

(No Model.)

R. MULHOLLAND.

VEHICLE GEAR IRON.

No. 375,765.

Patented Jan. 3, 1888.

Fig. 1.

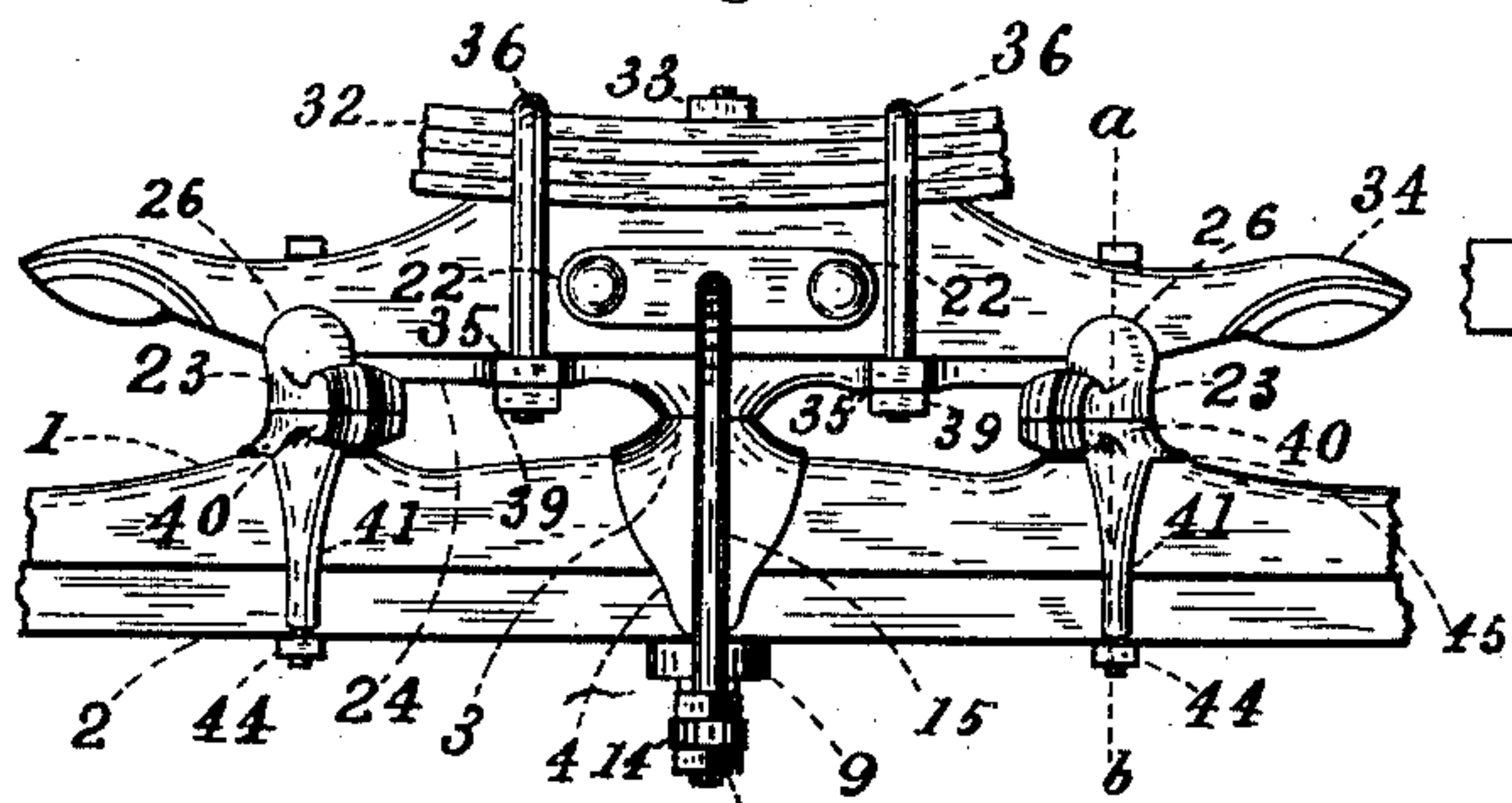


Fig. 2.

