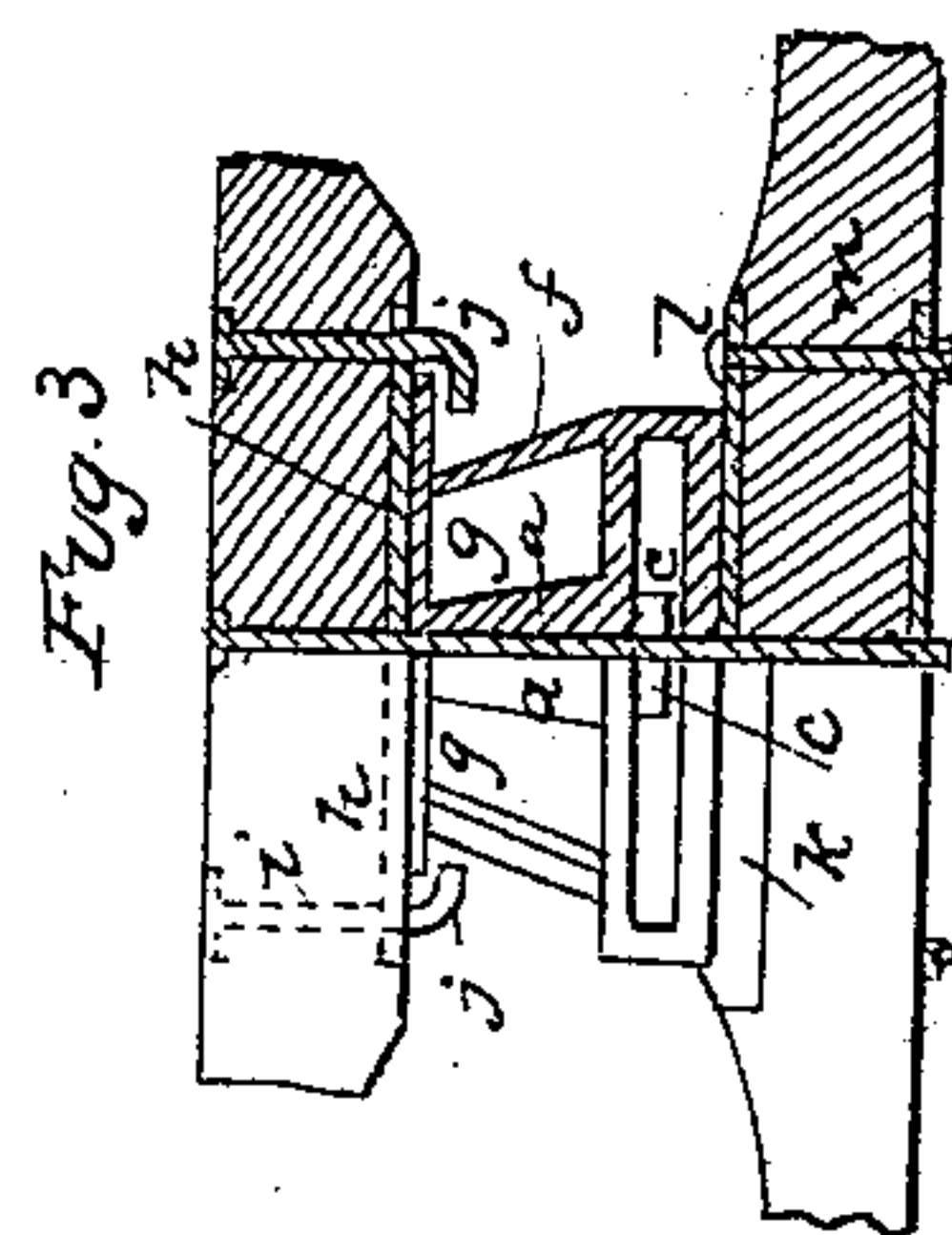
