

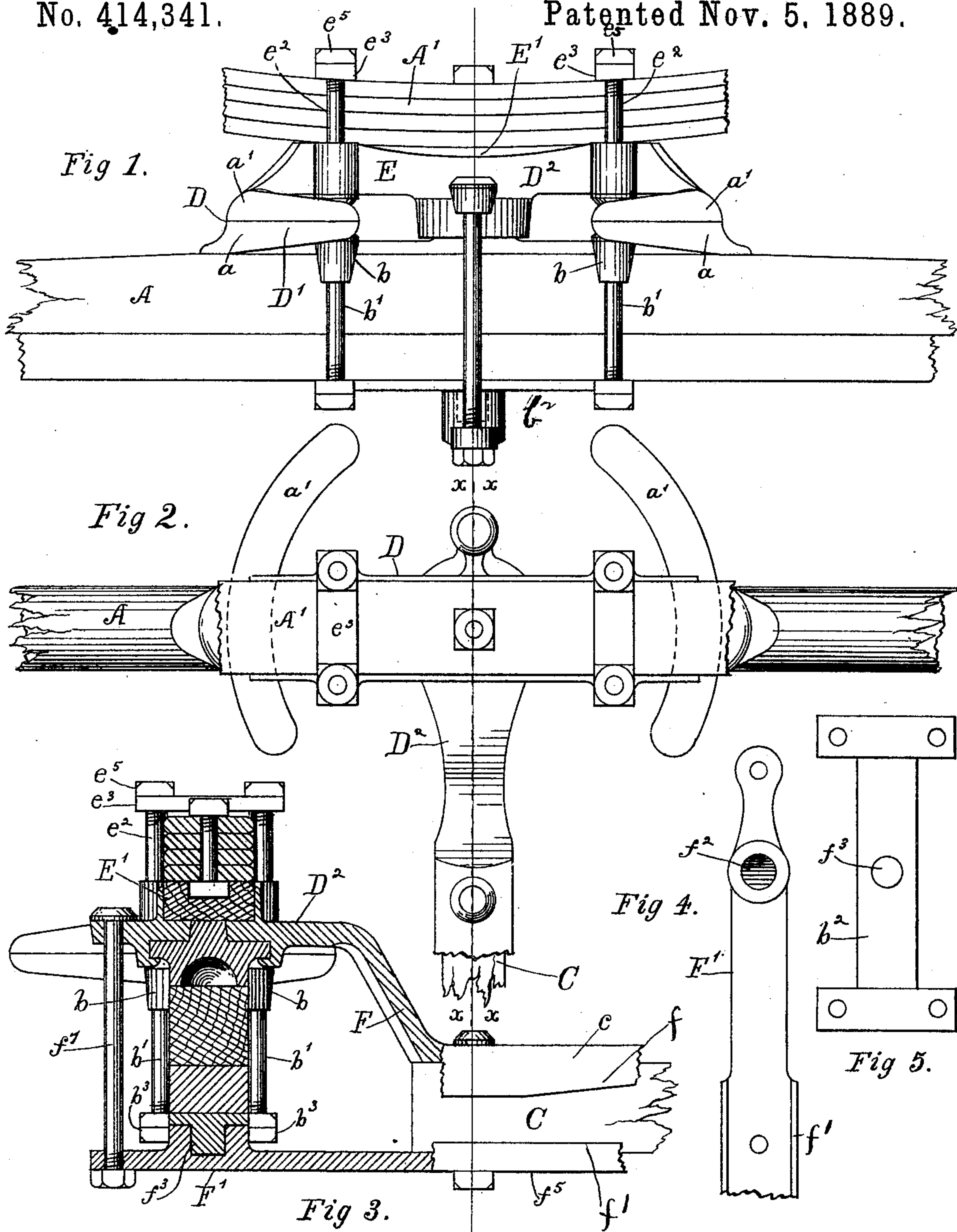
(No Model.)

2 Sheets—Sheet 1.

E. I. TENNANT.
CARRIAGE COUPLING.

No. 414,341.

Patented Nov. 5, 1889.



Witnesses
Isaiah Richards
Chas. J. Welch.

