

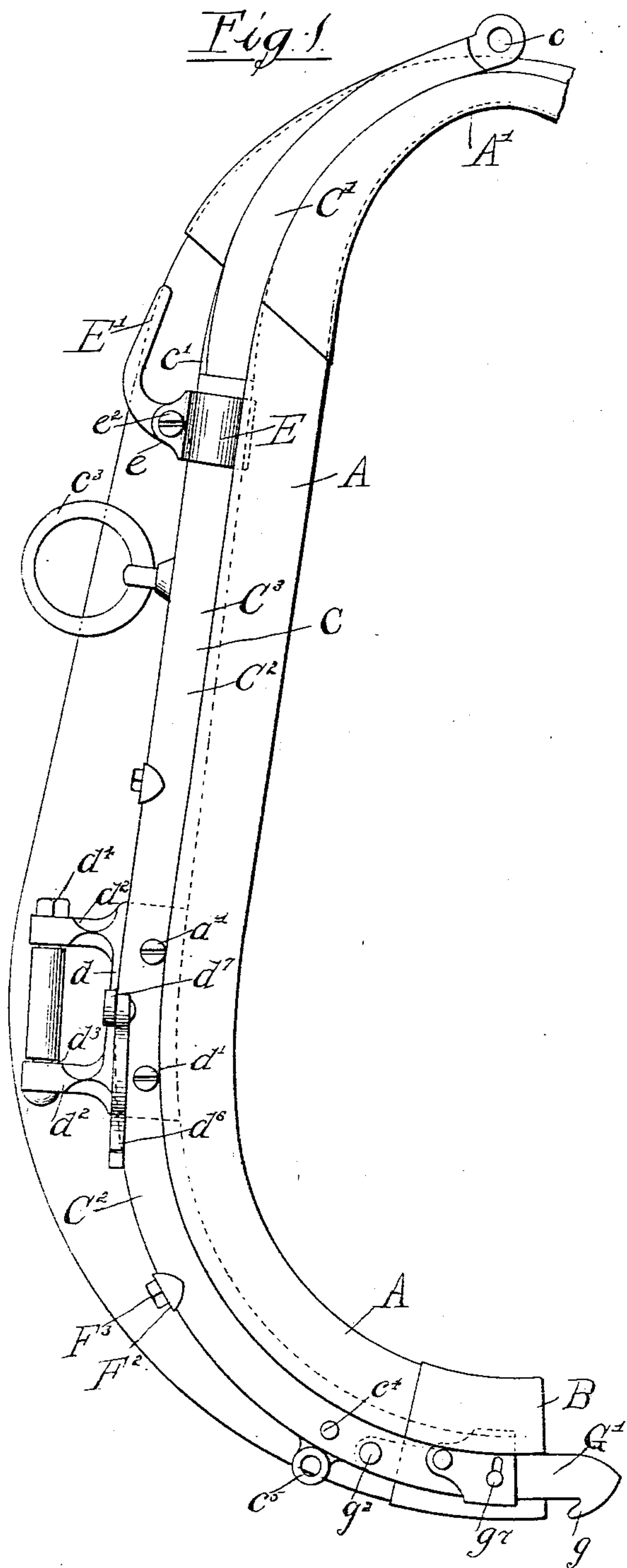
(No Model.)

3 Sheets—Sheet 1.

R. G. ARMSTRONG.  
HAME.

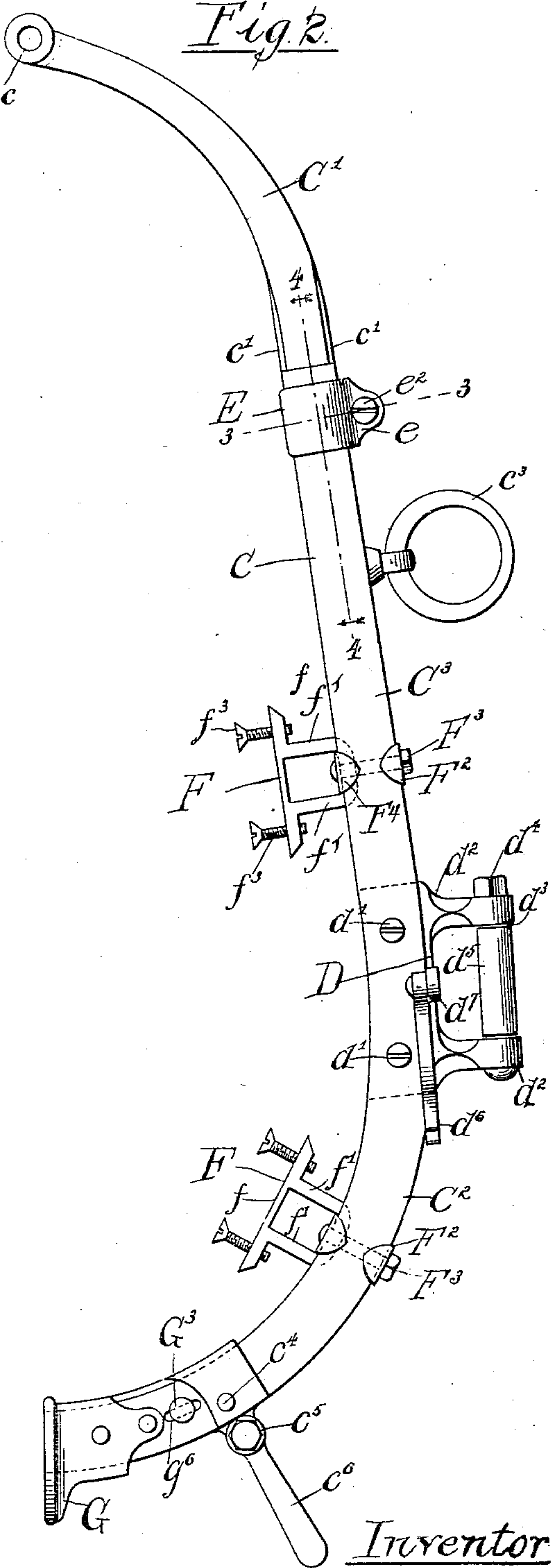
No. 555,279.