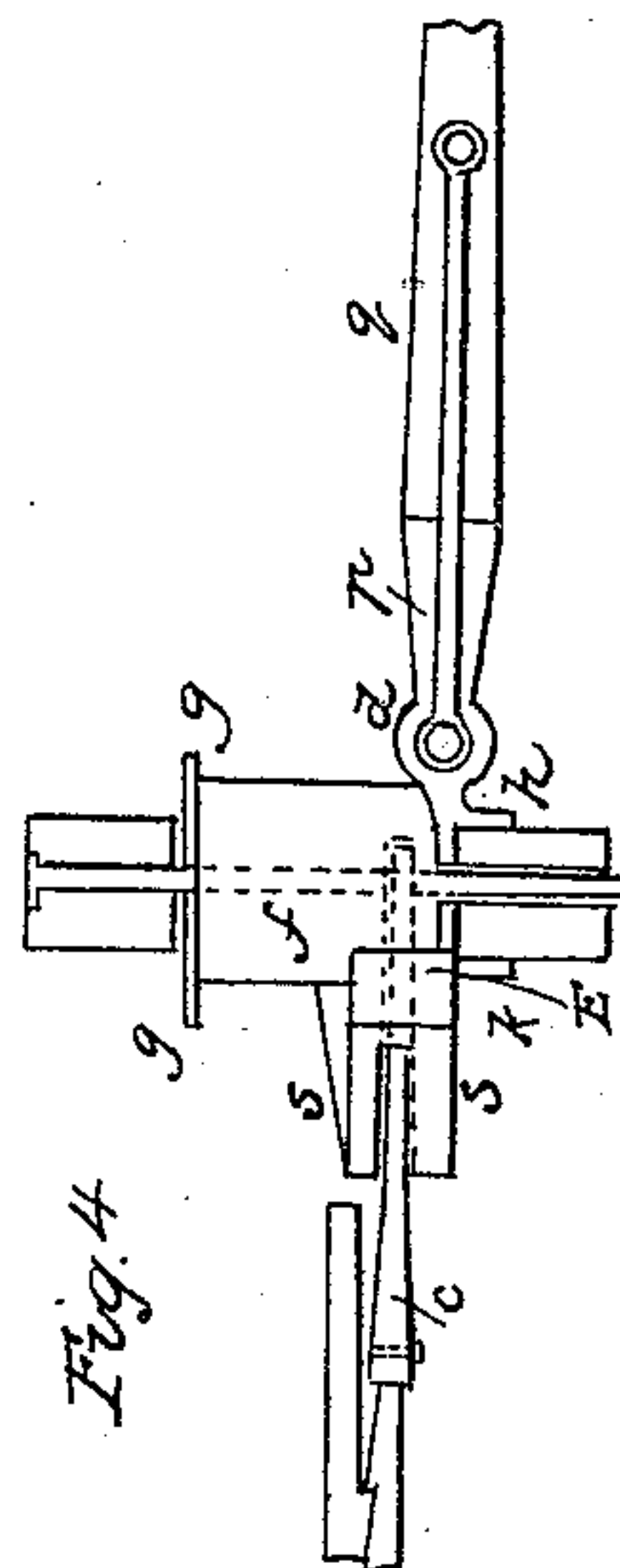
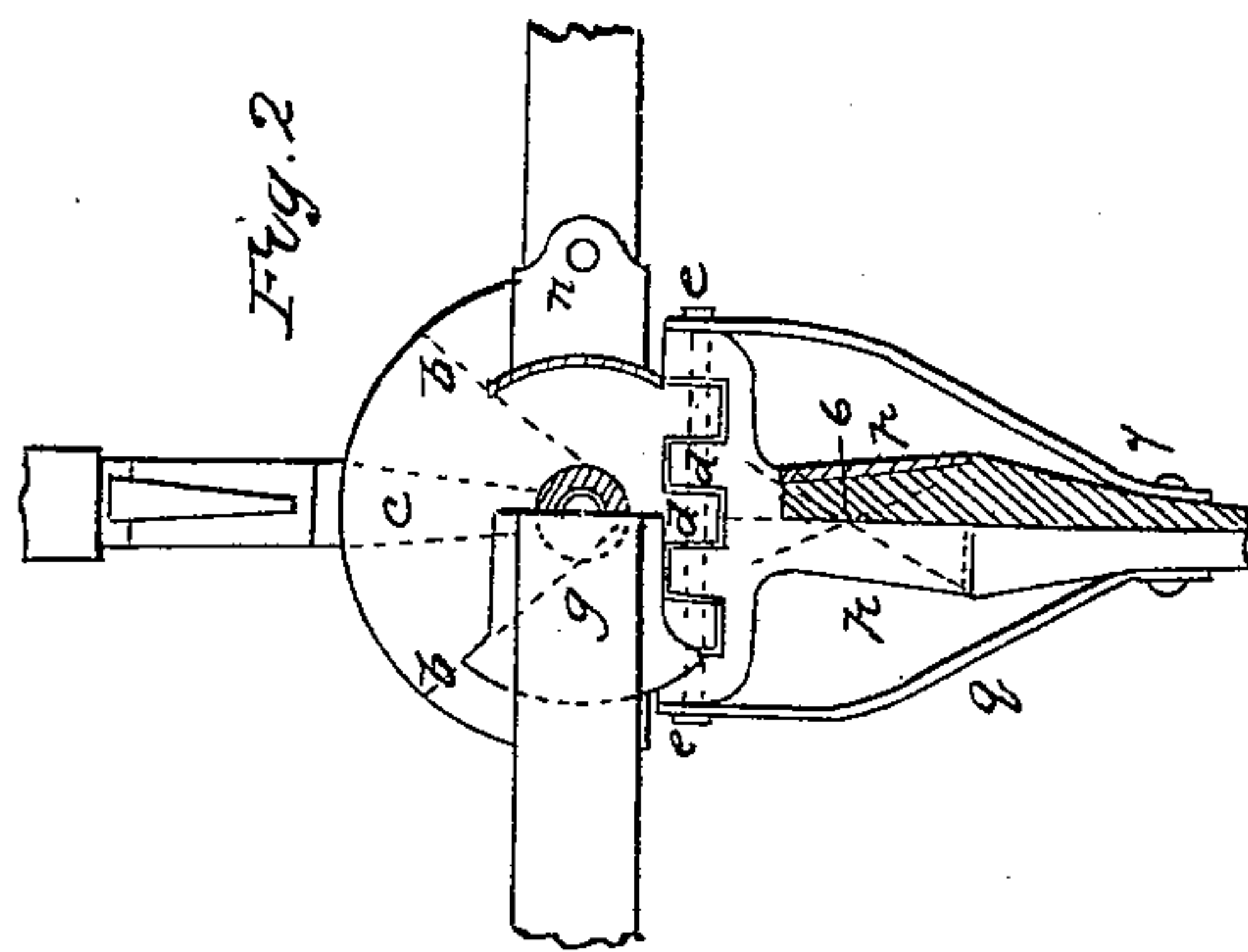