Inventor
Edward I. Tennant
By *Paul A. O'Leary*

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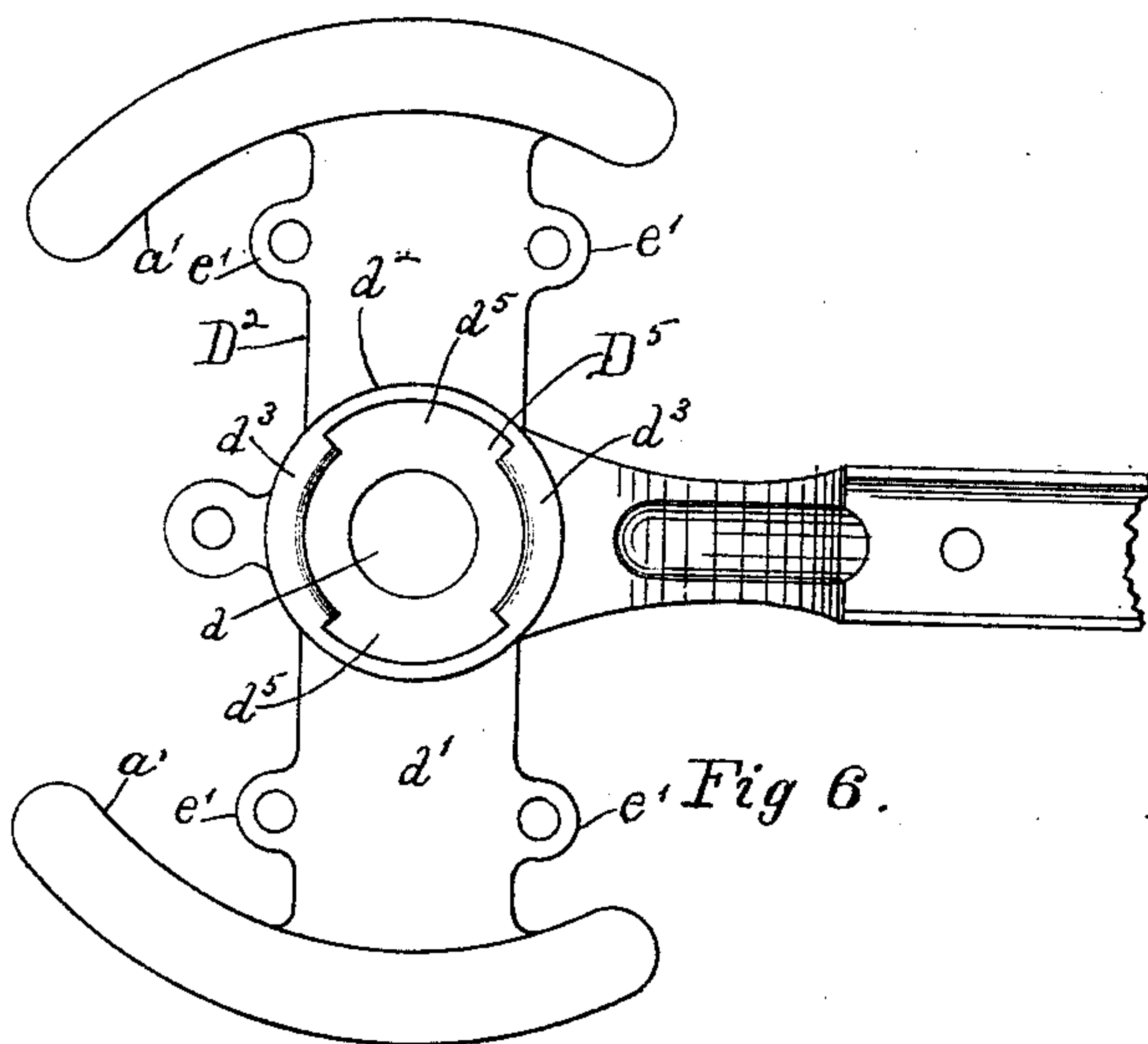


Fig 6.

