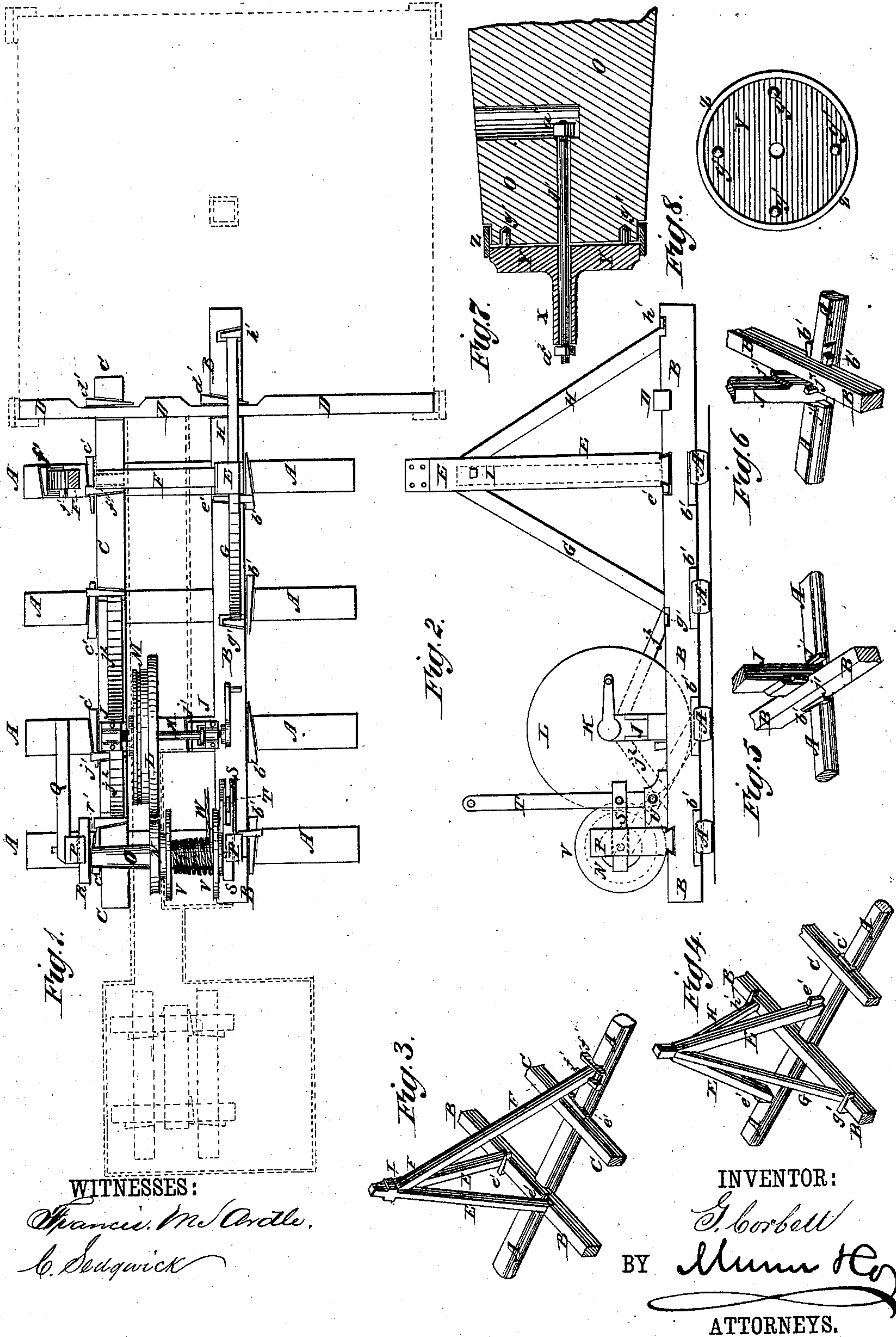


G. CORBETT.  
Oil-Well Rig.

No. 216,259.

Patented June 10, 1879.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE CORBETT, OF PETROLIA, PENNSYLVANIA.

## IMPROVEMENT IN OIL-WELL RIGS.

Specification forming part of Letters Patent No. **216,259**, dated June 10, 1879; application filed October 31, 1878.

