

(No Model.)

G. CORBETT.
WELL DRILLING RIG.

No. 412,602.

Patented Oct. 8, 1889.

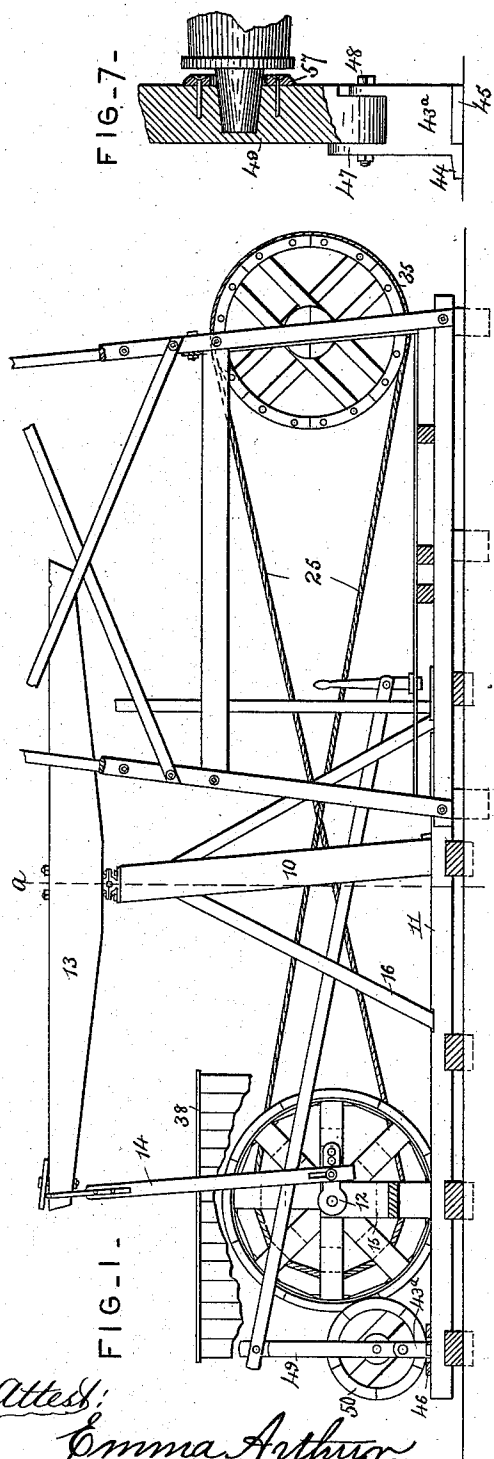


FIG. 7 -

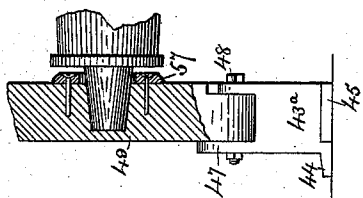


FIG. 3 -

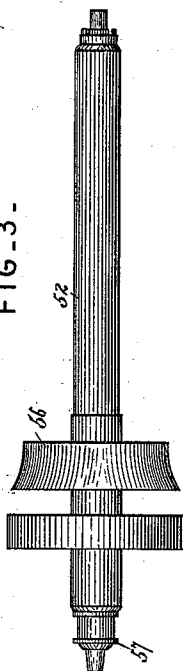


FIG. 6 -

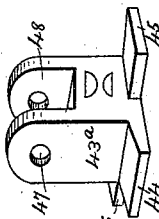


FIG. 4 - FIG. 5 -

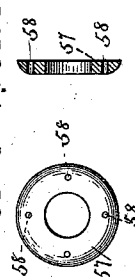
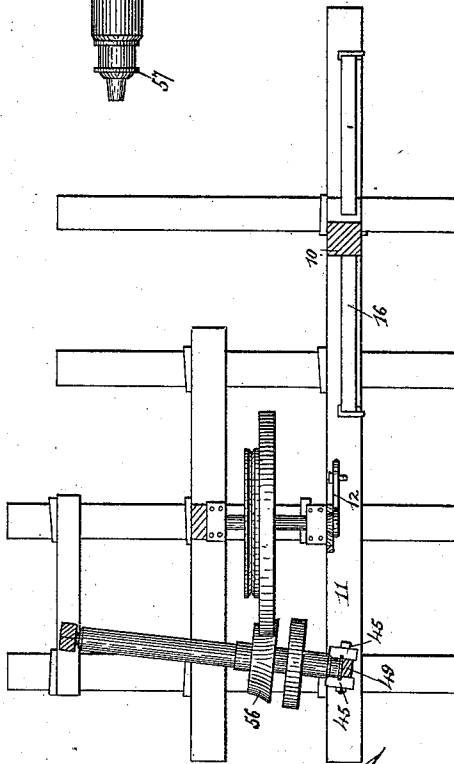


FIG. 2 -



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WELL-DRILLING RIG.