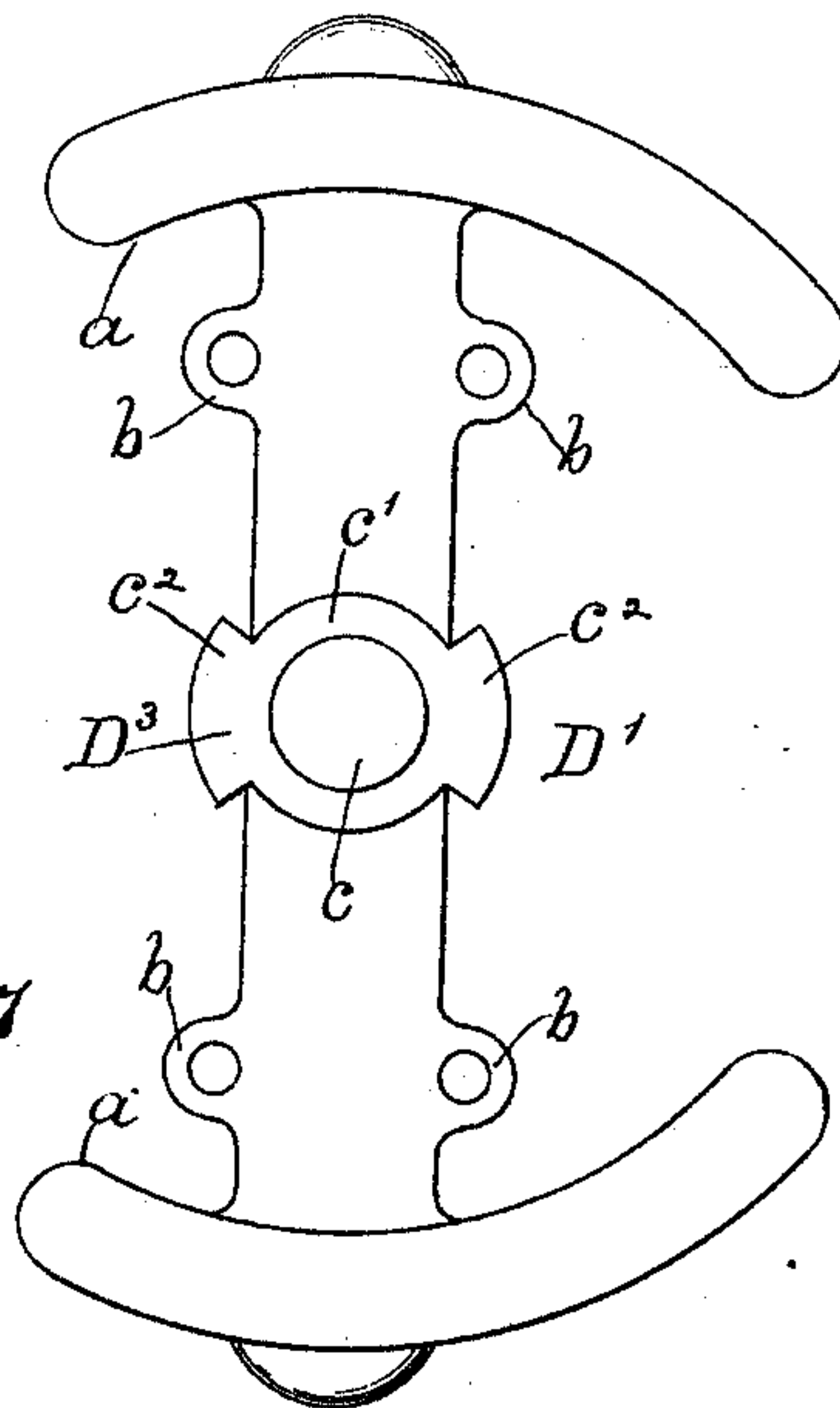


Fig 7.

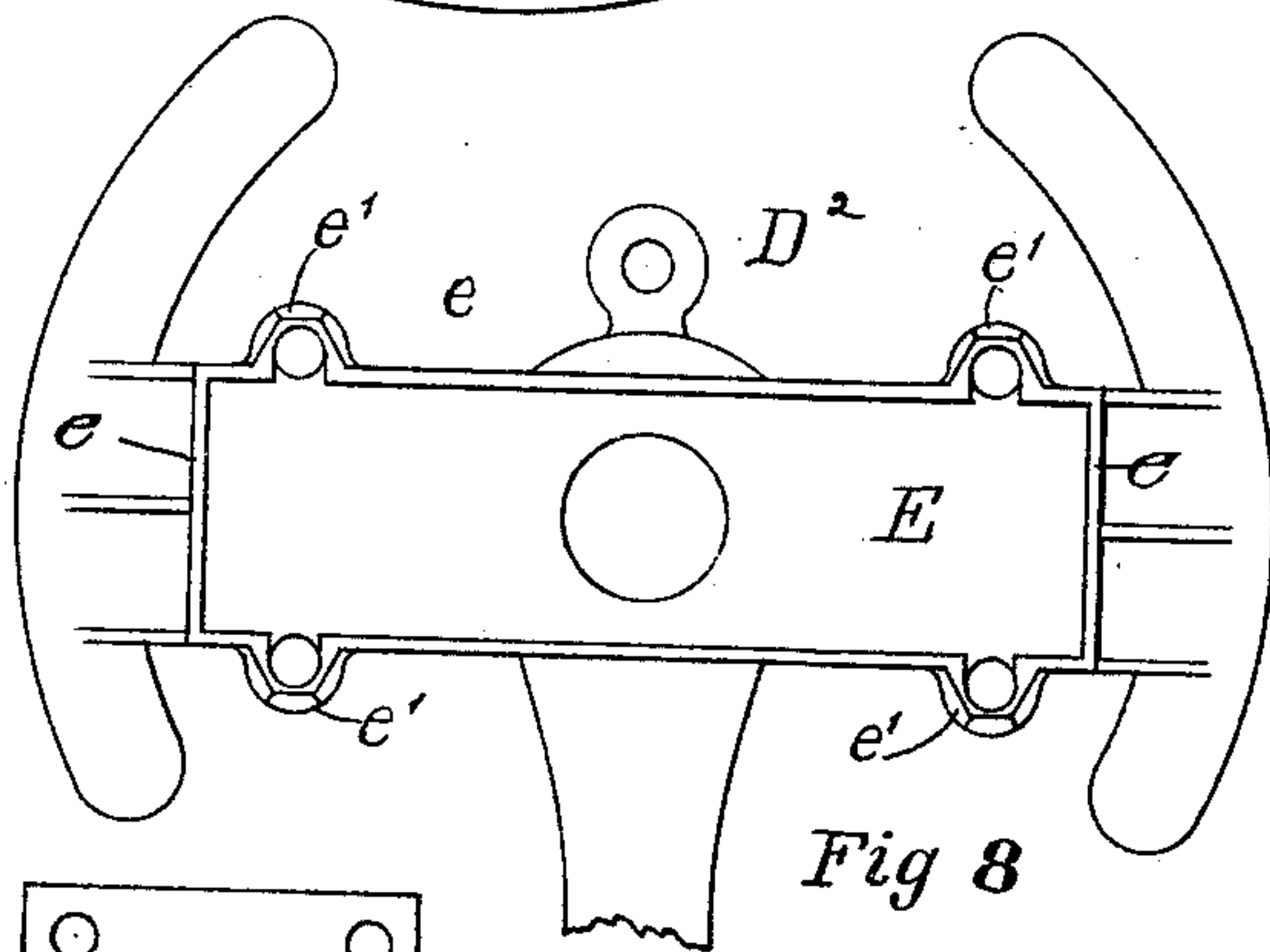


Fig 8.

