

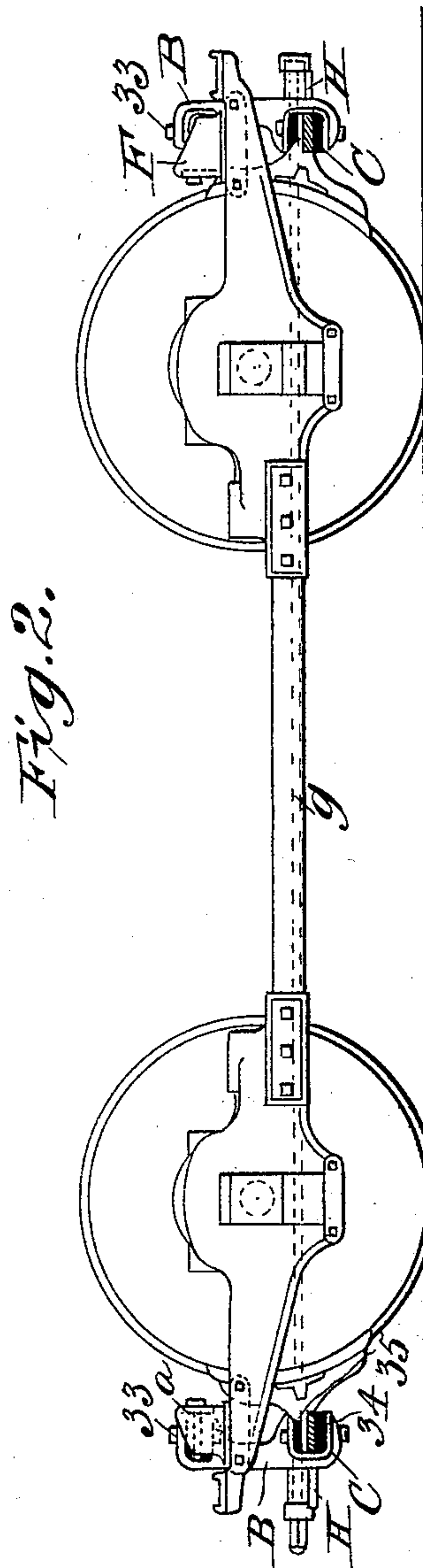
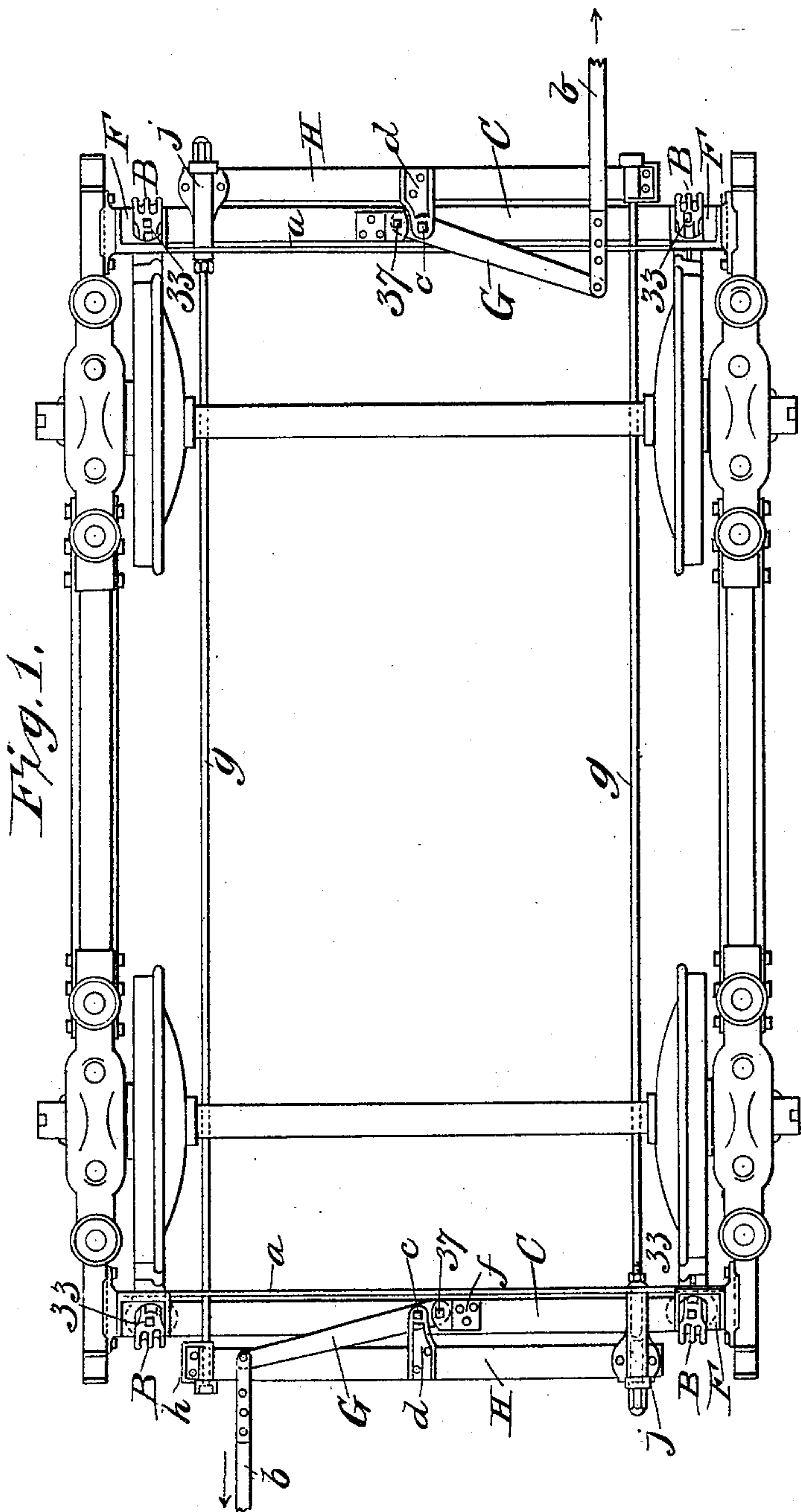
(No Model.)