Patented Feb. 25, 1896.



Witnesses:-

John W. Adams.  
Clinton Hamlin



Inventor

Robert G. Armstrong.

by: Dayton, Poles & Brown  
his Attorneys.

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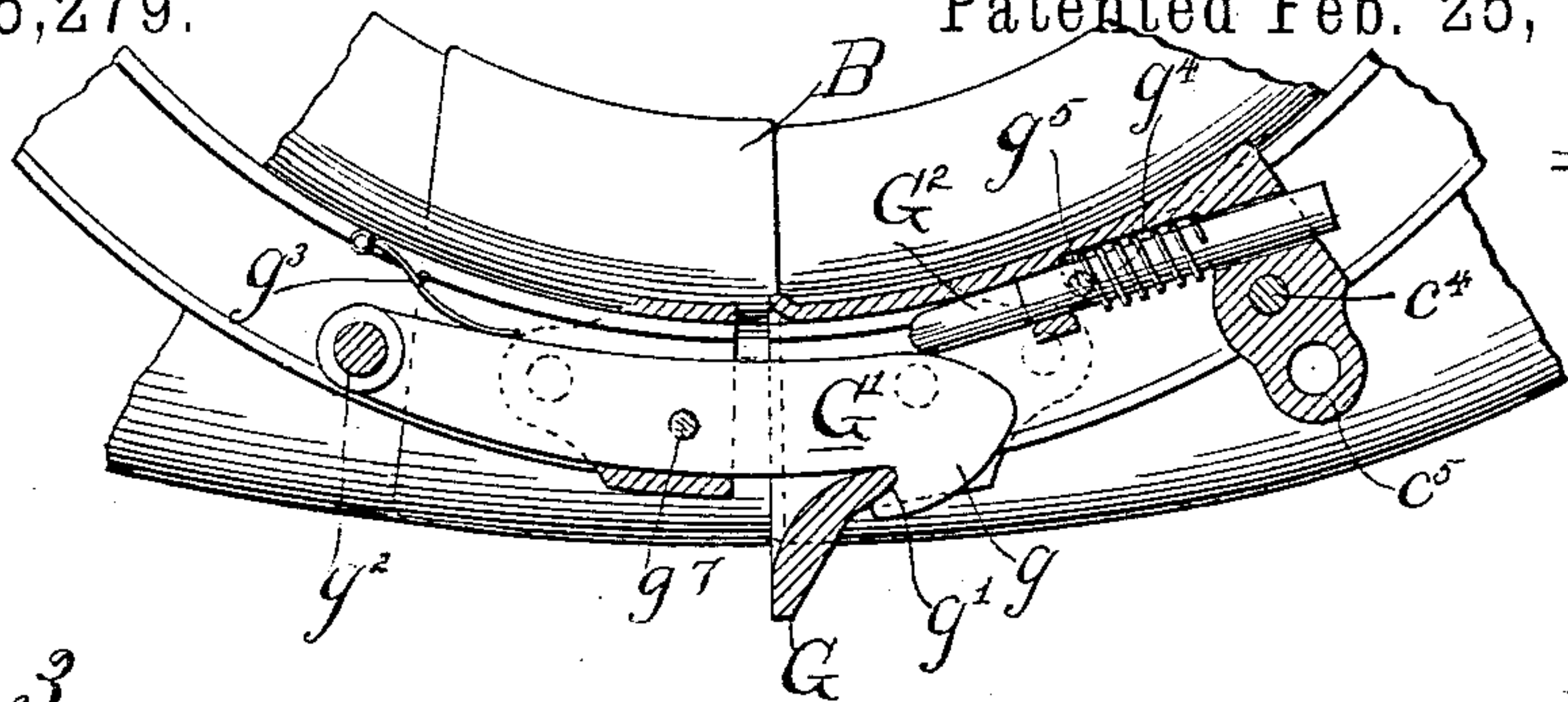