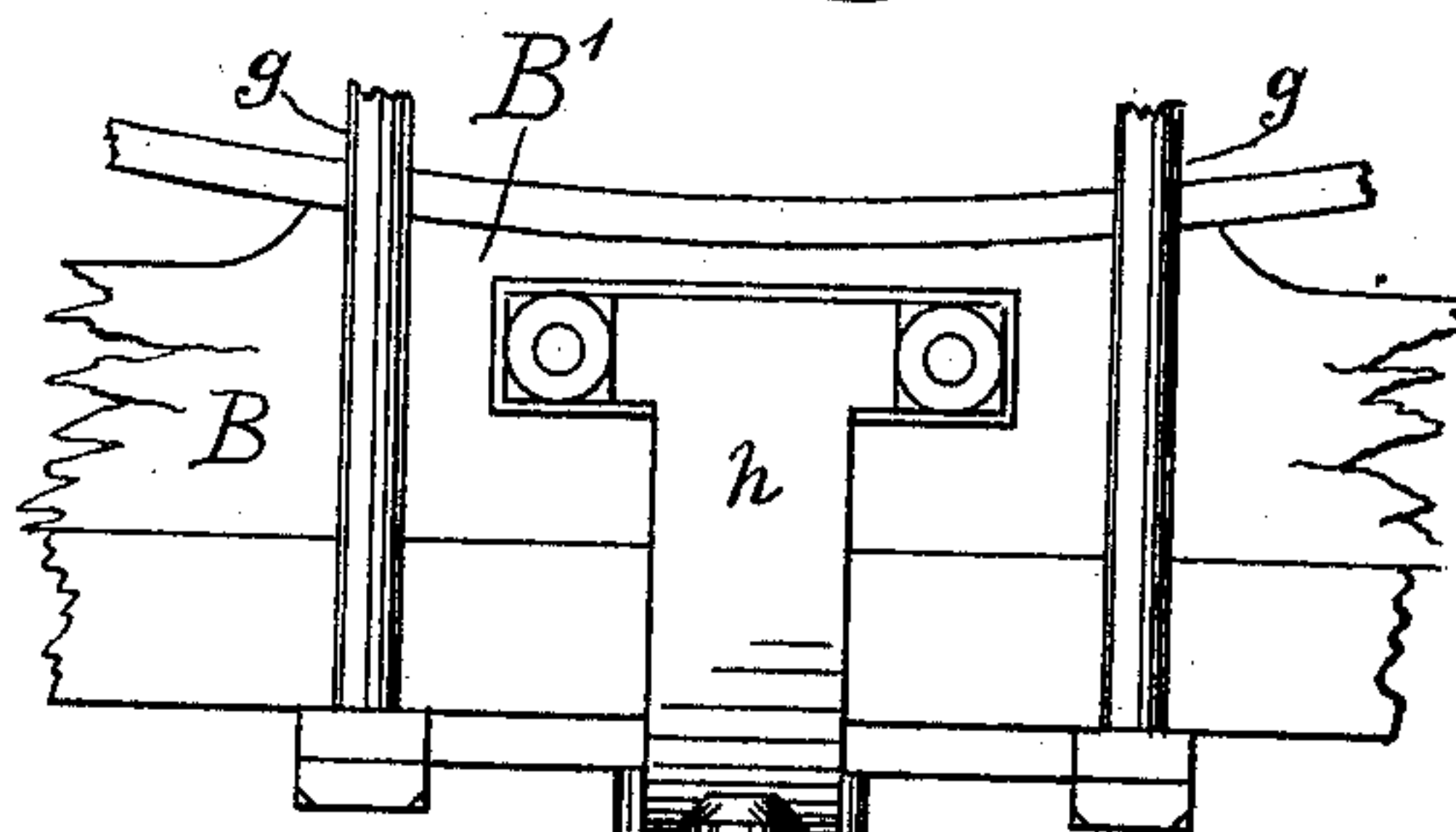


Fig 9.