3 Sheets—Sheet 1.

S. A. BEMIS & G. M. HOADLEY.
CAR BRAKE.

No. 497,514.

Patented May 16, 1893.



Witnesses:

Josh Blackwood
Albert B. Blackwood

Inventors,

Samuel A. Bemis,

Geo. M. Hoadley,

per Chapman & Co., - Attys.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

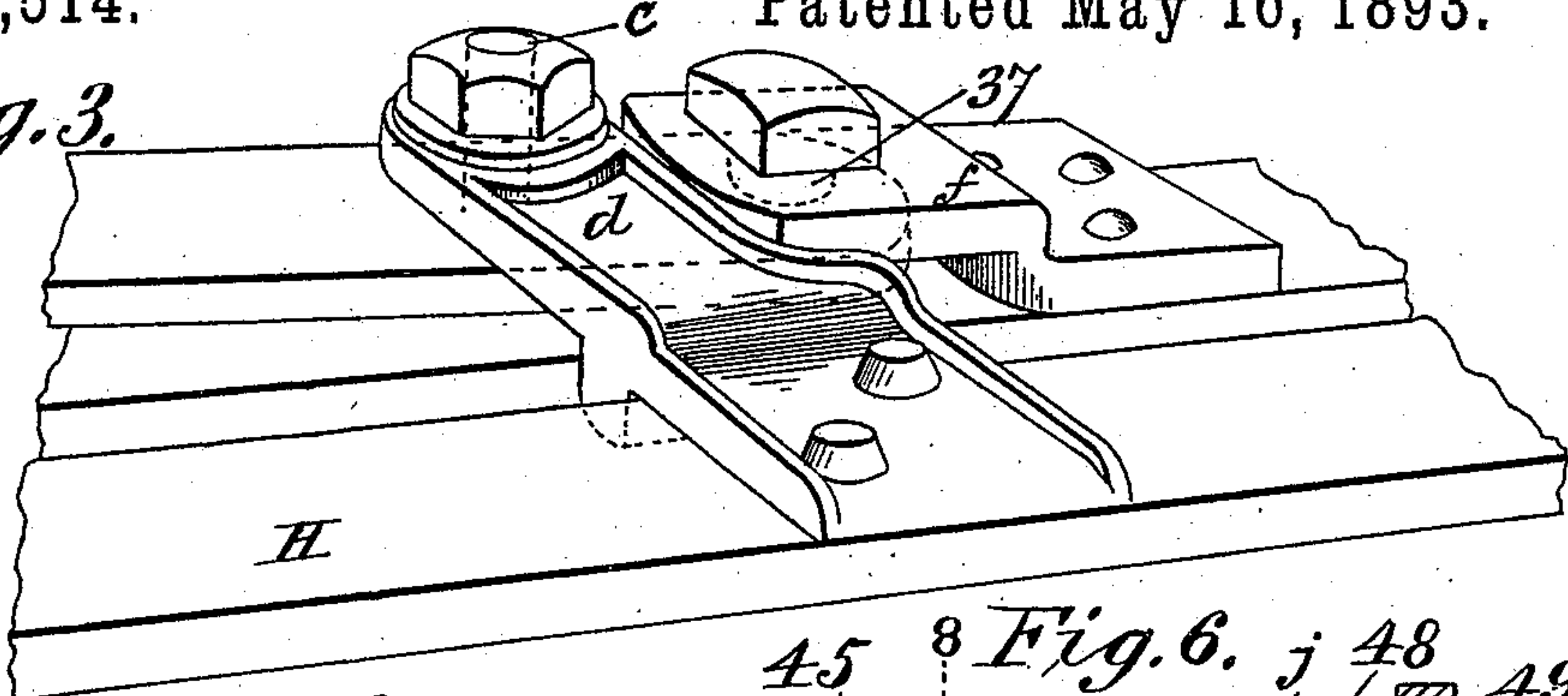


Fig. 4.

