G. P. SLATER.

DERRICK.

APPLICATION FILED APR. 24, 1916.

1,269,326.

Patented June 11, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

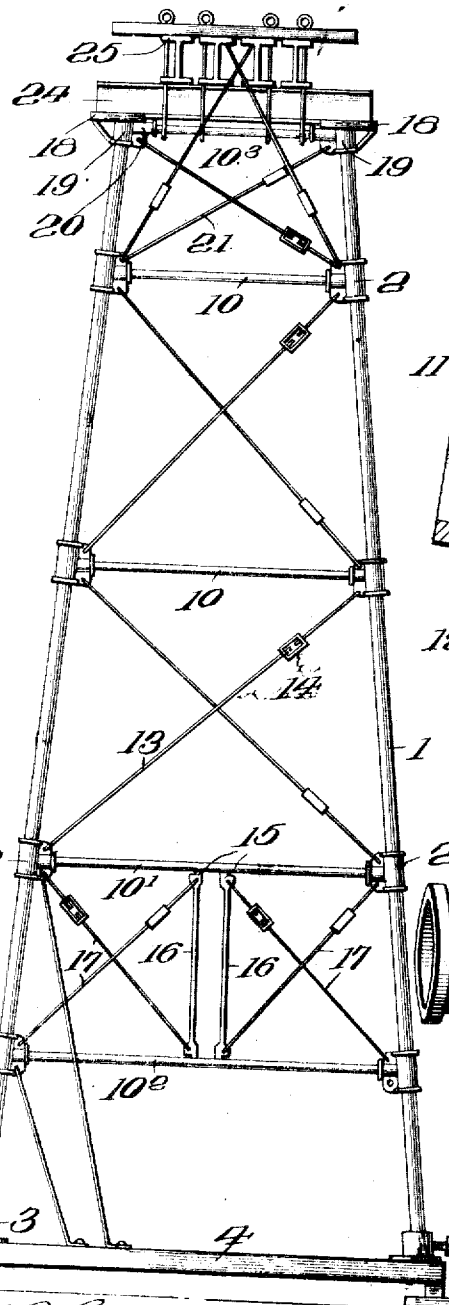


Fig. 2.

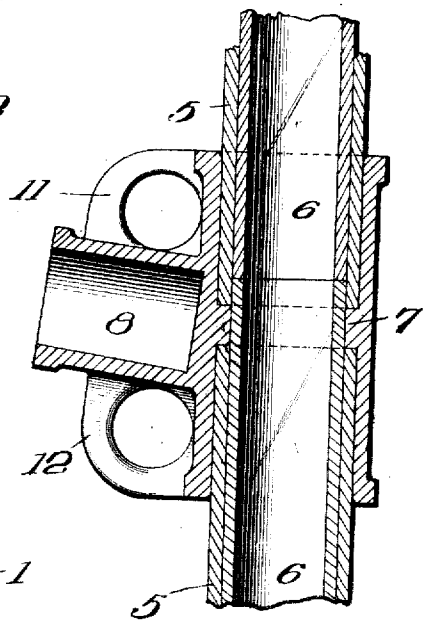
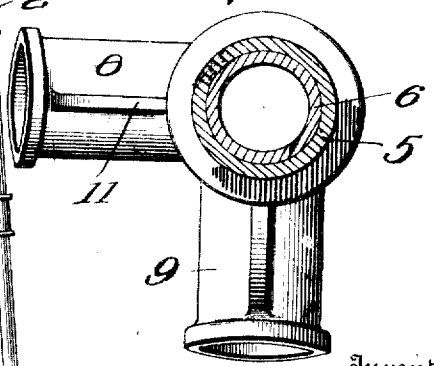


Fig. 3.



