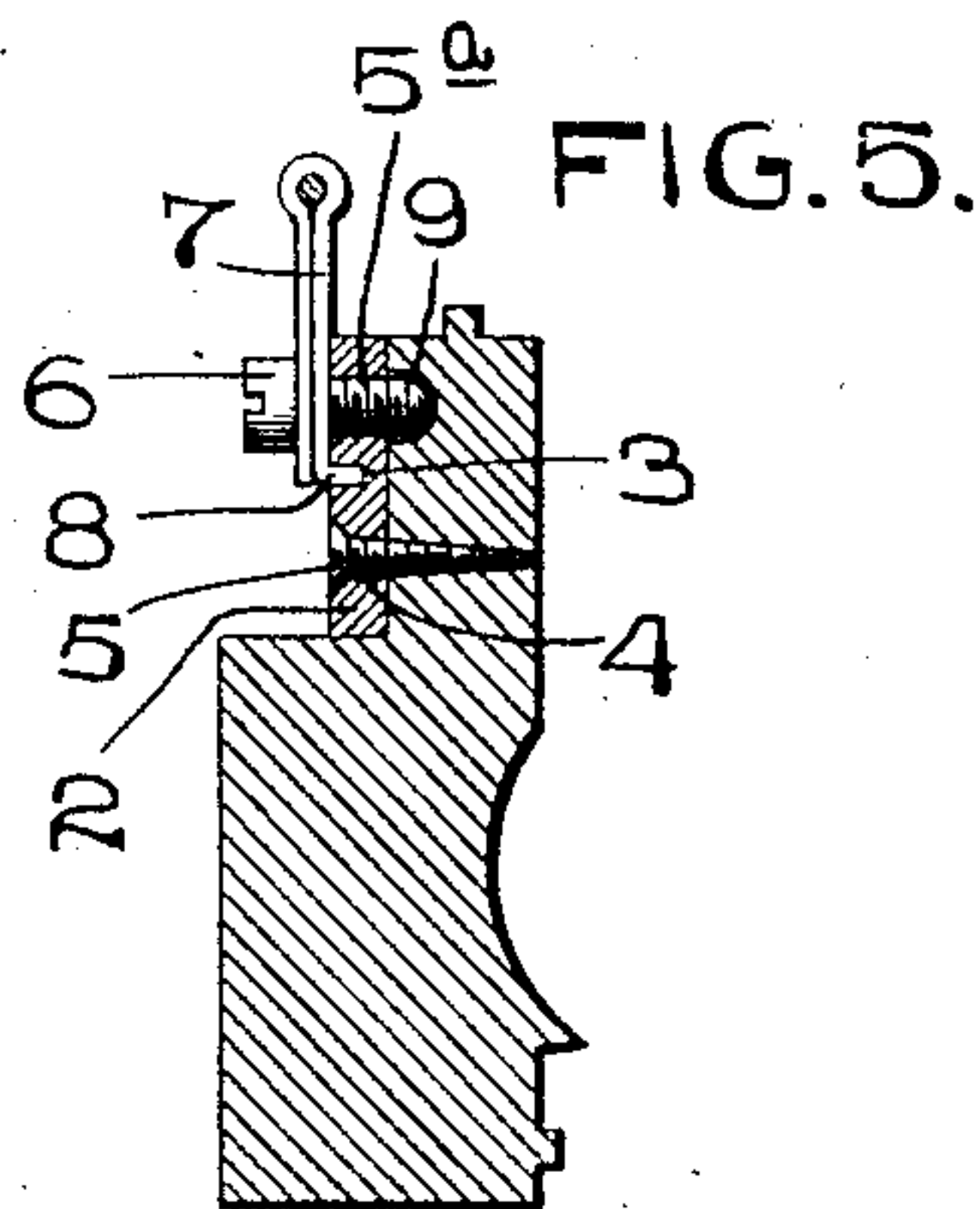