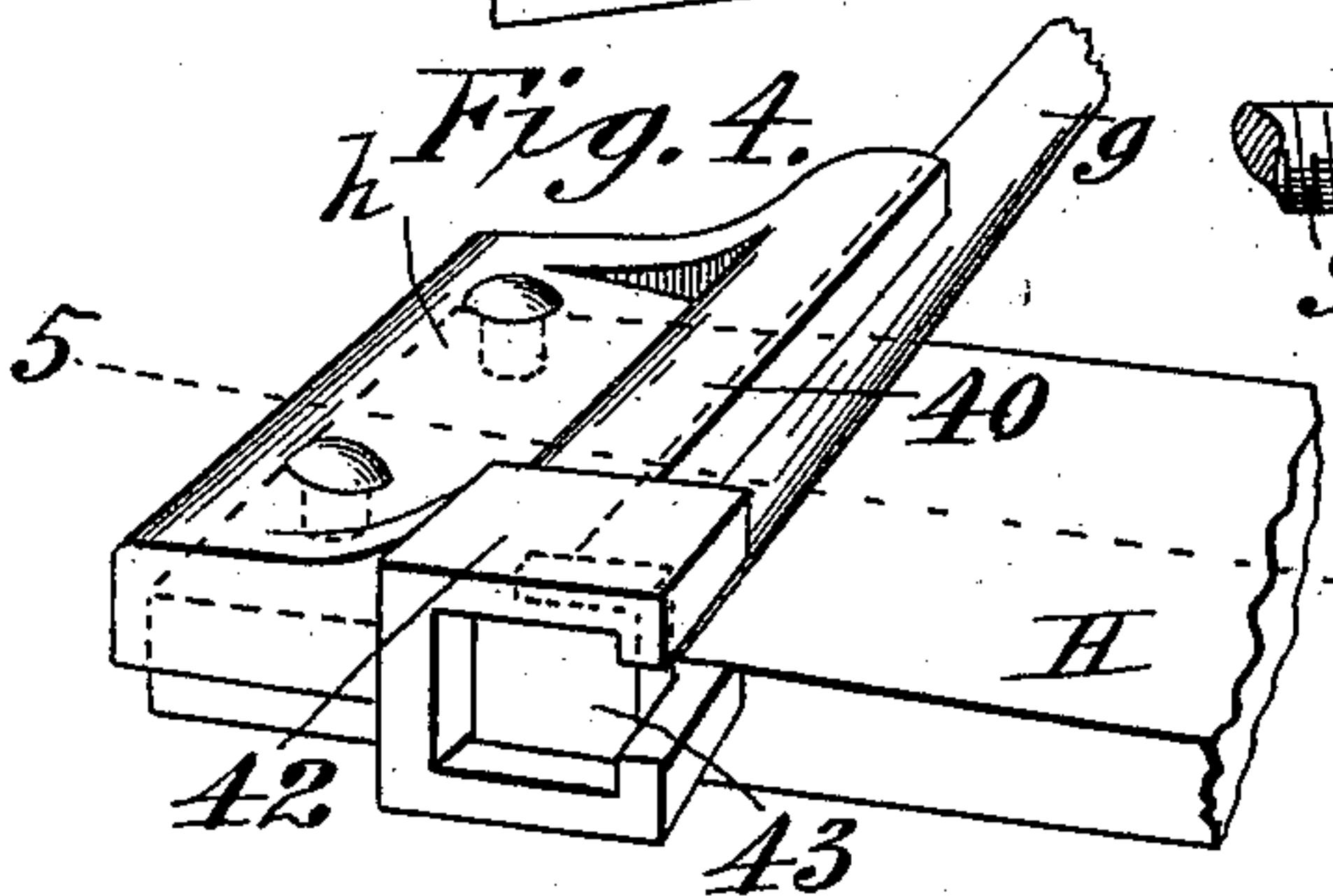


Fig. 5.

