

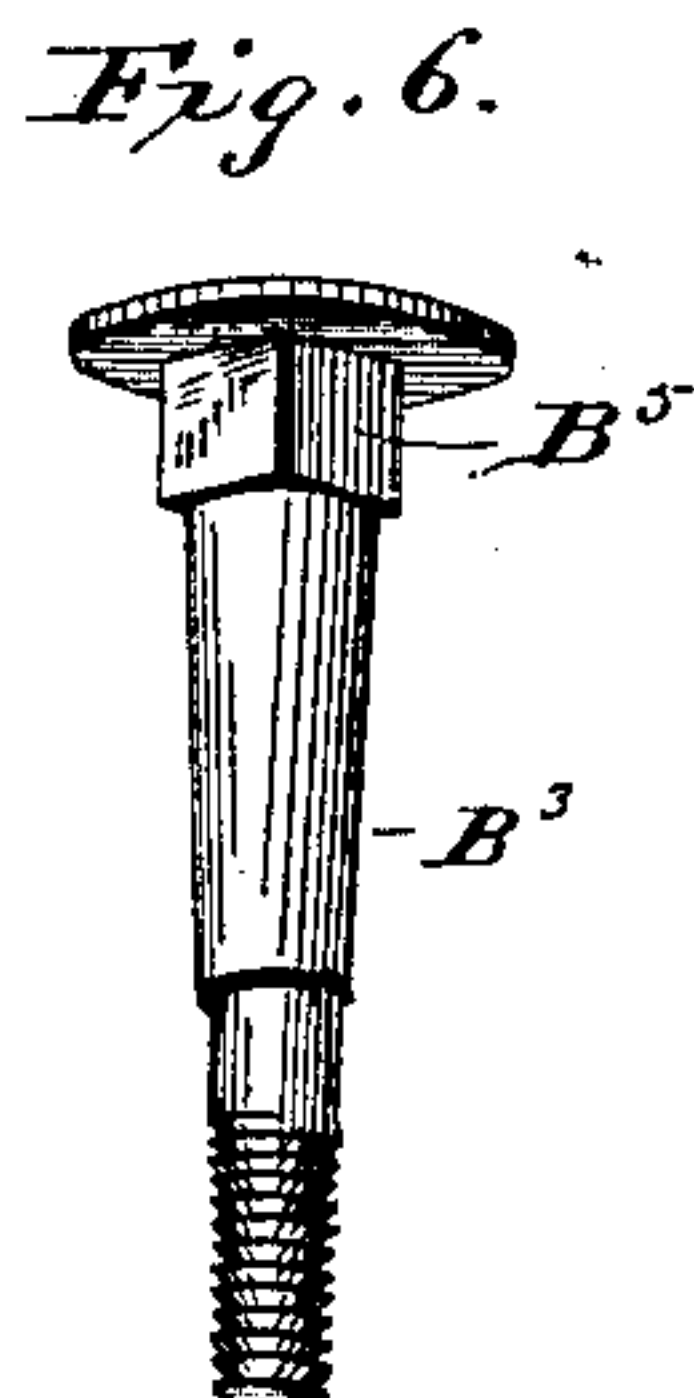
