

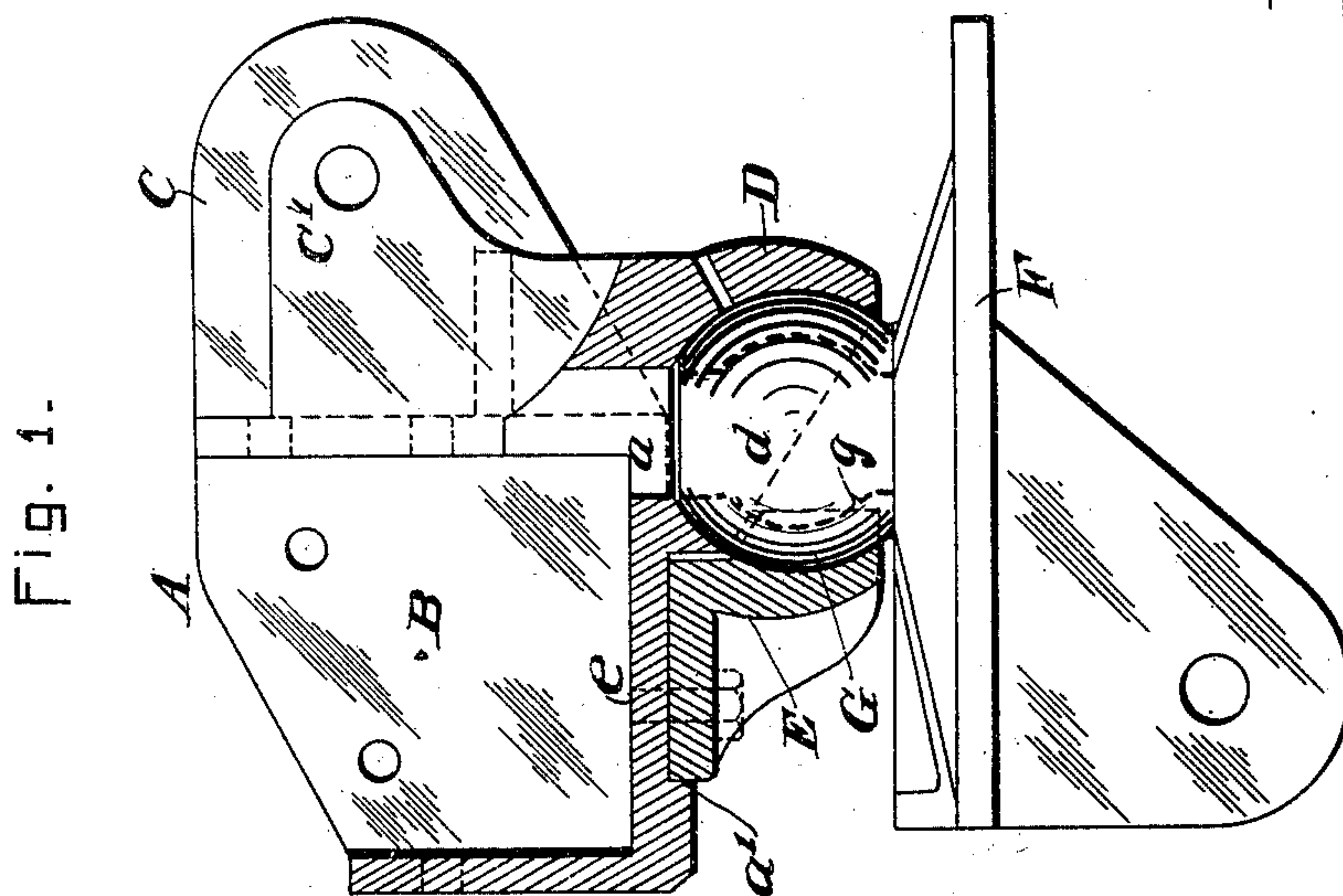