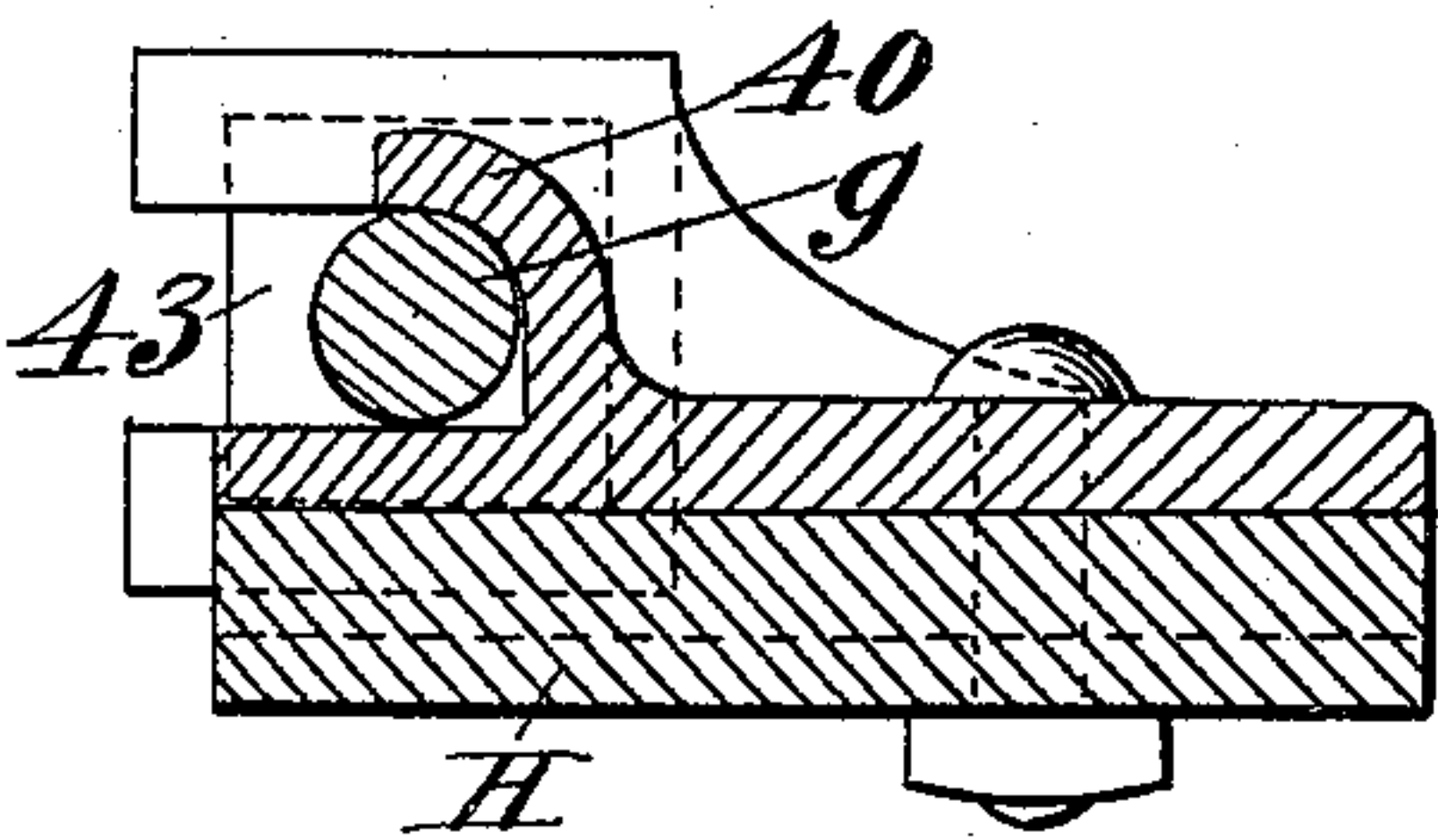


Fig. 9.

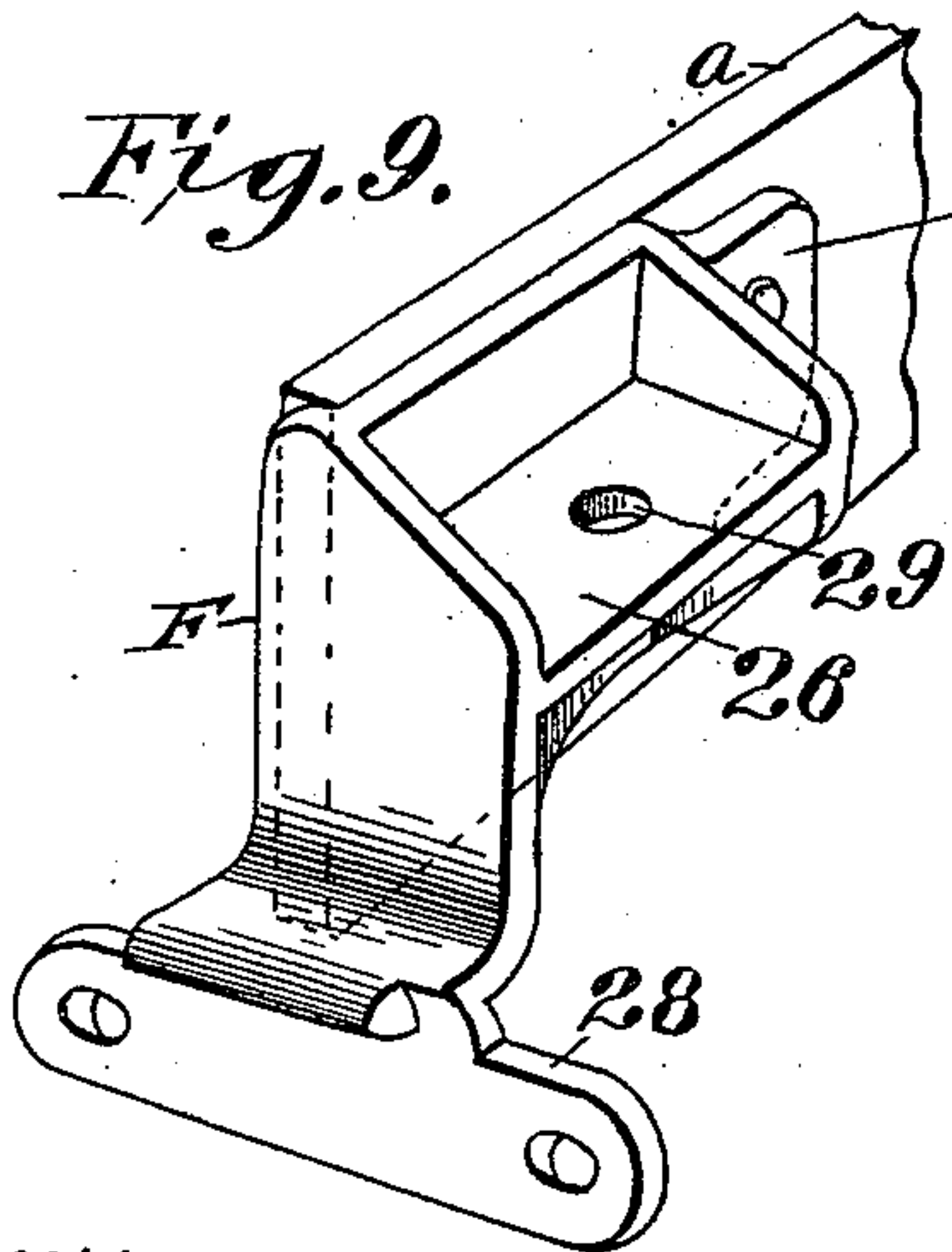


Fig. 10.