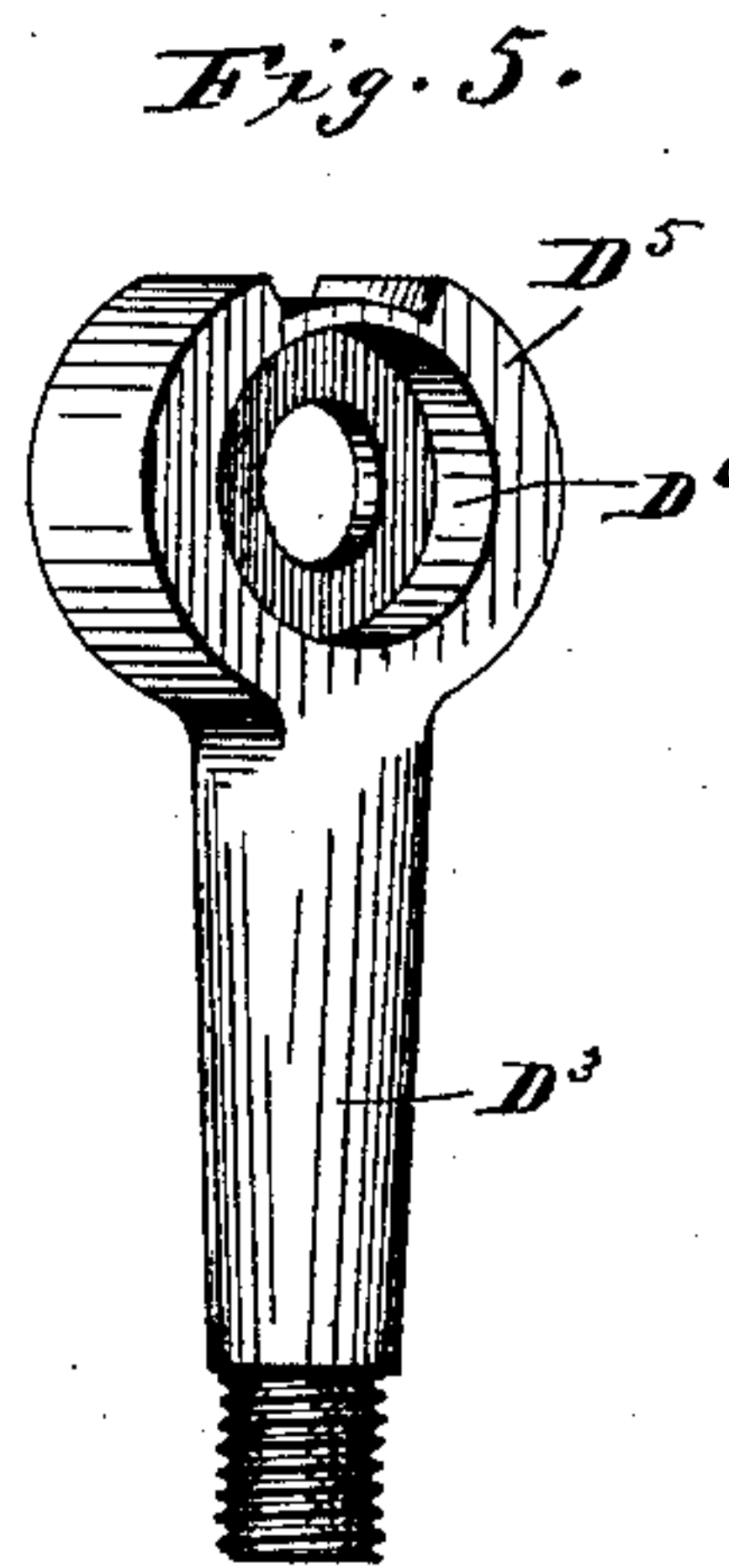