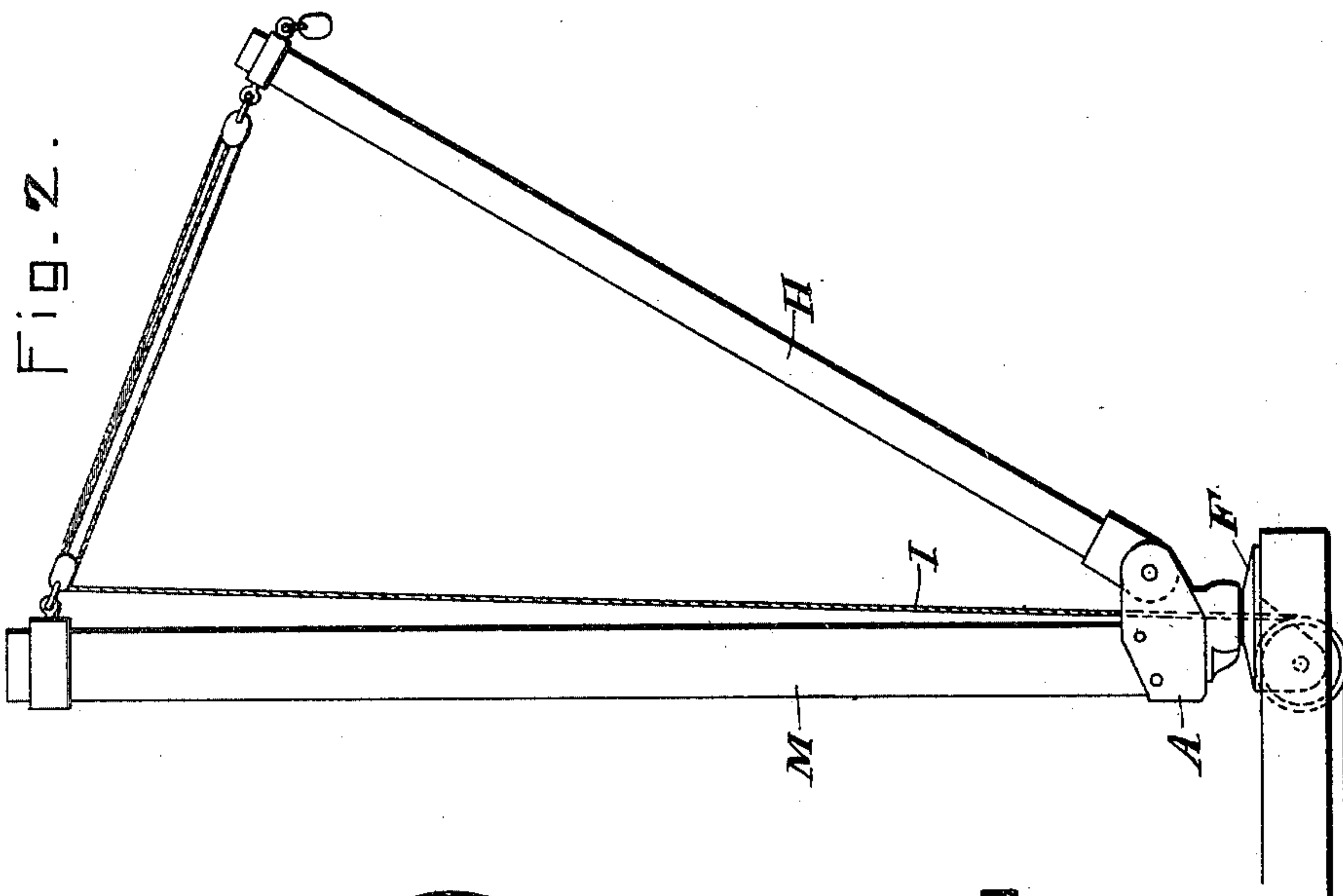
No. 681,840.