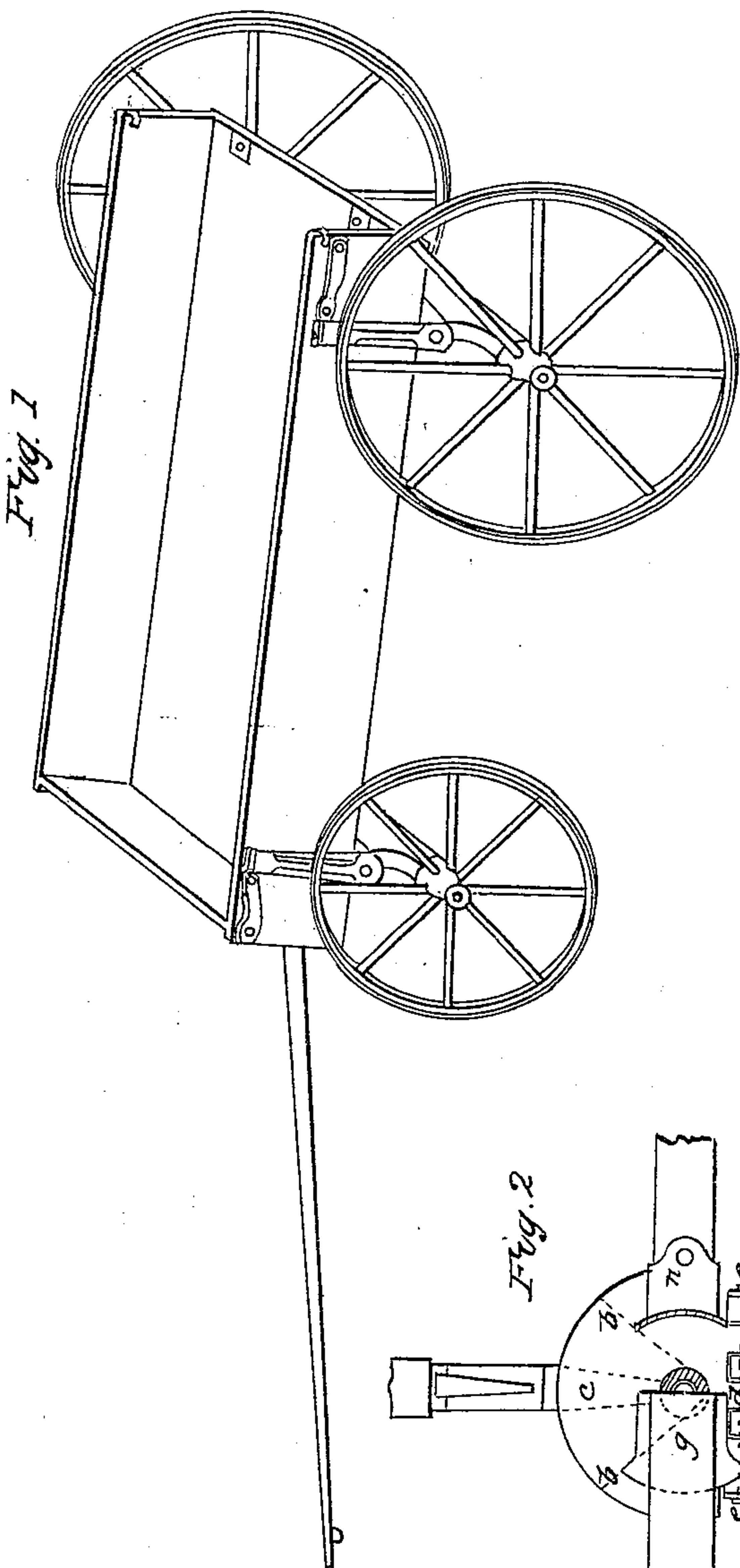


