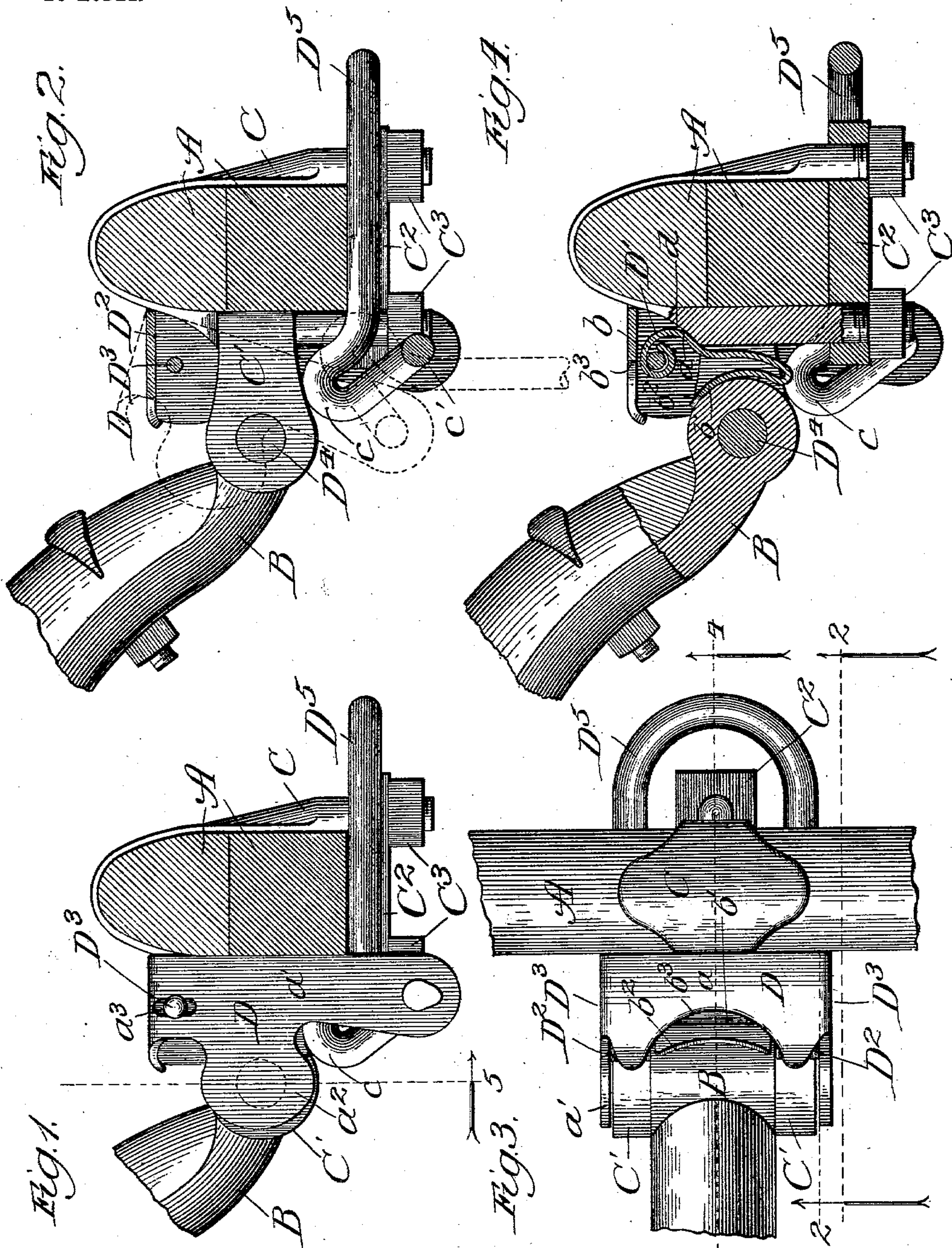


H. BREIDING.
SHAFT COUPLING.

APPLICATION FILED FEB. 14, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

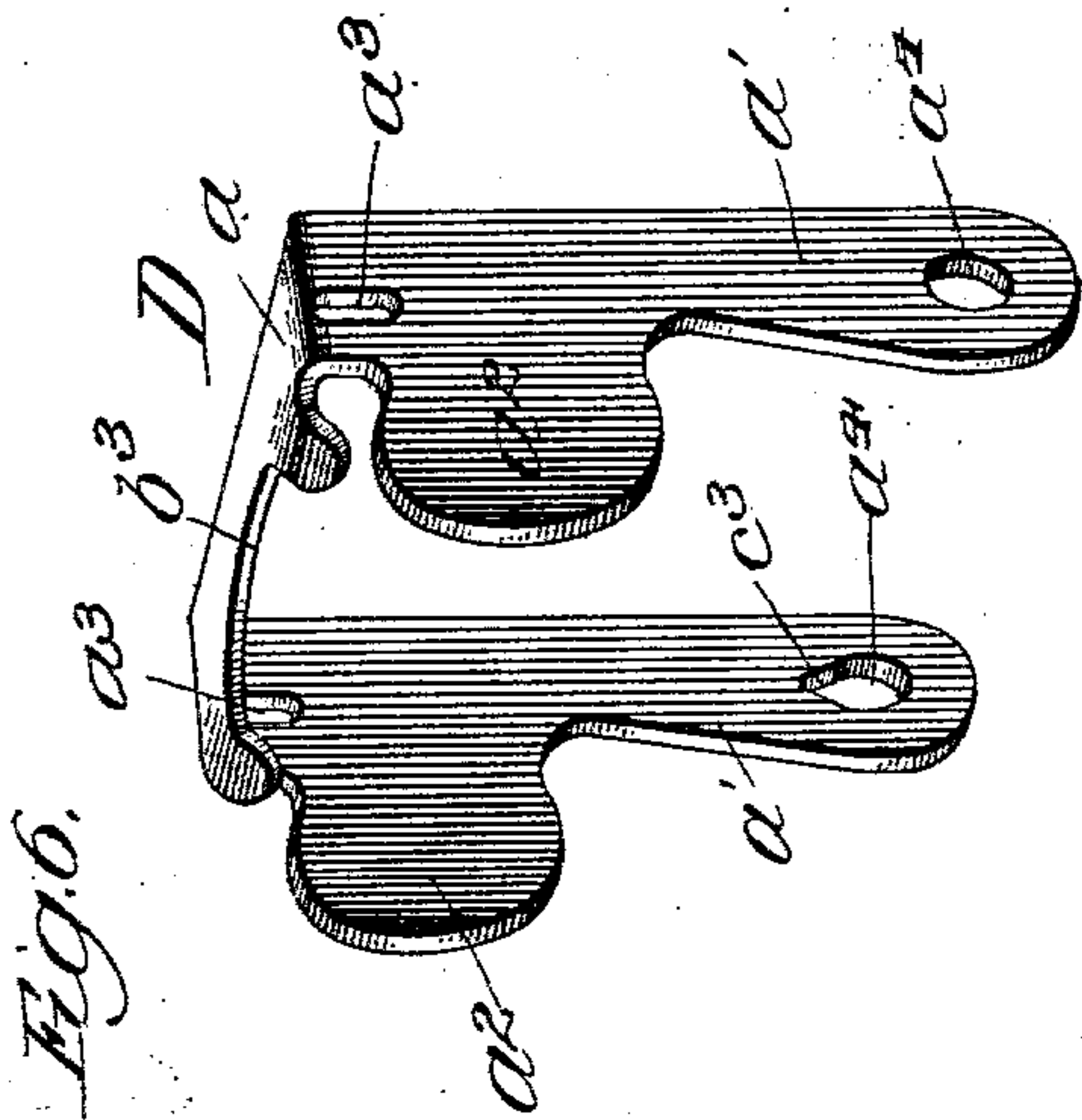


Fig. 9.