Patented Sept. 3, 1901.

E. F. TERRY.
PIVOT FOR MASTS OF DERRICKS.

(Application filed Nov. 2, 1900.)

(No Model.)



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EDWARD F. TERRY, OF NEW YORK, N. Y.

PIVOT FOR MASTS OF DERRICKS.

SPECIFICATION forming part of Letters Patent No. 681,840, dated September 3, 1901.

Application filed November 2, 1900. Serial No. 35,250. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. TERRY, of the city of New York, borough of Manhattan, in the county of New York and State of New York, have invented an Improvement in Pivots for Masts of Derrick, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the mast foot-block and its support, which together form the pivot for the mast of a derrick, and comprises certain novel features which will be hereinafter described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is an elevation of the mast foot-block and its support, the foot-block being shown in section; and Fig. 2 is an elevation of a portion of a derrick, showing the location of the foot-block.

My invention is especially adapted for use in connection with what are commonly termed "stiff-leg derricks," and while it is adapted for use with all forms of derricks it is more especially adapted for use with said stiff-leg derricks. In derricks of this kind it is possible under certain conditions, as when the boom is lowered nearly horizontal and swung around toward the back of the derrick, to entirely raise the mast from its support unless it is anchored thereto by some means. The construction herein shown is one in which a ball-and-socket joint may be used for the pivot support and the socket made to embrace more than half of the ball, so that the mast cannot lift. The mast foot-block, as herein shown, excepting in the construction of its pivot and the joint between the foot-block and its support, is similar to that shown in United States Patent No. 614,518, granted to me on the 22d of November, 1898. In that patent the form of construction is shown which, while differing from that herein shown, will prevent the mast of the derrick from lifting off of its support.

The foot-block A is provided with a socket B, adapted to receive the lower end of the mast M. It is also provided with flanges C

and C', adapted to receive a pivot-bolt, which also passes through the lower end of the boom H and furnishes a support for the pulley carrying the hoisting-rope. The foot-block is shown with an opening *a* at one edge of the socket for the reception of the mast, through which the cables for handling the boom and the load pass. The support F, which is adapted to be secured to the timbers forming the base of the derrick, is provided with a ball G, which is hollowed and has an opening in its upper end registering with the opening *a* in the foot-block, thus forming a continuous uninterrupted passage for the derrick-cables. A flange D is secured to or formed integrally with the block A and embraces a portion of the outer surface of the ball G, so as to form a bearing therewith. This flange is preferably made to embrace substantially one-half of the ball G, so that it may be put in place and removed freely. The outer edge of this flange preferably lies in a plane substantially as shown in the drawings and indicated by the dotted line and the reference-letter *d*. This is substantially at an angle of forty-five degrees with the horizontal and with the axis of the mast. Lying at this angle a portion of the flange extends below the central horizontal plane of the ball, and if the foot-block is held against horizontal movement the lower part of this flange will resist any force acting to raise the mast. At the same time certain portions of the interior surface of the flange are bearing upon the upper portion of the ball in such a manner that the mast is prevented from being displayed on the ball unless it is lifted. An additional member E is secured to the lower surface of the mast foot-block and has a flange engaging the surface of the ball at the side opposite that engaged by the lower portions of the flange D. The outer edge of this member engages with a shoulder or leg *a'*, formed upon the lower surface of the foot-block, and is thus prevented from horizontal movement away from the center of the ball. This member is secured to the mast foot-block by means of a bolt or bolts *e*. When this member is in place, it is evident that it will be impossible for the mast to be lifted off of its pivot without some portion of said pivot

being broken. By using a shoulder or leg α' to resist the said or horizontal strain tending to separate the two parts of the socket these two parts may be held more securely together 5 and the bolts which secure the two parts against separation in a vertical direction may be smaller than would otherwise be necessary. Moreover, by the use of the shoulder the proper location of the removable member E 10 is secured and it is not possible for the two parts of the flange to separate to such an amount as to make it possible for the mast to lift off of said support. The inclined plane of separation between the two parts of the 15 flange is thought to be superior to any separation upon a substantially vertical plane, as the main part of the flange embraces a sufficient portion of the ball to support the mast securely in place except against a lifting 20 strain, and it is therefore more convenient to assemble the parts than would be the case if the line of division were upon a substantially vertical plane. While the angle of forty-five degrees, as herein mentioned, is a desirable 25 angle, it is not to be understood that this is the only angle which may be used or that the angle to be used should be very near this angle. The object to be attained is that the angle be sufficient that the mast may be held 30 in place while being assembled and before the removable member of the flange is secured in place.