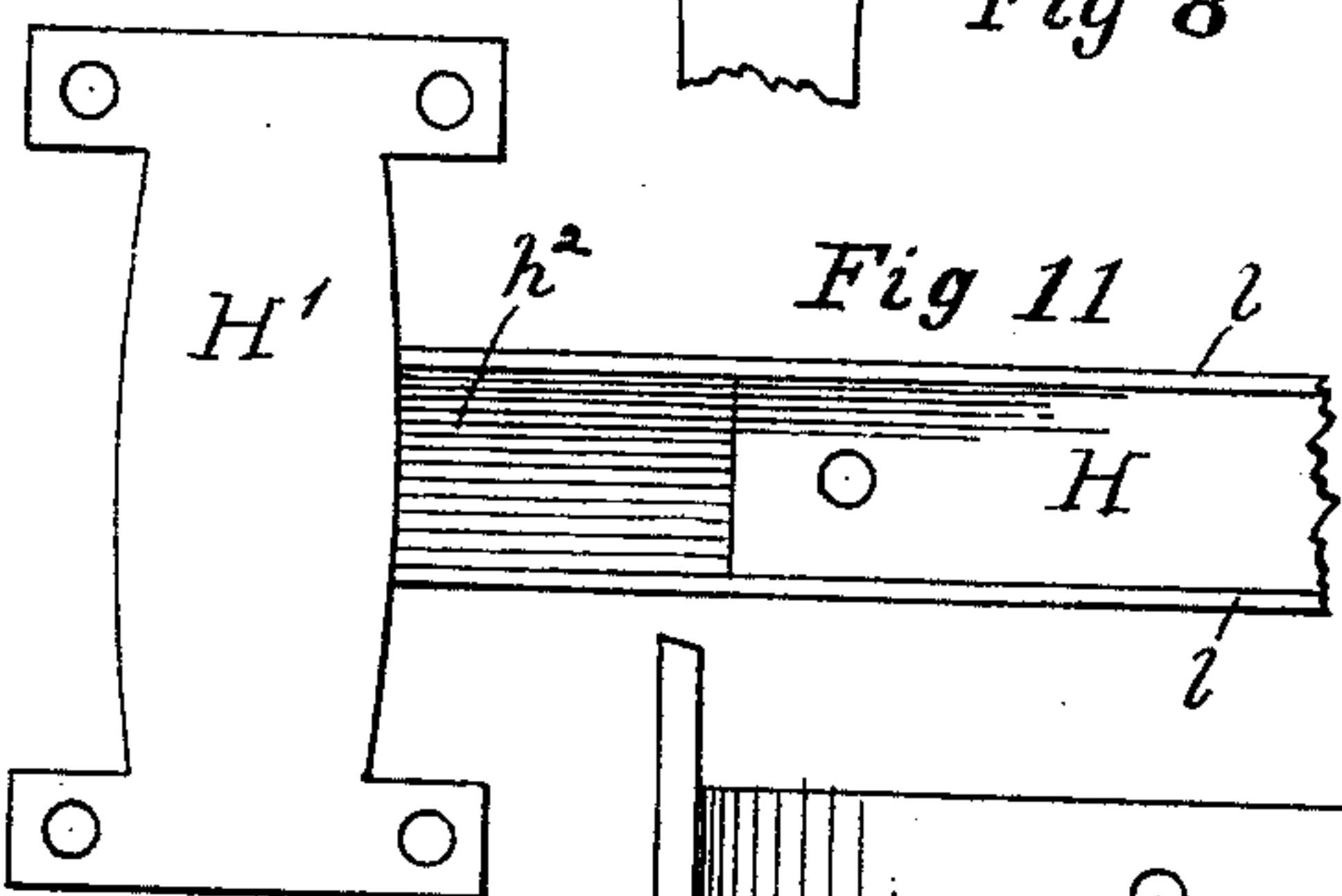


Fig 11.

