

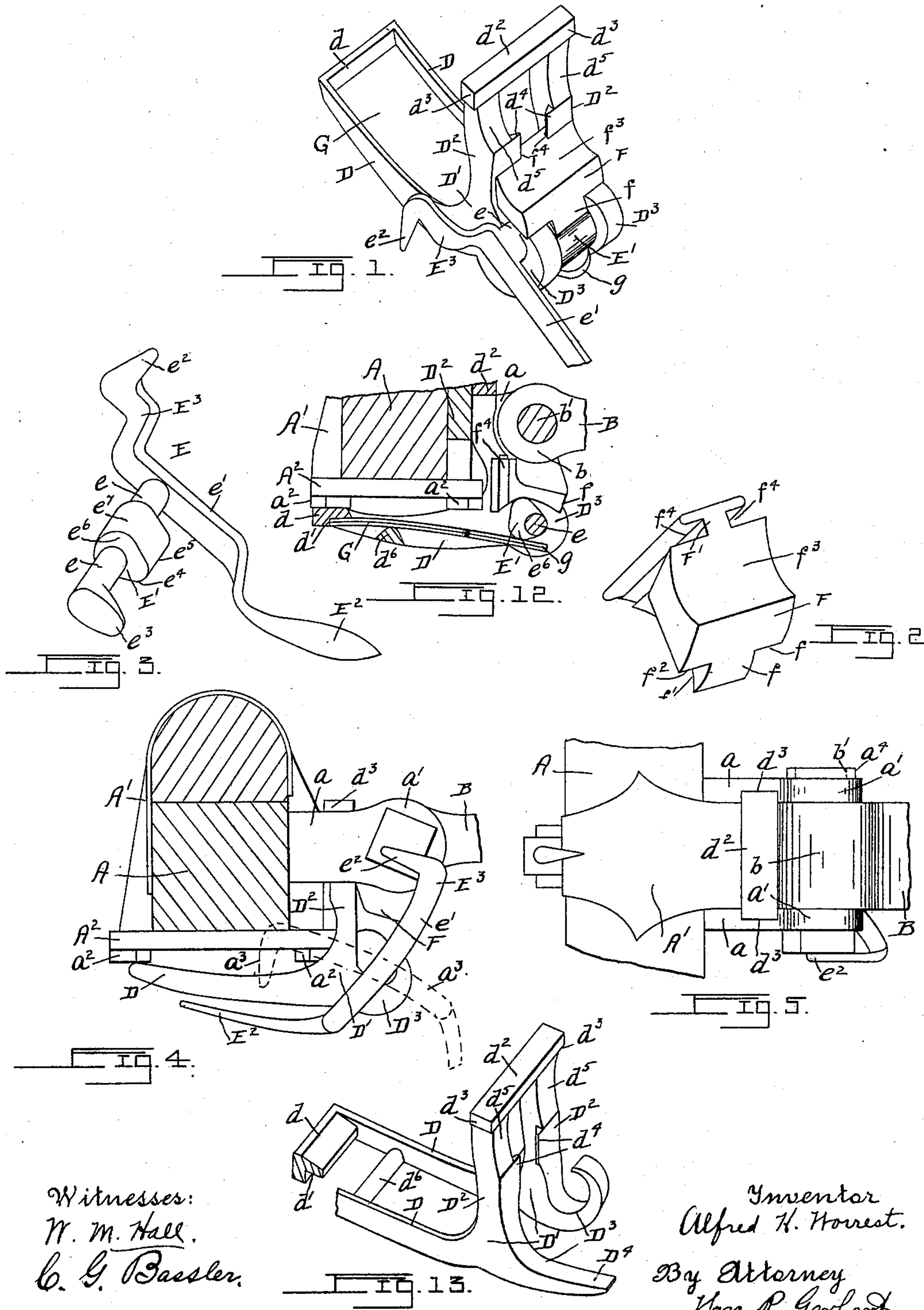
(No Model.)

2 Sheets—Sheet 1.

A. H. WORREST.
ANTIRATTLER FOR THILL COUPLINGS.

No. 596,562.

Patented Jan. 4, 1898.



Witnesses:
W. M. Hall.
C. G. Bassler.