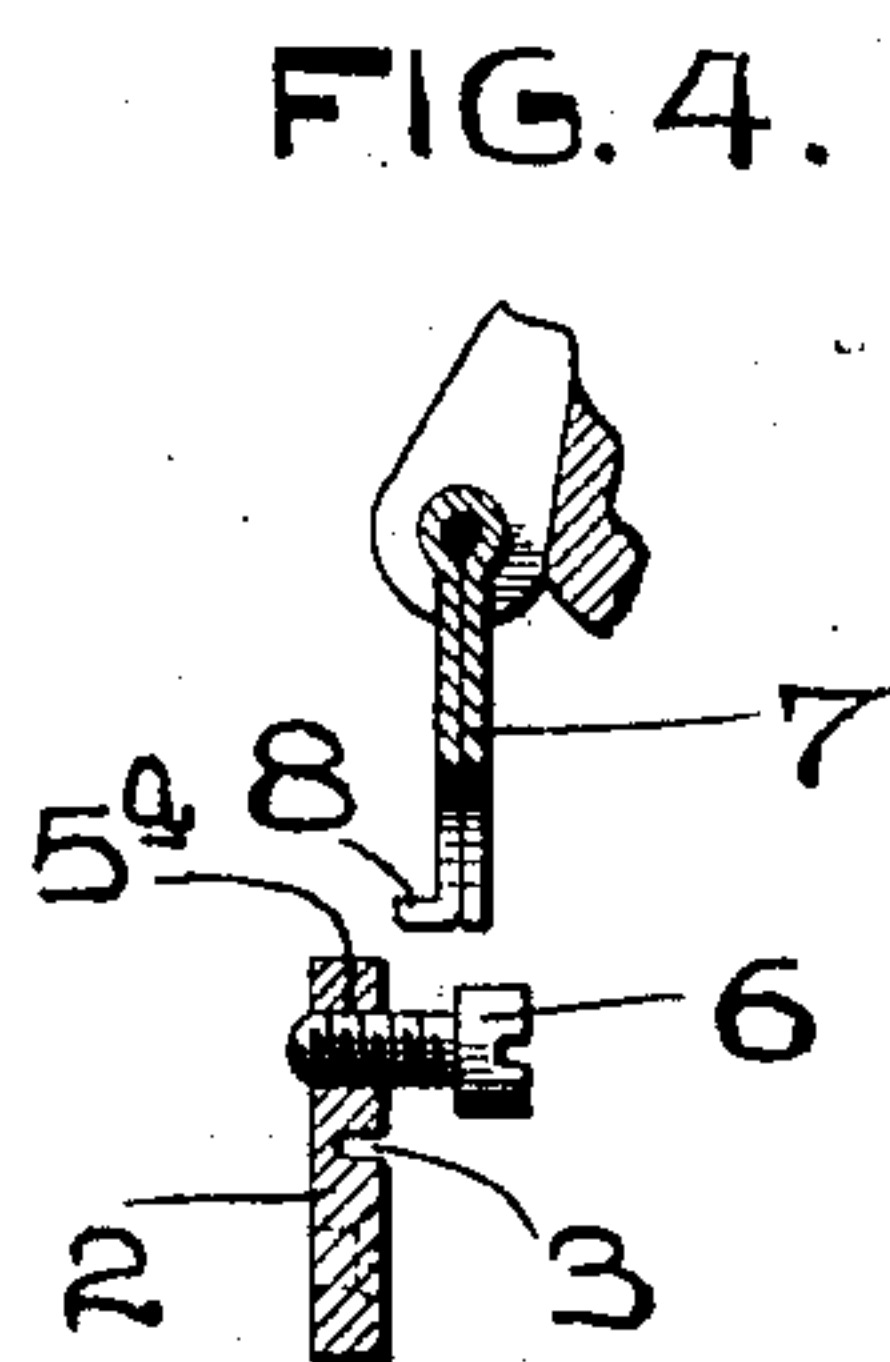
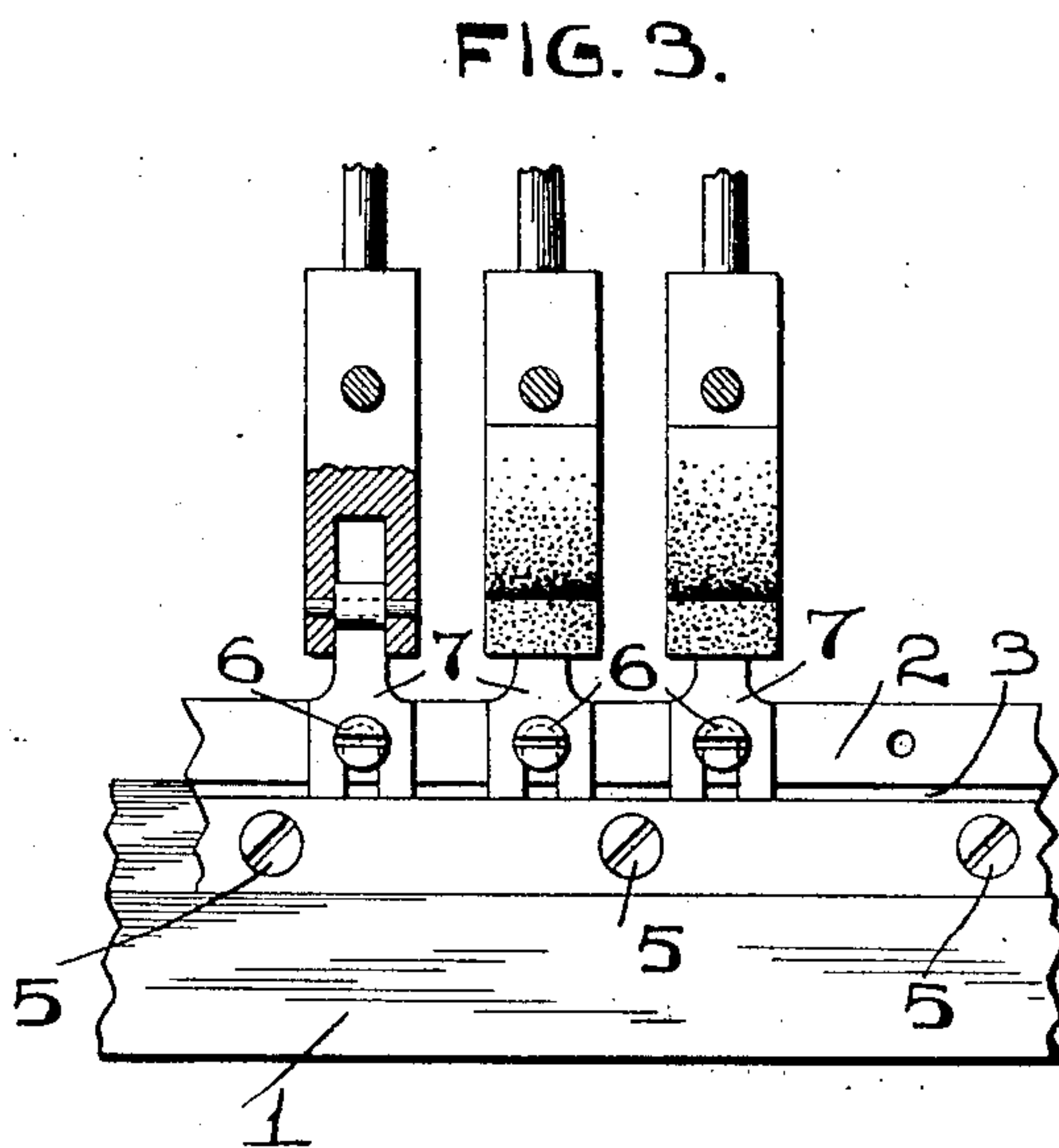
