No. 731,109. PATENTED JUNE 16, 1903.

J. C. KNUPP.

WELL DERRICK.

APPLICATION FILED APR. 18, 1903.

NO MODEL.

Fig. 3.

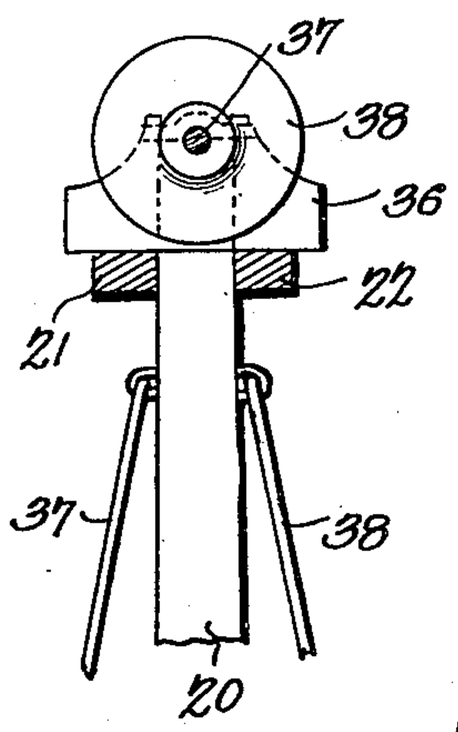


Fig. 2.