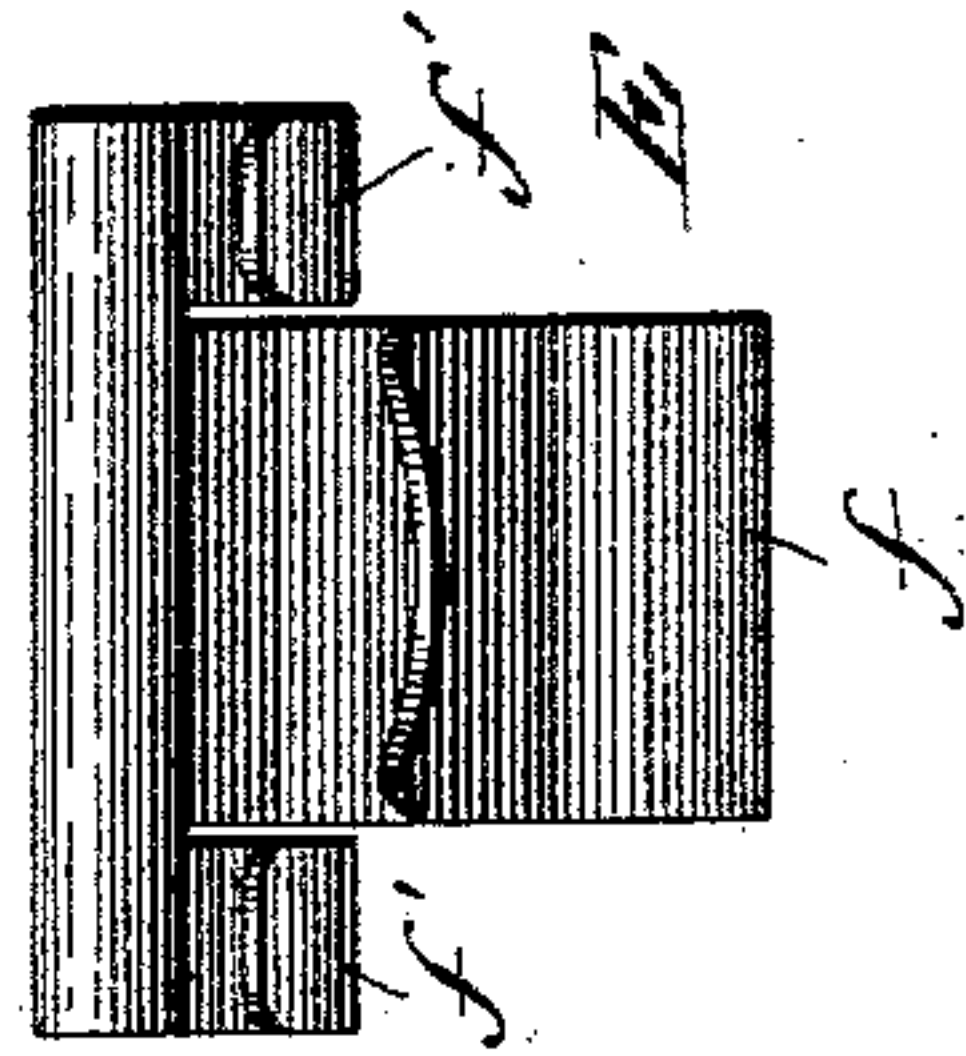


Fig. 8.