Inventor
Alfred H. Horrest.
By Attorney
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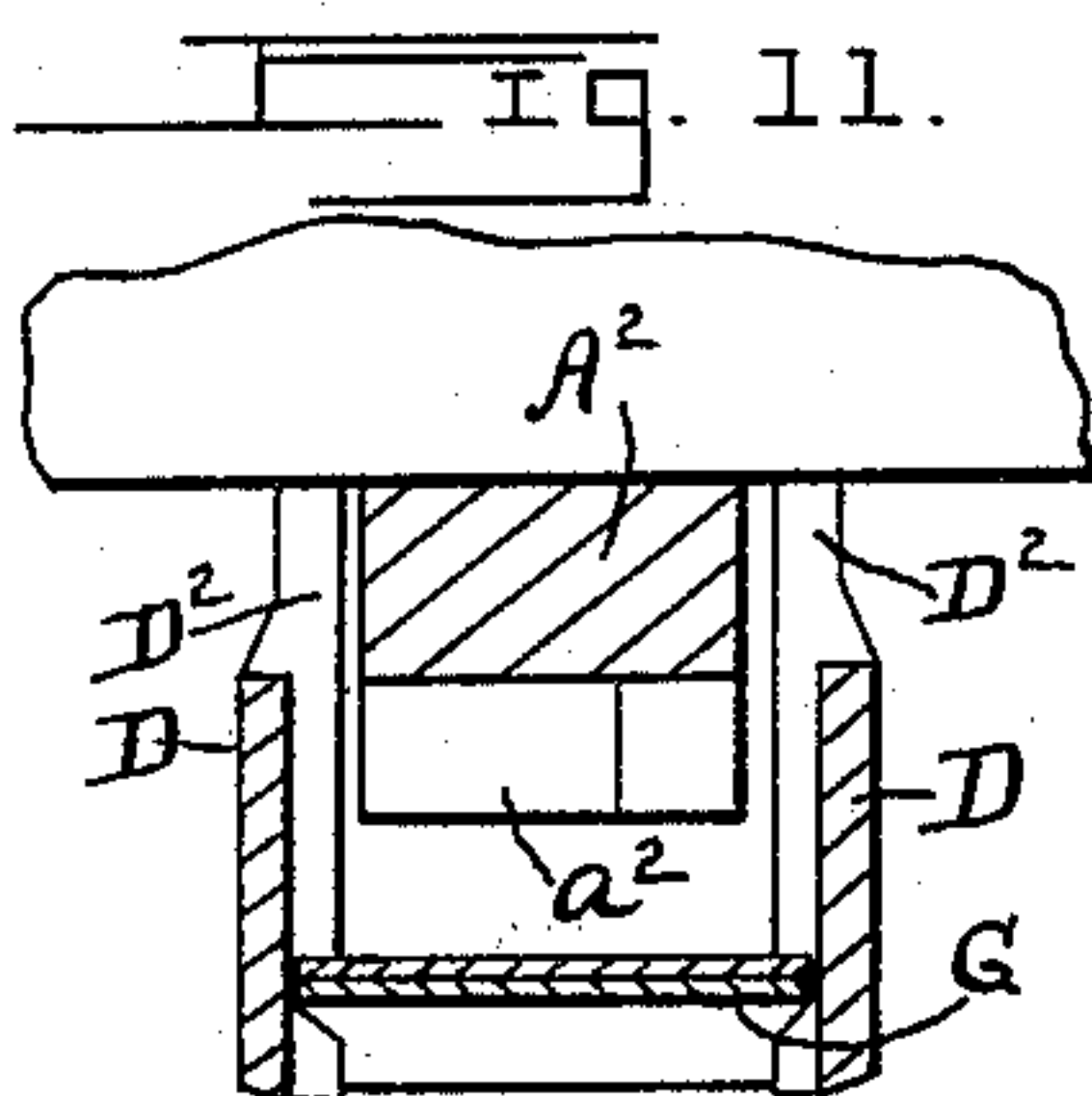
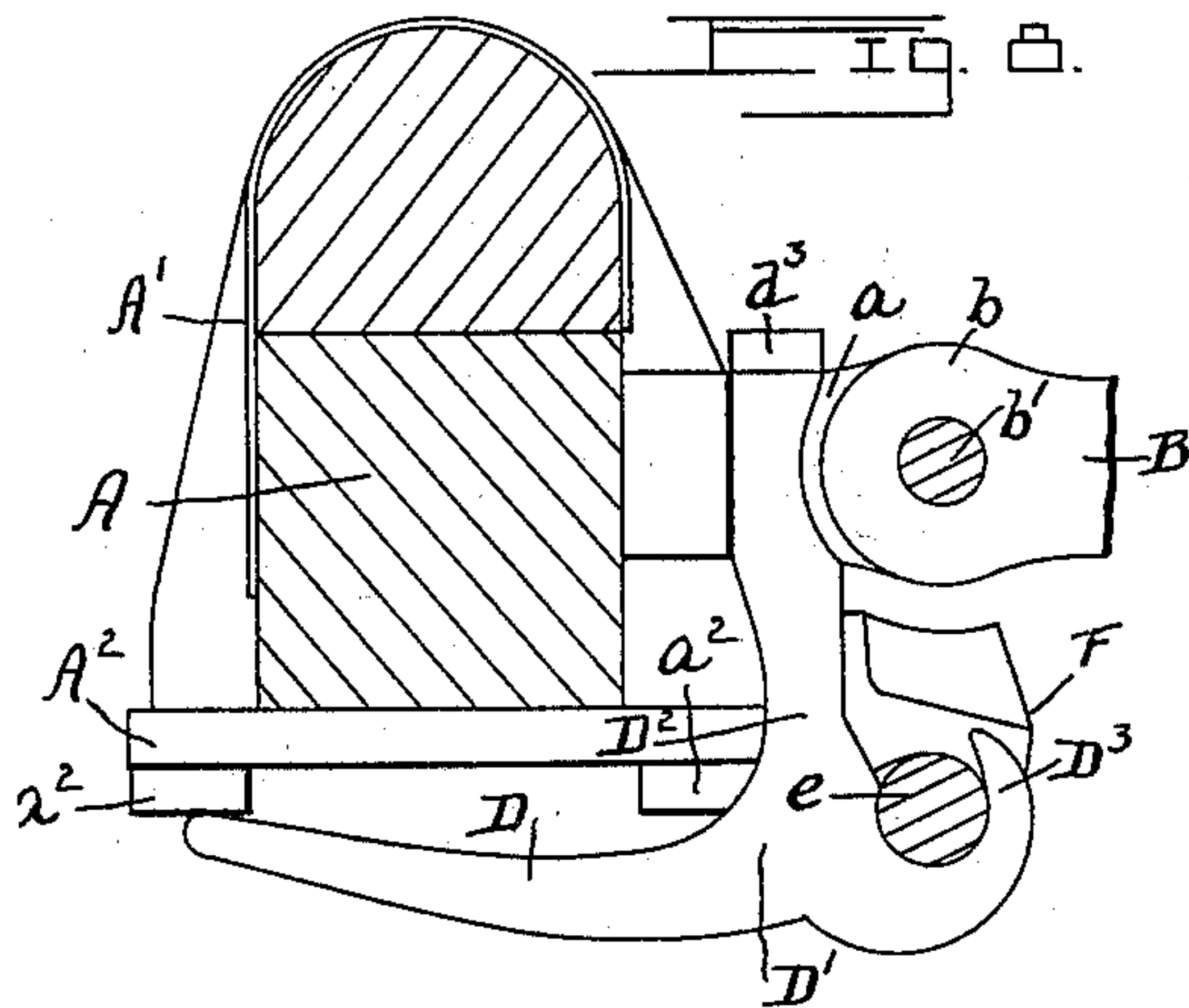