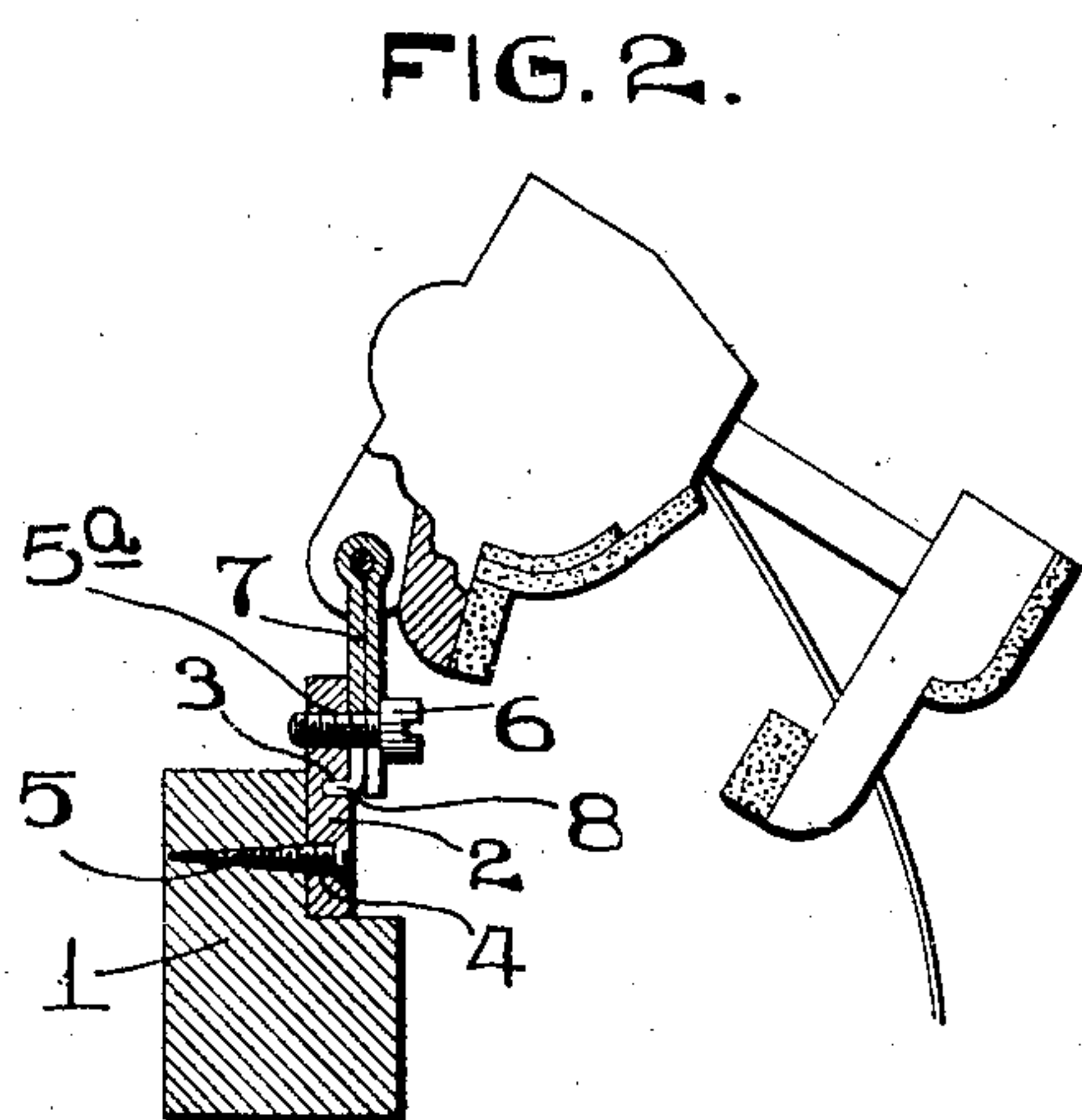
