(No Model.)

# S. WHEELAND.

## WELL DRILLING APPARATUS.

No. 306,792. Patented Oct. 21, 1884.

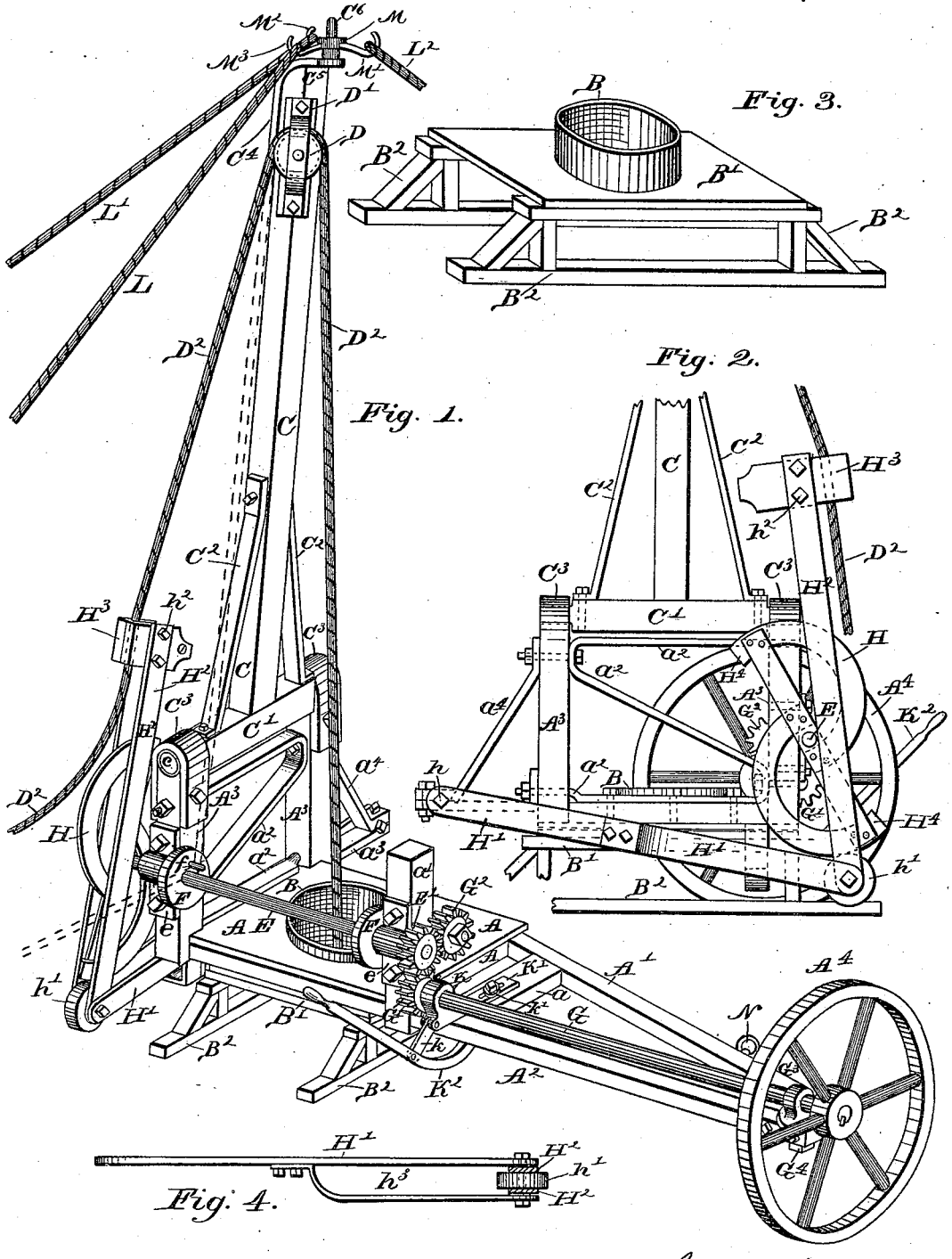

Fig. 1.



Fig. 3.



Fig. 2.



Fig. 4.

Witnesses
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# UNITED STATES PATENT OFFICE.

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## WELL-DRILLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 306,792, dated October 21, 1884.

Application filed July 17, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SIMEN WHEELAND, of Brownsville, in the county of Saline and State of Missouri, have invented certain new and useful Improvements in Well-Drilling Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this improvement is an efficient well-drilling appliance. The invention consists in the peculiar construction and arrangement of the parts, as will be hereinafter fully explained and specifically claimed, reference being had to the drawings herewith filed as part hereof, in which the same letters of reference denote the same parts in the different views.

