W. O'BRIEN.

DERRICK.

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1,160,948.

Patented Nov. 16, 1915.

FIG.1.

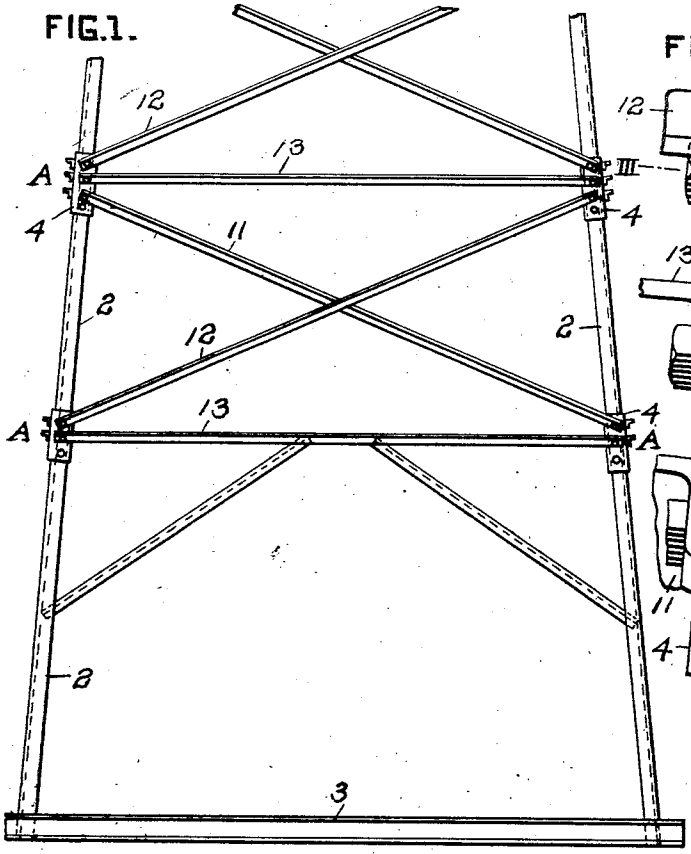


FIG.2.

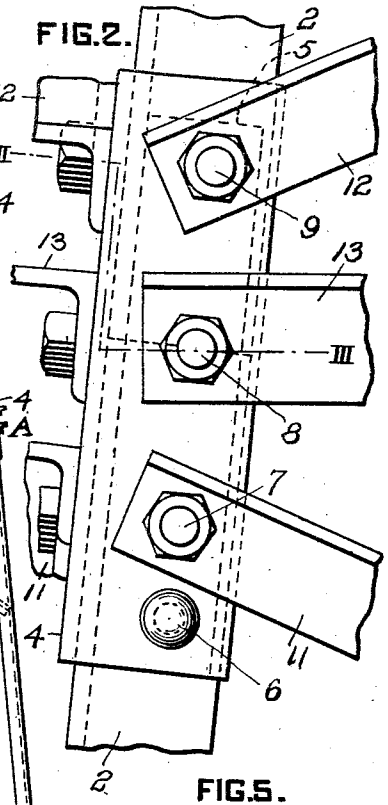


FIG.3.

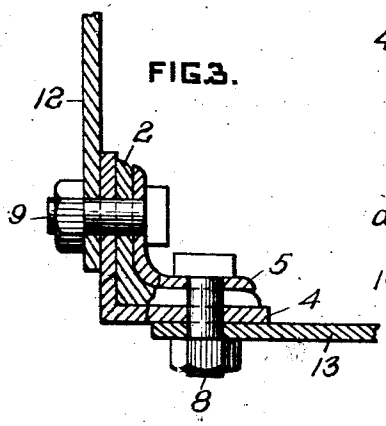


FIG.4.

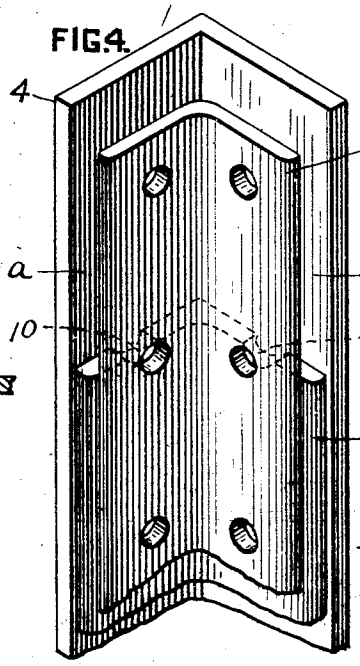
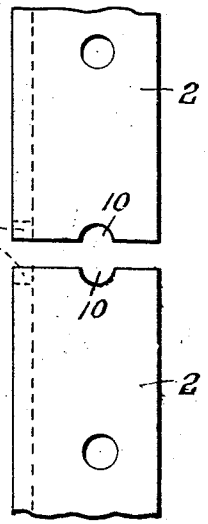


FIG.5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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DERRICK.