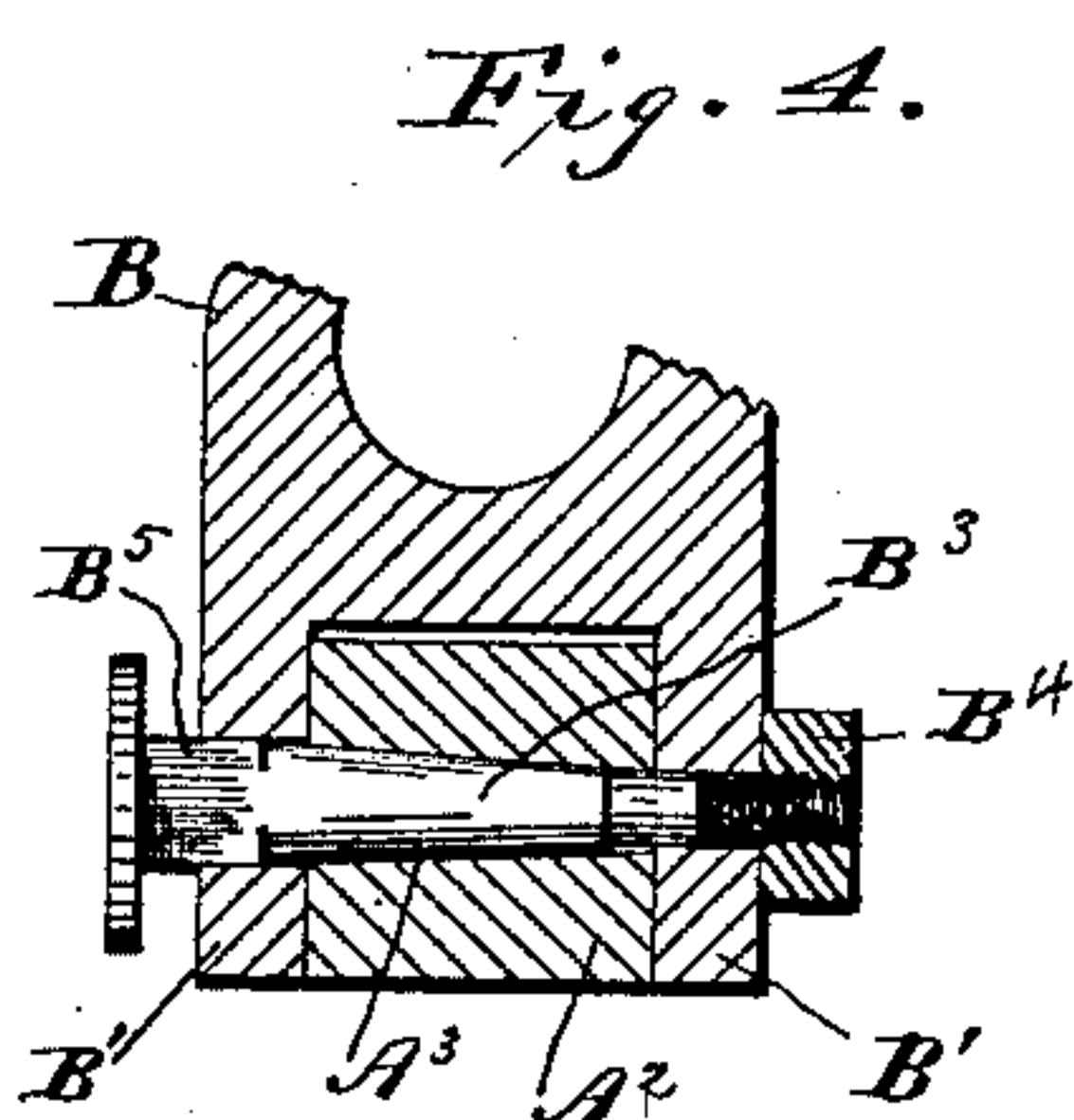
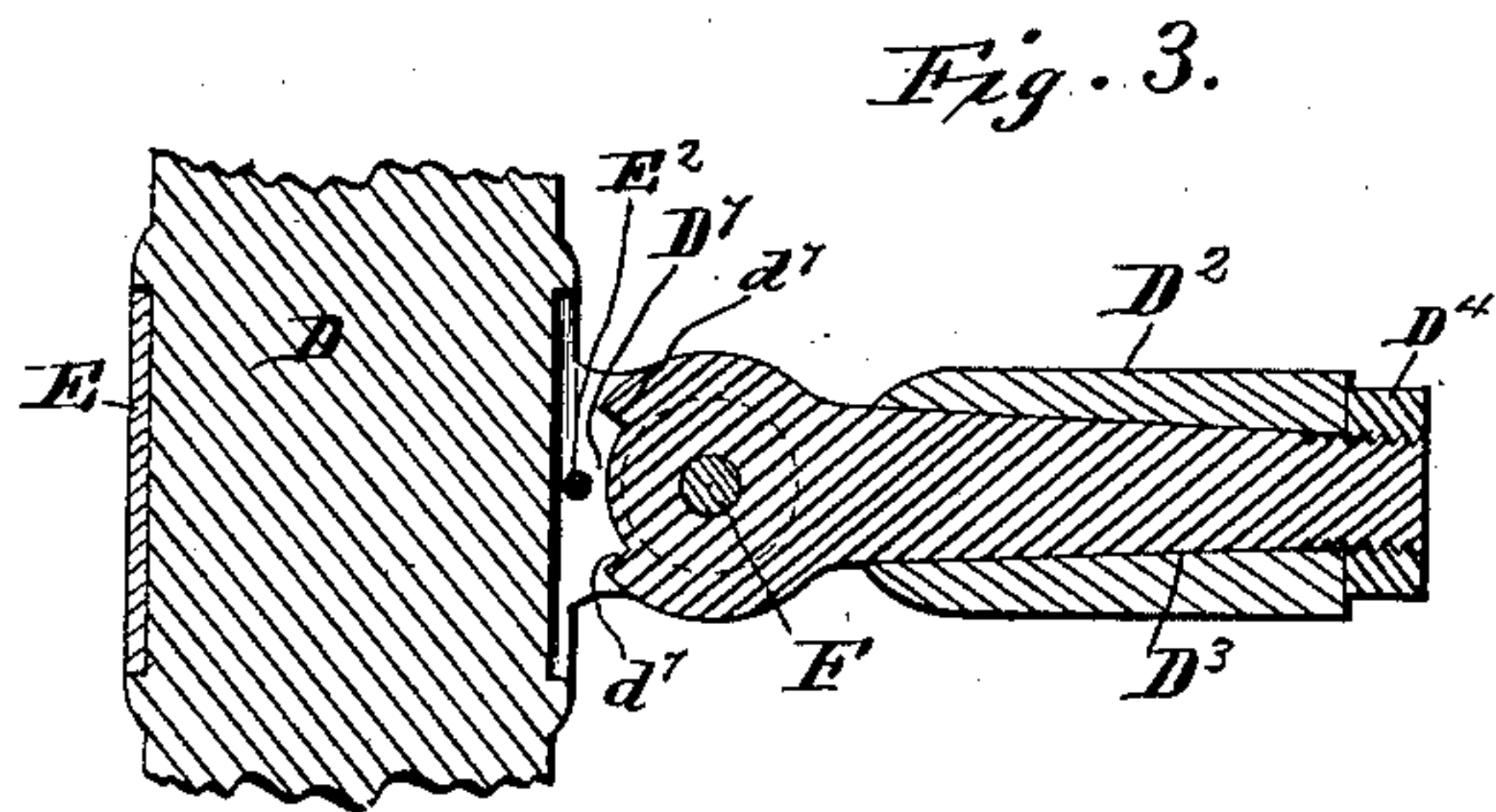