S. D. CARPENTER.

Construction of Lumber Wagons.

No. 73,076.

Patented Jan'y 7, 1868.



Witnesses
Geo. V. Ott
Hart Ruf

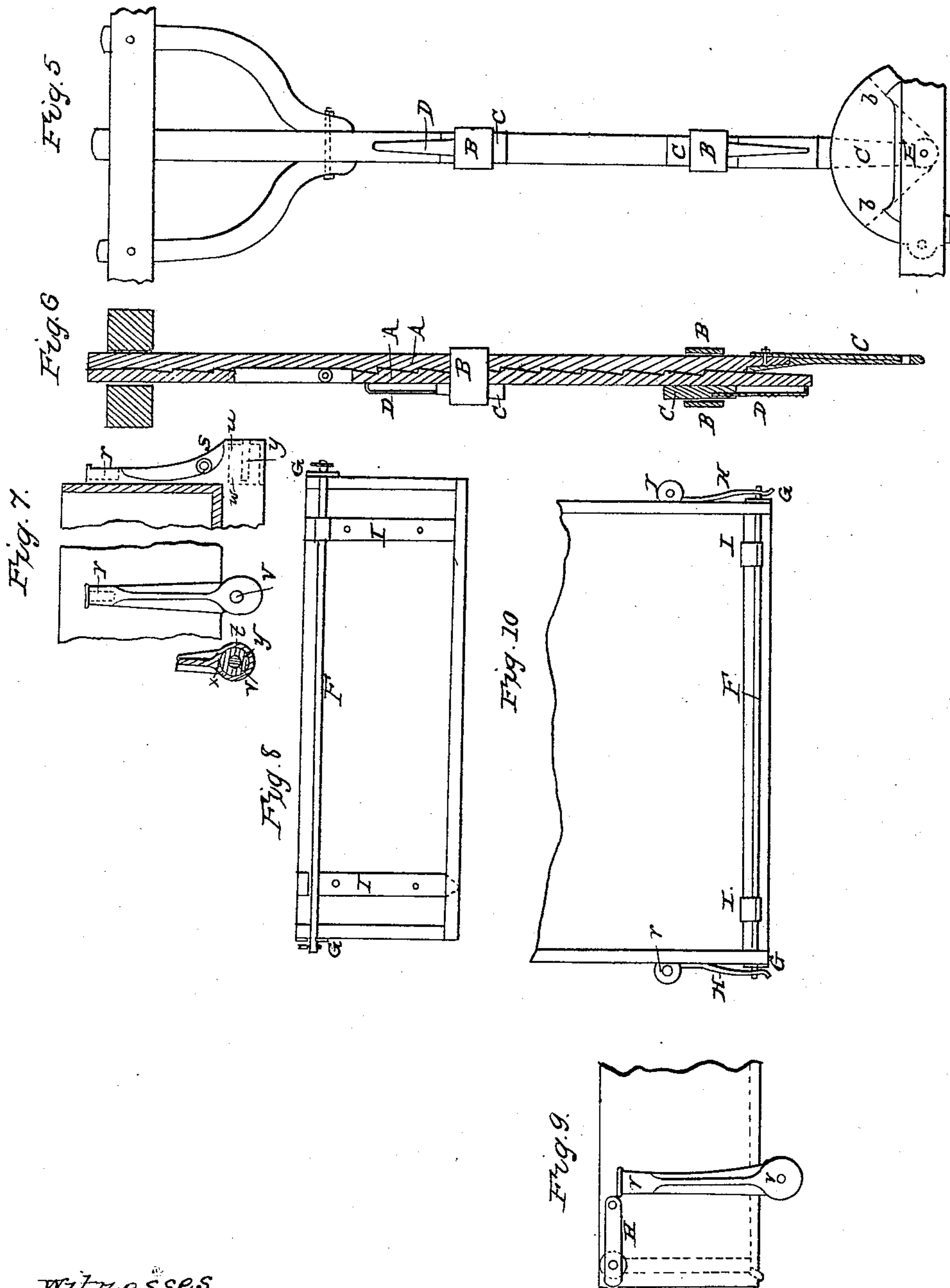
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United States Patent Office.