Witness

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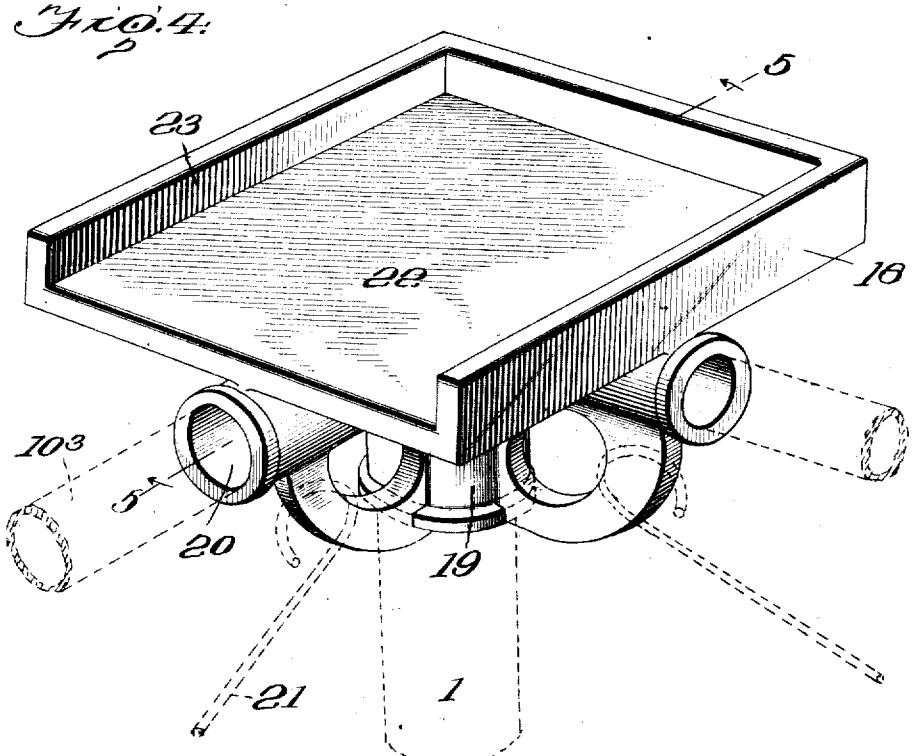
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2 SHEETS—SHEET 2.

Fig. 4.



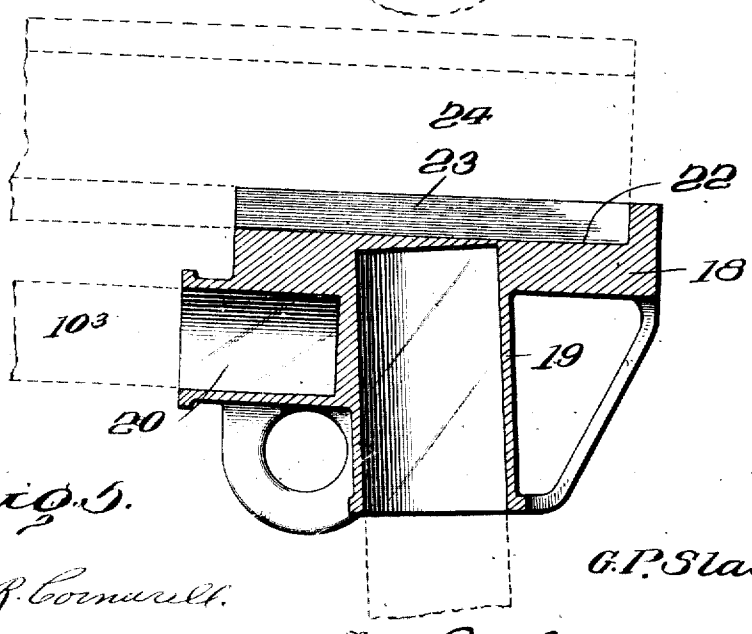


Fig. 5.

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UNITED STATES PATENT OFFICE.

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1,269,326. Specification of Letters Patent. Patented June 11, 1918.

Application filed April 24, 1916. Serial No. 93,173.