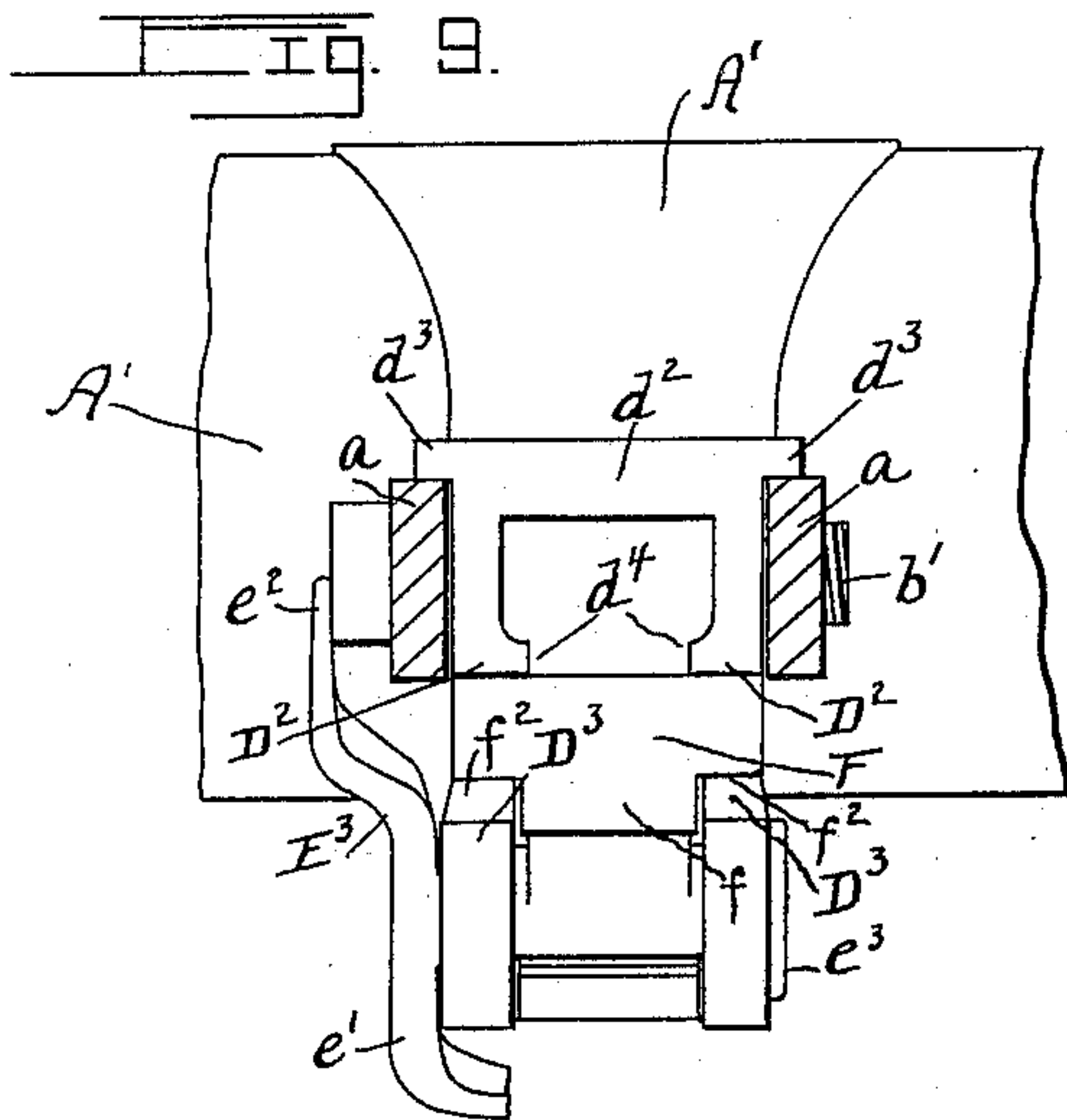
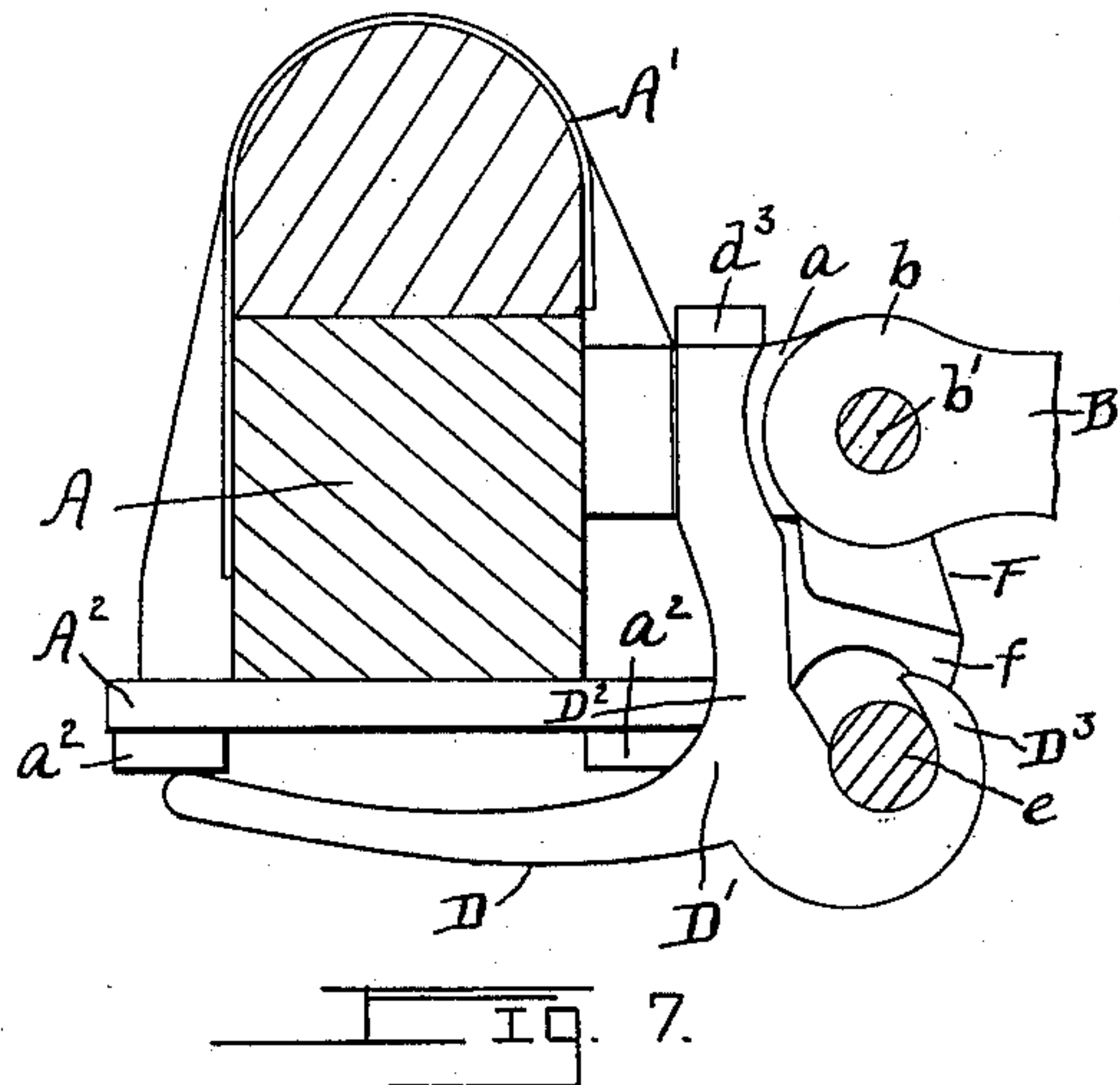
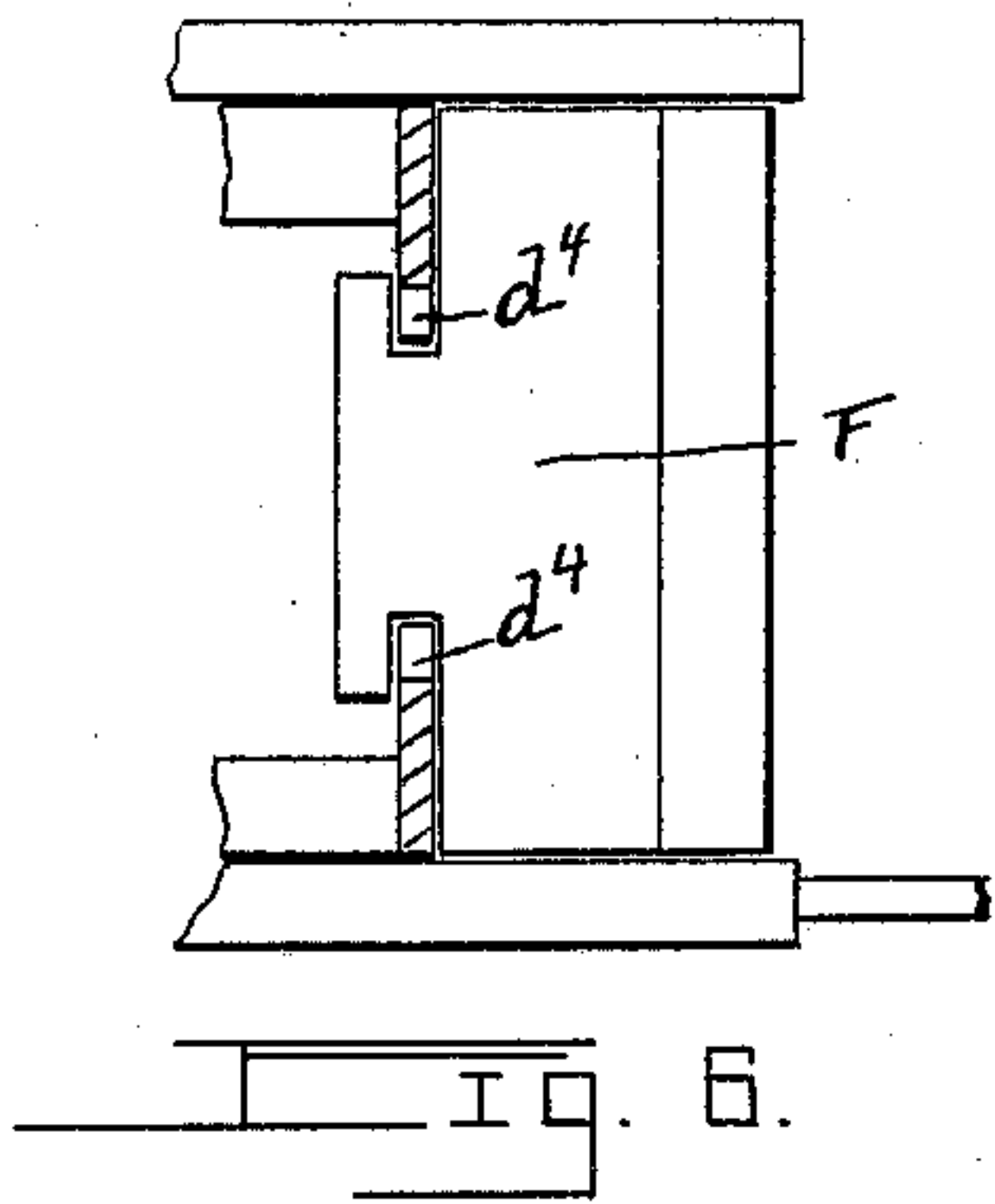
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UNITED STATES PATENT OFFICE.