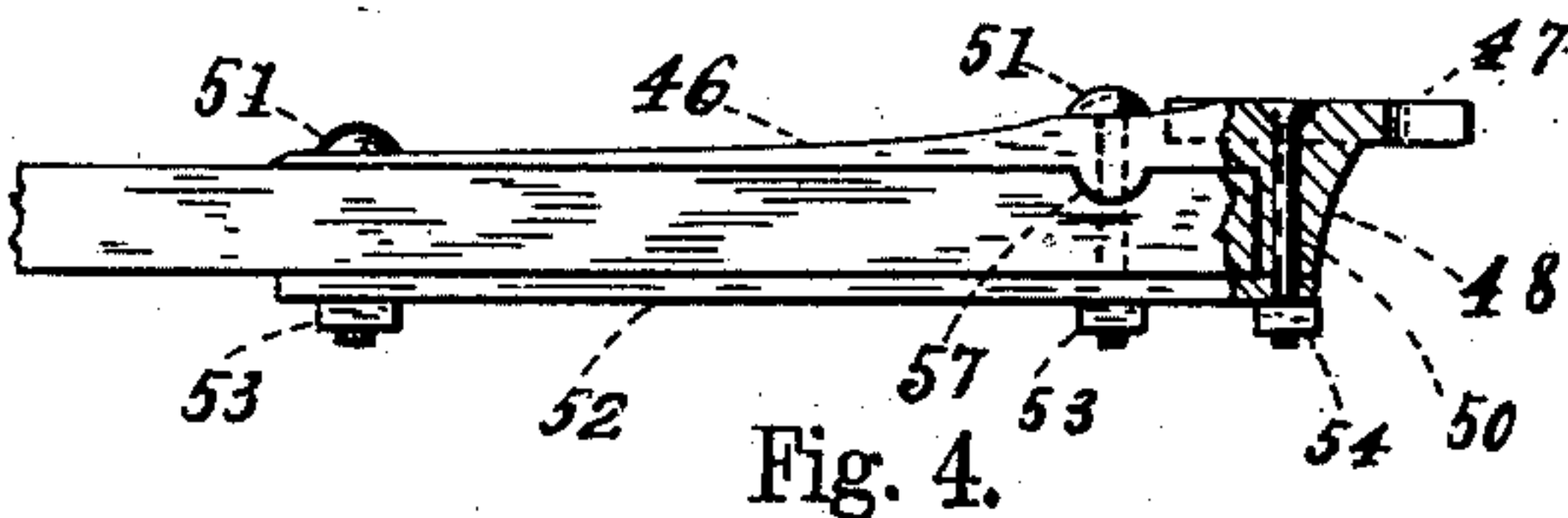


Fig. 4.

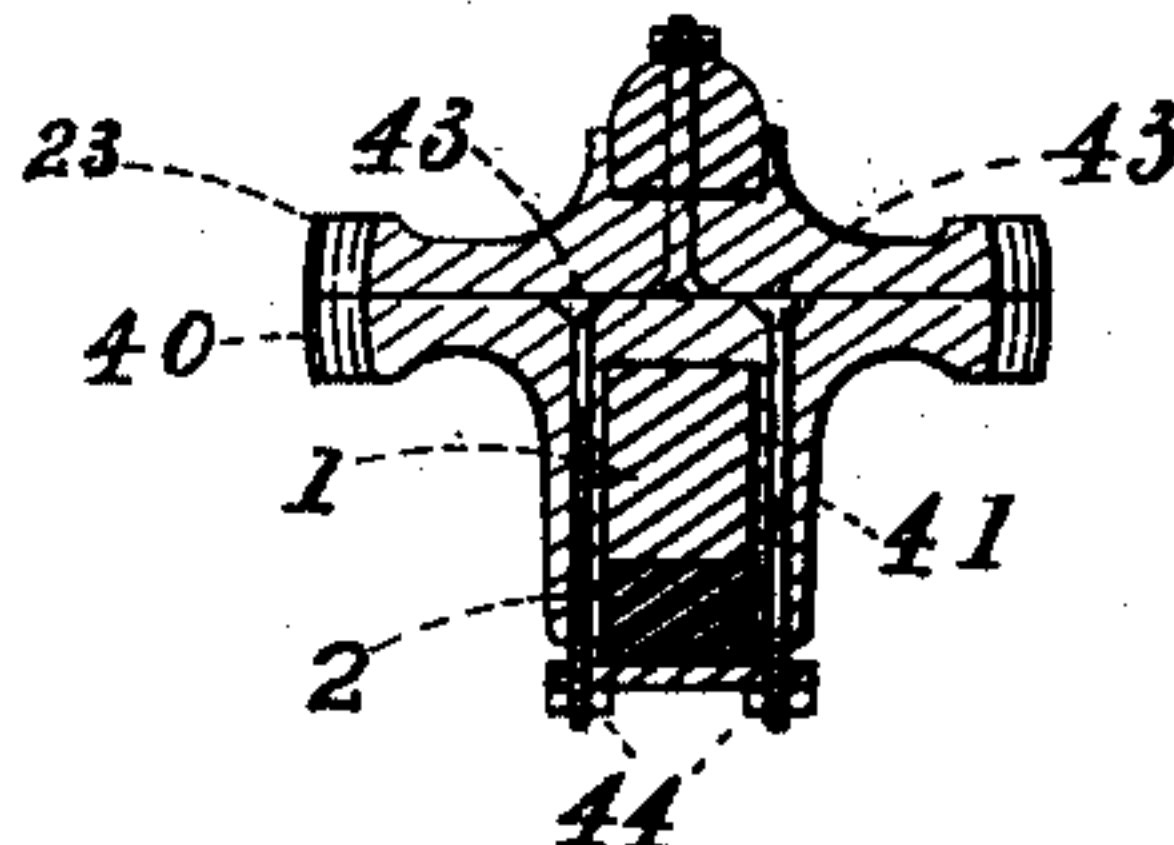


Fig. 5.