To all whom it may concern:

Be it known that I, GUY P. SLATER, a citizen of the United States, residing at Tulsa, in the county of Tulsa and State of Oklahoma, have invented certain new and useful Improvements in Derricks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in derricks adapted to be used in connection with drilling oil, gas and Artesian wells, the object being to provide a boltless derrick formed of a plurality of sectional legs connected together by coupling members having sockets to receive the abutting ends of the legs in order to form a rigid joint without the use of bolts or fastening means of any kind.

Another object of my invention is to provide a derrick in which the sectional legs are formed of concentrically arranged pipes, the inner pipe projecting upwardly beyond the upper end of the outer pipe, so that when a pair of superposed legs are arranged within a coupling, a brake joint will be formed.

Another and further object of my invention is to provide a derrick which is exceedingly simple and cheap in construction and one which can be readily set up or taken down, the upper leg section being provided with cap pieces to receive headers forming supports for the crown block.

Another and further object of the invention is to provide coupling members with sockets arranged at right angles to each other adapted to receive the ends of the girths.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawing,

Figure 1 is a front elevation of my improved construction of derrick showing the beamway.

Fig. 2 is a vertical section through one of the coupling members showing the leg sections in position therein.

Fig. 3 is a horizontal section through one of the leg sections showing the coupling member in plan view.

Fig. 4 is a perspective view of one of the cap members showing the same in position on the upper leg section, the girths and brace rods being broken away, and

Fig. 5 is a vertical section taken on the line 5—5 of Fig. 4.

Like numerals of reference refer to like parts in the several figures of the drawing.

In carrying out my invention, I construct a derrick in the form of a rectangular frame slightly converging formed of a plurality of superposed leg sections 1 herein shown, formed tubular, and arranged in longitudinal alinement with their ends abutting within the couplings 2 to form a complete corner post for the derrick as shown. In the form of derrick herein shown, the lower leg sections are mounted in sockets 3 secured on the corners of a rectangular base 4.

The leg sections 1 are formed of a pair of concentrically arranged tubular members 5 and 6, the inner member 6 projecting upwardly beyond the outer member 5, and in constructing these leg sections, a pair of pipes of different diameter are arranged one within the other of the same length, the inner pipe being forced upwardly within the outer pipe so that at the upper end of each leg section, the inner pipe will project and at the lower end of each leg section, the inner pipe will be spaced from the lower end on the outer pipe section, so as to form a brake joint when the leg sections are arranged in superposed position within the couplings 2 as will be hereinafter fully described.

Each of the couplings 2 is provided with a vertically disposed bore having a central annular flange 7 which is adapted to be engaged by the ends of the outer sections 5, of the legs 1, as shown in Fig. 2, the inner pipe section projecting upwardly into the outer pipe section of the upper leg section and abutting against the end of the inner section 6 of the upper leg when a pair of legs are arranged within the couplings 2 as shown, in Fig. 3.

Each of the coupling members 2 is provided with a pair of horizontally disposed sockets 8 and 9 arranged at right angles to each other and adapted to receive girths 10, for connecting the couplings together to form a rectangular frame, the socket portions 8 and 9 being provided with vertically disposed apertured flanges 11 and 12 into

which the hooked ends of brace rods 13 are adapted to be secured, said brace rods being provided with turn buckles for adjusting the tension thereof.

In the construction of derrick thus far described, it will be seen that each corner post is formed of a series of leg sections provided with abutting ends arranged within coupling members connected together by girths and brace rods so as to form a rigid frame.

The two lower girths $10'$ and 10^2 are provided with slotted portions in which the flattened notched ends 15 of guide rods 16 are mounted to form a beamway said rods being connected to the adjacent coupling members 2 by brace rods 17 which are provided with the usual turn buckles. A stemway, not shown, is formed on the back of the derrick in substantially the same manner as the beamway.

