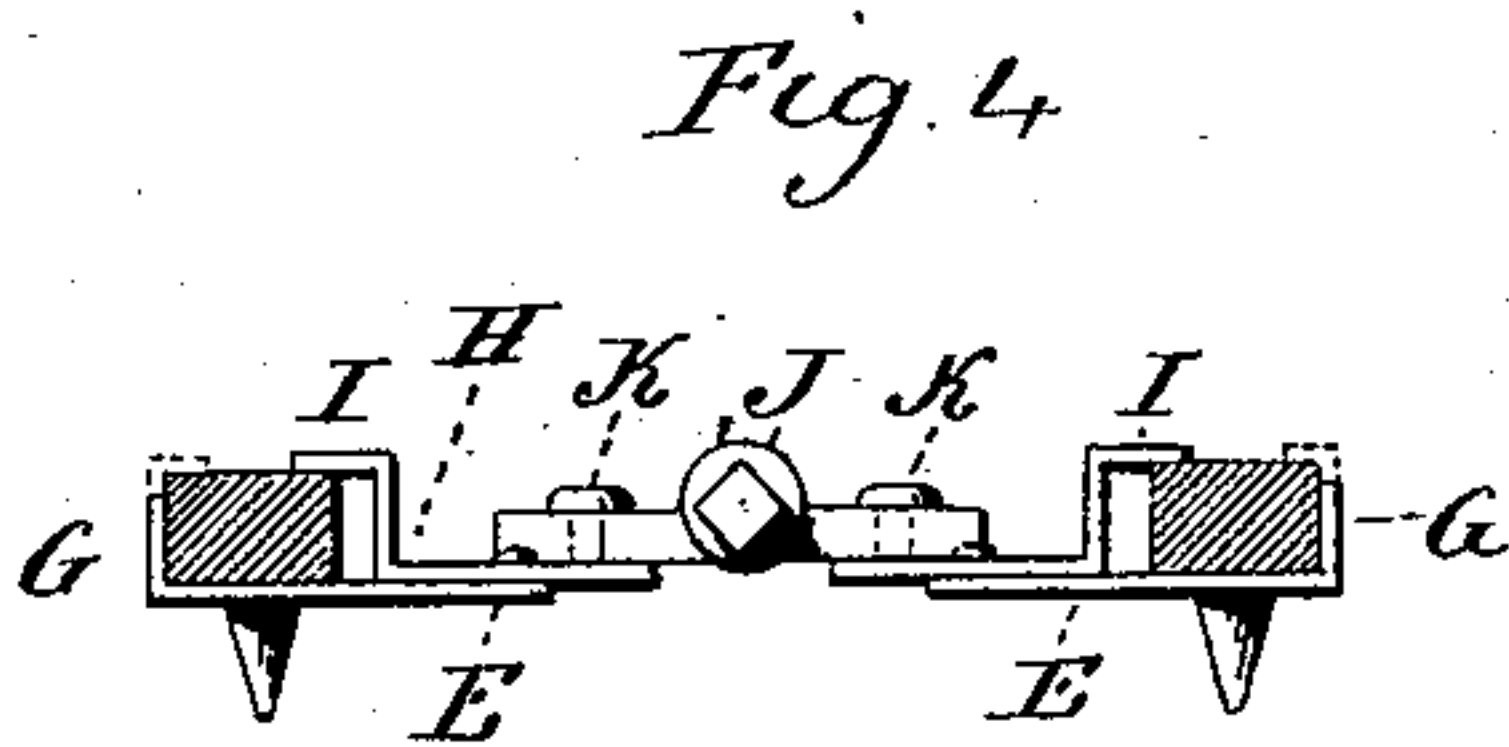