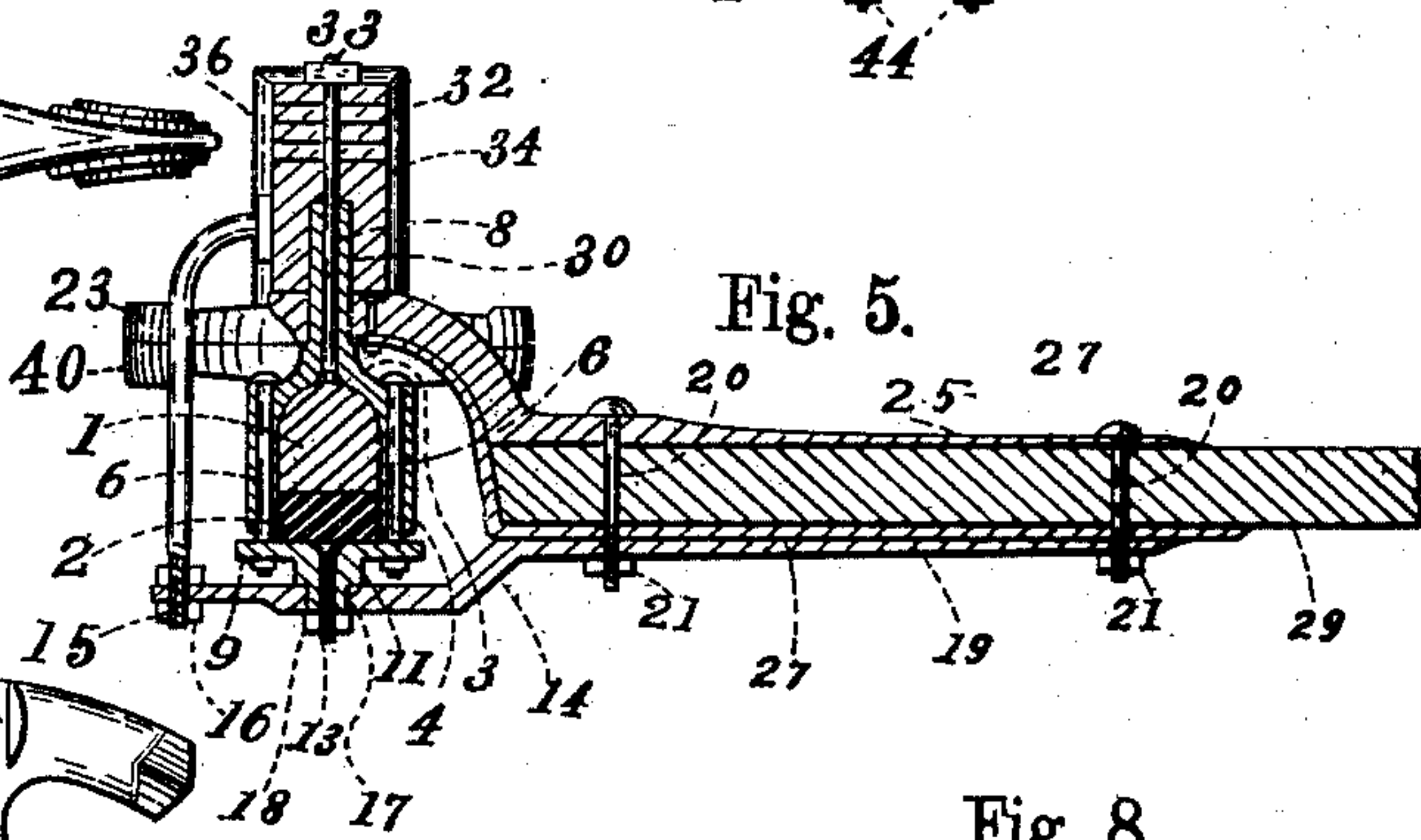


Fig. 6.