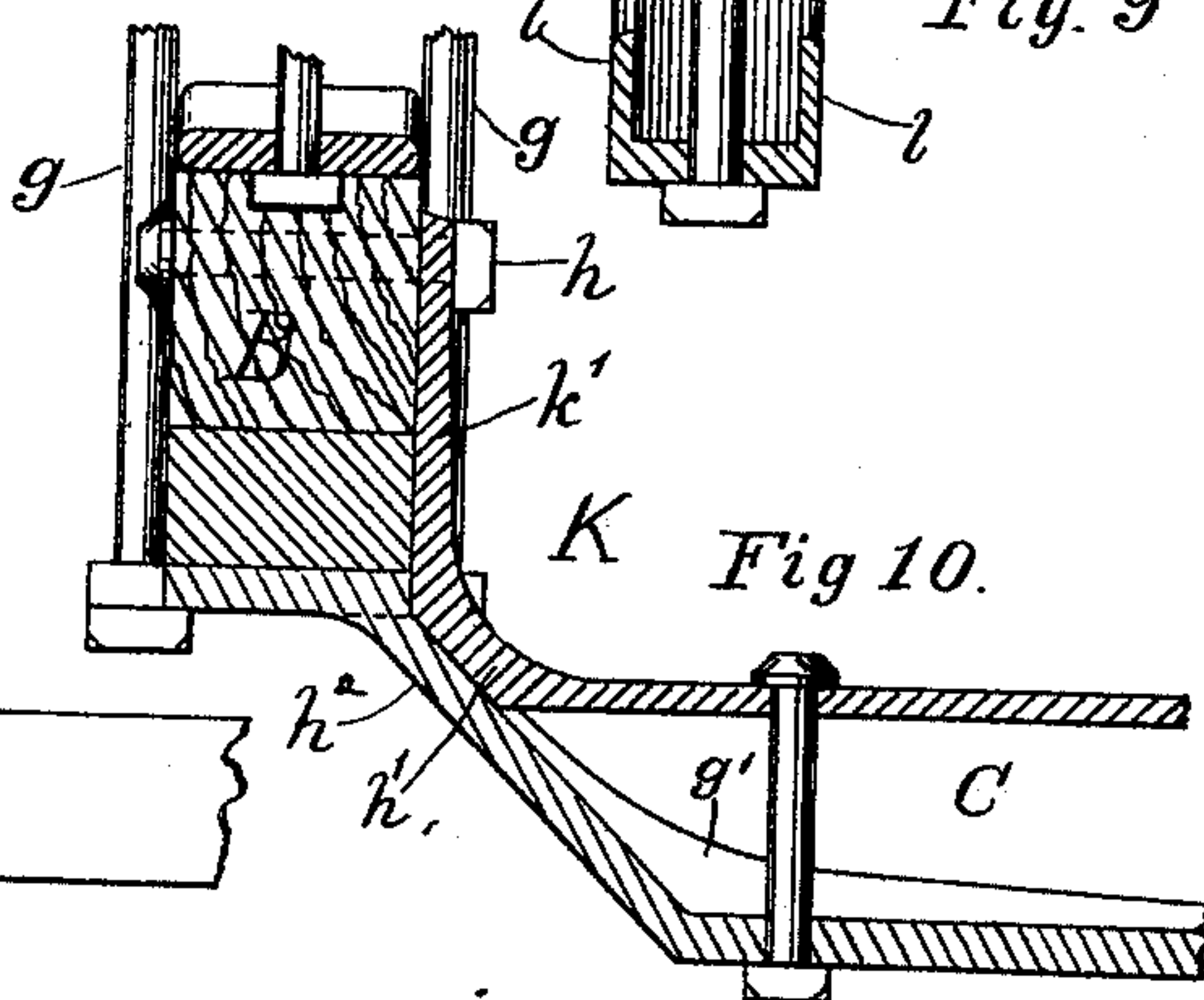


Fig 10.