1,160,948. Specification of Letters Patent. Patented Nov. 16, 1915.

Application filed January 22, 1915. Serial No. 3,751.

To all whom it may concern:

Be it known that I, WILLIAM O'BRIEN, a citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Derricks, of which the following is a specification.

My invention consists of an improvement in structural framework of the general type known as derricks, either for oil wells or other uses, structural towers of any kind, or the like.

It has for its object to provide, in a construction of such type, means for facilitating the erection, attachment of the braces, development of the building, and to provide a simple, compact structure in the manner more fully hereinafter described.

Referring to the drawings, Figure 1 represents in elevation a portion of a derrick embodying my invention. Fig. 2 is an enlarged detail view in elevation, showing one of the joints. Fig. 3 is an enlarged cross sectional detail view, indicated by the broken line III. III. of Fig. 2. Fig. 4 is a perspective detail view showing the parts in assembled position, ready for the insertion of the adjacent corner section. Fig. 5 is a detail view, showing adjacent ends of the column members partly broken away.

The derrick, or derricks, of the type involved are usually constructed in rectangular form, the corner posts being connected by lateral braces and the present invention particularly relates to the joint construction between the corner post sections. In the construction shown, these sections 2 are of commercial angle iron shape, resting at the bottom upon supporting sill members 3 and joined with successive sections at the joint A, forming the boundary of each "bent." The angle section 2 is provided with reinforcing overlapping members 4 and 5 respectively, also of angle shape, the member 4 preferably having a rectangular inner corner, as clearly shown in Fig. 3, to fit upon the outside of the main post section 2.

Reinforcing members 4 and 5 are permanently secured for a portion of their length to the upper portion of the post 2 by one or more rivets 6. This is of advantage, because the members 4 and 5 need not be entirely removed, and are provided with holes for the securing bolts 7 and 8. The members 4 and 5 are secured to the lower portion of the next upper section 2 by bolt 9. It will be understood that such holding means extend through the leg of each angle member at each side, as clearly shown in Fig. 3.

For the purpose of providing an interlocking engagement and facilitating the placement of one post section with relation to the other, each section is provided at its end with semi-circular openings 10 adapted to provide clearance for the bolt 8. Bolts 7, 8 and 9 are for the purpose also of connecting the terminals of the diagonal braces 11, 12 and horizontal brace 13 with the corner members of the derrick, and these brace members are connected as the derrick is built upwardly. The rivets 6 and bolts 7 and 8 having been applied, but without completely tightening the joint, as to the bolts, a receiving recess *a* is thus provided above the end of the post member 2 and between the joint members 4 and 5 for the reception of the next adjacent post member, as clearly shown in Fig. 4. Thereupon such post member is inserted, its recess 10 fitting over bolts 8, and bolts 9 are then inserted, with the several attached lateral brace members above described, whereupon the several nuts may be tightened, the nuts of bolts 9 being left sufficiently loose to allow of adjustment of the other ends of braces 12 to the level of the next succeeding joint attachment (corresponding to bolt 7) at the other side. The structure is thus progressively built clear to the top, each joint in turn providing the receiving socket for the next adjacent corner member, the joints being successively tightened as the work proceeds toward final completion of the derrick.

The construction, operation and advantages of the invention will be readily understood and appreciated by all those familiar with this class of work. It provides a strong, durable economical derrick, composed of comparatively few standard shapes, of structural steel; it facilitates rapid and easy erection, and may be as easily and quickly taken apart without cutting or injury to any of the parts. It avoids the necessity of slotting any of the members, thereby maintaining their strength at a maximum, while providing a stiff, rigid structure.

It will be understood that the shape, design, proportion or other details of the der

rick may be changed or varied, and that it may be built of any desired weight of material, by the skilled mechanic; but all such changes are to be considered as within the scope of the following claims.

What I claim is:

1. In derrick construction, the combination of adjacent rectangular corner members each having a partial bolt hole opening adapted to register with the other, inner and outer rectangular connecting joint members, and bolts extending through and connecting said members.

2. In derrick construction, the combination of adjacent rectangular corner members each having a partial bolt hole opening adapted to register with the other, inner and outer rectangular connecting joint members, braces connecting the several corner members of the derrick, and bolts extending through the ends of said several braces and through said members.

3. In combination, an angle corner post having bolt holes through each flange and partial bolt holes across its ends, a similar co-acting adjacent corner post abutting against said post, and inner and outer overlapping angle joint members bolted to and securing together said posts.

4. In a derrick, the combination of a plurality of main corner posts each consisting of angular sections in abutting engagement, inner and outer angular joint members overlapping the abutting ends thereof, cross brace members connecting the several corner posts, and bolts extending through the ends of said several brace members and through the post sections and joint members respectively.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WILLIAM O'BRIEN.

Witnesses:
H. HECK,
C. M. CLARKE.