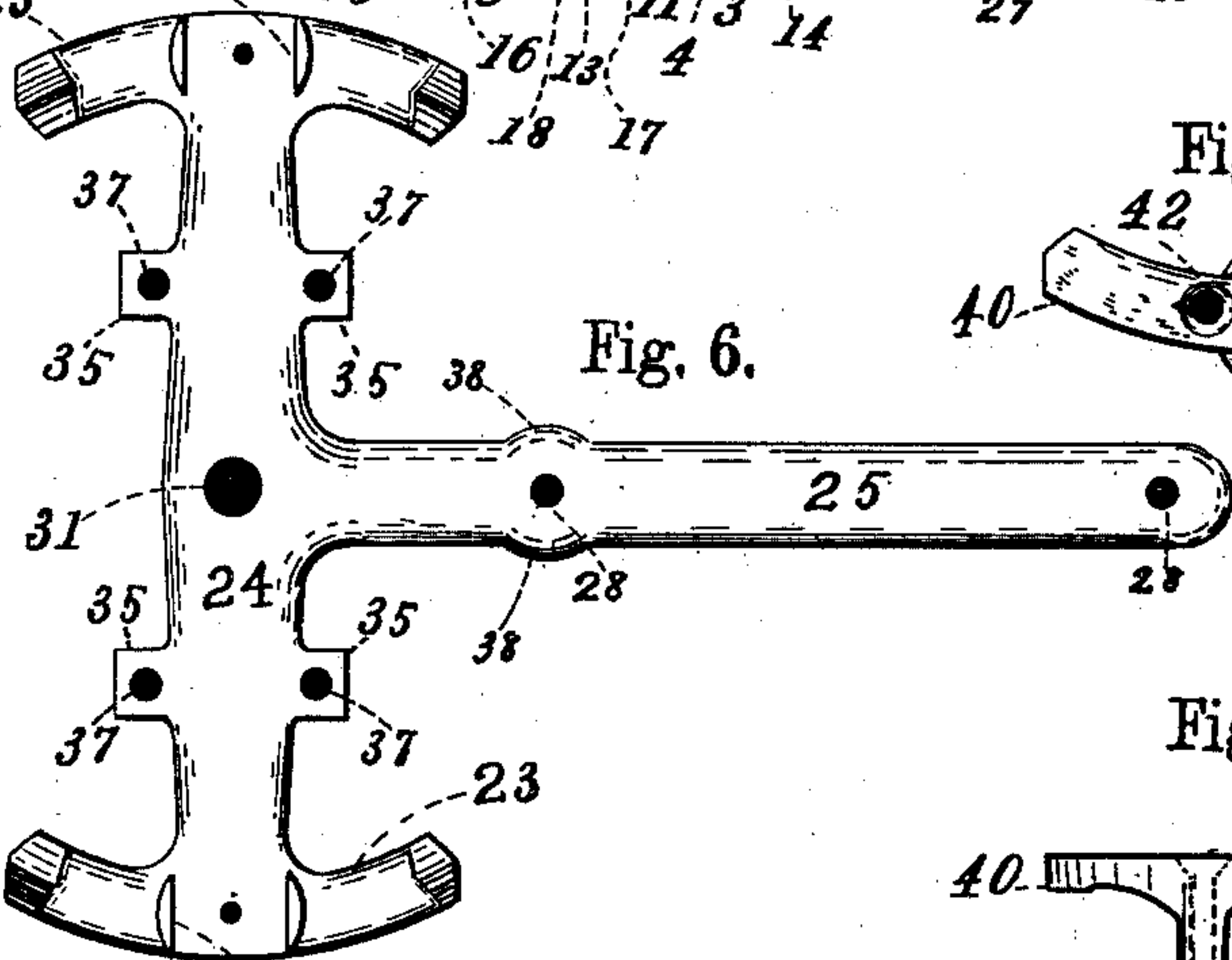


Fig. 8.

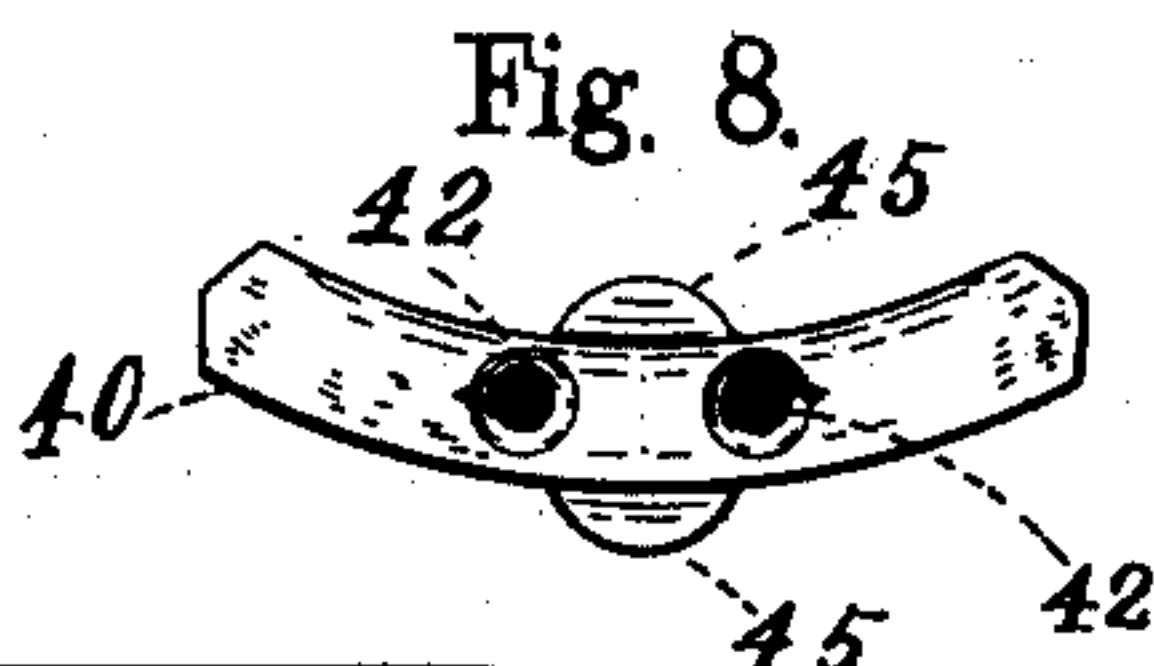


Fig. 9.

