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F. D. BEARLY

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DERRICK

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Fig. 1.

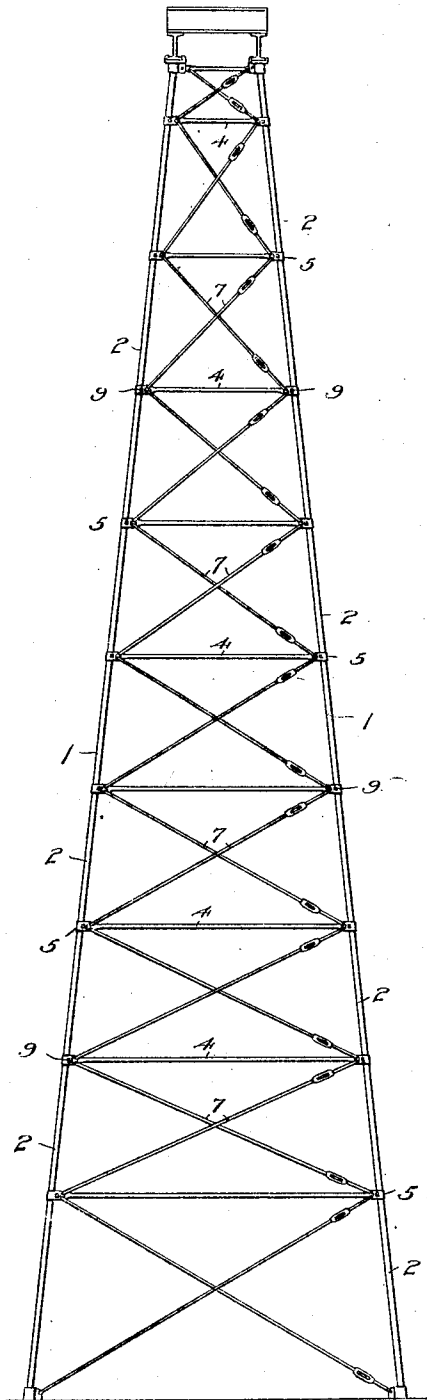


Fig. 2.

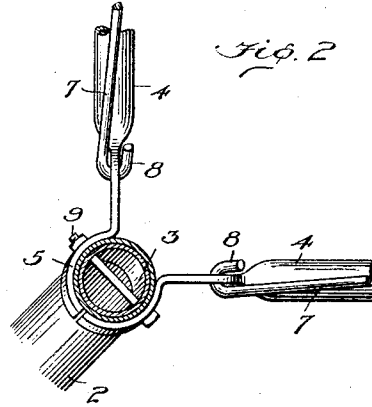
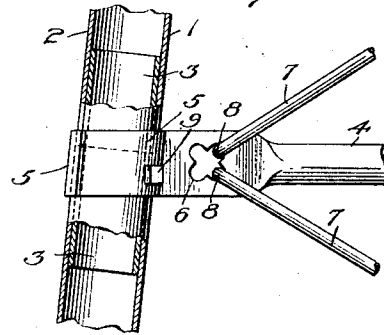


Fig. 3.



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DERRICK.

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My invention relates to the construction of derricks for oil wells or the like, and more particularly to what is commonly known as a pumping derrick, the principal object of the invention being to provide a strong and substantial pumping derrick of simple construction and moderate cost which may be readily erected and be easily disassembled when it is desired to transport the derrick from one location to another.

The principal features of the invention are concerned with the reinforcement of the joints of the sectional derrick legs and the connection of the girths to the legs at said joints. One of these primary features of the invention consists in constructing the derrick with a plurality of legs each of which is formed of a series of tubular sections arranged in longitudinal alinement, and in providing girths connecting said legs at the adjacent ends of said tubular sections, splicing members being inserted in the legs so as to extend into a plurality of the adjacent leg sections, the girths being formed at their ends with clamp portions each of which engages and partially embraces a derrick leg adjacent thereto, and the clamp portions at the neighboring ends of a pair of girths being secured to the derrick leg embraced between them by means of a bolt which extends through the adjacent splicing member and thereby retains the latter in position.

A further feature of the invention consists in constructing the derrick with a plurality of legs each of which includes a series of tubular sections arranged in longitudinal alinement, girths provided at their ends with clamp portions being employed for connecting said legs at the adjacent ends of the tubular leg sections, tubular splicing members being inserted in the legs at the joints thereof so as to extend into a plurality of the leg sections, and bolts which respectively pass through adjacent clamp members of a pair of girths and through the splicing member associated therewith forming means for connecting the said girths and splicing member to the derrick leg, neighboring clamp portions of the girths being in horizontal alinement and extending toward each other outwardly around the derrick leg embraced between them.

There are other features of the invention residing in particular combinations of parts

and advantageous details of construction, all as will hereinafter appear.

In the drawings chosen for the purpose of illustrating the invention, the scope whereof is pointed out in the claims,—

Figure 1 is an elevational view of a pumping derrick constructed in accordance with the invention.

Figure 2 is a detail horizontal section of a portion of the derrick showing the reinforced leg joint and the preferred form of girth connection.

Figure 3 is a detail view, partly in elevation and partly in vertical section, of the leg joint and girth connection.