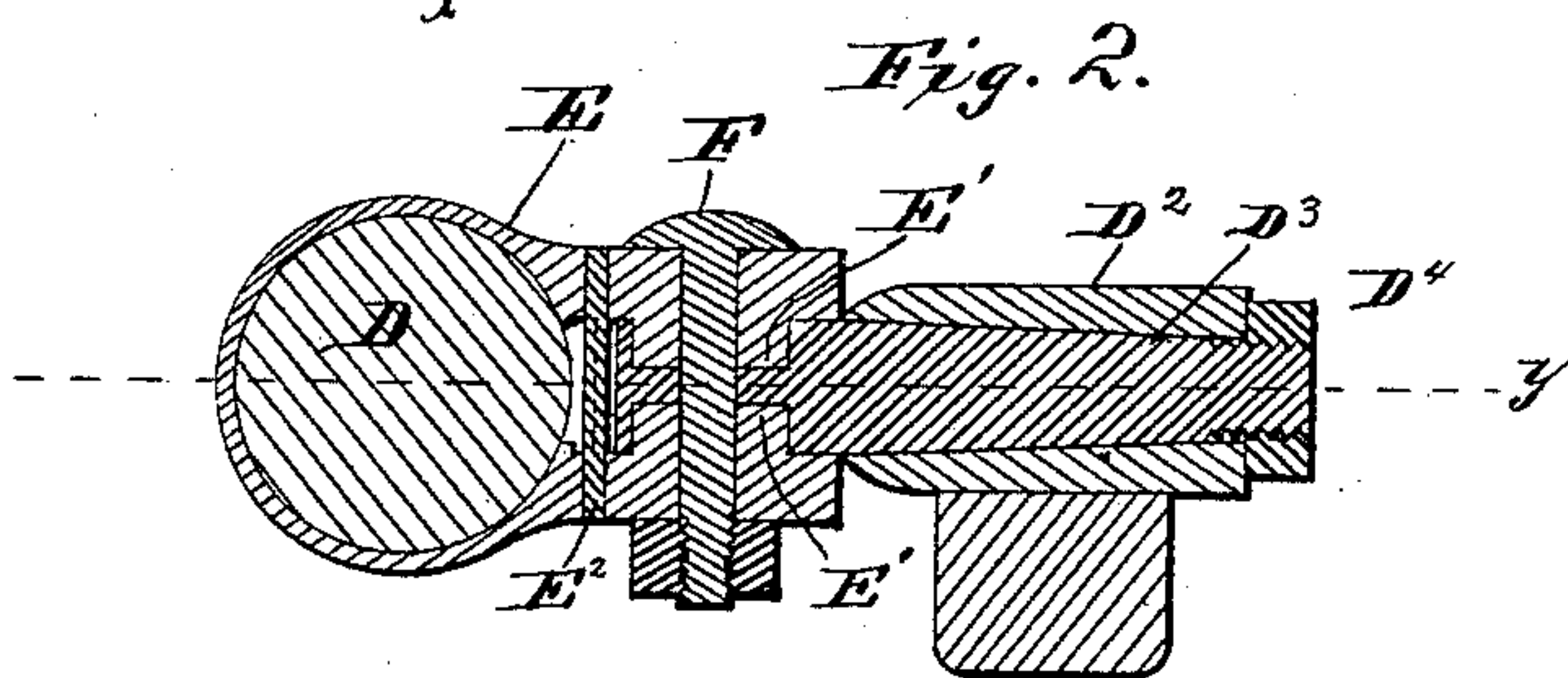