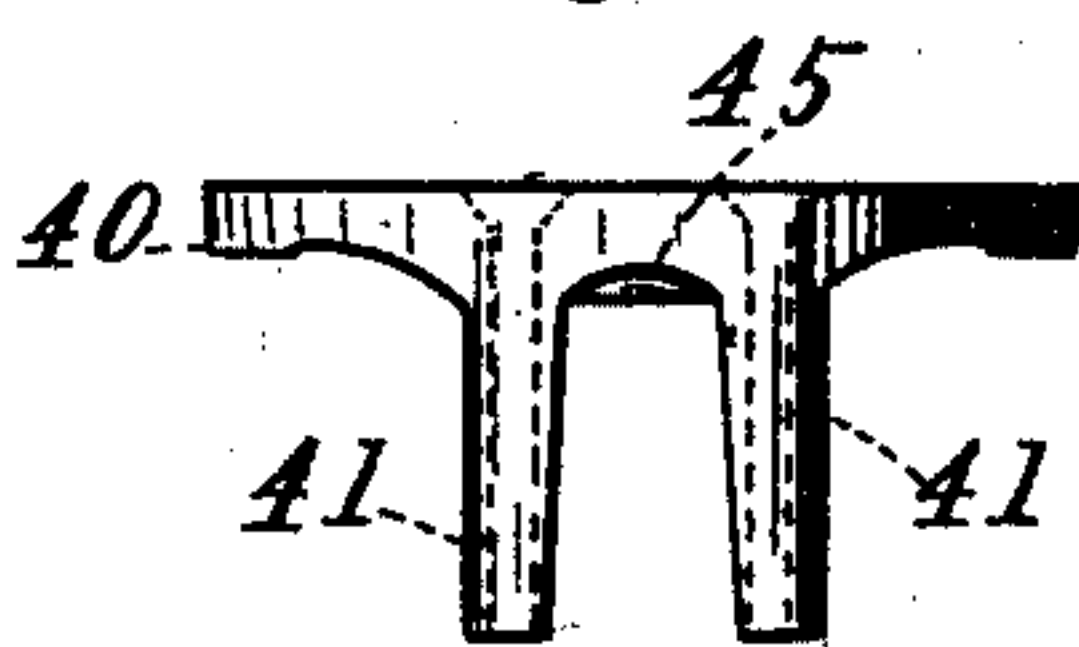


Fig. 7.