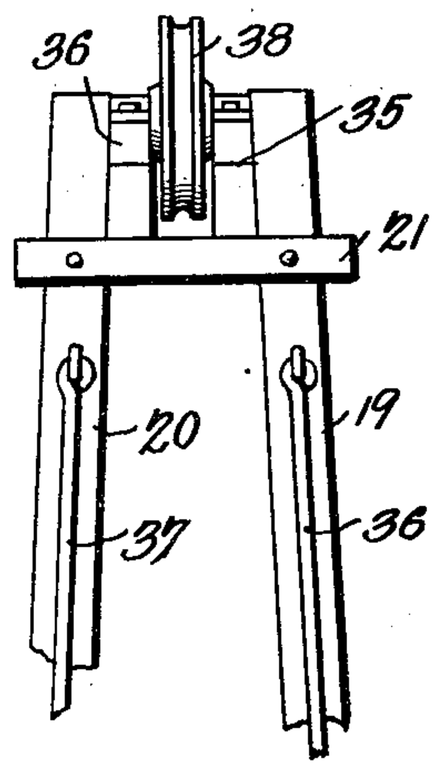
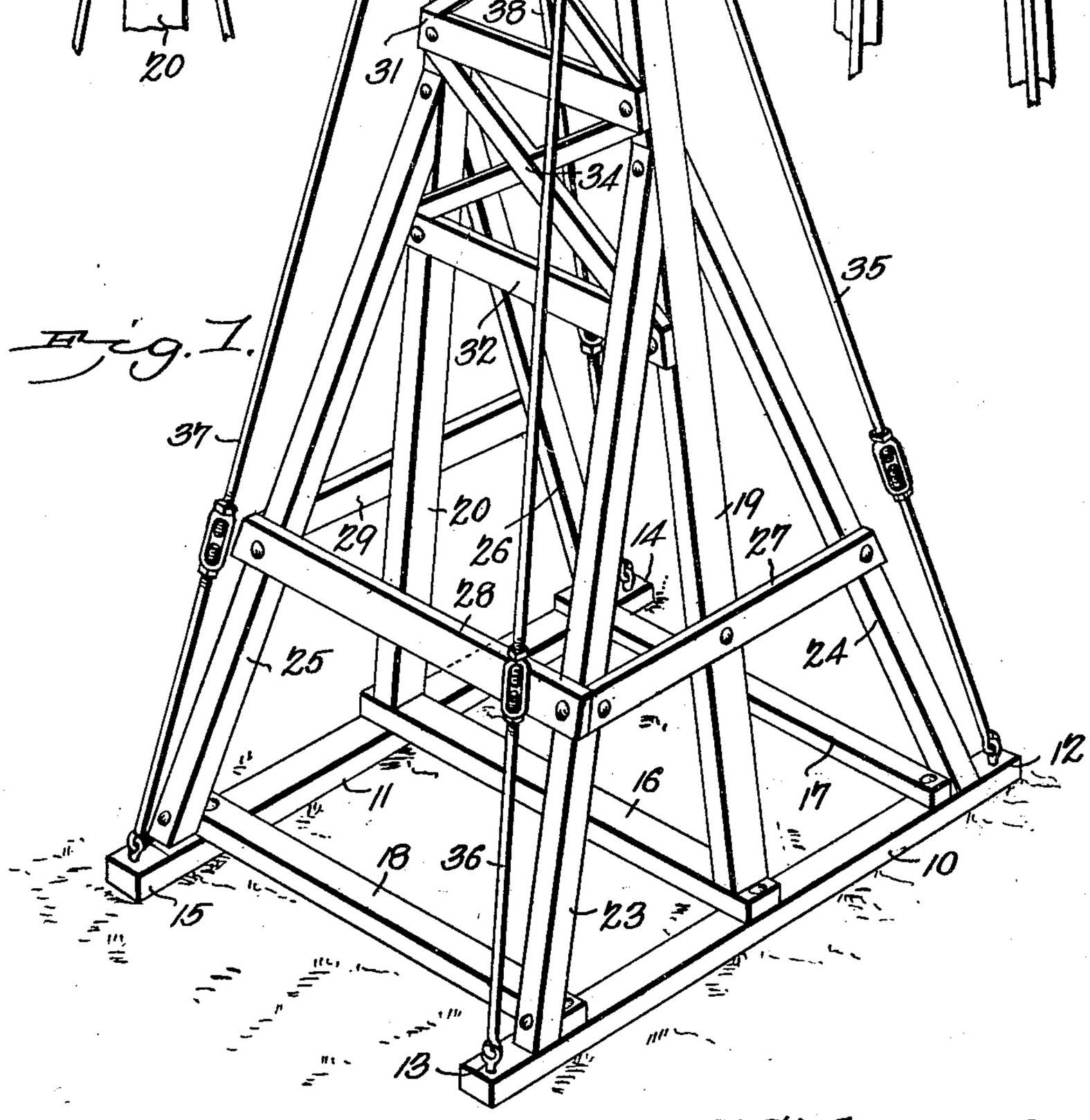


Fig. 1.



Witnesses

E. F. Stewart

C. N. Woodward.

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Attorneys

No. 731,109. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

JACOB C. KNUPP, OF CHAFFEE, PENNSYLVANIA.

WELL-DERRICK.

SPECIFICATION forming part of Letters Patent No. 731,109, dated June 16, 1903.

Application filed April 18, 1903. Serial No. 153,281. (No model.)

To all whom it may concern:

Be it known that I, JACOB C. KNUPP, a citizen of the United States, residing at Chaffee, in the county of Elk and State of Pennsylvania, have invented a new and useful Well-Derrick, of which the following is a specification.

This invention relates to derricks employed more particularly in drilling oil-wells, gas-wells, Artesian wells, and for similar purposes, and has for its object to simplify and improve devices of this character, lighten and cheapen the construction, and increase the strength without decreasing the efficiency; and the invention consists in certain novel features of the construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, in which corresponding parts are denoted by like designating characters, Figure 1 is a perspective view of the device complete. Fig. 2 is a front view, and Fig. 3 is a transverse sectional view, of the "head" of the derrick, illustrating the construction of this portion more fully.

