. The combination with the hub 13 having the arms 14 14' each having a reduced portion 15 and a button 16, and nuts 18 working on said arms, of the stop-plate 19 mounted on one of said arms and having the finger 21, and a foot-plate mounted on said arms and having an opening with which the finger 21 of the stop-plate may engage.

3. The combination with the hub 13 having the arms 14 and 14' each furnished with the reduced portion 15 and button 16, and the nuts 18 working on threaded portions of said arms, of the stops 19 and 19' mounted on the arms 14' and having the fingers 21, and the foot-plates 22 22 connected by the plate 25 and having the slots 28 28 with the enlarged portions 28' 28'.

THOMAS CURLEY.

Witnesses:

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