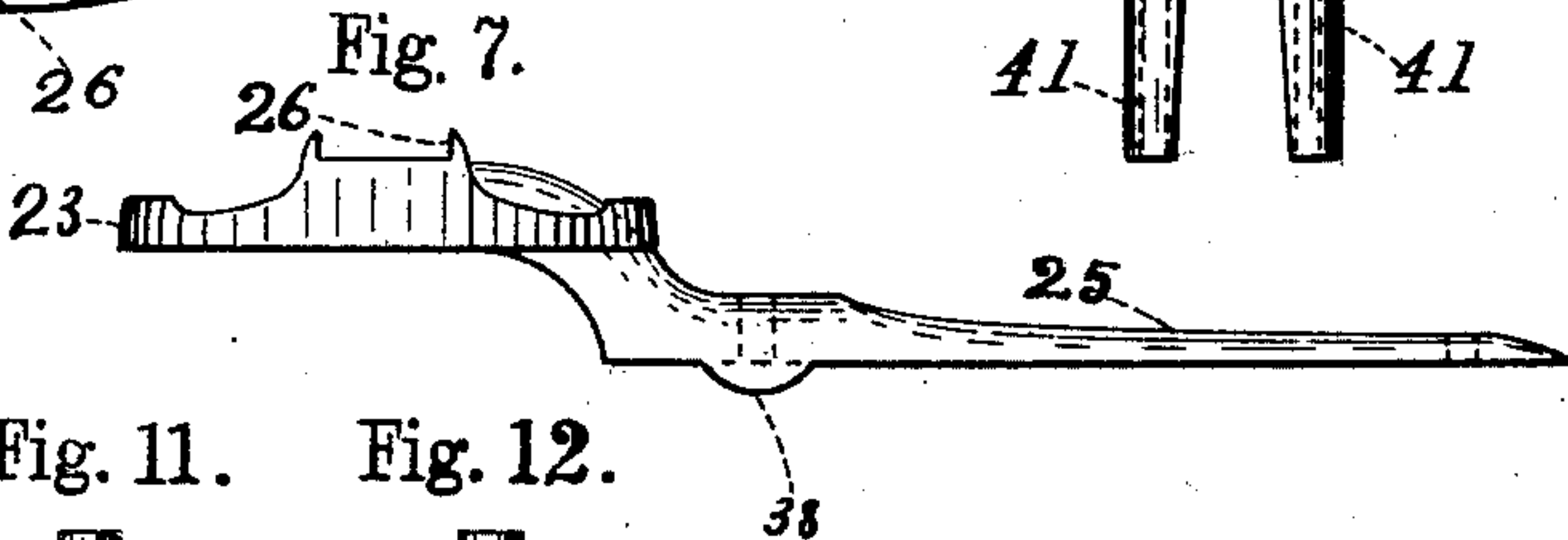


Fig. 10.

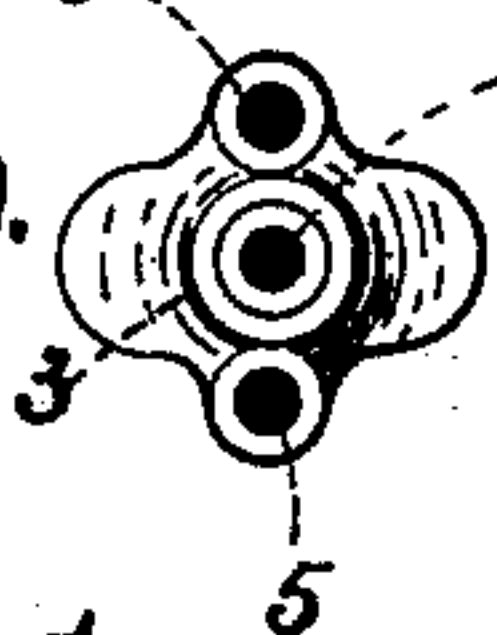


Fig. 11.

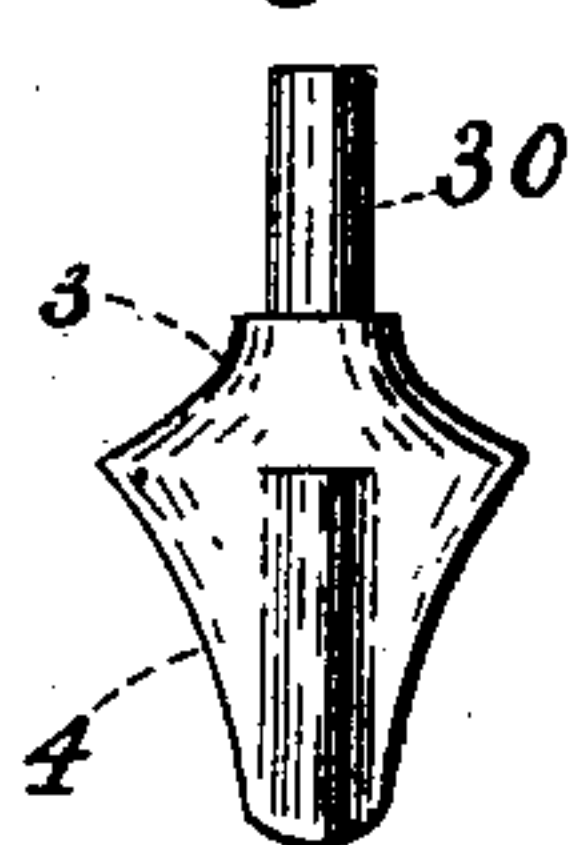
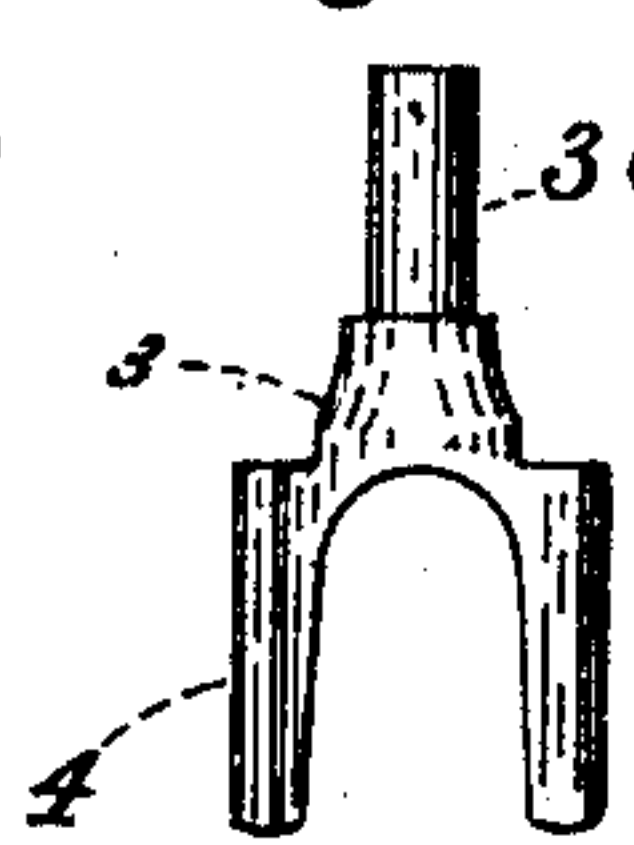


Fig. 12.