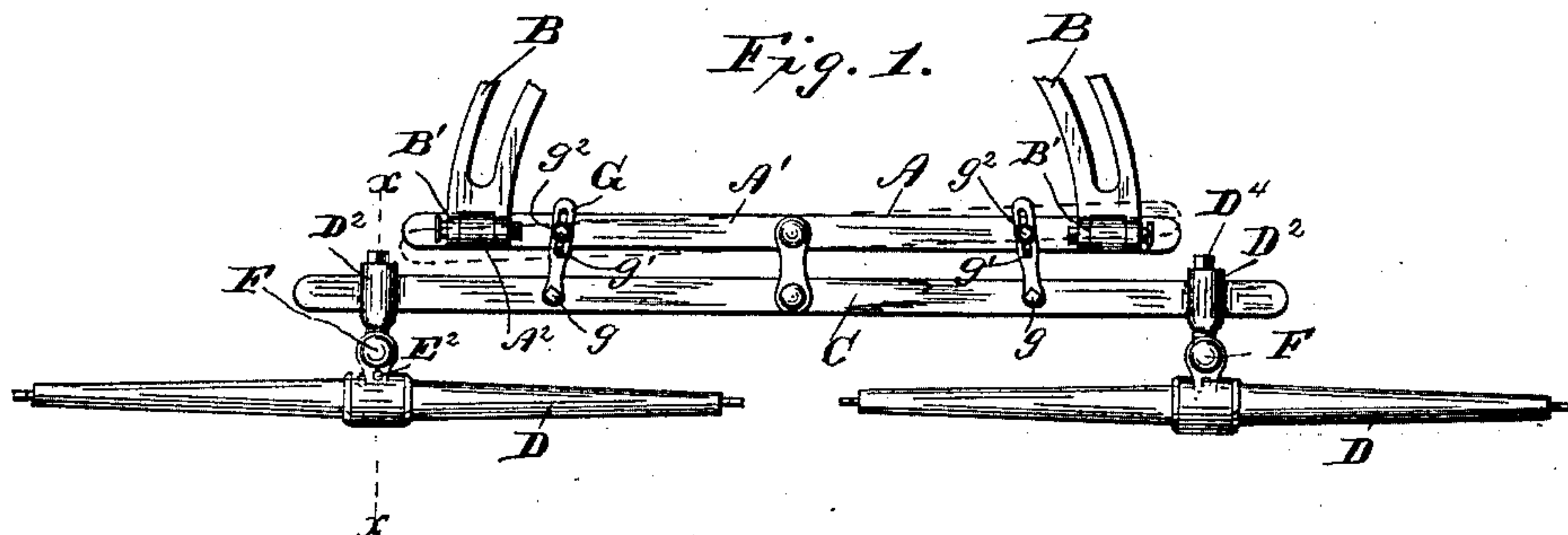
(No Model.)