STEPHEN D. CARPENTER, OF MADISON, WISCONSIN.

Letters Patent No. 73,076, dated January 7, 1868.

IMPROVEMENT IN THE CONSTRUCTION OF LUMBER-WAGONS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, STEPHEN D. CARPENTER, of the city of Madison, county of Dane, and State of Wisconsin, have invented a new and improved Mode of Constructing Lumber or Farm-Wagons, or essential parts thereof; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and the letters and characters of reference marked thereon, the said letters or characters having reference to like parts in each figure or representation.

The nature of my invention consists in providing, first, cast-iron coupling-blocks, so as to dispense with the ordinary "hounds," "sand-board," and counter-"hounds," or framework on the rear end of the pole; second, cast-iron stakes, so constructed as to lessen the cost of construction, and attaching them to their places without lessening their durability or efficiency; third, a universal reach, adjustable to long or short scale without the use of bolts or pins, with a cast-iron socket and shank to the same to add strength and durability to its coupling with the forward axle-tree; fourth, constructing the end board of the box so as to enable the same to be more readily and easily taken out and put in position.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a perspective view of the wagon put together for use, with the rear end board left out.

Figure 2 is a section and ground-plan of the coupling-blocks and their connection with the reach and pole.

Figure 3 is a front section and elevation of the main coupling or "rocker"-block, showing its connection with the forward axle-tree, and also shows the angular chamber for the reach, also the cone and the concave inclined braces.

Figure 4 is a longitudinal elevation of the coupling-blocks, showing the connection between the two blocks at the knuckles, and also the position of the reach-shank in the angular chamber.

Figure 5 is a ground-plan of the reach, showing its connections with the coupling-block and rear axle-tree, and also the "sleeves," the wedges, and the springs that hold the two portions of the reach firmly together.

Figure 6 is a longitudinal section of the reach, showing the notched edges of the two parts of the same, and the manner of holding the same together by the "sleeves" and wedges, and also exhibits a sectional view of that portion of the reach inserted in the cast-iron socket.

Figure 7 is a side view, elevation, and section of the stake, showing the peculiar manner in which it is to be attached to the bolster.

Figure 8 is a rear elevation of the box, showing the end board, and its manner of fastening both at the bottom and top.

Figure 9 is a side elevation of the box, showing the spring and collar that keep the said end board in its place.

Figure 10 is a ground-plan of the box, showing the spring, the collar or flange, and the rod in connection with the end board.

I construct the wagon (save in those parts herein described as new) according to the usual known methods, and do not refer to the same except so far as it may be necessary to illustrate those parts I claim as new.