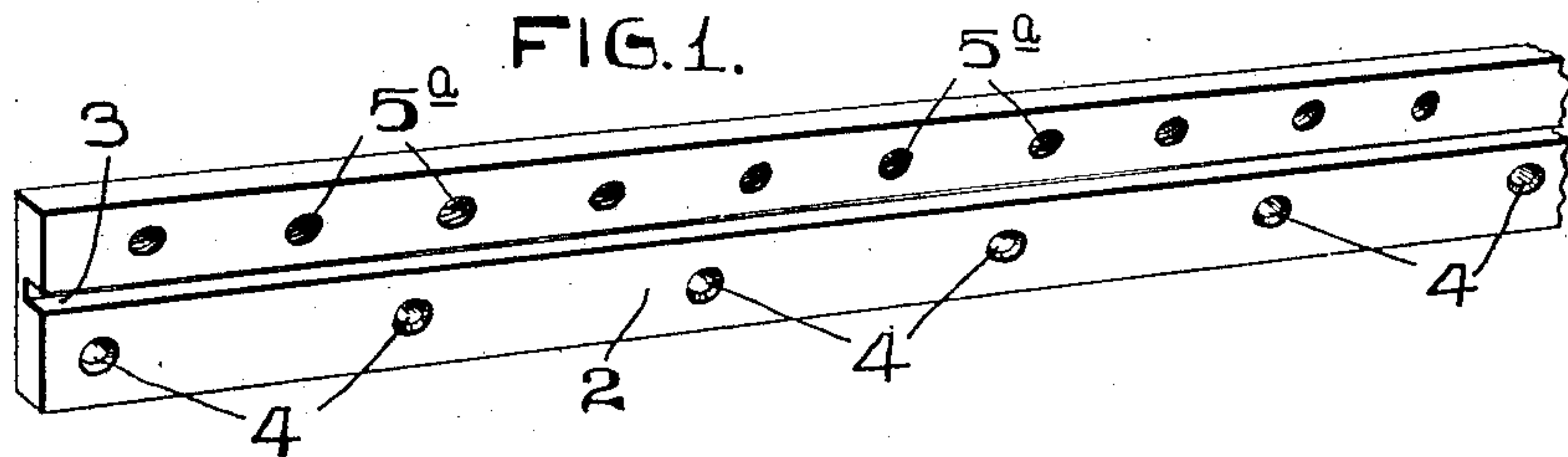