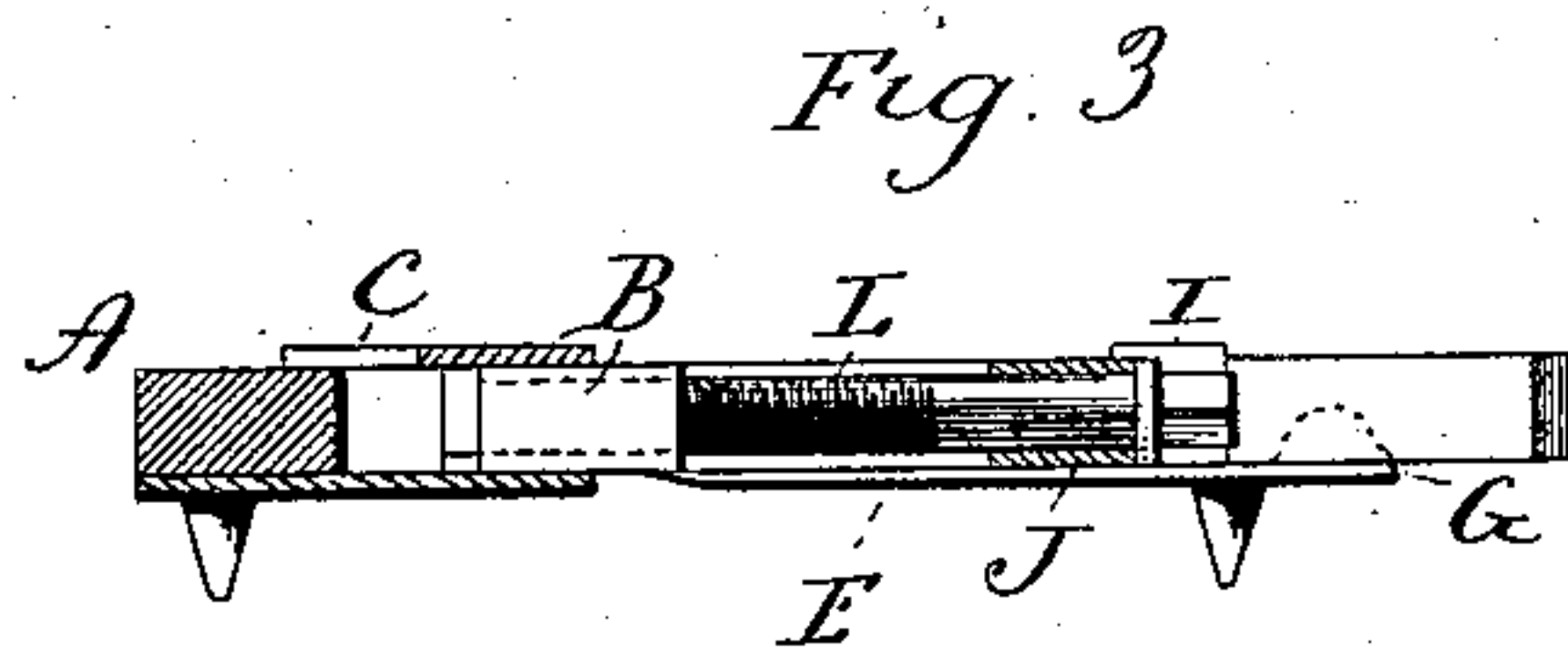
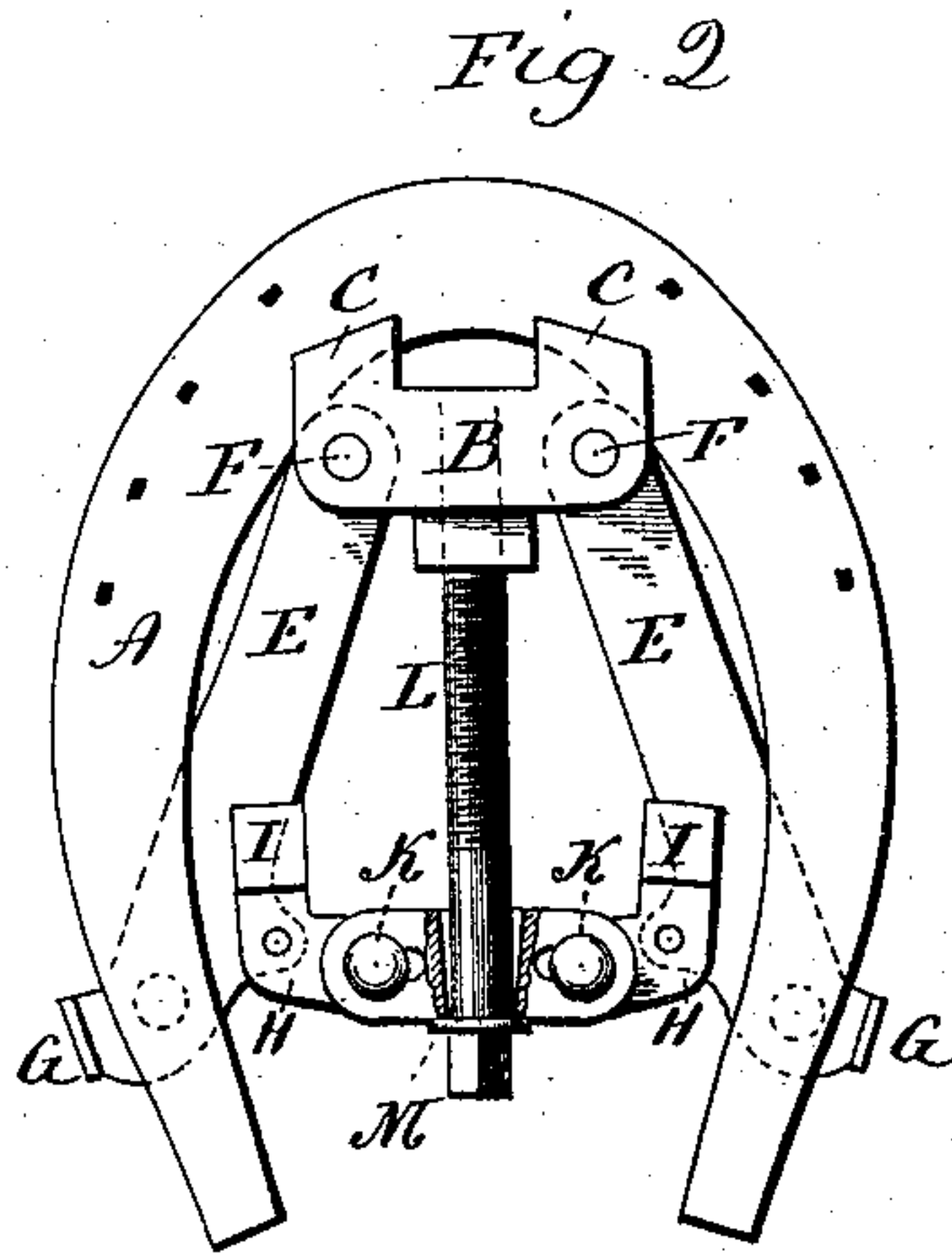