Having thus fully described my invention, I claim as new and desire to secure by Letters 35 Patent—

1. A mast foot-block and its support for derricks, having a ball-and-socket connection, the socket being composed of plural members which together embrace more than half the 40 ball, the plane of division between the two being oblique to the axis passing through the center of the socket-opening, one of said socket members having a shoulder engaged by the other to prevent its movement away 45 from the pivot.

2. A mast foot-block and its support for derricks, having a ball-and-socket connection, the socket being composed of plural members which together embrace more than half the 50 ball, the plane of division between the two being intermediate the perpendicular and the horizontal, both socket and ball having axial openings for the passage of the derrick-operating cables.

3. A mast foot-block and its support for derricks, having a ball-and-socket connection, the socket being composed of plural members which together embrace more than half the 55 ball, the plane of division between the two being intermediate the perpendicular and the horizontal, the ball and socket being located at one side of the mast and having axial openings for the passage of the derrick-operating 60 cables.

4. A mast foot-block and support for derricks, the support having a ball and the foot-

block having a socket embracing said ball, the walls of said socket being formed of two parts, one integral with the foot-block and the other adapted to be secured thereto, the 70 integral portion embracing substantially one-half the ball and at one side extending below the center of the ball, and the removable portion embracing a segment of the ball opposite that engaged by the lower side of 75 the integral portion.

5. A mast foot-block and support for derricks, the support having a ball and the foot-block having a socket embracing said ball, the walls of said socket being formed of two 80 parts, one integral with the foot-block and the other adapted to be secured thereto, the integral portion embracing substantially one-half the ball and at one side extending below the center of the ball, and the removable por- 85 tion embracing a segment of the ball opposite that engaged by the lower side of the integral portion, the ball and socket being adapted to lie at one side of the mast and having holes for the passage of the derrick- 90 operating cables.

6. A mast foot-block and support for derricks, the support having a ball and the foot-block having a socket embracing said ball, the walls of said socket being formed of two 95 parts, one integral with the foot-block and the other adapted to be secured thereto, one part having a shoulder engaged by the other to prevent its horizontal displacement, the integral portion of the socket embracing sub- 100 stantially one-half the ball and at one side extending below the center of the ball and the removable portion of the socket embracing a segment of the ball opposite that en- 105 gaged by the lower side of the integral portion.

7. A mast foot-block and support for derricks, the support having a ball and the foot-block having a socket embracing said ball, the walls of said socket being formed of two 110 parts, one integral with the foot-block and the other adapted to be secured thereto, one part having a shoulder engaged by the other to prevent its horizontal displacement, the integral portion of the socket embracing sub- 115 stantially one-half the ball and at one side extending below the center of the ball and the removable portion of the socket embracing a segment of the ball opposite that en- 120 gaged by the lower side of the integral portion, the ball and socket being adapted to lie at one side of the mast and having holes for the passage of the derrick-operating cables.

8. A mast foot-block for derricks having a socket for the reception of the foot of the mast, a support, and a ball-and-socket pivot 125 connection between the foot-block and its support having its center beyond one edge of the socket for the mast, the pivot-socket extending beyond the center of the ball and having one side detachably secured to the 130 remainder.

9. A mast foot-block and its support hav-

ing a ball-and-socket connection, the socket-
walls being formed of two separable parts,
each of which extends beyond the center of
the ball upon different sides thereof, the ball
5 and socket having registering openings for
the passage of the operating-ropes.
In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

EDWARD F. TERRY.

Witnesses:

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