ALFRED H. WORREST, OF LANCASTER, PENNSYLVANIA.

ANTIRATTLER FOR THILL-COUPPLINGS.

SPECIFICATION forming part of Letters Patent No. 596,562, dated January 4, 1898.

Application filed November 7, 1896. Serial No. 611,371. (No model.)

To all whom it may concern:

Be it known that I, ALFRED H. WORREST, a citizen of the United States, residing at Lancaster, in the county of Lancaster, State of Pennsylvania, have invented certain Improvements in Antirattlers, of which the following is a specification.

This invention relates to improvements in that class of antirattlers used with thill-couplings, and it is a modification upon an antirattling thill-coupling for which I have made application for Letters Patent of the United States, filed July 28, 1896, Serial No. 600,796. In the antirattling thill-coupling forming the subject-matter of said application a specially-constructed thill-iron and a special clip for the axle are required.

The object of this invention is to apply the principles shown and described in said preceding application to a thill-iron and clip of the ordinary construction.

The invention consists in the construction and combination of the various parts, as hereinafter fully described, and then pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front perspective view of the device for supporting and clamping the bearing-block in place; Fig. 2, a front perspective view of the bearing-block, and Fig. 3 a perspective view of the cam-lever. Fig. 4 is a side view of my improvement, showing the same attached to a thill-coupling and the bearing-block clamped in position; Fig. 5, a top plan view of the same; Fig. 6, a horizontal section on broken line 6 6 of Fig. 4, but showing the same with the thill-iron detached; Fig. 7, a vertical section on broken line 7 7 of Fig. 5, showing the antirattling bearing-block clamped in position; and Fig. 8, a similar section, but showing the parts in the position occupied thereby before said block is clamped in position. Fig. 9 is a front view of the device as shown in Fig. 1, the thill and thill-iron being cut away from the eye of the latter; and Fig. 10, a bottom plan view of the device for supporting and clamping the bearing-block in place. Fig. 11 is a section of the arms of the frame and the clip-bar on broken line 11 11 of Fig.

4. Fig. 12 is a longitudinal section showing the bearing of the spring on the cam. Fig. 13 is a front perspective view of the frame, the spring and the operating parts being removed therefrom and showing a portion of the rear end cut away.

Similar letters indicate like parts throughout the several views.

Referring to the details of the drawings, A indicates a vehicle-axle; A', an ordinary thill-coupling clip, having the jaws *a*; B, a thill-iron; *b*, the eye of the thill-iron, through which passes the bolt coupling together the thill and said jaws *a*, and *b'* the coupling-bolt. The clip A' is secured to the axle by means of the ordinary clip-bar A² and nuts *a*².

The frame supporting the antirattling bearing-block and the cam-lever comprises horizontal arms D, extending back beneath the axle and having their rear ends connected by a cross-bar *d*, angular in cross-section, so as to form therein an internal shoulder *d'*, and having its upper face bearing against the rear nut *a*² to prevent the unscrewing of the same; cheeks D' on arms D that embrace the front nut *a*² and prevent the unscrewing thereof; posts D², formed on cheeks D' and passing up between and adjacent to, respectively, the clip-jaws *a* and having their upper ends connected by a cross-bar *d*², provided with outwardly-extending shoulders *d*³, that bear on said jaws *a* between the eyes *a'* of said jaws and the body of the clip, and seats D³, that form bearings for the journals *e* of the cam-lever. Posts or cheeks D' support the whole appliance for preventing any rattling, the upward pressure from the seats D³ thereof, which supports the bearing-block, being in a direct upward line, with the cam bearing against the thill-iron. The spring bearing on the cam that influences the action of said cam does not support any weight from the thill-eye.

The cam-lever E comprises a cam E', having on the sides thereof journals *e*, that engage seats D³; a downwardly and rearwardly extending arm *e'* on one of said journals *e*, formed at right angles therewith and lapping the outer face of the adjacent seat D³, the swinging end of arm *e'* being turned inward at approximately right angles therewith and

extending beneath arms D of the supporting-frame, the inturned extremity of arm e' having thereon and at an approximately right angle therewith a drooping handle E^2 , that
 5 extends beneath the axle and wherewith the cam is operated; an outwardly and upwardly curved arm E^3 , forming a prolongation of arm e' and having thereon a rearwardly and upwardly extending lip e^2 , that when the parts
 10 are in their normal positions engages the outer face of the head of coupling-bolt b' and prevents disengagement of the same from the parts it connects, and a lip e^3 on the free end of the journal e opposite to that carrying
 15 handle E^2 , said lip e^3 being parallel with arm e' and bearing against the outer face of the adjacent seat D^3 .