No. 844,238.

PATENTED FEB. 12, 1907.

F. G. BILLINGS.  
PIANO FLANGE ATTACHING BAR.  
APPLICATION FILED SEPT. 24, 1906.



ATTEST.

*H. J. Fletcher.*

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INVENTOR.

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ATTY'S



# UNITED STATES PATENT OFFICE.

FREDERICK G. BILLINGS, OF MILWAUKEE, WISCONSIN.

## PIANO-FLANGE-ATTACHING BAR.

No. 844,238.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed September 24, 1906. Serial No. 335,989.

*To all whom it may concern:*

Be it known that I, FREDERICK G. BILLINGS, a citizen of the United States, and resident of Milwaukee, Wisconsin, have invented certain new and useful Improvements in Piano-Flange-Attaching Bars, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a piano-flange-attaching bar; and the particular object of my invention is to provide a continuous metal bar which is attached to the rail of a piano-action and to which the brass flanges which pivotally support the hammer-butts are removably and adjustably positioned.

A further object of my invention is to so construct an attaching-bar as that the flanges can all be properly spaced and which flanges can be quickly removed from the bar in order to remove any one of the hammers without necessitating the removal of the entire action or the entire rail on which said hammers are supported.

A further object of my invention is to so construct a bar as that there are no projecting ears or tongues, which latter very often break when a butt is being attached thereto, thus necessitating the removal and replacing of the entire bar.

To the above purposes my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of an attaching-bar of my improved construction. Fig. 2 is a cross-section of the main rail of a piano-action and showing my improved bar secured thereto. Fig. 3 is a front elevation of a portion of the rail and showing a portion of the attaching-bar thereon. Fig. 4 is a cross-section of the attaching-bar and illustrating the manner in which one of the flanges can be removed therefrom without entirely removing the attaching-screw. Fig. 5 is a cross-section of a modified form of the rail to which my improved bar is secured.

Referring by numerals to the accompanying drawings, 1 designates the ordinary wood rail of a piano-action, and 2 the attaching-bar, which is preferably constructed of a continuous piece of metal, such as brass, and

which is located on the upper portion and front side of the rail 1. Formed in the front face of the bar 2 is a longitudinally-extending groove 3, and formed through said bar below this groove is a row of apertures 4, through which pass screws 5, which enter the rail 1, thereby rigidly fixing the bar in position upon the rail. Formed through the upper portion of the bar 2 is a series of apertures 5<sup>a</sup>, which are arranged at equal distances apart and in which are seated the ends of the screws 6 which secure the brass flanges 7 to the bar. These apertures are formed at equal distances apart in order that the hammers will be properly spaced, and the inner plates of the flanges 7 are provided with inwardly-projecting ears 8 at their lower ends, which enter the groove 3 when the flanges are secured to the bar, and thus maintain said flanges in a perfect upright position.

When it is desired to remove one of the hammers of the piano-action, the screw 6 that secures the corresponding flange 7 is partially withdrawn from the bar 2, as shown in Fig. 4, and when so positioned the flange is easily and quickly removed from said bar.

The screws 6 are all seated in the body of the bar 2, and therefore rigidly hold all of the flanges, and any one of said screws can be easily and quickly loosened to remove any one hammer without disturbing any of the remaining hammers or flanges and without having to remove the entire action and rail.

The position of the apertures 5 correctly determines the spacing of the hammers, and it is practically impossible to break the bar when fixing a flange thereto, as there are no projecting parts, and said bar is very strong and rigid.

In Fig. 5 I have shown a modified form of the rail in which a groove 9 is formed in said rail for the reception of the rear ends of the screws 6 when tightened on the bar 2.

I claim—

1. The combination with the rail of a piano-action, and the hammer-butt flanges, of a continuous metallic bar secured to the rail and provided with a longitudinally-extending groove in its front face, intermediate its top and bottom edges; for the reception of the lower ends of the flanges; substantially as described.

2. The combination with the rail of a piano-action and the hammer-butt flanges, the lower ends of which flanges are bent laterally, of a continuous metallic bar located on said

5 rail in the front face of which bar is formed a continuous groove for the reception of the laterally-bent ends of the flanges, which bar is provided with apertures to receive the screws which fasten said bar to the rail, and said bar being also provided with apertures above the continuous groove for the reception of the screws which attach the hammer-butt flanges; substantially as described.

10 3. A flange-attaching bar for piano-actions, comprising a continuous metallic bar having flat front and rear faces and provided with a

longitudinally-extending groove in its front face between the top and bottom edges, and which bar is provided with apertures above and below the groove for receiving attaching-screws; substantially as described. 15

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

FREDK. G. BILLINGS.

Witnesses:

J. E. DEAKIN,

EARL R. BILLINGS.