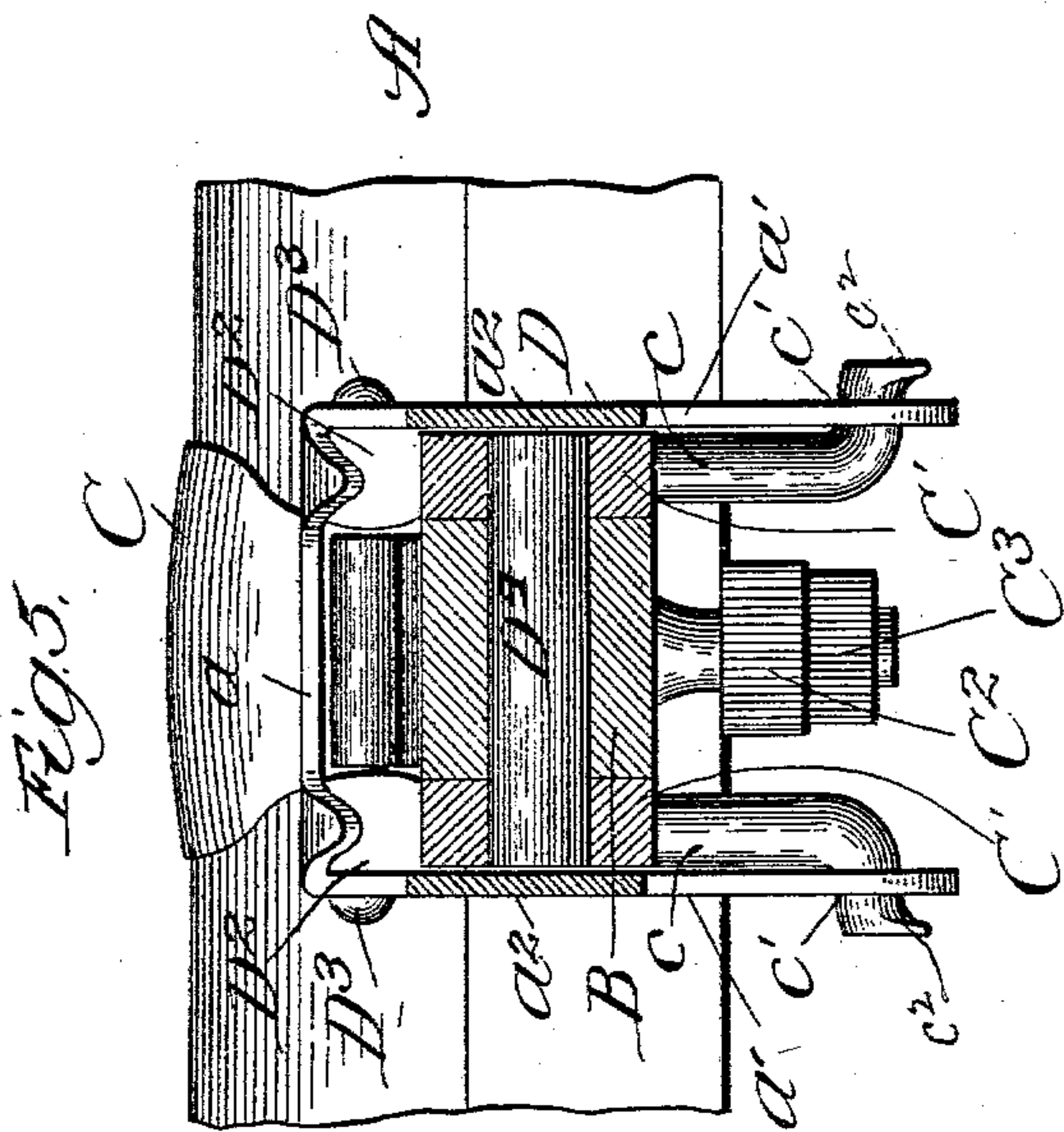
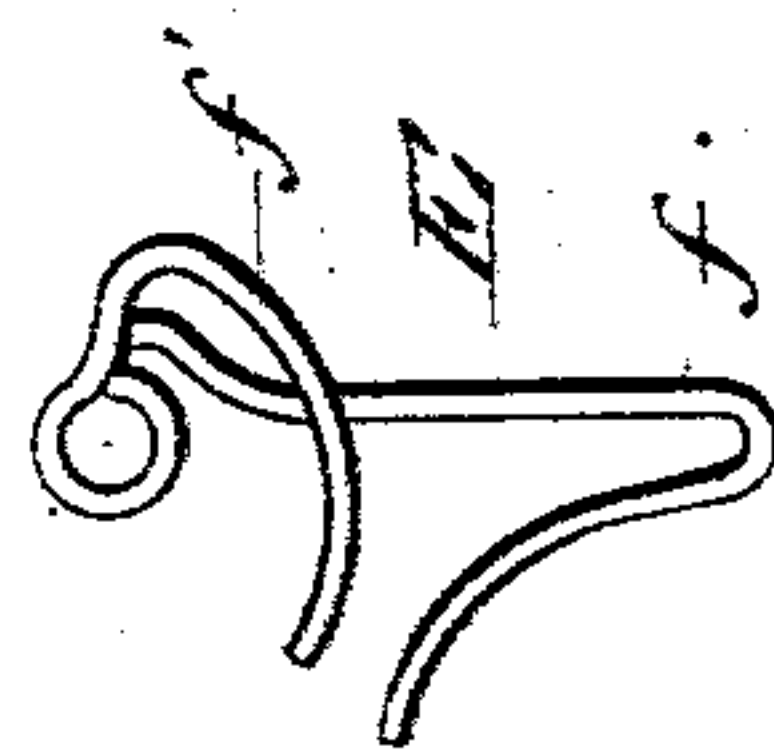