J. CLEMENTS.

DRAFT ATTACHMENT FOR VEHICLES.

No. 348,545.

Patented Sept. 7, 1886.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JOHN CLEMENTS, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE JAMES CUNNINGHAM, SON & COMPANY, OF SAME PLACE.

## DRAFT ATTACHMENT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 348,545, dated September 7, 1886.

Application filed November 14, 1885. Serial No. 182,849. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CLEMENTS, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Running-Gears for Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention has for its object to improve the construction of the running-gears of vehicles, particularly in respect, first, to the whiffletree-couplings; secondly, in respect to the means for limiting the swinging motion of the evener, and, thirdly, in respect to the coupling between the splinter-bar and hounds; and to this end it consists in certain novel features of construction and combination of parts, which will be hereinafter fully described and specifically claimed.

In the accompanying drawings, Figure 1 represents a bottom plan view of a portion of a running-gear having my invention applied thereto. Fig. 2 is a sectional view through the whiffletree-coupling on the line *x x*, Fig. 1; Fig. 3, another sectional view of the same, taken on the line *y y*, Fig. 2. Fig. 4 is a sectional view of the coupling between the splinter-bar and hounds; Fig. 5, a perspective view of the whiffletree-coupling bolt; Fig. 6, a perspective view of the bolt employed in the coupling between the hounds and splinter-bar.

Similar letters in the several figures indicate the same parts.

The letter A represents the splinter-bar, B the hounds, C the evener, and D D the whiffletrees.

D<sup>2</sup> is the whiffletree-iron, applied to the bottom of the whiffletree and secured in place by suitable bolts, and having a transverse tapering socket, as shown clearly in Fig. 2. Within this socket fits the conical shank D<sup>3</sup> of the bolt of the whiffletree-coupling, the extremity of said shank being screw-threaded, and having applied to it a nut, D<sup>4</sup>. The head D<sup>5</sup> of the bolt is of cylindrical form, and has cylindrical recesses or cavities D<sup>6</sup> D<sup>6</sup> formed in its opposite sides for the reception of corresponding