First. The coupling-blocks. One of these (herein designated as the "rocker-block") is fastened to the centre of the forward axle-tree; the other is fastened to the rear end of the pole by bolts. Both are coupled together at the knuckles by a coupling-pin. I construct the proper patterns in the usual way for moulding in sand. I core out the centre of the cone, *a*, figs. 2, 3, leaving sufficient metal for strength and durability, reducing the chamber or aperture at the top, so as to admit the "king-bolt" free of action. I also core out a triangular horizontal chamber, as described by the dotted lines at *b b* in figs. 2, 5. I also core a hole in the bottom of the chamber at the proper place, and of the required size to receive the "king-bolt." On the bottom and top of the lips or flanges that project above and below the angular chamber, I cast ribs to strengthen the same against any vertical or lateral strain of the reach. These ribs are designated by the dotted lines at *5 5*, fig. 4. The cast-iron shank of the reach, *c*, figs. 2, 3, 4, 5, 6, is inserted in the triangular chamber, and the lips or flanges above and below answer to the "sway-bars" in the ordinarily-constructed wagons. I also core a hole (about five-eighths of an inch diameter) longitudinally through the knuckles, to admit the coupling-pin

taking care that the holes in each knuckle are in line with the other knuckles. I also chamber out the knuckles, leaving a cavity considerably larger than the coupling-pin, excepting near the outer edge of the knuckles, where the cavity is reduced to the size of the pin for bearing. This will secure lightness and strength. I cast three knuckles on the rocker-block, each about two inches in length and about two inches in diameter, making them round on the outer surface, so as to fit the knuckles of the coupling-block belonging to the pole, on which I cast four knuckles of corresponding dimensions. I allow the concave braces *ff*, figs. 2, 3, 4, to project forward, so as to be cast with the outside knuckles of the rocker-block *c*, fig. 2, for the purpose of strengthening the same. The knuckle-joints are seen at *dd*, figs. 2, 4. The coupling-pin is seen at *ee*, fig. 2. The concave braces have their base at the outer edge of the rocker-block, inclining inward, as seen at *ff*, fig. 3, for the purpose of strength. Across the top of these braces, and connecting with the cone, projecting over the said braces some three-fourths of an inch, I cast a rocker-plate, *g*, figs. 2, 3, 4, being circular at the ends and narrower in the middle, as seen in fig. 2, so as to keep the bolster from rising to strain the king-bolt in any position it is likely to assume. On the top and around the centre opening in the lower rocker-plate, *g*, figs. 2, 3, 4, I cast a circular projection (similar to the rocker-plates now in use) to work in a circular groove in the upper rocker-plate attached to the bolster *h*, fig. 3, the groove being sufficiently large to admit a thick piece of leather to prevent wear and rattling noise by the jostling motion of the wagon. The upper rocker-plate *h*, fig. 3, is fastened to the bolster by means of bolts *ii*, fig. 3, which are bent at right angles, as seen at *j*, fig. 3, and remain under the projecting ends of the lower rocker-plate. These bent ends should have a free play of about one inch to allow easy rocking of the bolster in passing over small obstructions; but when the wheel sinks into deep ruts or places the bent ends of the bolts will bear under the projecting ends of the lower rocker-plate and prevent strain on the king-bolt. I also cast projections to the under side of the rocker-block, *kk*, figs. 3, 4, running its entire length, and fitting closely to the axle-tree, so as to take the strain off the bolts that fasten the same to the bolster. These bolts are seen at *m*, figs. 2, 3, the upper end passing through a projecting eye of the rocker-block, *l*, figs. 2, 3, and the lower ends pass through a wrought-iron strap or "skein" placed under the axle-tree. This will prevent the axle-tree from breaking in the centre unless the wrought-iron strap is parted asunder. I strengthen the knuckles on the coupling-block attached to the pole by means of "lugs" and projecting braces. The coupling-block that connects with the pole, I construct about one foot in length, somewhat fan-shaped, as seen in fig. 2, and as thin as will do for strength; and to save metal and add strength, I cast ribs or projections across the under side, at the forward end, and also diagonally across, as seen by the dotted lines *66*, fig. 2. I also cast flanges or projections on the upper side of the same, as seen at *pp*, figs. 2, 4, for the purpose of holding the pole firmly in its place and relieving the bolts by which it is fastened from strain. These flanges should be from one and a half to two inches in height, running from the base of the knuckles to the front of the casting, angling with the same, so as to leave the forward portion or "mouth" considerably wider than at the knuckles, to give the pole a better bearing and more strength. To add to the general strength of this connecting-block, I attach wrought-iron braces, *gg*, figs. 2, 4, from the ends of the coupling-pin, and fastening them to each side of the pole at *7*, fig. 2.