The derrick is provided with a plurality of legs 1 arranged, as usual, in the form of a pyramid having a square base, each leg comprising a series of tubular sections 2 disposed in alinement end to end, the lowermost leg sections, termed the starting legs, being longer than the others. For a derrick having a load capacity of about thirty tons the leg sections may be formed of pipe approximately two and one half inches in diameter.

Inserted within the derrick legs at the joints thereof are short tubular splicing members 3 which extend into each of the adjacent leg sections. The splicing members which enter the starting legs 2 of the derrick may advantageously be made long enough to form extended reinforcements for said starting legs.

The adjacent legs of the derrick are connected by transversely extending girths 4 the central portions of which are preferably tubular and the ends whereof are fashioned with clamping portions 5. Inwardly of the clamping portions the girths 4 are preferably flattened and provided with apertures 6 for enabling the obliquely extending turnbuckle braces 7 to be connected thereto. The ends of the braces 7 may advantageously be in the form of hooks 8 which, by entering the corresponding eyes or openings 6 in the girths, afford simple and convenient means for detachably securing the braces in their assembled positions.

The clamp portion 5 at the end of each girth engages the adjacent derrick leg 1 and extends outwardly part way around the latter toward the clamp portion 5 at the neighboring end of the adjacent girth 4, so that the derrick leg is embraced between adjacent clamp members. These cooperating

clamp members 5 are preferably positioned in horizontal alinement in overlapping relation to the abutting derrick leg sections 2, thus advantageously cooperating in preserving said sections in alinement.

The girths 4 and the splicing members 3 are maintained in assembled relation to the derrick leg by means of bolts 9, each of which passes diametrically through one of the leg sections 2 and through a plurality of the clamp portions 5, as well as through the adjacent splicing member. This construction is not only simple and efficient, but also is very advantageous in that it necessitates the use of a comparatively few bolts; thus facilitating the assembly and dismantling of the derrick. It will be perceived, moreover, that the girths 4 are combined with the derrick legs in such manner that the connecting bolts are relieved of undue strain; and it will be appreciated that the bolts 9 are not only conveniently accessible but also are related to the girths, the derrick legs and the splicing members in a manner efficiently connecting those parts.

I claim:—

1. A derrick involving a plurality of legs each including a series of tubular sections arranged in longitudinal alinement, girths connecting said legs at the adjacent ends of said tubular sections, said girths being integrally provided at their ends with clamp portions, a clamp portion at an end of one girth and a clamp portion at an end of the adjacent girth being adapted to receive a leg of the derrick between them, and to overlap a plurality of said tubular sections forming said leg, splicing members inserted in said legs and each extending into said leg sections, and a plurality of means for connecting each end of each girth to the derrick leg adjacent thereto, said means involving a member extending through a plurality of said clamp portions and through the splicing member adjacent thereto.

2. A derrick involving a plurality of legs each including a series of abutting tubular sections arranged in longitudinal alinement, girths connecting said legs at the adjacent ends of said tubular sections, said girths being integrally provided at their ends with clamp portions each of which is adapted to overlap the exterior of a plurality of said tubular sections of the adjacent derrick leg, the clamp portions at the neighboring ends of a pair of said girths embracing a leg of the derrick between them, splicing members disposed in telescoped relation to said legs and each overlapping a plurality of said tu-

bular leg sections, and means each extending through a plurality of said clamp portions and through the adjacent splicing member for respectively connecting said splicing members and the adjacent girths to the derrick legs.

3. A derrick involving a plurality of legs each including a series of tubular sections arranged in longitudinal alinement, girths connecting said legs at the adjacent ends of said tubular sections, said girths being integrally provided at their ends with clamp portions each of which overlappingly engages a plurality of said tubular leg sections, splicing members inserted in said legs and each extending into a plurality of said leg sections, and a plurality of means for respectively connecting the adjacent ends of neighboring girths to the corresponding derrick leg, said means involving a device engaging a plurality of said clamp portions, and extending through the splicing member adjacent thereto.

4. A derrick involving a plurality of legs each including a series of tubular sections arranged in longitudinal alinement, girths connecting said legs at the adjacent ends of said tubular sections, said girths being integrally provided at their ends with clamp portions each of which partially embraces a plurality of tubular sections of the adjacent derrick leg, the clamp portions at the neighboring ends of a pair of said girths being in horizontal alinement, obliquely extending tension member braces for connecting adjacent derrick legs through the intermediacy of said girths, said oblique braces being detachably connected to said girths inwardly of the clamp portions of the latter, and bolts respectively passing through a plurality of said clamp portions and through one of the tubular leg sections adjacent thereto.

5. A derrick involving a plurality of legs each including a series of tubular sections arranged in longitudinal alinement, girths connecting said legs at the adjacent ends of said tubular sections, each of said girths having a tubular intermediate portion and flattened end portions, said end portions forming clamps for cooperating with said legs, each of said clamps being disposed in overlapping relation to a plurality of said tubular leg sections, and means for connecting adjacent clamps of neighboring girths to a derrick leg interposed between said clamps.

In testimony whereof I affix my signature.

FRED D. BEARLY.