SPECIFICATION forming part of Letters Patent No. 412,602, dated October 8, 1889.

Application filed October 4, 1888. Serial No. 287,131. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CORBETT, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Well-Drilling Rigs, of which the following is a specification.

My invention consists of various features of novelty, which will first be fully described with reference to the accompanying drawings, and then more specifically pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of a drilling-rig and lower portion of the derrick. Fig. 2 is a ground plan of the rig-timbers, showing the position of the sand-reel and lever-post. Fig. 3 is a side elevation of the sand-reel. Fig. 4 is a face view of the friction-collar, hereinafter described. Fig. 5 is a cross-section of the same. Fig. 6 is a perspective view of the sand-reel lever-post. Fig. 7 is a side elevation of the sand-reel lever-post, to which is fastened a portion of the sand-reel lever. This lever is broken away to show one method of applying the friction-collar, which is in cross-section, and also shows the connection of the sand-reel gudgeon with said lever.

In Fig. 1, 10 represents the samson-post. The dotted line *b* is drawn at right angles to the main sill 11, at which angle samson-posts have invariably been set heretofore. It will be observed that in my rig the top of the samson-post is leaning toward the crank 12. The object of this arrangement is to enable the drilling-rig to better withstand the weight of the drilling cable and tools and the jar of the same when drilling.

In instances, say, where the well is one thousand feet deep and the drilling-cable is attached to the temper-screw ready for drilling, when the band-wheel crank 12 is on its lower center, the cable weighing about fifteen hundred pounds and the drilling-tools weighing about two thousand pounds additional, are suspended from the end of the walking-beam 13. Now, with a perpendicular samson-post, as indicated by the line *b*, the weight is transferred through the walking-beam 13 and pitman 14 to the crank 12, thence directly to the jack-post 15 and main sill 11, and it is a common occurrence, where ordi-

nary timbers are used, for the weight of the tools and rope to cause the back end of the rig to lift up at every revolution of the crank, causing an unsteadiness of the entire structure and a false jar to be conveyed to the drill. Thus it will be perceived that my samson-post 10 in its inclined position acts in its capacity as a support to the walking-beam 13; but the weight of the drilling-tools when being lifted is transferred from the walking-beam to the samson-post, not directly in the direction of the length of the latter, but in such a direction as to cause it to have a tendency to fall toward the rear end of the rig. The power exerted in this direction by the samson-post is utilized to hold the rear of the rig down in position by the brace 16, which sustains the weight and transfers it back on the main sill 11, thus holding said sill down in place and preventing the back end of the rig from lifting.

43^a represents the sand-reel lever-post, which is preferably made of cast metal. The base is cast hollow, with the projections and 45. The objects of these projections are twofold: first, to enlarge the base, in order that it may stand firmer, and, second, for securing the post to the main sill 11, which is done by placing the pieces 46 over the projections 45 and spiking them securely to the main sill 11. The upper front flange 47 is made higher than the upper inner flange 48, in order to give a rigidity laterally to the lever 49. The advantages of a lever-post thus constructed are that it is more economical, has greater strength, and is easily adjusted to its proper position on the main sill. This construction has many obvious advantages over the wooden post now in use, which is tenoned and keyed in a mortise in the main sill, and therefore cannot be readily adjusted.

In Figs. 4 and 5 is shown the sand-reel friction-collar 57, which is employed in the manner shown in Fig. 3 or in Fig. 7. The holes 58 in this collar are for the passage of screws or spikes for fastening it to the lever 49, and the hole 59 is for the passage of the gudgeon. The collar is preferably made of metal, and its object is to prevent the front end of the sand-reel shaft 52 from cutting into the sand-reel lever 49. The back end of the sand-reel, when aligned, is much higher than the front

end. Therefore it has constant bearing against the lever 49, which, being of wood, soon wears from the friction caused by the rapid revolutions of the wooden sand-reel; but this friction-collar, being harder than the wooden post or sand-reel, will keep the surface against which it bears burnished, and thus prevent a great proportion of the wear that would ordinarily be produced by the rubbing together of the two wooden surfaces. It can be either fastened to the sand-reel shaft 52, as shown in Fig. 3, or to the lever 49, as shown in Fig. 7.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a rig, the combination, with the main sill, the driving-shaft, and a walking-beam connected with said shaft, of a samson-post planted in said main sill, leaning beyond the perpendicular toward the drawing-shaft and

supporting said walking-beam, substantially as and for the purposes set forth.

2. In a rig, the combination, with the main sill, the driving-shaft mounted thereon, and the walking-beam adapted to receive motion from said shaft at one end and to carry the drilling-rope at the other, of a samson-post supporting said beam and leaning beyond the perpendicular toward the drawing-shaft, and a brace between said post and sill, substantially as set forth.

3. In a rig, the combination, with the main sill and the sand-reel lever 49, of the lever-post having the lever pivoted thereto and the projections therefrom, and the pieces 46, as set forth.

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Witnesses:

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