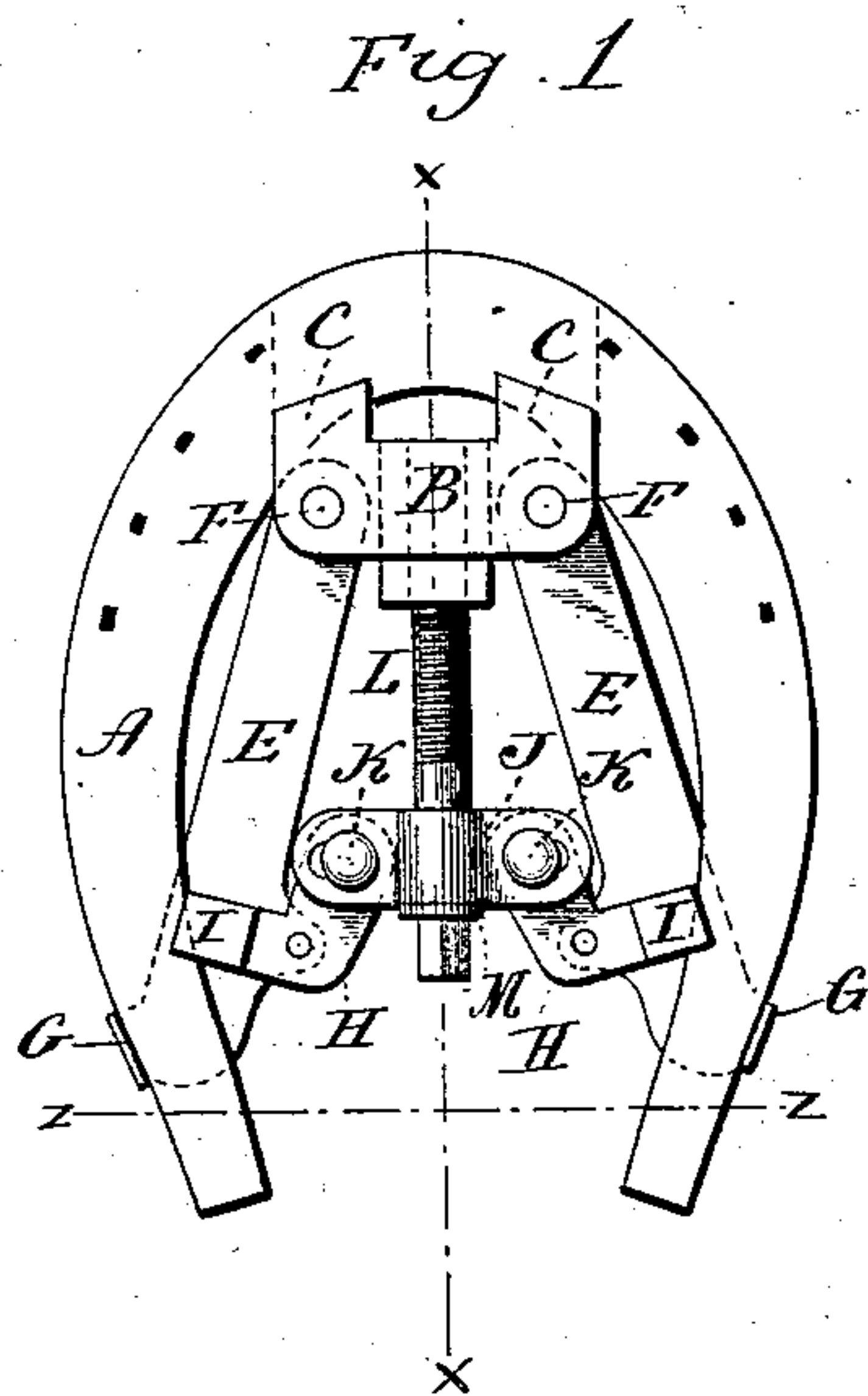