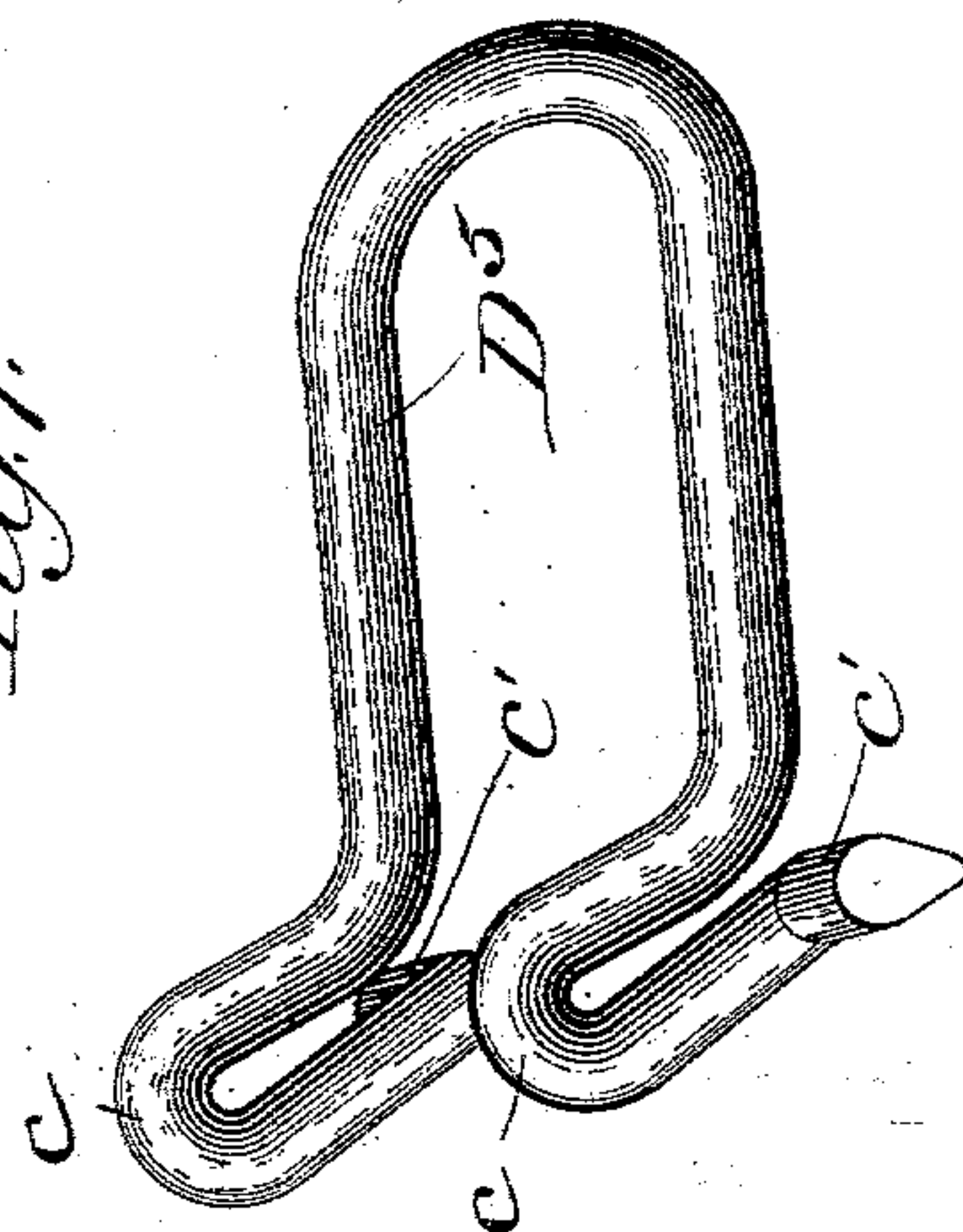


