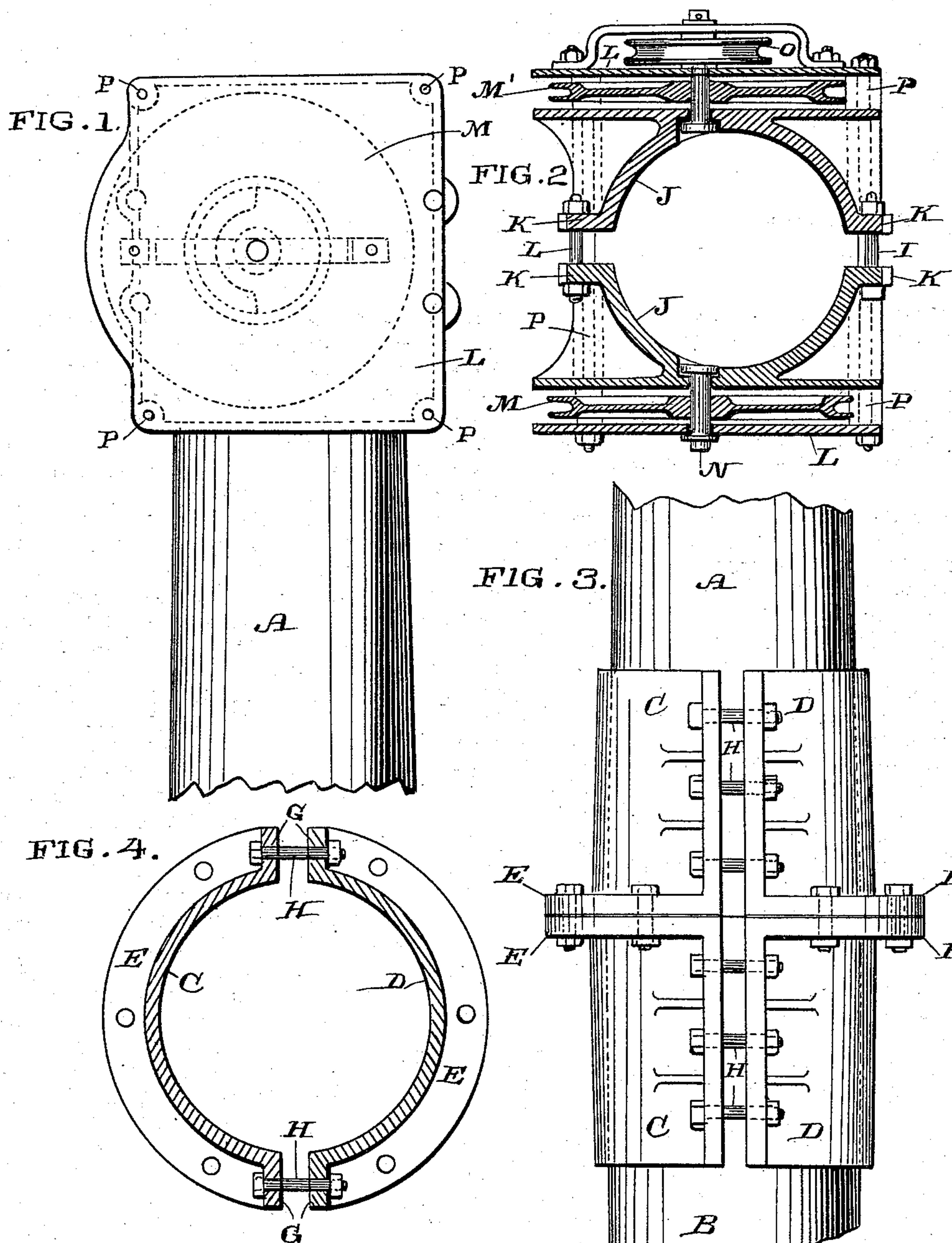


(No Model.)

O. M. LOVERIDGE.  
DERRICK.

No. 455,630.

Patented July 7, 1891.



Witnesses,  
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H. C. Lee.

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# UNITED STATES PATENT OFFICE.

ORANGE M. LOVERIDGE, OF WEAVERVILLE, CALIFORNIA.

## DERRICK.

SPECIFICATION forming part of Letters Patent No. 455,630, dated July 7, 1891.

Application filed November 5, 1890. Serial No. 370,412. (No model.)

*To all whom it may concern:*

Be it known that I, ORANGE M. LOVERIDGE, a citizen of the United States, residing at Weaverville, Trinity county, State of California, have invented an Improvement in Derricks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in derricks, and is especially applicable to what I term a "hydraulic derrick," for which a patent was issued to me November 1, 1881, No. 248,938.