Fig. 9

Fig. 3

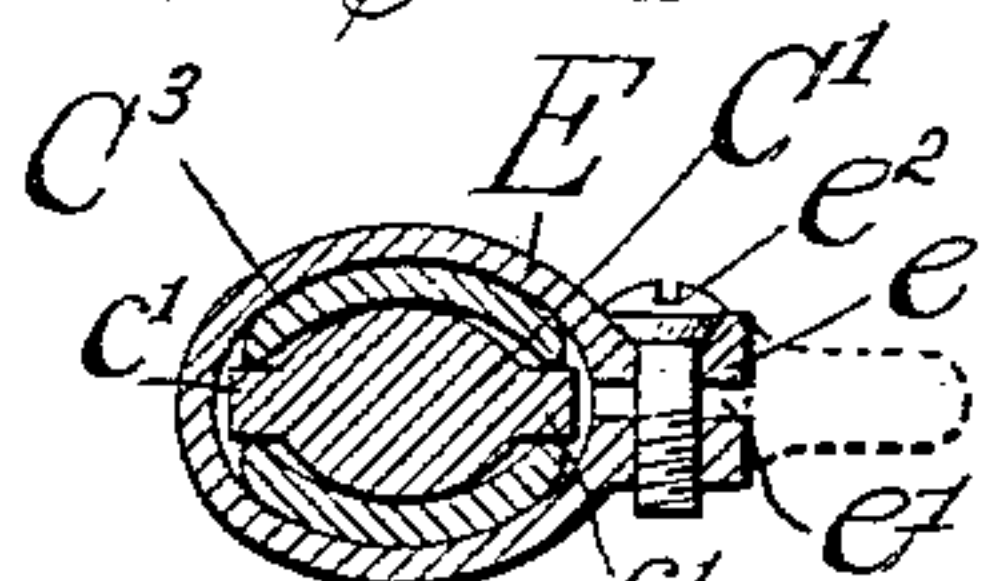


Fig. 4

Fig. 5

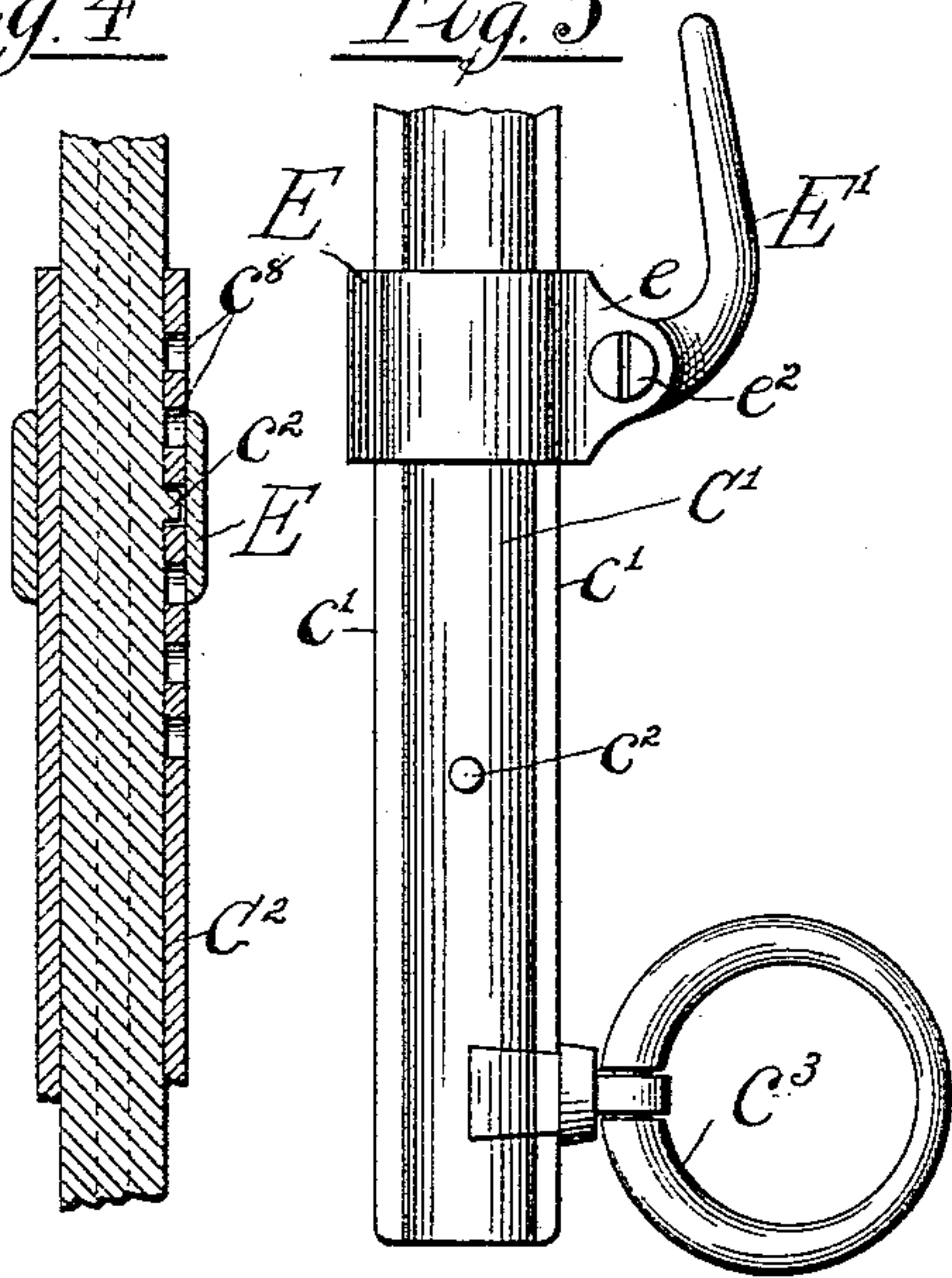


Fig. 6