Witnesses.

Arthur Sangster
Henry Ashbery

Inventor.

Richard Mulholland.
By James Sangster,
att'y.

UNITED STATES PATENT OFFICE.

RICHARD MULHOLLAND, OF DUNKIRK, NEW YORK.

VEHICLE GEAR-IRON.

SPECIFICATION forming part of Letters Patent No. 375,765, dated January 3, 1888.

Application filed July 25, 1887. Serial No. 245,177. (No model.)

To all whom it may concern:

Be it known that I, RICHARD MULHOLLAND, a citizen of the United States, residing in Dunkirk, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Vehicle Gear-Irons, of which the following is a specification.

My invention relates to fifth-wheel gear-irons and to the means for connecting the front and rear end gear of vehicles, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is a side elevation of the rear coupling, a portion being broken away at the rear to show the bolt for connecting the parts together. Fig. 3 is a plan or top view showing the front and rear irons. Fig. 4 is a transverse section through lines *a b*, Fig. 1 or Fig. 3, omitting all the parts beyond it. Fig. 5 is a vertical longitudinal central section through line *c d*, Fig. 3, cutting through all the parts except the bolts and front head-block brace. Fig. 6 is a detached top view of the upper fifth-wheel, head-block plate, and reach-iron, all formed in one piece, and Fig. 7 is a side elevation of the same. Fig. 8 is a top view of one side of the lower fifth-wheel, and Fig. 9 is a side elevation of Fig. 8. Fig. 10 is a top view of the king-bolt clip-iron. Fig. 11 is a front elevation; Fig. 12, a side elevation of the same, and Fig. 13 is a bottom view of the king-bolt yoke.

Heretofore vehicle fifth-wheels have been made by dropping or forging the lower sections in one piece, consisting of the bottom fifth-wheel and axle-clip, the lower ends of which are made in a bolt-shape form, with screw-threads and nuts for securing it by means of clip-ties to the axle and bed-piece. The king-bolt has also been made in a similar manner in one piece, the upper part being of a bolt shape with screw-thread and nut to connect it to the head-block or other support, the middle part being flat and clip-shaped, and the lower ends bolt-shaped with screw-threads and nuts which connect it by a clip-tie to the axle. The objection to this method of construction is mainly its high cost for the ordinary grade of work.

The object of my invention is to dispense with this expensive construction and to produce instead a fifth-wheel which shall have the

finish and strength of the old construction, and at the same time be cheap and durable, and to otherwise improve gear-irons, as hereinafter set forth.

In said drawings, 1 is the front axle-bed or bed-piece, usually of wood. 2 is the axle, both being of well-known construction.

3 represents what may be termed a "compound king-bolt and clip," which is preferably made of malleable cast-iron, and is formed on the inner side to fit the shape of the bed-piece. The vertical tubular clip parts 4 extend down to or near the bottom of the axle. On each side of the clip portion 4 is a bolt hole or perforation, 5, (see Fig. 10,) to receive the bolts 6. (Shown in Fig. 5.) These bolts 6 pass through the metal as close to the inner sides as practicable, so that the bolts will be as close to the axle as possible.

In the center of the compound king-bolt and clip is a bolt-hole, 7, passing vertically down through it and having a countersunk portion to receive the bolt-head 8. (See Figs. 5 and 10.) The king-bolt yoke 9 is made with tie parts having bolt-holes 10 (see Fig. 13) to receive the bolts 6, which firmly and rigidly secure it, and also the compound king-bolt, to the axle. It also has a neck part, 11, (shown in Figs. 5 and 13,) having a central countersunk bolt-hole, 12, adapted to receive the bolt 13, which is provided with a square countersunk head, the flat top of which rests against the bottom of the axle. The yoke-brace 14 is perforated at the front to receive the lower end of the front head-block brace, 15, to which it is secured by a nut, 16. The reduced portion 17 of the neck part 11 of the king-bolt yoke 9 passes through the brace 14, and is secured by bolt 13 and a nut, 18. The king-bolt yoke-brace 14 also extends back far enough to form (or be attached to) the bottom reach-iron, 19, and is perforated to receive the bolts 20, by which it is secured to the reach by nuts 21. The top of the front head-block brace, 15, is in the form of a T, and is secured to the head-block 34 by bolts 22. The top fifth-wheel consists of the parts 23, the head-block plate 24, the lips 26, for preventing any lateral movement on the head-block, and the clip-tie parts 35, and one or more reach-irons, 25, all formed in one piece. The extension 25 is rigidly secured to the reach by the bolts 20, passing through holes 28, the reach 29, the wrought-

iron strengthening-bar 27, and the bottom reach-iron, 19, thereby securing the whole firmly together.