*To all whom it may concern:*

Be it known that I, GEORGE CORBETT, of Petrolia, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement in Oil, Gas, and Salt Well Apparatus, of which the following is a specification.

Figure 1 is a top view of a portion of the apparatus illustrating my invention. Fig. 2 is a side view of the same. Fig. 3 is a perspective view of a modification of the same. Fig. 4 is a perspective view of another modification of the same. Fig. 5 is a perspective view showing how the reel-post is secured. Fig. 6 is a perspective view of a modification of the same. Fig. 7 is a longitudinal section of the gudgeon and part of the shaft. Fig. 8 is a detail view of the inner side of the gudgeon plate or flange.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of oil, gas, and salt well apparatus, so as to make it stronger, more convenient in use, and more easily adjusted, should it get out of true, than apparatus constructed in the usual way.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

A are the mud-sills. B is the main or line sill, which is placed in cross-notches in the upper sides of the mud-sills A, and secured in place by keys *b'* driven into the said notches at the sides of the said main sill; or the lower side of the main sill B may be notched to receive the mud-sills A, and may be secured in place by keys *b'* driven into the said notches and into rabbets in the sides of the said mud-sills A, as shown in Fig. 6.

C is the side or sub sill, which is placed in notches in the upper sides of the mud-sills A, and is secured in place by keys *c'* driven into the said notches at the sides of the said sub-sill C.

D is the first derrick-sill, which is placed in cross-notches in the upper sides of the main and sub sills B C, and is secured in place by keys *d'* driven into the said notches at the side of the said derrick-sill D.

E is the samson-post, the lower end of which is inserted in a cross-notch in the upper side

of the main sill B, at a little distance from the derrick-sill D, and is secured in place by a key, *e'*, driven into the said notch at the side of the said lower end of the said post E.

The upper end of the samson-post E is squared off to receive the walking-beam irons, which are secured to it by bolts.

The samson-post E is strengthened in position by three braces, F G H. The upper end of the brace F is inserted in a mortise in the upper part of the rear side of the post E, where it is secured in place by a bolt, I. The lower end of the brace F is inserted in a dovetailed cross-notch in the sub-sill C, where it is secured in place by two keys, *f'*; or the lower end of the brace F may be placed in a dovetailed cross-notch in the mud-sill A, and secured in place by two keys, *f'*. Both arrangements are shown in Fig. 1.

The upper ends of the side braces, G H, are inserted in mortises in the sides of the upper part of the post E, and their lower ends are placed in mortises in the upper side of the main sill B, where they are secured in place by the keys *g' h'*.

In the modification shown in Fig. 3, the samson-post E is made in two parts, the upper ends of which are beveled and are secured to each other. The parts of the post E incline from each other toward their lower ends, and the said lower ends are placed in cross-notches in the main sill B, and are secured in said notches by keys *e'*.

In the modification shown in Fig. 4 the post E is made in two parts, secured to each other at their upper ends, and inclining from each other toward their lower ends, and the said lower ends are inserted in mortises in the mud-sill A upon the opposite sides of the main sill B, where they are secured in place by keys *e'*.

J are the jack-posts, in bearings in the upper ends of which the crank-shaft K revolves. The lower end of the rear jack-post J is inserted in a dovetailed cross-notch in the sub-sill C, where it is secured in place by a key, *j<sup>1</sup>*. The rear jack-post J is strengthened in position by two side braces, *j<sup>2</sup>*, the upper ends of which are inserted in mortises in the sides of the upper part of the said jack-post J.

The lower ends of the braces *j<sup>2</sup>* are inserted



in mortises in the upper side of the sub-sill C. The lower end of the forward jack-post J is inserted in a notch in the side of the main sill B and in a dovetailed notch in the upper side of the mud-sill A, where it is secured in place by keys  $j^1$ . The notch in the mud-sill A may be an extension of the notch in the said mud-sill A when the main sill B is placed in a notch in the mud-sill, and may be a separate notch when the said main sill is notched to receive the mud-sill. These two arrangements are shown in Figs. 5 and 6. This construction allows the main sill B and the sub-sill C to be placed parallel with each other and at right angles with the mud-sill A.