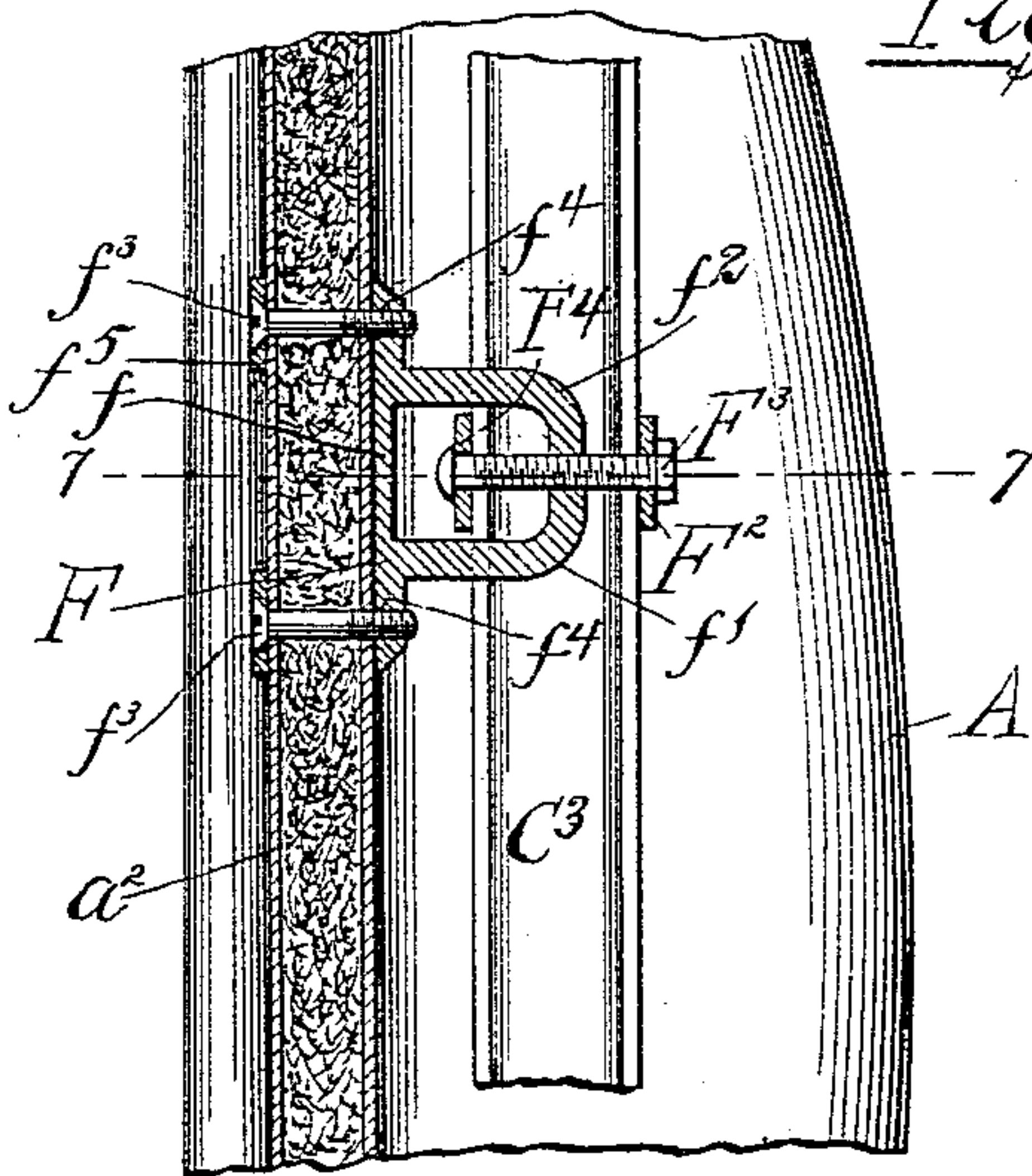


Fig. 7

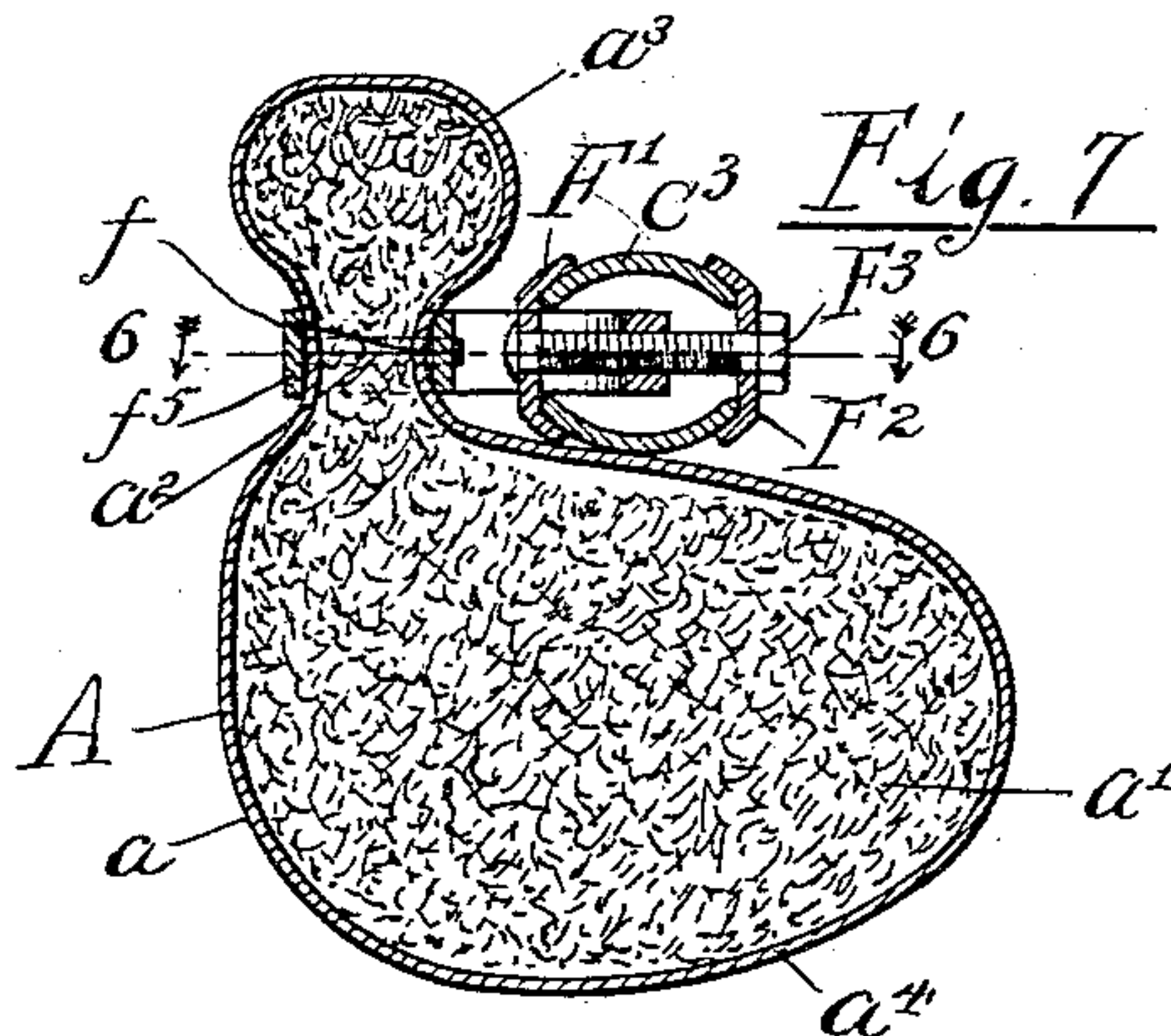
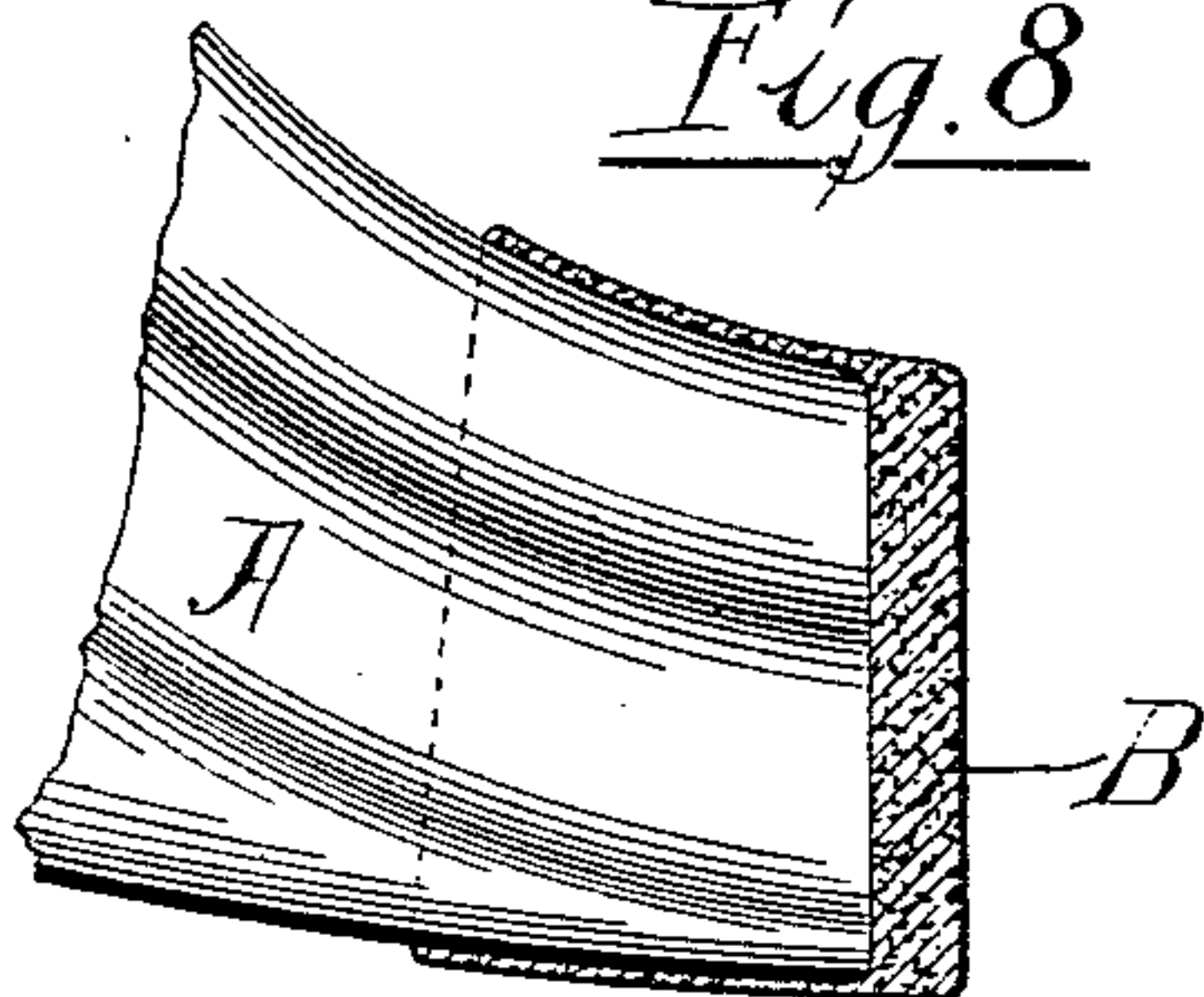