Second. Stake. I construct the necessary patterns in the usual way, and cast the stakes with a round, oval, or square socket, to fit the end of the bolster, (I prefer the oval or elliptical shape,) the upright part being of the usual height of wagon-stakes, and made with thin flanges placed at right angles, as seen in fig. 7, so as to give strength and secure lightness. At the upper end of the stake I cast a round socket, *r*, figs. 7, 10, for the purpose of adding a wooden stake for additional height, if required; and I also leave an "eyelet" or "dead-eye" in the brace or flange, as seen at *s*, fig. 7, for convenience in securing, loading by ropes, or other means. I core out that portion which is to fit on the end of the bolster, so as to leave the cavity or chamber elliptical or oval, its greatest diameter being vertical, as seen at *t*, fig. 7, taking care to leave the diameter of the chamber a little the largest at its outer or enclosed end, as seen at *u*, fig. 7, and core a hole through the cap *v*, fig. 7, to said chamber, some three-fourths of an inch diameter. I then make the end of the bolster to closely fit the chamber at *w*, fig. 7, and to correspond to the elliptical shape of the other portion of the chamber, though fitting loosely. I then bore a hole in the end of the bolster, nearly as deep as the chamber in the casting, and not quite as large as the hole in the cap over said chamber. I then check or part the end of the wood, as seen at *x*, fig. 7, and then, after the stake has been driven firmly in its place, I make a tapering pin, *yy*, fig. 7, of well-seasoned hard wood, which I dip in hot glue and drive in till it fills the hole in the cap and forces the end of the bolster to fill the oval slope of the socket tightly. This will prevent the stake from "twisting" or turning or coming off, and can be put on rapidly with little expense.

Third. The reach. I construct the reach of two pieces of hard wood, of sufficient strength for the service required. I cut notches equidistant in the surfaces which are to act together, as seen at *A A*, fig. 6. I make two cast-iron or other metal "sleeves," nearly square, as seen at *B B*, figs. 5, 6, the upper side being inclined so as to suit the angle of the wedge *C C*, figs. 5, 6, to which I attach a spring, *D*, figs. 5, 6, with a sharp point bearing on the reach, so as to keep the wedge from getting loose by the jostling motion of the wagon. This is seen in fig. 6. When the wedges are driven tightly, the notches are interlocked, and the strain is sustained by said notches. One part of the reach I insert between the rear axle-tree and bolster in the usual way. The other portion I insert in the cast-iron socket *C*, figs. 2, 3, 4, 5, 6, fastening the same by a bolt; permitting the other end of said part of the reach to extend to the rear axle-tree. When it is desired to lengthen out the reach I remove the wedges, which will let the two portions of the reach fall apart; and when the desired length of the reach is obtained, I tighten up the sleeves by driving in the wedges. The cast-iron shank to the socket *E E*, fig. 4, which receives one part of the reach, is extended into the angular chamber of the rocker-block, as seen at *E*, figs. 4, 5, with an eye cast in the front end to receive the king-bolt. In the centre of this shank, the whole distance between the socket and the eye, I insert a piece of flat wrought iron, to be placed in the

mould before casting, as a moulder would a core. The edges of this wrought piece should be made jagged, and then allow some one-fourth of an inch cast metal on all sides of it; and then, should the shank break, by "cramping" the wagon too violently, the jagged wrought piece will cause the parts to hold together, and thus prevent the reach from severing its connection with the rocker-block.

I disclaim those portions of the wagon not herein specifically set forth as new, and also disclaim the socket in the top of the stake; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The rocker-block and the coupling-block attached to the pole, for the purposes and substantially as herein described.

2. I claim the manner of fastening the stakes to the bolster, for the purposes and substantially as herein described.

3. I claim the manner of fastening the reach together and operating the same, the cast-iron socket C, the sleeves and wedges, the shank E, and the wrought-iron fillet for strengthening the same, for the purposes and substantially as herein set forth.

STEPHEN D. CARPENTER.

Witnesses:

GEO. V. OTT,
KARL RUF.