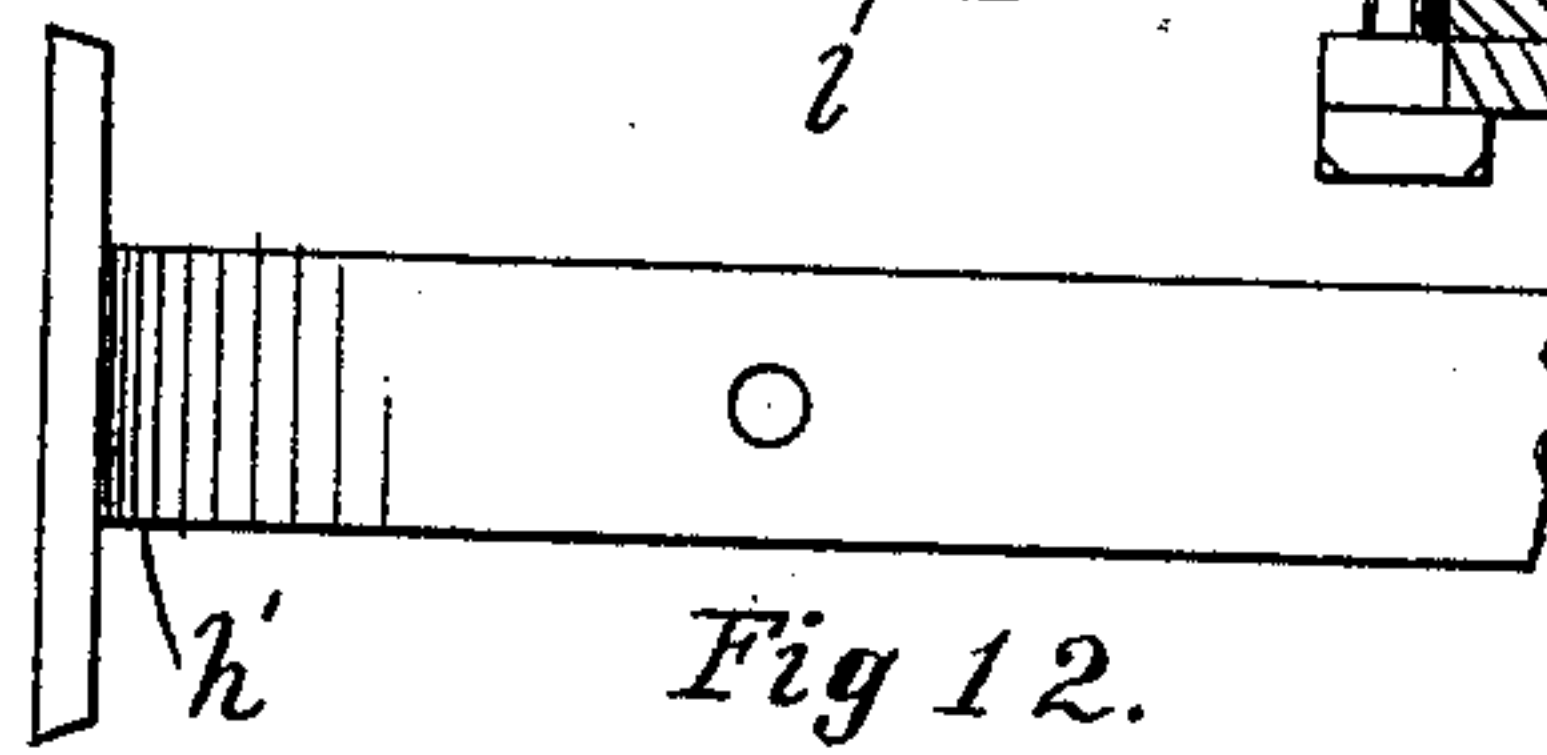


Fig 12.

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UNITED STATES PATENT OFFICE.

EDWARD I. TENNANT, OF SPRINGFIELD, OHIO.

CARRIAGE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 414,341, dated November 5, 1889.

Application filed February 7, 1889. Serial No. 299,051. (No model.)

To all whom it may concern:

Be it known that I, EDWARD I. TENNANT, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Carriage-Couplings, of which the following is a specification.

My invention relates to improvements in carriage-couplings.

10 The object of my invention is to provide a coupling for carriages the parts of which may readily be connected together and when properly in place are firmly locked, so as to be held securely against accidental displacement, the construction being such that the
15 couplings may be applied to carriages or vehicles of any variety.

My invention consists in improved constructions for the front and rear portions of
20 the coupling by which the reach is secured to the respective axles and the front axle attached to the body of the vehicle, so as to permit the necessary movement in turning.

My invention further consists in the constructions and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation view of the front portion of the
30 coupling with the fifth-wheel attachment. Fig. 2 is a plan view of the same. Fig. 3 is a partial sectional view taken on the line X X in Fig. 2. Figs. 4 and 5 are detail views of the lower yoke-plate and connecting-bar.
35 Figs. 6, 7, and 8 are plan views, respectively, of the front coupling and fifth-wheel attached thereto. Fig. 9 is an elevation view of the rear portion of the coupling, showing the same attached to the rear axle. Fig. 10 is a
40 sectional view of the same. Figs. 11 and 12 are plan views, respectively, of the top and bottom connecting-pieces at the rear portion of the coupling.

Like parts are represented by similar letters of reference throughout the several views.

In the said drawings, A represents the front axle, and B the rear axle. C is the reach which connects the same.

A' and B' represent the springs on the respective axles.

D is the fifth-wheel, which forms a part of

the front portion of the coupling. This fifth-wheel is composed of the upper and lower fifth-wheel plates D' and D², each provided with segments *a a' a'*, which form the fifth-wheel circle. The lower fifth-wheel plate D' is adapted to rest on the top of the front axle A, and is provided on either side with projecting lugs or ears *b*, through which pass securing-bolts *b'*, projecting at the lower end through the yoke-bar *b²*, which rests on the bottom of the axle, the said bolts being provided with suitable nuts *b³*, for drawing the parts tightly together. At the center of the lower fifth-wheel plate D' is a bearing D³, having a central projecting portion *c* and an outer or bearing surface *c'*, the said bearing-surface *c'* being extended at either side to form locking-plates *c² c²*. The upper fifth-wheel plate D² is provided with a central bearing D⁵, having a central opening *d* and an annular flange *d'*, an inner bearing-surface *d²*, and laterally-projecting flanges *d³*. These laterally-projecting flanges *d³* extend inwardly from the annular flange *d'*, and are cut away on either side to form openings *d⁵*, adapted to receive the locking-plates *c² c²* of the lower fifth-wheel plate D'. The central bearing D³ of the lower fifth-wheel plate D' has the locking-plates *c² c²* extending transversely across said plate, while the upper plate has the flanged openings *d⁵* longitudinal with the said plate.

In placing the parts together the plates are turned at right angles to their normal position, when the locking-plates *c²* will pass through the openings *d⁵*, permitting the central projection *c* to enter the central opening *d* and the bearing-surface *c'* to come against the bearing-surface *d²*. When the plates are turned to their normal position, the locking-plates *c²* come under the lateral flanges *d³*, and the parts are thus held firmly together.

To provide for securing the spring to the upper fifth-wheel plate and at the same time adapt the said plate to the use of springs of different shape and size, I provide at the top of said upper plate a spring-bearing pocket E, having upwardly-projecting side and end flanges *e*, adapted to receive the spring-bearing E'. This spring-bearing E' is preferably made of wood, and is adapted to fit snugly in

the pocket E, and is held in position by the said flanges *e*. The fifth-wheel plate D² is provided with lugs *e'* on either side of the pocket E, adapted to receive suitable fastening-bolts *e²*, which pass through the same, and are provided at the top with the usual yoke-pieces *e³* and nuts *e⁵*, to secure the spring in place on the fifth-wheel and at the same time hold the spring-bearing firmly in place in the pocket E. By this construction it will be seen that by changing the spring-bearing E' to suit the curve of the spring the same fifth-wheel may be used with any size or shape of spring desired.