Fig. 8



Witnesses:-

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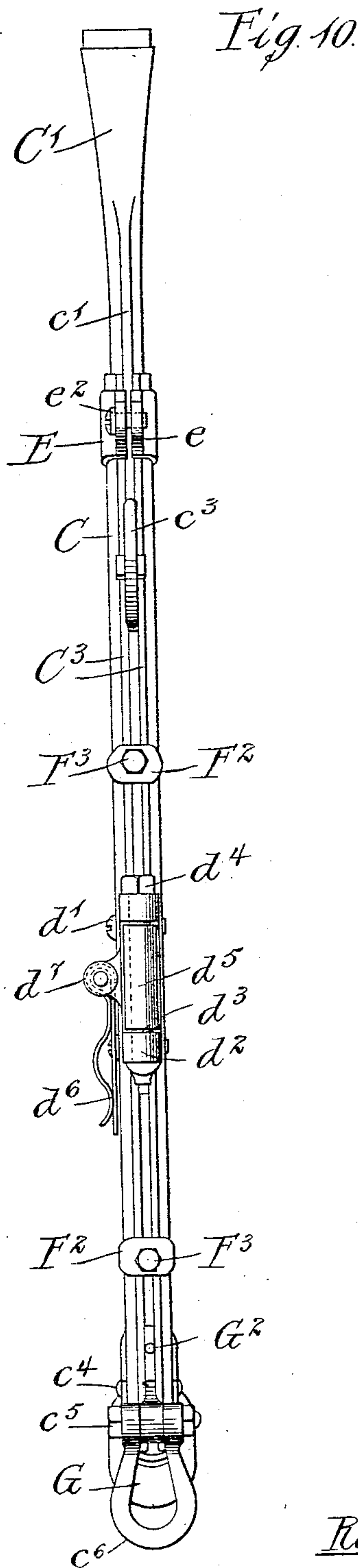
(No Model.)

3 Sheets—Sheet 3.

R. G. ARMSTRONG.  
HAME.

No. 555,279.

Patented Feb. 25, 1896.



Witnesses:-  
John W. Adams.  
Clinton Hamlin.

Inventor:-  
Robert G. Armstrong.  
by:- Dayton, Poole & Brown  
his Attys.