To the crank-shaft K is attached the band, friction, or drive wheel L and the bull or tug wheel M. Against the face of the band-wheel L rests the face of the friction-wheel N, which is attached to the shaft O.

P are the sand-reel posts, the rear one of which is mortised and keyed to the mud-sill A a little to the rear of the sub-sill C, and is strengthened by the brace Q.

The upper end of the brace Q is bolted to the rear side of the upper part of the rear reel-post P, and its lower end is bolted to a mud-sill, A. The lower end of the forward reel-post P is dovetailed and keyed in a dovetailed notch in the upper side of the main sill B.

The rear gudgeon of the reel-shaft O revolves in bearings in a block, R, placed in a cross-notch in the upper part of the forward side of the rear reel-post P, and secured in place by a key,  $r'$ . The forward gudgeon of the reel-shaft O revolves in bearings in a block, S, which slides in a dovetailed groove in the inner side of the upper part of the forward reel-post P.

The forward end of the sliding bearing block S is slotted, and to it within the said slot is pivoted the lever T, the lower end of which is pivoted to a block, U, attached to the main sill B, so that the friction-wheel N may be readily thrown into and out of gear with the band-wheel L by operating the said lever T.

To the forward part of the shaft O is attached the reel V, the drum of which may be made tapering to cause the rope W to range properly with the center of the top of the derrick, or it may be made straight, as may be desired. The reel V is made short and with wide flanges, so that the rope W will form a short and high coil, and will thus raise the sand-pump quicker. One of the flanges of the reel V may be made thick to adapt it to be used as a brake-wheel when lowering the sand-pump, or a separate brake-wheel may be used. By this construction the reel is placed at right angles, or nearly so, with the band-wheel L, so that the friction-wheel N will act squarely against the face of the said band-wheel L, and will not injure or destroy it.

It will be observed that the lever operates upon the longer end of the reel-shaft O, and

may thus be more easily operated. This construction also brings the rope coil upon the forward side of the band-wheel. The shaft O may, however, be reversed, if desired, bringing the rope coil upon the rear side of the band-wheel.

The gudgeon X of the reel-shaft O is cast upon the center of the face-plate Y, which fits upon the end of the said shaft O, and has a wrought-iron band, Z, around its edge. The band Z projects so as to fit into a rabbet formed around the end of the shaft O, as shown in Fig. 7.

Upon the inner side of the gudgeon-plate Y are formed four (more or less) dowel-pins,  $y'$ , to enter holes in the end of the shaft O.

The gudgeon X is perforated longitudinally to receive the bolt A', by which it is secured in place. The inner end of the bolt A' is screwed into a nut,  $a^1$ , placed in a transverse hole in the shaft O. The bolt A' has a nut,  $a^2$ , screwed upon its outer end. The dowel-pins  $y'$  are made pointed, to adapt them to be used for marking the places where the holes are to be bored. This is done after the bolt A' has been secured to the shaft O by placing the gudgeon upon the said bolt and striking it with a maul or mallet, which causes the dowel-pins  $y'$  to indent the end of the shaft O, and thus mark the places for the holes. This construction prevents the shaft O from splitting or opening, and should the said shaft shrink it will grasp the dowel-pins more firmly, and will thus hold the gudgeon more securely in place. In case it is not desired to use the bolt A', the gudgeon may be secured in place by bolts through the flange or plate.

A weatherboarding or partition of boards should pass between the friction-wheel and the band-wheel, whether the reel takes the rope hand or left hand side of the apparatus, to secure a dry band or belt wheel at all times.

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

1. In an oil, gas, and salt well apparatus, the combination, with mud-sills A B, arranged at right angles to each other, of the forward jack-post J, keyed to one and dovetailed to the other of said sills, as and for the purpose specified.

2. The combination, with the sand-reel shaft O and journal-blocks R S, of the posts P, the forward one keyed to sill B, and the rear one to sill A, substantially as and for the purpose set forth.

3. The band-wheel L and flanged reel V, the latter arranged on shaft O at right angles to band-wheel, in combination with a friction-wheel, N, arranged as and for the purpose specified.

GEORGE CORBETT.

Witnesses:

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