Figure 1 is a perspective view of a well-drill embodying the features of my improvement. Fig. 2 is a sectional end elevation of the same. Fig. 3 is a perspective view of one of the parts detached. Fig. 4 is a top view of one of the parts detached.

A A′ $A^2$ represent a frame provided with vertical extensions $A^3$ $a'$, and a circular opening fitting over a cylindrical vertical extension, B, of a base-frame, B′ $B^2$, on which the frame A A′ $A^2$ is arranged to revolve for a purpose hereinafter set forth.

C is a vertical beam, tenoned at its lower end to a transverse beam, C′, having journals *c*, by means of which, with straps $C^3$, it is flexibly connected to the vertical extension $A^3$.

$C^2$ represents metal braces for additionally securing the connection of the vertical beam C to the transverse beam C′, and $a^2$ is a Z-shaped metal brace for securing the position of the parts to which it is connected, as shown.

D is a pulley secured to the upper part of the beam C by means of metal arbor D′, to receive and act as a bearing for the rope $D^2$, connecting with the well-drill (not shown) and with an automatically adjustable link or frame, $H^2$, by means of a clamp, $H^3$, secured to the rope $D^2$, and to the link $H^2$ by means of bolts $h^2$.

E is a shaft provided at its outer end with a double cam, H, for a purpose hereinafter set forth, and with disks F F, which serve as guards for winding the rope $D^2$, and elevating the drill from the well as occasion may require. The shaft E revolves in bearings *e e*, secured to vertical extensions *a′* $A^3$ of the revolving frame A A′ $A^2$.

$E^2$ is a gear-wheel secured to the inner end of the shaft E, and arranged to mesh with a pinion, G′, secured to a shaft, G, having a wheel, $A^4$, rigidly affixed to its outer end, as shown, and arranged to revolve in a swivel metal bearing, $G^3$, secured to the frame A′ $A^2$, near its outer end, and an adjustable metal bearing, K, affixed to the transverse beam *a*, and having a slotted extension, K′, for a purpose hereinafter set forth.

H′ is a metal frame or link, flexibly connected to the lateral extension $a^3$ $a^4$ of the revolving frame by a pivot-bolt, *h*, and provided with a friction-roller, *h′*. The vertical beam C has a metal addition, $C^4$ $C^5$, having a pivot, $C^6$, for the reception of a perforated plate, M, having radial hooked projections M′ $M^2$ $M^3$.

L L′ $L^2$ are guy-ropes for steadying the machine.

$K^2$ is a lever connecting by means of a link, *k*, with the adjustable bearing K for the shaft G, for the purpose of putting the pinion G′ on the shaft G out of gear with the pinion E′ on the shaft E, and in gear with the pinion or idle-gear $G^2$, for the purpose of thereby reversing the motion of the shaft E, and elevating the drill from the well by winding the rope $D^2$ thereon, the latter being previously disengaged from the clamp $H^3$, and secured to the disk F by means of staple or hook affixed thereto, as shown at *f*.

The mechanism is put in operation by one or more draft-animals connected through the usual single or double tree to the ring-bolt N, on the frame-extension A′, and driven in a circuit around the vertical extension B of the base frame or platform B′ $B^2$, which is to be rigidly secured in position by any suitable means. As the frame A A′ $A^2$ moves around the platform-extension B, the wheel $A^4$ will revolve and give motion to the shaft G, and through the gearing G′ $E^2$ to the shaft E, provided at its outer end with the double cam H, which will pass through the link or frame $H^2$, and periodically engage with friction-roller *h′*, affixed to the link H′, flexibly connected to

the frame-extension $a^2$ $a^1$, and by bearing the same downward elevate the well-drill until the ends $H^1$ of the cam H pass the roller $h'$, when the drill will drop with the usual effect. As the drilling progresses, the rope $D^2$ is lowered through the clamp $H^3$, as occasion may require. When the work is done, the flexibly-connected vertical extension C is lowered on the part A A′ $A^2$ for convenience of transporting, for which purpose the parts H′ $H^2$ may be disengaged from the frame-work and from each other.

Having explained the construction and operation of my improvement, what I claim as new, and desire to secure by Letters Patent, is—

1. The double cam H, and links H′ $H^2$, and the driving-frame A A′ $A^2$, provided with vertical extension C, and geared shafting G E, all arranged to operate substantially as specified, for the purpose set forth.

2. The frame B′ $B^2$, provided with cylindrical vertical extension B, in combination with the frame A A′ $A^2$, and superstructure, arranged to operate as specified, for purpose set forth.

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

SIMEN WHEELAND.

Witnesses:
A. ARMSTRONG,
W. H. REAVIS.