cylindrical bosses, E' E', formed upon a clip-iron, E, and the web of metal between said recesses or concavities is provided with a central opening or perforation for the passage of a transverse bolt, F, which passes also through corresponding openings or perforations in the parts E' of the clip-iron, all as shown clearly in Fig. 2. The head D<sup>5</sup> of the coupling-bolt is further provided with a recess, D<sup>7</sup>, the walls d' d' of which constitute shoulders or stops for a cross-pin, E<sup>2</sup>, passing through a clip-iron to abut against, and thus serve to limit the swinging motion of the whiffletree. It will be noticed that this form of coupling, besides being very strong and secure, is so contrived as to permit the whiffletree to turn upon the coupling-bolt D<sup>3</sup> as a center, and also to a limited extent upon the transverse bolt F, thus producing a connection which, while sufficiently flexible, does not permit the whiffletree to turn on its longitudinal axis. The pin E<sup>2</sup>, apart from the function of keeping the ends of the clip in proper position, operates in connection with the shoulders or stops d' d' to limit the motion of the whiffletree upon the bolt F, and prevents its ends from striking and marring the evener, as will be readily understood.

Ordinarily in the construction of carriages leather or metal loops are secured to the splinter-bar near the ends of the same, and are made to embrace the evener, their object being to limit the swinging motion of the evener and prevent it from striking the splinter-bar, and at the same time bear a portion of the strain in turning the vehicle. There is, however, in such a construction no co-operation between the two loops—that is to say, either one or the other of the loops when the vehicle is turned is made to bear the whole strain, while the other one is practically for the time being inoperative. By the use of slotted metal bars or slides G (shown in Fig. 1) I have remedied this difficulty, and have provided for an equal support at each end of the evener simultaneously, so that neither the evener itself nor any of the connections will be unduly strained. Each bar or slide, it will be noted, is pivoted at one end by a bolt, *g*, to the evener, and is provided at its opposite end with an elongated slot, *g'*, through which extends a bolt, *g*<sup>2</sup>, se-



cured to the splinter-bar or the iron A' on the under side of the same, and the length of the slot is so proportioned that when in turning the evener the inner end of the slot of one of the bars or slides is against its bolt  $g^2$  the outer end of the slot in the bar or slide on the other side is against its corresponding bolt  $g^2$ , the result being that one bar or slide is put under compression, while the other one is put under tension, and the strain on the opposite ends of the evener is equalized.

The iron A' under the splinter-bar is formed with a bearing-block, A<sup>2</sup>, having a conical aperture, A<sup>3</sup>, formed in it, and the hounds B are provided with clips or ears B', which embrace said block A<sup>2</sup>, while a conical bolt, B<sup>3</sup>, passes through said ears and block, and is held by a nut, B<sup>4</sup>, applied to its threaded end. The perforation in one of the ears B' is made square, and is adapted to receive a corresponding squared portion, B<sup>5</sup>, formed on the bolt near its head, while the perforation in the other one of said ears is made to conform to the conical portion of the bolt.

Should the bolt at any time become at all loose from wear, it can be adjusted longitudinally and tightened by turning up the nut, and this tightening process can be repeated until the head of the bolt abuts against the ear, and then by removing the bolt and turning it before replacing it, so as to bring a new wearing-surface into play, it may be tightened and re-

tightened, as before, its life being thus prolonged, and the connection being at all times kept tight.

Having thus described my invention, what I claim as new is—

1. The combination, with the bolt of the whiffletree-coupling having the cylindrical head provided with recesses in its opposite sides and the recess in its end, of the clip-iron and securing-bolt constructed and applied as described, and the pin for co-operating with the walls or shoulders of the recess in the end of the whiffletree-bolt, substantially as described.

2. The combination, with the splinter-bar and evener, of the pivoted rigid bars or slides applied to the evener and splinter-bar on opposite sides of the pivot of the former and alternately put under compression and tension as the evener is turned to its extremes of movement, substantially as described.

3. The combination, with the splinter-bar and evener, of the slotted bars or guides pivoted to the evener and bolts passed through the slots of said bars or slides and into the splinter-bar or the iron secured thereto, substantially as described.

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Witnesses:

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