# UNITED STATES PATENT OFFICE.

ROBERT G. ARMSTRONG, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS  
TO JOHN M. GREEN AND STEPHAN N. LANE, OF SAME PLACE.

## HAME.

SPECIFICATION forming part of Letters Patent No. 555,279, dated February 25, 1896.

Application filed February 14, 1895. Renewed January 30, 1896. Serial No. 577,469. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT G. ARMSTRONG, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Hames; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention appertains to certain improvements in harness specially adapted for use in fire departments where it is desirable to provide for the suspension of the hames and collar, either separately or in connection with other parts of a set of harness, over the tongue of fire apparatus to be drawn by horses, in such manner that the hames and collar will be in open position when suspended, and the parts thereof will be adapted to instantaneously interlock when brought around the neck of a horse. In such devices it is desirable to provide for an adjustment of the hames as well as of the collar, so that the latter may fit upon the neck of any horse and the former be suitably fitted to the collar. It is also desirable that the locking mechanism be automatic and positive in its action, and that both the hame and collar shall be as light as possible consistent with strength and durability. This in view of the manifest rough usage and strain to which all harnesses used in fire departments are subjected. It is specially desirable to provide for an adjustment of both the collar and hames for large and small animals that will be capable of very quick manipulation, because in the haste attending the hitching of horses to apparatus in responding to an alarm of fire it not infrequently happens that horses get into the wrong positions, and that another horse is to be used with a given set of harness than the regular one to which the harness is previously fitted, and if said harness is not capable of adjustment in a few moments' time the danger of injuring or disabling the horse will be manifest.

Having the above objects in view, my present invention comprises among its several features the following: First, an adjustable

collar; secondly, a cushion between the two ends of the lower section of the collar whereby the space between them is filled and a continuous structure provided when said ends are locked together in use; third, an improved locking mechanism; fourth, improved means for securing the metallic hame to the collar; fifth, the metallic hame adjustable lengthwise; sixth, a metallic hame made in the manner shown and described, and, seventh, various details of construction hereinafter referred to and more particularly pointed out in the appended claims.

Figure 1 of the drawings illustrates one-half of my improved collar and hame. Fig. 2 represents the other hame detached from the collar. Fig. 3 is a transverse sectional view of the hame taken on line 3 3 of Fig. 2. Fig. 4 is a longitudinal sectional view taken upon the line 4 4 of Fig. 2. Fig. 5 is a side view of the lower portion of the upper section of the one-half of the hame detached from the lower section, but showing the clamping-ring in position thereon. Fig. 6 is a side view, partially in section, of a portion of the collar and the hame in position thereon, illustrating more particularly the means for securing the two together, the section being taken upon the line 6 6 of Fig. 7. Fig. 7 is a transverse sectional view of the collar and hame, taken upon the line 7 7 of Fig. 6. Fig. 8 is a side view of one end of the lower part of the collar, showing the elastic end piece thereof in section. Fig. 9 is a sectional view of the lower ends of the collar and hame when locked together, showing interior arrangement of the locking devices. Fig. 10 is an outer edge view of the hame shown in Fig. 2.

A represents one half or section of a collar, which may be of any suitable construction or arrangement. Preferably said collar is provided with a leather outer covering  $a$ , an interior padding or stuffing  $a'$ , and the usual narrow neck  $a^2$  between the fore-wale  $a^3$  and the after-wale  $a^4$ . Each portion of the collar is designed at its upper end to fit telescopically within the hollow downwardly-projecting ends of an upper connecting-section  $A'$ , whereby relative adjustment of said ends may be varied as desired. This is an old and



familiar construction which I find it convenient to use, but to which I make no claim *per se*.

The lower end of the collar is made with an elastic or compressible section so that when the two adjacent ends are brought together and held by the interlocking ends of the hame, as hereinafter described, there shall be no space between said ends, and the back lock of the locking devices will be taken up. This I accomplish preferably by the use of a rubber pad B, as shown in the drawings, Fig. 3. Said pad is cup-shaped with a thickened bottom and is herein shown as adapted to be slipped over the extreme lower end of one section of the collar. It is obvious, however, that said pad may be secured to the collar in any other manner, and I therefore do not desire to be limited to the particular form or arrangement shown. The pad B also acts as a cushion when the ends of the collar and hames are brought suddenly and violently together in positioning them upon the horse, thus materially preventing unnecessary jar and a racking of the parts. The pad B is in this instance placed on one section of the collar only, but such pads may obviously be provided on the ends of both sections if desired.

The hame C is made of metal, preferably of steel, and consists of two halves designed to be hinged together at their upper ends and detachably locked together at their lower ends. Each half of the hame C comprises two sections C' and C<sup>2</sup>, of which the upper section, C', is provided at its upper end with a suitable enlargement and eye c through which the pintle of a hinge may be placed, whereby the two upper sections, C', will be hinged together in a familiar manner. Each upper section, C', is curved, as shown in Figs. 1 and 2, to fit the curve of the upper portion or neck of the collar, and the lower portion of each section C' is provided on its opposite sides with projecting ribs or feathers c' which are adapted to enter corresponding grooves or slots in the lower section, C<sup>2</sup>, and thus prevent a rotating or twisting of either section in or upon the other. Projecting from the front side of the lower portion of the upper section, C', and between said ribs c', is a pin or stud c<sup>2</sup> for a purpose hereinafter mentioned, and secured near the lower end of each section C' is a rein-ring c<sup>3</sup> of any approved construction.