The compound king-bolt and clip-iron is provided with a tubular neck or socket portion, 30, (see Figs. 5, 11, 12,) which, when in its proper position, passes up through the hole 31 in the head-block plate and into the head-block, where it is secured by the countersunk head-bolt 8, which passes up and through the tubular neck 30. (See Figs. 1, 5.) The bolt 8 also passes up through the spring 32, and the nut 33 secures the whole together. The spring is rigidly secured in place by the clips 36, which pass down into the holes 37 (see Fig. 6) in the clip-tie parts 35, and are secured by nuts 39. (Shown in Fig. 1.)

The lower fifth-wheel sections, 40, are provided with clip portions 41, having bolt-holes 42, (shown in Fig. 8,) adapted to receive the countersunk bolt-heads 43. (See Figs. 4, 8, 9.) The bolt-holes 42 are made as near to the inner sides of the clip portions 41 as practicable, so as to bring the bolts 43 as near the axle and axle-bed as possible. It is rigidly secured to the axle and bed by clip-ties, the bolts 43, and nuts 44. (See Figs. 1, 4.) The lower fifth-wheel sections are also provided with horizontally-projecting lips 45 to give them a broad bearing on the axle-bed.

The rear coupling-irons consist of the upper reach coupling-iron, 46, provided with lips 57, to prevent any lateral movement of the reach, the portion 46 having the clip ties 47 and the vertically-projecting rear portion, 48, having the socketed bolt-hole 49, (shown in Fig. 3,) to receive the countersunk square-headed bolt 50, the whole being made in one piece. It is provided with bolt-holes to receive the bolts 51, by which it is attached to the rear part of the reach. 52 represents the lower reach-iron. The bolts 50 51 pass through it, and the whole are secured rigidly together by nuts 53 54 and firmly attached to the rear axle in the usual well-known manner by saddle-clips passing through and being secured to the clip-ties 47. (See Figs. 2, 3.) By this construction the coupling-iron 46 may be of malleable cast-iron, and when secured to the back end of the reach and to the wrought reach-iron 52 by bolts 50 and 51 materially increases the strength and durability of the several parts and renders them less expensive to make.

In the drawings but a single reach is shown; but it will be seen that double reaches may be used instead without materially changing the construction by forming the head-block plate 24 with two reach-extensions similar to 25 at equal distances each side of the center in a manner well understood. By this construction the top and bottom fifth-wheels, the compound king-bolt clip-iron, the king-bolt yoke, and its several parts may be of malleable cast-iron, and when strengthened by wrought-iron and bolts in the manner described the whole is strong, durable, and cheaply made.

I claim as my invention—

1. In vehicle gear-irons, a compound king-bolt and clip-iron having the clips extend down to or near the bottom of the axle, and having bolt-holes the inner sides of which pass as close to the axle as possible, or nearly through the metal, a neck part, and a bolt-hole up through the center of same, in combination with bolts passing down through the clip portions on each side of the axle into a king-bolt yoke, and a means for securing them, a king-bolt yoke-brace, a means for securing the king-bolt yoke thereto, and a bolt passing up through the center of the king-bolt clip iron for securing it to the upper fifth-wheel and head-block, substantially as described.

2. In vehicle gear-irons, the upper gear-iron consisting of the head-block plate having the two upper fifth-wheel sections and reach-iron all formed in one piece and secured to the under side of the head-block, in combination with the lower fifth-wheel sections, their combined clip portions having supporting-lips on both sides and extending down each side of the axle to or near the bottom of the same, and having bolt-holes the sides of which nearest the axle pass through or nearly through the metal, bolts passing down through said openings, clip-ties, and a means for securing the whole to the axle and reach, substantially as and for the purposes described.

3. The compound king-bolt and clip-iron having the vertical tubular clip portions and the tubular neck portion, in combination with the bolts 6 8 13, and the king-bolt yoke, for the purpose of holding the several parts together, substantially as described.

4. In vehicle gear-irons, the top fifth-wheel sections having the head-block plate, the lips 26, clip-ties, king-bolt socket or hole 31, and reach-iron extension 25, all in one piece of metal, in combination with the head-block, the lower fifth-wheel sections, the axle, the king-bolt yoke, the king-bolt yoke-brace, and bolts for securing them together, substantially as described.

5. The upper fifth-wheel and head-block plate having the reach-extension iron or irons 25, in combination with the reach, and the lower king-bolt yoke-brace and reach-extension, a wrought-iron support, 27, extending along the bottom of the reach and secured to the bottom of the head-block plate by a bolt or other suitable means for connecting the whole together, substantially as described.

6. In vehicle gear-irons, the rear reach coupling-iron having the lips 57, the rear portion provided with clip-ties and bolt-holes, and the lower projecting portion, 48, through which passes the countersunk bolt 50, in combination with the reach, reach-iron, and axle, and bolts for securing the whole together, substantially as described.

RICHARD MULHOLLAND.

Witnesses:

GEO. P. ISHAM,

PETER J. MULHOLLAND.