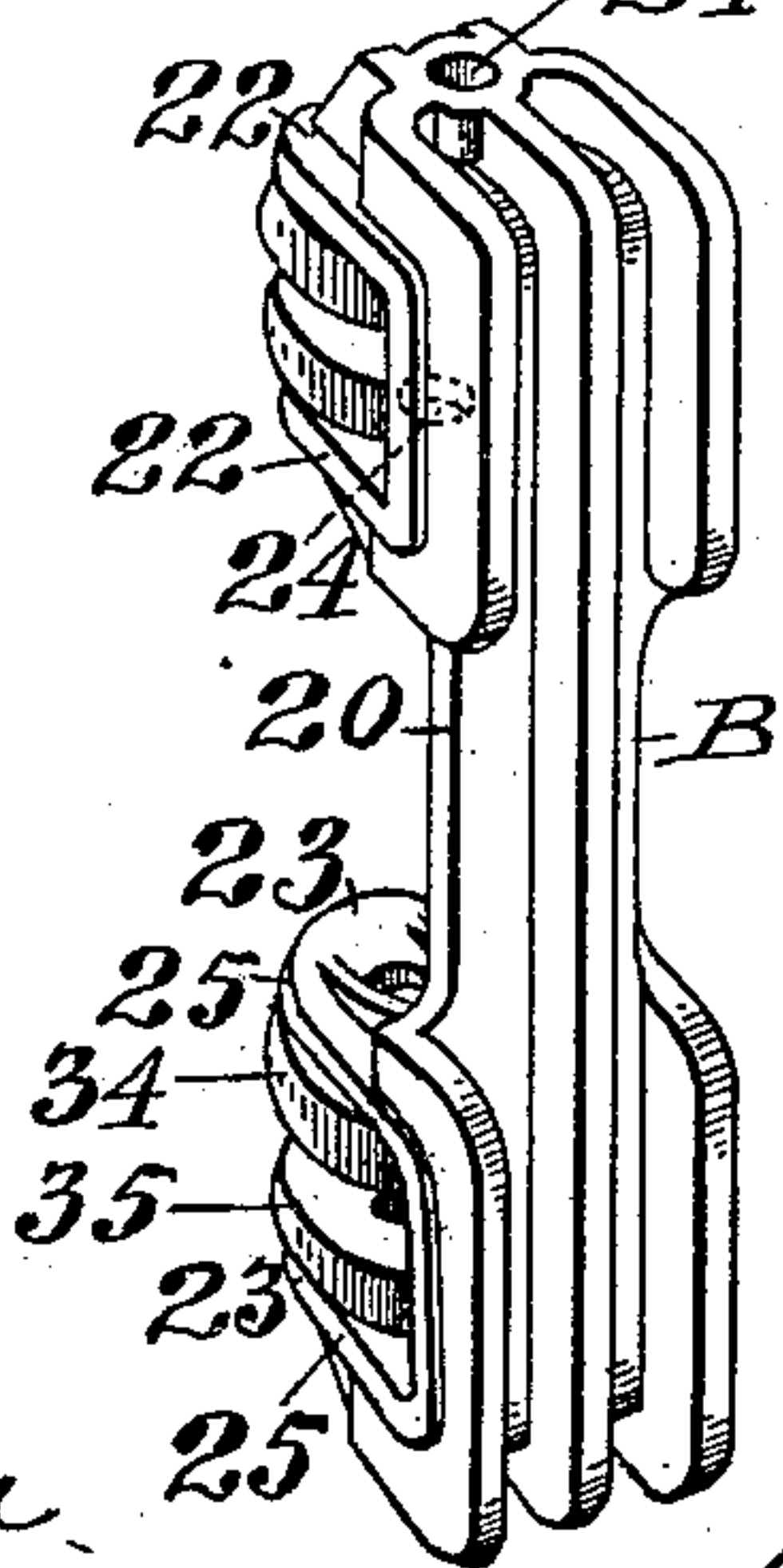
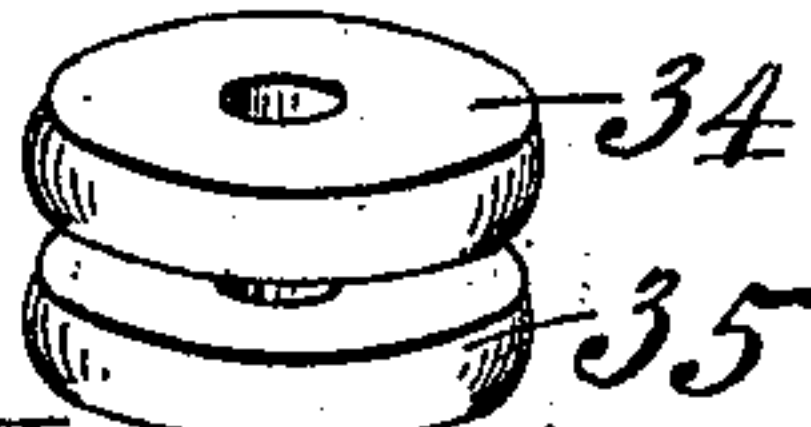
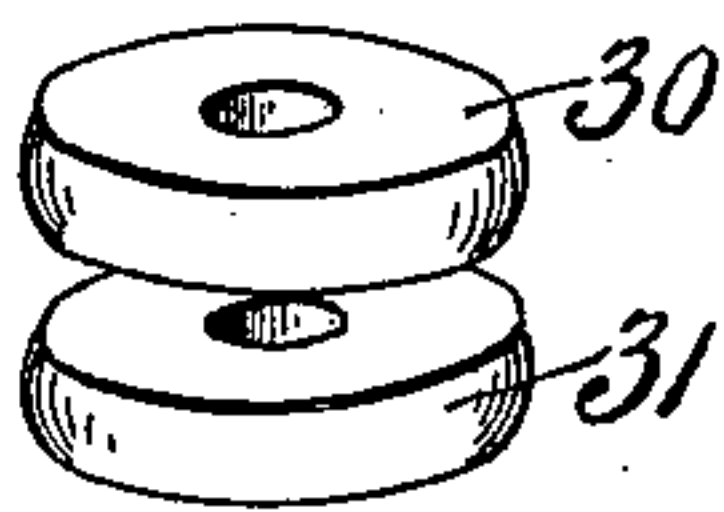