F indicates an antirattling bearing-block. This block has a projection f beneath, which
 20 engages between seats D^3 , said projection having a concave bottom face f' , that rests on cam E' in front of posts D^2 . Said projection also forms shoulders f^2 on the ends of bearing-block F, which lap and bear upon the
 25 outer portion of said seats D^3 . The top of this bearing-block is concave in cross-section, as shown at f^3 , Fig. 2, and on the center of the rear side thereof is a rearwardly-extending tongue F' , that projects back between
 30 posts D^2 . The lower portions of posts D^2 are upright, and on the inner edges of said upright portions are vertical lips d^4 , that engage grooves f^4 in the sides of tongue F' . Above lips d^4 the upper ends d^5 of posts D^2 are curved
 35 backward and upward, so as to form concave front faces therein to form a suitable socket for the reception of the eye b of the thill-iron. The filling-block is put in place by lowering it onto the cam E' from above and so that
 40 grooves f^4 engage lips d^4 on posts D^2 .

Between the arms D of the frame is a flat double-plate spring G, the rear end whereof takes under shoulder d' of cross-bar d , whence said spring extends forward over a cross-bar
 45 d^6 , connecting the lower edges of said arms D between cross-bar d' and cheeks D' to and beneath cam E' , against which it bears with an upward pressure. The front end g of the spring G is narrowed to conform with the nar-
 50 rowed channel between cheeks D' .

When in its normal position, binding bearing-block F against eye b of the thill-iron, the front slope e^4 of the tongue e^5 of cam E' bears against the bottom of the downward projec-
 55 tion f of bearing-block F, the swell e^6 of the cam projecting downward and backward and having the lower curve e^7 thereof bearing on spring G, whereby, as the contacting surfaces of the filling-block and of the eye of the thill-
 60 iron wear away, the pressure of said spring G on tongue e^6 revolves the cam and forces the filling-block up the slope of the swell of said cam and retains said filling-block in close contact with the seats of the thill-iron.

65 Originally the parts forming the eyes D^3

are extended horizontally, or approximately so, as shown at lines D^4 , Fig. 13, but in assembling the parts the journals e of the cam-lever are placed on said parts adjacent to
 70 posts D^2 , and then the ends thereof are bent or riveted around said journals. In attaching my device, the bearing-block being in place on the frame, the thill is detached from the axle, and between the jaws a of the clip
 75 A' the arms of the frame are inserted, with shoulders d^3 resting on said jaws, between the eyes thereof and the body of the clip. Then, if it has not been done before, the cam-lever is turned so that lip e^2 uncovers the
 80 bolt-holes in the eyes of said jaws a , as shown by broken lines a^3 in Fig. 4. The eye of the thill-iron is inserted between jaws a and there secured by the coupling-bolt b' , when the handle E^2 of the cam-lever is forced back
 85 beneath the axle, pressing the bearing-block up against the eye of the thill-iron.

In Fig. 5 a nut a^4 is shown on the threaded end of coupling-bolt b' ; but said nut is not necessary, as the bolt is held in place by
 90 lip e^2 .

In many ways safety is added to a thill-coupling with which this device is used. When the eyes of the thill-irons are inserted between the jaws of the clip, that one to be
 95 last coupled is upheld by the bearing-block beneath it while the other is being connected. The nuts a^2 , securing the clip on the axle, are prevented from loosening; the coupling-bolt is prevented from working out of place; and the bearing-block is automatically forced
 100 to take up the wear between itself and the eye of the thill-iron.

As will be understood by the specification, this invention adapts the cam and the spring actuating the same, described in the prior
 105 application before mentioned, to a frame removably connected with the clip, whereby by the interposition of a bearing-block said cam and spring can be employed as an antirattler for a thill-coupling of the ordinary construction, which could not be done with said cam and spring and their connections, as shown and described in said prior application.

I do not restrict myself to the details of construction herein shown and described, as
 115 it is obvious that many alterations may be made therein without departing from the principle and scope of my invention.

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

1. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame having vertical members connected with the axle-clip, a bearing-block adjustably con-
 125 nected with said vertical members and adapted to engage the eye of the thill-iron, a cam below said bearing-block and in contact therewith, and means for automatically actuating said cam to take up the wear between the eye
 130

of the thill-iron and the bearing-block, for the purpose specified.

2. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame 5 located under the thill-coupling, posts on said frame, shoulders on the posts and resting on the jaws of the axle-clip, vertical lips on said posts, a cam hinged in the frame, a bearing-block supported by said cam and having 10 grooves engaging the lips on the posts, and means for actuating the cam to engage the bearing-block with the eye of the thill-iron, for the purpose specified.