The lower sections, C<sup>2</sup>, of the hame each consist of two curved arms C<sup>3</sup> made crescent-shaped in cross-section, as illustrated in Fig. 3, and rigidly fastened together, with their concave surface facing inward and with their margins sufficiently separated to afford suitable slots or openings within which the ribs c' of the upper section, C', may fit and slide, while its body portion fits within the socket formed between the arms C<sup>3</sup>. At their lower ends the arms C<sup>3</sup> are rigidly secured together by being riveted to the sleeves, which inclose

the locking devices, as shown, and by the rivets c<sup>4</sup> which unite the eye-lug c<sup>5</sup> to the hame, said eye-lug being that to which is secured the usual loop c<sup>6</sup> to which the pole-chain of the harness is fastened. Said lug is provided with a shank portion made of proper shape to fit between the two arms C<sup>3</sup>, and the rivet c<sup>4</sup> is passed through both of the arms and the shank and fastens the whole securely together. Loops D to which the tugs or traces are fastened are provided at their usual location at points about midway between the ends of the lower section, and also serve to bind the arms C<sup>3</sup> rigidly together. As herein shown, the loops D comprise a frame d which is adapted to fit between the arms C<sup>3</sup> and is secured thereto by screw-bolts d', as clearly indicated in Figs. 1 and 2. Said frame d is provided with outwardly-extending parallel arms d<sup>2</sup>, which are apertured at their extremities to receive a bolt or pin d<sup>3</sup>, to which the trace may be secured. A nut d<sup>4</sup> on a threaded end of the bolt serves in this instance to secure the same removably in place, and said bolt d<sup>3</sup> is also preferably provided with an antifric-tion-roller d<sup>5</sup>, by which undue wear is prevented, but such roller may obviously be omitted if so desired. A rein-holding clip d<sup>6</sup> pivoted to a projecting lug d<sup>7</sup> of the frame d is adapted to hold the reins when the harness is suspended and insures their being in convenient reach of the person who hitches up the horses, when necessity calls.

The insertion of the upper section, C', in the lower section, C<sup>2</sup>, obviously affords a telescopic connection between the two, by reason of which the length of each half of the hame may be adjusted as desired. In practice the relative positions of the two sections will be determined for particular uses by means of a clamping-sleeve E, which encircles the upper end of the lower section, C<sup>2</sup>, and clamps the same together upon the inserted end of the upper section, C', and upon the ribs c' thereof. Said sleeve is in this instance made in the form of an annular band, having at one side a laterally projecting lug e and upon its inner face a longitudinal slot e' extending some distance into said lug. A clamping-screw e<sup>2</sup> extending between the two portions of the lug forming the opposite walls of the slot enables the same to be drawn together sufficiently to clamp the sleeve tightly upon the section C<sup>2</sup> and bind the latter upon the section C'.

As a further precaution against the relative displacement of the sections from their adjusted positions, the upper section, C', is herein shown as provided on one side with a projecting lug or pin c<sup>2</sup> and the adjacent arm of the lower section with a series of apertures c<sup>3</sup>, into any one of which the pin c<sup>2</sup> may be inserted and within which it will be held when the clamping-ring E is in place. When it is desired to alter the length of the hame, the screw e<sup>2</sup> is turned so as to loosen the sleeve E, which is then slipped upwardly and off the section C<sup>2</sup>, so that the ends of the arms C<sup>3</sup>



thereof are free from the sleeve. Said arms may then be spread apart sufficiently to allow the pin  $c^2$  to be withdrawn from the particular aperture  $c^8$  in which it may have been inserted and shifted to another and the desired aperture. The required length of the hame being thus obtained, the sleeve E is replaced and the screw  $e^2$  tightened, whereupon the parts will again be firmly bound together.

One of the sleeves E is provided with an outwardly and upwardly projecting hook E', by which the hame and collar may be suspended, said hook being preferably and in this instance formed by an integral continuation of the lug  $e$ . On the sleeve from which said hook is omitted the slot  $e'$  may obviously extend clear through the lug  $e$ , in which case the sleeve is an ordinary split clamping-ring of familiar form.

The hames are commonly secured to the collar—an upper and lower section to each half of the collar; but it is desirable that the hame be adjustably secured thereon. I have illustrated in Figs. 6 and 7 more particularly the mechanism whereby this adjustment may be effected. F is a metallic clip consisting of a base  $f$  and two upwardly-extending arms  $f'$  united together by a central cross-piece or bridge  $f^2$ . The said base  $f$  is of proper form and is arranged to lie within the crease formed between the fore and after wales of the collar, and is united to the neck  $a^2$  of the collar by means of screw-headed bolts  $f^3$ , which pass through suitable apertures in the said neck  $a^2$  of the collar and engage screw-threaded apertures formed in the opposite ends of the clip. The clip F is thus held rigidly with the arm  $f'$  projecting outward in proper position to enter between the two members of the split hame when the latter is in position upon the collar. As a means of adjustably securing the hame to the clip F, I make use of a bolt  $F^3$ , screw-threaded throughout the greater portion of its length and engaging at its inner end with a correspondingly screw-threaded aperture formed in the cross-piece or bridge  $f^2$ . The bolt  $F^3$  extends outward in the same plane with the arms  $f'$ , and is, therefore, also adapted to extend between the members of the hame. At its outer end it is provided with a suitable head and a washer  $F^2$  curved to conform to the outer side of the hame upon which it rests. A similar washer,  $F^4$ , is provided on the opposite end of the bolt  $F^3$ , the end of the latter being upset or headed slightly to secure the washer thereon, but to allow the bolt to turn freely. It will be manifest that upon turning the head of the bolt in one direction the clip F and hame will be drawn together or with the hame in the closest relation to the collar, while if the bolt  $F^3$  be turned in the opposite direction the parts will still be secured together, but with the hame at a greater distance to the right than that shown in Fig. 7.

It will be obvious that the adjustment of the hame on the collar may be considerable

or but very little, as found necessary or desirable, provision being made for an adjustment of approximately an inch, and I find that the construction above described is admirably suited for the purpose.

Now referring to the locking mechanism illustrated in Figs. 1, 2 and 9, it will be noticed that one of the hames is provided at its end with a bell-mouthed housing or sleeve G and that the other hame is provided with a projecting pivoted locking-bolt G', which is adapted to enter the casing G. The lock is effected by having the downwardly-projecting lug  $g$  of the bolt pass over and engage a shoulder  $g'$  of the casing. The bolt G' is pivoted at  $g^2$ , and a spring  $g^3$ , bearing upon the upper margin thereof, tends to keep the bolt G' in proper position to engage the shoulder  $g'$  when the two parts of the hame are brought together.