Fig. 7.



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UNITED STATES PATENT OFFICE.

HENRY BREIDING, OF STERLING, ILLINOIS.

SHAFT-COUPLING.

SPECIFICATION forming part of Letters Patent No. 745,714, dated December 1, 1903.

Application filed February 14, 1903. Serial No. 143,311. (No model.)

To all whom it may concern:

Be it known that I, HENRY BREIDING, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented a new and useful Improvement in Shaft-Couplings, of which the following is a specification.

My invention relates particularly to combination quick-shift and antirattle couplings of the general nature of the coupling described in Patent No. 628,443, granted to me July 11, 1899.

My primary object is to provide for a coupling of this character additional safeguards against rattling and accidental uncoupling and also to render the device exceptionally simple and durable.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a broken sectional view of an axle and thill joined by the improved coupling; Fig. 2, a sectional view taken as indicated at line 2 of Fig. 3; Fig. 3, a plan view of the device shown in Fig. 1; Fig. 4, a section taken as indicated at line 4 of Fig. 3; Fig. 5, a section parallel with the axle as indicated at line 5 of Fig. 1; Fig. 6, a perspective view of the hood or shaft-pin retainer; Fig. 7, a perspective view of the lever; Fig. 8, an edge view of a modified form of antirattler-spring, and Fig. 9 a front view of the same.

The preferred construction is as follows:

A represents a vehicle-axle; B, a pole-eye or thill-eye; C, an axle-clip of usual construction having thill-attaching eyes or lugs C', a clamping-bar C², and nuts C³; D, a hood or shaft-pin retainer constituting a part of the new attachment; D', a spring serving the double function of preventing rattle of the thill and of locking the attachment-lever; D², resilient rubber blocks resting upon the tops of the axle-clip lugs and serving as a safety-lock for the device; D³, a pin or rivet extending through the upper portion of the hood and serving to secure the spring and rubbers to the hood; D⁴, a headless shaft-pin extending through the thill-eye and axle-clip eyes and having its ends substantially flush with the outer lateral surfaces of the thill-eyes, and D⁵ a lever serving to depress the hood, thereby forcing the spring D' into the space

between the thill-eye and axle-clip and at the same time bringing the retaining-lips of the hood into alinement with the shaft-pin. 55

The hood or shaft-pin retainer comprises a sheet-metal U-shaped member having a top *a* and sides *a'*, provided with plain rear edges and with forwardly-projecting retaining-lips *a*². The upper portions of the sides are provided with vertical slots *a*³ for the pin D³, and the lower ends thereof are provided with perforations *a*⁴ for the pivots of the lever. 60

The spring D' is wedge-shaped and provided at its upper portion with an eye *b*, loosely receiving the pin D³. The spring has a forwardly and upwardly turned leaf *b'*, concaved on its front side to conform to the curve of the thill-eye. The end edge of the leaf *b'* is concaved at *b*² to prevent interference with the thill when the thills are elevated. 65

For the same reason the front edge of the top of the hood is concaved at *b*³. 70

The lever D⁵ comprises a U-shaped member with cams *c* for engaging the under surfaces of the axle-clip lugs and lateral pivots *c'*, fitting in the perforations *a*⁴ of the hood. The pivots *c'* have triangular projections *c*² for preventing accidental disconnection of the lever from the hood. One of the perforations *a*⁴ is round, and the other has a triangular recess *c*³, providing for the ready connection and disconnection of the lever when turned to a certain position with reference to the hood. 75