Fig. 11.



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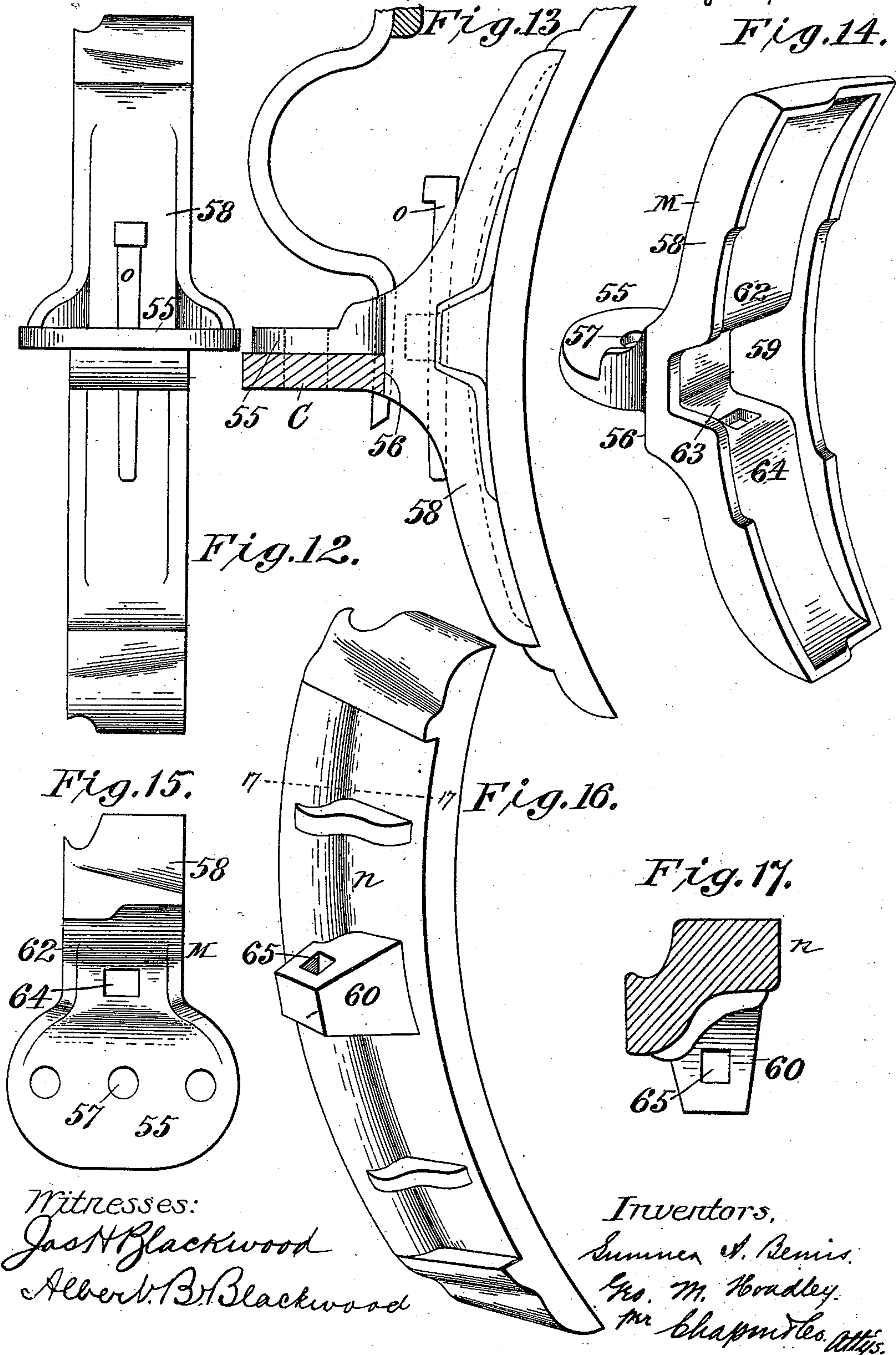
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

SUMNER A. BEMIS AND GEORGE M. HOADLEY, OF SPRINGFIELD,
MASSACHUSETTS.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 497,514, dated May 16, 1893.