Extending backwardly and downwardly from the upper fifth-wheel plate D² and cast rigidly therewith is an upper connecting-piece F, provided at the lower end with side flanges *f*, which extend downwardly on each side of the reach C.

F' is a lower connecting-piece, also provided with small flanges *f'* to receive the reach C. The lower connecting-piece F' is provided at the front end with a socket *f²*, adapted to fit over a projection or stud *f³* on the yoke-plate *b²*. The upper and lower connecting-pieces F and F' are bolted to the reach C by suitable bolts *f⁵*, and are also connected together at the forward end by a safety-bolt *f⁷*, which serves to hold rigidly together the parts, and furnishes means for taking up any wear in the fifth-wheel or lower connecting-piece.

In coupling the reach C to the rear axle, I use a lower connecting-piece H, extended backwardly and upwardly and formed into the yoke-plate H', adapted to rest on the bottom of the axle and receive the connecting-bolts *g*, which secure the spring B' in place. The upper connecting-plate K is provided with an upwardly and rearwardly extending portion K', which rests against the front of the axle and is secured thereto by a suitable fastening-bolt *h*. The upper connecting-plate K is formed with a bearing-seat *h'*, adapted to rest against a similar bearing-surface *h²* on the lower coupling-plate. These connecting-plates H K are bolted firmly to the reach C, thus forming an angle or corner connection which rests against the front and bottom of the rear axle, respectively, and holds the same firmly against torsional movement, while the reach C is dropped below the plane of said axle. The lower rear connecting-plate H is preferably formed with small side flanges *l*, adapted to fit on either side of the reach C, and thus more firmly hold the same in position and prevent breakage of said plate H.

It will be seen that by the construction above described a carriage-coupling is formed the parts of which are readily detachable, and at the same time when secured together are held securely in position by having the annular flange *d'* on the upper plate adapted to encircle the bearing-surface *c'*. On the lower fifth-wheel plate I have a locking device between the said parts, which is entirely shield-

ed from dirt and foreign substances. The respective locking portions being placed at right angles to each other, it will be seen that when the fifth-wheel is in place in its normal position and the wheels of the vehicle on the axle it will be impossible for the parts to become detached.

The projecting ears *b* on the lower fifth-wheel plate I extend downwardly below the bottom of said plate, so as to engage the axle A on either side, as shown in Figs. 1 and 3, and thus more firmly secure the fifth-wheel to the axle and relieve the fastening-bolts *b'* of any undue strain thereon.

Having thus described my invention, I claim—

1. The combination, with the reach of a vehicle, of the upper and lower interlocking fifth-wheel plates, as described, said upper plate being provided with a backwardly and downwardly extending connection secured to said reach, the axle to which the lower plate is secured, a yoke-plate at the bottom of said axle secured to said lower plate, a lower connection pivoted to said yoke-plate concentric with the center of said fifth-wheel plates, said lower connection being attached to the upper connection through the reach in the rear of the axle and to the upper plate by a safety-bolt in the front of the axle, substantially as specified.

2. The combination, with a fifth-wheel composed of interlocking parts, as described, of a rear projecting connecting-piece having side flanges adapted to be attached to the vehicle-reach, a lower connecting-piece also attached to the said reach, a yoke-piece at the bottom of said axle connected to the lower part of said fifth-wheel, a pocket in the upper part of said fifth-wheel, an independent spring-bearing in the said pocket, and a safety-bolt connecting the upper and lower connecting-pieces, substantially as specified.

3. The combination, with the reach of a vehicle, of the upper and lower forward connecting-pieces, each swiveled to the axle and connected together at the front and rear of said axle, as described, the rear connecting-pieces adapted to bolt to the top and bottom of the reach, and having bearing-faces to come together, as described, the upper connecting-piece being bolted to the front of said axle and the lower piece to the bottom of said axle, substantially as and for the purpose set forth.

4. The combination, with a fifth-wheel having the upper and lower plates, as described, and a bearing-surface having upwardly-projecting side and end flanges about the same adapted to form a pocket on said upper plate, of an independent spring-bearing to fit in said pocket, substantially as specified.

5. The combination, with a reach of a vehicle and a fifth-wheel at one end thereof, of rear connecting-pieces at the opposite end of said reach, said rear connecting-pieces being

adapted to bolt to the top and bottom of the reach, respectively, and provided with bearing-faces to come together, as described, the upper connecting-piece being bolted to the
5 front of said axle and the bottom piece to the bottom of said axle, substantially as set forth.

In testimony whereof I have hereunto set my hand this 4th day of February, A. D. 1889.

EDWARD I. TENNANT.

Witnesses:

CHAS. S. WELCH,
ISAIAH RICHARDS.