Mounted on the upper leg sections 1 are cap members 18 provided with sockets 19 to receive the upper ends of the leg sections and sockets 20 arranged at right angles to one another to receive girths 10^3, the sockets 20 having depending apertured portions in which the hooked ends of the brace rods 21 are secured. The cap members 18 are formed with horizontally disposed plate portions 22 supported by braces and having vertical flanges 23 around three of their sides in which are seated the ends of eye beams 24 on which is mounted a four-piece crown block 25.

From the description, it will be seen that I have provided a derrick formed of four corner posts, each corner post being formed of a plurality of leg sections arranged with their ends abutting within couplings which are provided with sockets to receive the girths and apertured flanges to receive the hooked ends of brace rods, whereby the derrick can be readily set up or taken down by simply loosening the turn buckles of the brace rods and separating the members. It will also be seen that each leg section is formed of a pair of concentrically arranged pipes so arranged in respect to each other that when the series of the leg sections are arranged in superposed position within the couplings, they will form a brake joint to provide a rigid connection. It will also be noted that the coupling members are provided with centrally disposed shoulders within the bores so that the outer pipe sections abut against these shoulders when the leg sections are arranged in position thereon.

It will be seen that I have provided a derrick in the form of a rectangular frame slightly converging having a plurality of legs arranged in longitudinal alinement with their ends abutting in coupling members to form complete corner posts for the derrick, each coupling member being provided with a pair of sockets arranged at right angles to each other to receive the cross girths.

I claim:

1. A derrick having sectional legs connected together by coupling members, each section comprising a pair of concentrically arranged tubes arranged to break joints, the inner tube of each section projecting outwardly beyond the outer tube, and adapted to engage the inner tube of the adjacent section, the ends of the outer tubes engaging said coupling member.

2. A derrick having sectional legs connected together by coupling members, each coupling member having a bore provided with a centrally disposed annular flange, each leg section being formed of a pair of concentrically arranged tubes of different lengths, the outer tube of each section abutting against said flange, and the ends of the inner tube of each section being arranged in contact with the ends of the inner tubes of the adjacent sections to one side of said flange.

3. A derrick formed of a rectangular frame having sectional legs, each leg section comprising a pair of concentrically arranged tubes of different lengths, the inner tube of each leg section projecting outwardly into the outer tube of the adjacent leg section and abutting against the inner tube thereof, coupling members surrounding the said leg sections at the joints thereof, and flanges formed on said coupling members contacting with the ends of the outer sections of said legs.

4. A derrick having sectional legs, each leg section being formed of a pair of concentrically arranged tubes of different lengths, the ends of the inner tube of each section being in engagement with the ends of the inner tube of the adjacent sections, and coupling members surrounding said leg sections at the ends thereof, having annular flanges engaging the ends of the outer sections of said legs.

5. A derrick comprising a substantially rectangular frame formed of corner posts, each corner post comprising a series of vertically arranged sections, each section comprising a pair of concentrically arranged tubes of different lengths, the inner tube of each section projecting upwardly beyond the outer tube of each section and adapted to fit within the lower end of the outer tube of the adjacent section, and engage the lower end of the inner tube thereof, and coupling members surrounding the joints of said section having an annular flange engaging the end of the outer sections.

6. A derrick having sectional tubular legs composed of concentrically arranged tubes of different lengths, the inner tube of each section projecting outwardly at one end beyond the outer tube, coupling members sur-

rounding the abutting ends of said sectional legs having flanges engaged by the outer sections thereof, the abutting ends of the inner tubes being arranged in a different plane to form a break joint for said sectional legs.

7. A derrick having sectional legs composed of concentrically arranged tubes arranged to break joints, a coupling member having an annular internal flange arranged to engage the ends of the outer tubes, said coupling member having sockets, the ends of the inner tube being in engagement with one another.

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

GUY P. SLATER.

Witnesses:
H. R. SLATER,
R. B. LINN.