My present invention consists in an improved method of securing the sheaves over which the hoisting-rope passes at the head of the derrick-mast or the boom, in an improvement in the construction of the mast and boom in sections, so as to prevent winding or twisting, and in the means for securing the sections together and certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a view of the upper end of the mast, showing the sheave and the method of attaching it. Fig. 2 is a horizontal section taken through the clamp and the sheave. Fig. 3 is a side view of the clamp for joining the abutting ends of the mast-sections. Fig. 4 is a horizontal section through the clamps.

In the construction of derricks for use in hydraulic-mining works the masts are often made of a length of eighty or ninety feet and the booms of corresponding length to enable the workmen to move the bowlders to a sufficient distance. When masts of this description are made of a single piece of timber, a certain amount of winding or twisting in the length of the mast as the wood seasons is unavoidable, and the result is that if the hoisting-sheaves are permanently fixed to the mast or boom in the usual manner and in a perfectly-straight line when first put in they will soon get out of position, so that the hoisting-ropes will not lead fairly over them. In order to overcome this difficulty, my first improvement consists in making the mast or boom, or both, of two or more sections, the ends of which are abutted together and secured by clamps.

A and B represent two of these sections,

and the upper section is reversed from its position while growing, so that its upper end abuts against the upper end of the lower section, the two being made approximately of the same size at this point. By thus reversing one of the sections the wind or twist of the lower section will be in one direction and the twist of the upper section will be in the contrary direction, and the twist of the two parts in the opposite direction will thus in a measure counteract each other and to a great extent, if not wholly, overcome the difficulty of twisting. In order to secure these ends strongly together, I have shown the semicircular clamps C and D. Each of these clamps has a semicircular flange E around one edge, the flanges being on the upper edge of the lower clamps and on the lower edge of the upper clamps. These flanges are perforated to receive bolts, which pass through the two flanges and by which they are secured together. Other flanges G G extend vertically up the sides of the clamps along their meeting edges, and bolts H serve to secure the sections of the clamps together around the end of the timber. The inner circumference of the clamps is preferably made slightly tapering and larger at the abutting ends than at the opposite ends. The ends of the timbers will be correspondingly shaped, so that when the clamps are secured around the ends of the timbers and bolted together this slight taper will prevent the timber from being drawn out of the clamps, and when the flanges C are bolted together a strong continuous mass will be formed.

In order to secure the sheaves to the upper end of the mast or boom or other point, I have shown the clamps J, adapted to fit around the timber, having the flanges K and the bolts I, by which the clamps are drawn together and fixed upon the timber.

Upon one side of one of the clamps is formed a casing L, within which is journaled the pulley or sheave M, turning upon a pin N, which passes through the clamp and casing and is secured as shown. The flange of the pulley projects sufficiently to allow the rope to lead fairly over the pulley, which is grooved in the usual manner to receive the rope. Upon the opposite half of the clamp is another casing, in which is journaled a second sheave M', so



that the rope may work on either side of the mast, and outside of this is a casing containing a second smaller sheave O, and this pulley may serve for the purpose of hoisting a man to the mast-head when necessary or for hoisting articles which might be needed at that point. Through the angles of these casings pass the long bolts P, which are also secured by nuts, the whole being thus secured in a rigid manner.

It will be manifest that if the timber of which the mast or boom is formed should commence to twist or wind, so as to throw the pulley out of proper line, it will only be necessary to loosen the clamp-bolts and turn the clamps around until the pulley comes into proper line, and these bolts may be again tightened and the clamp secured in place.

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

1. In a derrick, the mast constructed in two or more lengths, one of said lengths being reversed, so that the two upper ends of the timbers shall abut together, in combination with clamps whereby said abutting ends are secured together, said clamps being tapered and the meeting ends of the lengths being likewise formed to prevent their being drawn out of the clamps, substantially as herein described.

2. In a derrick, the mast constructed of two or more sections, semi-cylindrical clamps adapted to clasp the ends of the timbers and

having the opening which clasps the timber made tapering to fit the correspondingly-formed ends of the sections, as shown, said clamps having vertical flanges by which they may be rigidly secured to the timber ends, and horizontal flanges and bolts by which the clamps upon each timber may be secured together, substantially as herein described.

3. In a derrick, and in combination with the mast or boom thereof, the rope-winding sheave journaled in a casing, and a clamp composed of two semi-cylindrical sections, to one of which said casing is secured, said clamps provided with vertical flanges upon the edges and having bolt-holes by which the clamps may be secured together and made adjustable upon the ends of the timber, substantially as herein described.

4. In a derrick, the semi-cylindrical clamps having the vertical flanges upon their meeting edges and bolts passing through said flanges, whereby they may be adjustably secured upon the timber, casings formed with or secured to each of the clamp-sections, and sheaves or pulleys journaled within said casings, so as to be movable with the clamps, substantially as herein described.

In witness whereof I have hereunto set my hand.

ORANGE M. LOVERIDGE.

Witnesses:

S. H. NOURSE,  
H. C. LEE.