(No Model.)

H. S. PULLMAN.  
SUPPLEMENTAL HORSESHOE.

No. 455,690.

Patented July 7, 1891.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HERBERT S. PULLMAN, OF MERIDEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO S. W. KENT, OF SAME PLACE.

## SUPPLEMENTAL HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 455,690, dated July 7, 1891.

Application filed January 12, 1891. Serial No. 377,464. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT S. PULLMAN, of Meriden, in the county of New Haven and State of Connecticut, have invented new Improvements in Supplemental Horseshoes; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top or plan view of a principal shoe, showing the supplemental shoe applied thereto; Fig. 2, the same as Fig. 1, representing the parts in the position of being applied to or removed from the shoe; Fig. 3, a longitudinal section on line  $xx$  of Fig. 1; Fig. 4, a transverse section cutting on line  $zz$  of Fig. 1.

This invention relates to an improvement in the attachment for the principal shoes of horses whereby calks may be readily attached or removed, as occasion may require, and the invention is an improvement upon the device for which Letters Patent No. 229,607 were granted to Charles G. Hill, July 6, 1880. In that invention a toe-piece is adapted to be introduced upon the inside of the shoe and so as to grasp the shoe at the toe. To this toe-piece two arms are hinged, which extend rearward, diverging, and at their rear end each constructed to engage its respective side of the shoe, and each carry at its rear end a calk, while the toe-piece carries one or more calks at the toe end. To secure this device upon the shoe a wedge-like bar is introduced between the inner sides of the branches, with a screw through it connected with the toe-piece, so that the said bar may be forced toward the toe between the sides of the branches and thus force the branches outward and into firm engagement with the shoe at the rear, and so as to wedge the device in the shoe that it may be firmly held but yet easily removed by withdrawing the cross-bar.

While this device accomplishes a good result, difficulties are sometimes experienced with it: first, the tendency which the wedge-like bar has to spread the shoe, and, second, the lack in the adjustability of the bar with relation to the two branches—that is to say, the bar bearing upon the two branches oper-

ates upon both, but is not adapted to play between the bars so as to adapt itself to the two bars that they may operate equally upon the two bars.

The object of my invention is to overcome these difficulties; and it consists in the construction as hereinafter described, and particularly recited in the claims.

A represents the principal shoe, which is of usual construction.

B represents the toe-piece, which is constructed with one or more thin flanges C on its forward side, which are adapted to set over the upper side of the shoe and between the shoe and the hoof, and it is constructed with a flange D upon the opposite side, which is adapted to set upon the under side of the shoe at the toe, as seen in Fig. 3, and so that the toe part of the shoe is between the said two flanges as a means for holding that toe-piece engaged with the shoe.

E E represents the two arms which are hinged at their forward ends to the toe-piece, as at F, and so swing freely in a horizontal plane. At the rear ends of these arms they are constructed to engage the outside of the shoe, instead of the inside, as in the patent before referred to. To thus engage the outside the arms E E are turned upward upon their outer ends, as at G, Fig. 4. Near the rear end of each of the arms an L-shaped lever H is hung, and so as to swing in a horizontal plane. One arm of each of these levers is shaped to form a flange I, which is adapted to pass over the shoe upon the inside, as seen in Figs. 1 and 4, while the ends of the arms bear against the inside of the shoe, so that when the said levers H are turned to bring the said flanges I onto the upper side of the shoe the shoe will be held between the arms and the said flanges. The other arm of the levers H extends forward, and the two arms are connected by a cross-head J, hung to studs K on the respective arms by slotted connection, as shown, so that the levers H may swing toward or from each other. Through the cross-head J a bolt L passes, its head M adapted to bear upon the rear side of the cross-head, while the bolt itself is screw-threaded into the toe-piece, and so that the screw may be forced into the toe-piece, and thereby draw the cross-head toward