The lever is conveniently formed from one-fourth-inch steel rod bent to U form, the end portions being bent out of the plane of the U and then upon themselves to form the cams *c* and then laterally to form the pivots *c'*. 80

The manner of applying the device will be readily understood. The shaft-pin replaces the ordinary bolt and connects the thill-eye to the axle-clip. The hood is preparatorily slipped over the thill before the thill is connected with the axle-clip. The spring is then entered and the lever thrown from the position of the dotted lines to the position of the full lines of Fig. 2. In this movement the cams or bearings *c* of the lever slip along beneath the axle-clip lugs till the pivots are in the rear of the cams and the lever is locked. This leaves the spring and rubbers under compression. It will be noted that the spring has an inclined portion *d*, which bears against 85 90 95 100

a corresponding inclined portion d' of the axle-clip and that the leaf b' of the spring bears upon the thill-eye above a horizontal diameter. The result is that the spring has a strong tend-

5 ency to raise the hood and lock the lever, also that the spring will readily free itself when the device is opened. This is of prime importance, since it is necessary to provide against possibility of rattle by the lever and desirable to have the device easily removable. Should the spring break, as it is liable to do in extremely cold weather, the rubbers act as a safety-lock for the device, preventing possibility of accident.

15 In a modification contemplated the spring E, Figs. 8 and 9, is formed with a main portion f for entering between the thill-eye and axle-clip and two branches f' , adapted to surmount and bear upon the tops of the axle-clip lugs in lieu of the rubbers D^2 . Since the danger of all the leaves of the spring breaking at one time is exceedingly remote, the safety feature of the device practically would be unaffected by the modification, and the necessity for the use of the somewhat-expensive rubbers would be obviated. Moreover, a proper spring is less liable to deterioration than is rubber.

It is noteworthy that in my construction there are few parts, no objectionable projections, and the spring is well housed. Moreover, the device is exceedingly neat, compact, and durable and has the very great merit of absolute safety.

Changes in details within the spirit of my invention are contemplated. Hence no undue limitation should be understood from the foregoing detailed description.

What I regard as new, and desire to secure by Letters Patent, is—

40 1. A device of the character described, comprising a shaft-pin retainer, a shaft-eye-engaging spring and axle-clip lug surmounting resilient member connected with said retainer, and a lever serving to depress said
45 retainer, for the purpose set forth.

2. The combination of a shaft-pin retainer, a shaft-eye-engaging spring pivotally con-

nected by a transverse pivot with the upper portion thereof, and a lever pivotally joined to the lower portion thereof, for the purpose set forth. 50

3. The combination of a shaft-pin retainer, a shaft-eye-engaging spring provided with an eye, a resilient member for engaging the upper surface of an axle-clip lug, a pin serving to connect said spring and said lug-engaging member to said pin-retainer, and a lever for depressing said pin-retainer, for the purpose set forth. 55

4. The combination of a U-shaped hood having a top provided with a concaved front edge, a shaft-eye-engaging spring attached thereto and provided with a forwardly and upwardly turned leaf having a concaved end edge, and a U-shaped lever connected with the lower portion of said hood, for the purpose set forth. 60 65

5. The combination of a U-shaped hood for embracing the lugs of an axle-clip and provided at its upper portion with vertical slots, a shaft-eye-engaging spring, a pin working in said slots and connecting said spring and hood, and a U-shaped lever connected with the lower portion of the hood, for the purpose set forth. 70 75

6. The combination of a U-shaped hood for embracing the lugs of an axle-clip, rubber blocks in the corners at the upper portion of said hood, a shaft-eye-engaging spring, a pin connecting the spring and rubbers with the hood, and a U-shaped lever connected with the lower ends of the sides of the hood, for the purpose set forth. 80

7. The combination of a U-shaped hood, a suitable shaft-eye-engaging spring, and a U-shaped lever pivotally joined to said hood and comprising an endless member bent to U shape with end portions bent to form lug-engaging cams and extremities bent laterally to afford pivots, for the purpose set forth. 85

HENRY BREIDING.

In presence of—

J. E. MCPHERRAN,

C. CHASE MACPHERAN.