3. In a thill-coupling, the combination, with 15 a thill-iron and a coupling-bolt, of a frame located under the thill-coupling, posts on said frame, shoulders on the posts and resting on the jaws of the axle-clip, vertical lips on said posts, a cam hinged in the frame, a bearing- 20 block supported by said cam and having grooves engaging the lips on the posts, and means for automatically actuating the cam to maintain the bearing-block in contact with the thill-iron, for the purpose specified.

25 4. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame having a horizontal portion extending beneath the axle, posts on said frame, shoulders on the posts and resting on the jaws of the 30 axle-clip, vertical lips on said posts, a cam hinged in the frame, a bearing-block supported by said cam and having grooves engaging the lips on the posts, and a spring in the horizontal portion of said frame and bearing 35 upon the lower side of the cam, for the purpose specified.

5. In a thill-coupling, the combination, with an axle-clip, clip-plate, thill-iron and coupling-bolt, of a frame detachably connected 40 with the thill-coupling, a portion of said frame extending beneath the clip-plate and adapted to prevent the turning of the nuts securing said clip-plate, and an antirattler supported by said frame, for the purpose specified.

45 6. In a thill-coupling, the combination, with an axle-clip, clip-plate, thill-iron and coupling-bolt, of a frame detachably connected with the thill-coupling, arms on said frame on opposite sides of the nuts securing said 50 clip-plate, a cross-bar connecting said arms and bearing against the rear nut, cheeks on said arms embracing the front nut, and an antirattler supported by said frame, for the purpose specified.

55 7. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame having a horizontal portion extending beneath the axle, and having the rear end thereof adapted to prevent the detaching of the 60 nut of one of the clip-arms, posts on said frame, shoulders on the posts and resting on the jaws of the axle-clip, vertical lips on said posts, a cam hinged in the frame, a bearing-block supported by said cam and having 65 grooves engaging the lips on the posts, and a

spring in the horizontal portion of said frame and bearing upon the lower side of the cam, for the purpose specified.

8. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame 70 having a horizontal portion extending beneath the axle and having the rear end thereof adapted to prevent the detaching of the nut of the rear clip-arm, cheeks on said frame and embracing the nut of the front clip-arm, 75 posts on said cheeks, shoulders on the posts and resting on the jaws of the axle-clip, vertical lips on said posts, a cam hinged in the frame, a bearing-block supported by said cam and having grooves engaging the lips on the 80 posts, and a spring in the horizontal portion of said frame and bearing upon the lower side of the cam, for the purpose specified.

9. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame 85 located beneath the thill-coupling, posts on said frame, shoulders on the posts resting on the jaws of the axle-clip, vertical lips on said posts, a cam hinged in the frame, an attachment on said cam and adapted to retain the 90 coupling-bolt in place, a bearing-block supported by said cam and having grooves engaging the lips on the posts, and means for actuating the cam to engage the bearing-block with the eye of the thill-iron, for the 95 purpose specified.

10. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a frame having a horizontal portion extending 100 beneath the axle and having the rear end thereof adapted to prevent the detaching of the nut of the rear clip-arm, cheeks on said frame and embracing the nut of the front clip-arm, posts on said cheeks, shoulders on 105 the posts and resting on the jaws of the axle-clip, vertical lips on said posts, a cam hinged in the frame, an attachment on said cam and adapted to retain the coupling-bolt in place, a bearing-block supported by said cam and having grooves engaging the lips on the posts, 110 and a spring in the horizontal portion of said frame and bearing upon the lower side of the cam, for the purpose specified.

11. In a thill-coupling, the combination, with a thill-iron and a coupling-bolt, of a 115 frame having a horizontal portion comprising arms extending beneath the axle, a cross-bar connecting the rear ends of said arms and having a shoulder thereon, said cross-bar being adapted to prevent the detaching of the 120 nut of the rear clip-arm, cheeks on the forward part of said arms, a cross-bar connecting said arms intermediate of the rear ends thereof and said cheeks, a cam journaled in front of said cheeks and in prolongations of 125 said arms, a spring having the rear end engaging beneath the shoulder of the rear cross-bar of said arms, then passing over said intermediate cross-bar and having its front end engaging beneath a rearwardly-extending 130

tongue of said cam, posts on said cheeks and having concave front faces in the upper portions thereof, shoulders on the posts and resting on the jaws of the axle-clips, vertical lips
5 on said posts, an arm on a journal of said cam and adapted to retain the clamping-bolt in place, and a bearing-block supported by said cam and having grooves engaging the lips on the posts, said bearing-block engaging the eye of the thill-iron, all substantially as and for the purpose specified.

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