Application filed February 13, 1893. Serial No. 462,123. (No model.)

To all whom it may concern:

Be it known that we, SUMNER A. BEMIS and GEORGE M. HOADLEY, citizens of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Brake Mechanism for Railway-Cars, of which the following is a specification.

This invention, for improvements in brake-mechanism for trucks of railway cars, particularly relates to the supports for the brake-beam; to the connection of this beam support on the truck-frame; to the connection of the brake-beam upon said support therefor; to the construction and combination of the brake-shoes and brake-beam the one with respect to the other, and to take-up or adjusting devices for the brake-rods.

To these ends the invention consists in parts constructed and combined, all substantially as will hereinafter fully appear and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a plan view, and Fig. 2 a side elevation, of a standard motor truck comprising the improved brake appliances. Fig. 3 is a perspective view on a larger scale showing the connections of the brake-lever with the brake-beam and the resistant and part having the fulcrum for the brake-levers. Fig. 4 is a perspective view showing the means of connection between the brake-rod and the bar of the brake mechanism to which it is connected, and Fig. 5 is a vertical sectional view through the same, taken on the line 5—5, Fig. 4. Fig. 6 is a longitudinal, sectional view of the take-up device for the brake-rod, Fig. 7 being a plan view of the under side of the socket and guide plate forming part of said take-up device, and Fig. 8 is a cross sectional view of the take-up device on line 8—8, Fig. 6. Fig. 9 is a perspective view of the part by which connection is formed between the brake-beam hanger and its support. Fig. 10 is a perspective view of the brake-beam hanger. Fig. 11 is a perspective view of the yielding mediums of supporting engagement between the hanger and the parts with which it has connection. Figs. 12 and 13 are respectively a rear edge view and a side view of the brake-

shoe and the holder by means of which it is supported on the brake-beam,—Fig. 14 being a perspective view of the latter part. Fig. 15 is a plan view of Fig. 12. Fig. 16 is a perspective view of the brake-shoe and Fig. 17 is a cross section thereof taken on the line 17—17, Fig. 16.

In the drawings, A represents the truck-frame which may be of any suitable form or construction, the one here shown comprising at the sides, the beam-connected yokes which are supported on the journal boxes for the wheels, and the transverse uniting end-beams or guides, *a, a*, and the hangers, B, B, (on which the brake-beams, C, C, are mounted) are supported at the corners of this truck-frame. The form of the hanger is shown in the perspective view, Fig. 10, and comprises a vertical member, 20, having at its upper and lower ends suitably separated and parallel rigid jaws or lugs, 22, 22, and 23, 23, each of which pairs of jaws has a vertically aligned aperture, 24 and 25. The connection which the hanger has with the cross-beam or hanger-support is, by its attachment with and through the medium of the part or casting, indicated at F in Fig. 9, the same comprising a horizontal flange, 26, with suitable connection lugs, 27, 28, whereby it may be rigidly bolted to the truck-frame and this casting, F, is suitably reinforced by strengthening webs, as apparent, and has, through the flange, 26, thereof, a vertical aperture 29. One of these castings, F, is provided at each corner of the truck. A cushion, preferably as a circular body of rubber, 30, bears upon the flange, 26, and another, 31, lies next to the under face of said flange, and these cushions, with the flange, are embraced by the jaws, 22, 22, of the hanger, and united by the bolt 33, which passes vertically through both of the jaws and intervening parts, and receives a suitable confining nut. The bolt has a diameter smaller than the hole through the flange, 26, or in any event is so applied, that there may be a slight fore-and-aft rocking of the hanger toward and away from the adjacent rim of the car-wheel,—the cushions, 30 and 31, yielding to permit such movements. The brake-beam, C, is extended transversely between the opposing pairs of hangers, under the cross-beams, *a, a*,

of the truck-frame and the ends thereof have connections with the lower jaws of the hangers by bolts, they also lying between the cushions 34 and 35, this connection which the brake-beam has with the lower jaws of the hanger, being similar to the form of connection between the upper jaws of the hanger and the supporting part therefor.

G G represent the brake-levers for operating each of the brake-beams, the same having connected thereto a draft-rod, *b*, for setting the brake; and each of these brake-levers is pivotally mounted, as at *c*, very near its inner end to a lug, *d*, of an auxiliary bar, H, which lies parallel with, and just outside of, the brake, B, while the extreme inner end of the brake-lever, as seen at 37, is pivotally connected to the step-formed lug, *f*, which is rigidly attached to the middle portion of the brake, B.