The improved derrick comprises a base portion formed of spaced side members 10 11, having extended ends 12, 13, 14, and 15 and connected by a central transverse member 16 and spaced transverse members 17 18, all the parts being securely bolted together, so that they can be easily separated and put together again when required. The transverse members 16, 17, and 18 will be utilized to support the floor of the derrick; but as the floor forms no part of the invention it is omitted, as its presence would obscure some novel portions of the structure which it is desired to illustrate. Rising from the ends of the central transverse member 16 are two main vertical members 19 20, tapering uniformly toward their upper ends and converging inwardly and connected at points below their upper ends by transverse tie-bars 21 22, thus leaving the upper ends of the vertical members extending above the tie-bars, as shown. The main vertical members 19 20 are supported by inclined brace members 23, 24, 25, and 26, connected at their lower ends to the base members 10 11 just outside the transverse members 17 18 and with their upper ends "scarfed" and secured to the vertical members 19 20 intermediately of their heights, as shown. The inclined brace members and the vertical members are further supported by horizontal tie-plates 27 28 29, while the vertical members are also further supported by transverse tie-bars 30, 31, and 32 and reversely-diagonal braces 33 34, as shown. Connecting the extended ends 12, 13, 14, and 15 of the base members 10 11 with the upper portions of the vertical members 19 20 are stay-rods 35, 36, 37, and 38, each rod preferably with a turnbuckle or other means for "straining" it longitudinally to secure the proper tension. By this simple means a very compact, strong, and light derrick is produced composed of relatively few parts and each part coacting to support and strengthen the other parts and effectually resisting all strains to which it may be subjected no matter from what direction they may come.

The parts comprising the derrick are so distributed and the relative strength so proportioned that no superfluous weight is employed. Hence the resistance is uniformly distributed throughout, so that a very economical structure is produced, which will efficiently resist all the strains to which it is subjected and combining the minimum of strength and lightness with the maximum of efficiency.

The parts of the framework may be of wood or metal or partially of each and may be of any required size or proportion.

Transversely disposed upon the tie-bars 21 22 are spaced crown-blocks 35 36, engaging the inner surfaces of the extended upper ends of the side members 19 20 and supported thereby from lateral movement and connected by a pulley-shaft 37, upon which the cable-pulley 38 is journaled between the crown-blocks, as shown. By this simple means the cable-pulley is efficiently supported and the crown-blocks likewise supported and all lateral movement prevented.

Having thus described the invention, what I claim is—

1. A derrick comprising a base portion formed of spaced side members having extended ends and connected by a centrally-disposed transverse member, and transverse members spaced from said central member,

main vertical members connected to said central member and converging toward their free ends and connected by transverse tie-bars, inclined brace members secured to said base side members and to said spaced transverse members and likewise to said vertical members intermediately of their height, and stay-rods between the extended ends of said base members and the upper ends of said vertical members, substantially as described.

2. A derrick comprising a base portion formed of spaced side members and connected by a centrally-disposed transverse member, and transverse members spaced from said central member, main vertical members connected to said central member and converging toward their free ends and connected by transverse tie-bars, and uniformly tapering toward their upper ends, and inclined brace members secured to said base side members adjacent to said spaced transverse members and likewise to said vertical members intermediately of their heights, substantially as described.

3. A derrick comprising a laterally-extended base portion, vertical side members spaced apart and rising from said base portion and converging toward their upper ends, transverse tie-bars connecting said side members, below their upper ends, crown-blocks supported transversely of said tie-bars between the upper ends of said side members and laterally supported thereby, and a cable-pulley mounted for rotation between said crown-blocks, substantially as described.

4. A derrick comprising a base portion formed of spaced side members connected by a central transverse member and spaced transverse members, main vertical members connected to said central member and converging toward their upper ends and connected by transverse tie-bars, spaced transverse tie-bars intermediately connecting said vertical members, and with reversely-disposed diagonal braces connecting said vertical members between them, and inclined brace members secured to said base side members and to said vertical members intermediately of their heights, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JACOB C. KNUPP.

Witnesses:
JOHN TRUBY,
J. F. PHILLIPS.