G<sup>2</sup> is a spring-actuated sliding bar or lock longitudinally movable in the casing G, so that its forward end is adapted to enter the space between the upper forward margin of the bolt G' and the inner upper surface of said casing and thus lock said bolt G' from movement and prevent the depending lug  $g$  of the latter from becoming disengaged from the shoulder  $g'$ . The spring  $g^4$  is preferably wrapped about the sliding lock G<sup>2</sup> and normally tends to hold the latter in the position illustrated in Fig. 9. A thumb-piece or unlocking-latch G<sup>3</sup> is secured by a small pin or stud  $g^5$  to said sliding lock G<sup>2</sup>, the pin  $g^5$  passing through an elongated opening  $g^6$  in the lower end of the hame.

To unlock the device, the latch G<sup>3</sup> is taken hold of by the fingers and moved away from the bolt G', thus withdrawing the sliding lock G<sup>2</sup>, whereupon the bolt G' may be raised and disengaged from the housing G by means of a vertically-movable thumb-piece  $g^7$  similar to that of the unlocking-latch.

So far as I am aware, I am the first to provide a lock for a bolt that unites the two parts of the hame together in a harness, so that the bolt cannot be disengaged or the lower sections of the hames come apart until said locking-bolt has first been withdrawn, and for this reason I do not desire to be limited to the particular arrangement of the parts herein shown and described.

I claim as my invention—

1. A hame for horse-collars, comprising two parts having adjustable telescopic connection with each other, a longitudinal flange or rib on one of said parts adapted to fit within a corresponding groove in the other whereby said parts are held in fixed non-rotative relation to each other; the telescopic portion of the embracing member being compressible, and a clamping device adapted to clamp said embracing member upon the other and to hold the two parts of the hame against movement with relation to each other, substantially as described.

2. An adjustable hame comprising two parts



having telescopic connection with each other, oppositely - arranged longitudinal flanges upon one of said parts adapted to fit within corresponding grooves in the other part whereby  
 5 said parts are held in fixed non-rotative relation to each other; the embracing member of said parts being provided with compressible embracing sides, a clamping-ring inclosing said embracing member, and a projection on  
 10 one of the parts adapted to interlock with recesses in the other part, whereby said parts may be adjustably and positively clamped against movement with relation to each other, substantially as described.

15 3. A hame for horse-collars, comprising a lower section consisting of two arms held slightly separated from each other by rigid connections at their lower ends, an upper section fitting between the arms of the lower section and adapted for longitudinal adjustment  
 20 therein, ribs on said upper section arranged to fit and project between the margins of said arms, and means for clamping the arms upon the upper section and its ribs, substantially  
 25 as described.

4. A hame for horse-collars, comprising a lower section consisting of two transversely-curved arms held slightly separated from each other with their concave faces inward  
 30 by rigid connections at their lower ends, an upper section consisting of a mandrel-like body portion fitting within the socket formed by the hollow of the two arms, and oppositely-arranged lateral ribs arranged to project be-  
 35 tween the margins of the arms, said sections being adapted for longitudinal adjustment upon each other, and an annular sleeve for clamping the arms upon the upper section and its ribs, substantially as described.

40 5. A hame for horse-collars, comprising a lower section consisting of two parallel arms held slightly separated from each other by rigid connections at their lower ends, an upper section fitting between the arms of the  
 45 lower section and adapted for longitudinal adjustment therein, a plurality of apertures in one of said arms, and a projecting lug on the upper section adapted to engage either of  
 50 said apertures, and a surrounding sleeve for clamping the arms upon the upper section with the lug engaging a desired aperture, substantially as described.

6. A hame for horse-collars, comprising two arms arranged parallel to each other at a  
 55 slight distance apart, an upper section adjustably inserted between the arms of the lower

section, means for clamping the arms upon the upper section, an eye-lug provided with a shank fitting between the arms, and rivets or bolts passing through the arms and frame  
 60 to secure the same together, substantially as described.

7. A hame for horse-collars, comprising a lower section consisting of two arms arranged parallel to each other at a slight distance  
 65 apart, an eye-lug provided with a shank portion extending between the arms near their lower ends and rigidly secured thereto by a bolt or rivet, a tug-attaching loop having a flange adapted to be inserted between the  
 70 arms, rivets or bolts for securing the loop in place, an upper section adjustably inserted between the arms of the lower section, and means for clamping said arms upon said upper section, substantially as described. 75

8. A pair of hames for horse-collars having a hinged or flexible connection at their upper ends and provided at their lower ends with interlocking devices comprising a pivoted  
 80 latching-lever on one hame, a bell-mouthed sleeve on the end of the other hame, provided in its interior with a shoulder with which the end of the latching-lever is adapted to interlock and a spring-pressed sliding bolt arranged within said sleeve, adapted to yield  
 85 to permit the entrance of the latching-lever and to normally hold said lever in engagement with the shoulder, substantially as described.

9. The combination with a horse-collar and  
 90 hame, of means of adjusting the hame laterally upon the collar, comprising a clip secured adjacent to the roll or fore-wale of the collar, and a bolt securing the hame in adjusted relation to the clip, substantially as set forth. 95

10. The combination with a horse-collar and hame, of means for adjusting the hame outwardly and inwardly upon the collar, comprising a clip secured to the collar adjacent  
 100 to the roll or fore-wale thereof, a loop secured on the clip, an opening in the hame adapted to receive said loop, and a bolt extending through the hame and engaging the loop, substantially as set forth.

In testimony that I claim the foregoing as  
 105 my invention I affix my signature in presence of two witnesses.

ROBERT G. ARMSTRONG.

Witnesses:

TAYLOR E. BROWN,  
 S. M. LANE.