g g represent the brake-rods which extend lengthwise of the truck, and have connections at their ends with the auxiliary bars, H, H; one of the rods, *g*, has a fixed connection with one bar, H, and an adjustable connection with the other bar,—the fixed connection for one rod, as shown being at the end of the truck at which the adjustable connection for the other rod is had. The fixed connection between the rod, *g*, and the bar, H, is insured by the means illustrated in Figs. 4 and 5, (although other means may be substituted therefor) and in this connection it will be seen that there is a casting, *h*, which is adapted to be fitted upon and screwed or riveted to the end portion of the said bar, H, and having the lip, 40, to overlie a portion of the brake-rod which is just within its end, and this casting has, at the edge portion of the bar, a squared socket, 42, with a seat or shoulder whereby the head, 43, of the brake-rod may be inclosed and also have a bearing engagement therein. The connection which the brake-rod has at its other end with the bar, H, thereat, is particularly illustrated in Figs. 6, 7, and 8, in which there is shown to be secured to the bar a casting, J, which comprises suitable foot-lugs, 44, 44,—through which it is bolted to the bar, and steady-lugs, 46, 46, which lie against the opposite edge of the bar, and the longitudinally extended tube-like portion, 45, while, by preference, the bottom portion of this part, as shown, is cut away for the avoidance of unnecessary weight and for permitting as compact and close a disposition of this casting as may be relative to the bar. The outer end portion of this casting, J, is countersunk and within the casting is set an externally cylindrical part, 48, which is axially bored and screw-tapped and which has, near its outer end, the circular shoulder or flange, 49, to set within the countersunk seat therefor, and the extremity of this cylindrical part is of polygonal form so that by a wrench it may be rotated. The contiguous extremity of the brake-rod, *g*, has a screw-threaded engagement with the said bored and tapped part, 48, so that by

the rotation of the latter the brake-rod may be taken up for wear or adjusted in either direction longitudinally. The externally cylindrical part, 50, which is axially bored and screw-threaded and provided at its end with the polygonal enlargement 53, fulfills the function of a lock-nut for the adjusting device, 48, for,—after the adjustment has been effected, the part 50 is screwed endwise along the threaded rod to a hard bearing against the inner end of the adjusting nut, 48.

The brake-shoe is connected to the brake-beam, C, by the means which is fully and clearly shown in Sheet 3 of the drawings and with reference thereto *m* represents a casting or brake-shoe-holder which has a lug, 55, which rests upon the upper side of the brake-beam near its end opposite the wheel, the casting having the right-angular portion, 56, which has a steadying engagement with the edge of the beam and this lug is rigidly confined upon the beam by a bolt passing through the recess, 57, in the lug, and through the beam; the casting, *m*, also comprises a portion, 58, of a generally arc-form intermediate of the back of which the lug is extended and which has between its ends a socket, or quite deep recess, 59, in which the rearwardly extended lug, 60, of the brake-shoe end is inserted. The upper and lower walls, 62, 63, of this socket 59, are vertically perforated, as seen at 64, through which and also through the perforation, 65, in the brake-shoe lug, 60, the confining key, *o*, is passed for making the detachable connection between the shoe and fixture, *m*, of the brake-beam.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with a truck-frame, of a hanger, cushion-supported thereon and having a fore-and-aft swing and a brake-beam supported by the hanger, substantially as set forth.

2. The combination with a truck-frame, of a hanger thereon having a fore-and-aft swing, and a brake-beam cushion-supported upon the hanger and carrying a brake-shoe, substantially as set forth.

3. The combination with a truck-frame, having a lug or flange of the hanger having separated jaws, the cushions, 30, 31, and the uniting-bolt, and the brake-beam supported by a lower portion of the hanger, substantially as described.

4. The combination with a truck-frame, of a hanger supported thereon for a fore-and-aft movement and having at its lower portion separated rigid jaws, the brake-beam and upper and lower cushions between the jaws and a uniting bolt, substantially as described.

5. The combination with a truck-frame, of a hanger supported thereon for a fore-and-aft swinging movement, and having at its lower portion the jaws, 23, 23, the brake-beam, a brake-shoe-holder with a lug or flange, 55, the cushions, 34 and 35, and the bolt passing

through the hanger-jaws, the cushions, said brake-beam and the holder-flange, substantially as described.

6. The combination with the brake-beam of the brake-shoe-holder comprising the flange 55, with the shoulder 56, and the bolt passed through the flange and beam, substantially as described.

7. The brake-shoe-holder comprising the arc-formed body having the rearwardly extended socket, 59, with the apertures, 64, 64, through the upper and lower walls thereof, and the flange, 57, rearwardly extended intermediate between the ends of the holder and having the vertical aperture, 57, as set forth.

8. The combination with the headed brake-rod, and bar with which the rod by one end has a non-adjustable connection of the casting, *h*, comprising a base by which it is secured to the bar, and having the socket, 42, substantially as described.

9. The combination with the bar, *H*, and casting, *a*, comprising socket 42, and lip 40, of the rod, *g*, with the head, 43, seated in said socket, substantially as described.

10. The combination with the brake-rod and the bar or part to which it is connected, of the nut, 48, turning with relation to said bar, the rod screw-engaging the nut, and a lock-nut on the rod, adapted to be screwed

along the latter to bear against the adjusting nut, substantially as described.

11. The combination with the brake-rod and a bar with which it has by one end an engagement through a casting thereon which has a counterbored socket of the externally cylindrical nut rotatable in the casting having the shoulder engagement in said socket and having a screw-threaded engagement with the brake-rod, substantially as described.

12. The combination with the bar, *H*, having secured thereto the casting *J*, comprising the part cylindrical portion, 45, the lugs, 44, 44, the depending steady-lugs, 46, 46, and having the countersunk socket, of the nut, 48, with flange, 49, and lock-nut, 50, screw-engaging the rod and bearing endwise against the nut, 48, all as described and shown.

13. The combination with the truck-frame, of the casting, *F*, having the angularly arranged lugs, 27, 28, by which it is connected to the frame and having the flange, 26, the hanger, *B*, with upper rigid jaws, 22, 22, and the cushions 30, 31, and vertically applied uniting bolt, substantially as described.

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