the toe, or unscrewed therefrom will permit the toe-piece to recede. This completes the construction. In application the cross-head J is drawn to the rear, as seen in Fig. 2, which  
 5 turns the levers so as to take their flanges I away from the inner sides of the shoe. This also spreads the arms E E. In this condition they are placed upon the shoe, as seen in Fig. 2. The toe-piece is introduced, and the outer  
 10 ends G of the arms E pass respectively outside the rear ends of the shoe, while the levers H pass in between the sides of the shoe, as seen in Fig. 2. The arms being brought to bear upon the surface of the shoe, the bolt is  
 15 turned to force the cross-head J toward the toe-piece, and in doing this the arms E E are drawn together, so as to bring the upturned ends G G to a bearing upon the respective outsides of the shoe at the same time the le-  
 20 vers are turned, so as to force their flanges I in over the inside of the shoe and bring that end of the lever to bear upon the insides of the shoe, so that the sides of the shoe will be forcibly grasped between the ends of the  
 25 levers and the upturned ends of the arms, as seen in Figs. 1 and 4, and so that the strain upon the shoe is between the upturned ends G G, the tendency of which would be to draw the rear ends of the shoe together instead of  
 30 forcing them asunder, as in the patent before referred to; but this tendency to draw the shoe together at the rear is equalized by the tendency of the levers to force the sides of the shoe outward.

35 When the supplemental shoe is to be removed, the bolt is withdrawn so far as to bring the cross-head into substantially the position seen in Fig. 2, where the supplemental shoe is free from the principal shoe.

40 To adapt the cross-head to a variation in the bearing or position of the two arms, the hole through the cross-head through which the bolt passes is made larger upon the inside than upon the outside, as represented in partial section, Fig. 2, so as to permit the cross-  
 45 head to have a rocking movement upon the bolt, and which will permit a considerable variation in the inclination of the arms with relation to each other and to the bolt, and  
 50 thus insure an equal bearing upon both sides.

The toe-piece and the arms are provided with calks, as represented, substantially the same as in the Hill patent.

55 While I prefer to construct the levers H so that their ends may pass in over the shoe upon the inside this is not essential, as the upturned ends G of the arms may be adapted to pass in over the shoe upon the outside, as represented in broken lines, Fig. 4, which  
 60 would make an engagement with the shoe to prevent the escape of the arms.

From the foregoing it will be understood that I claim nothing shown or described in the before-mentioned patent; but

What I do claim as an improvement there- 65 on is—

1. The combination of the toe-piece adapted to engage the shoe at the toe end, two arms E E, hinged thereto, extending rearward, their rear ends adapted to engage the shoe at the rear upon its outsides, levers H H, hung, respectively, to the arms E E, near their rear ends, upon the inside of the shoe, one arm of said levers adapted to engage the inside of the shoe, as opposed to the engagement of the arms upon the outside, a cross-head hung to the other arms of the said levers, and a bolt through said cross-head connected with said toe-piece, whereby the said cross-head may be forced toward the toe-piece and correspondingly turn the levers, substantially as described. 75 80

2. The combination of the toe-piece B, adapted to engage the shoe at the toe, the two arms E E, hung to said toe-piece and extending rearward, their rear ends turned upward, so that each may engage the shoe upon the outer opposite sides of the shoe, L-shaped levers H H, hung to the said arms E E upon the inside of the shoe, one arm of said levers adapted to engage the shoe upon the insides and opposed to the engagement of the arms upon the outsides, the said ends of the levers constructed with flanges I to pass in over the top of the shoe, a cross-head J, hung to the other arms of said levers, with a bolt L through said cross-head and connected with the toe-piece, substantially as described. 85 90 95

3. The combination of a toe-piece B, adapted to engage the shoe at the toe, two arms E E, hung to the said toe-piece and extending rearward, their rear ends upturned to engage the shoe upon the outsides at the rear, levers H H, hung, respectively, to the arms E E near their rear ends, one arm of said levers adapted to engage the shoe upon the insides, opposed to the engagement of the arms upon the outsides of the shoe, a cross-head J, hung to the other arms of the said levers, with a bolt through said cross-head and connected with the toe-piece, and the hole through the said cross-head through which the bolt passes, enlarged from the outside inward to permit the rocking movement of the cross-head on the bolt, substantially as described. 100 105 110 115

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HERBERT S. PULLMAN.

Witnesses:

E. A. MERRIMAN,  
S. W. KENT.