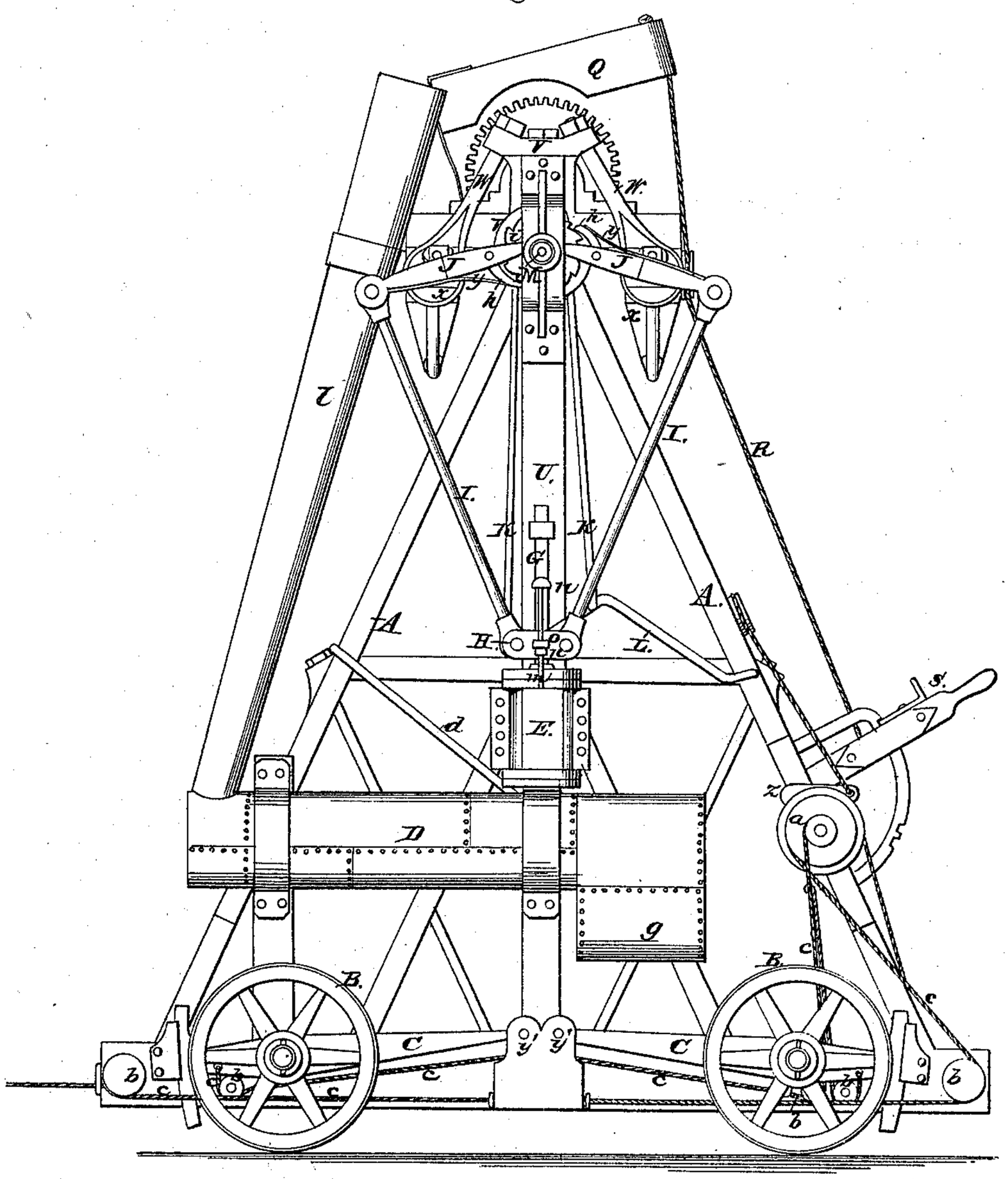
A. B. Beaumont,

2 Sheets, Sheet 1.

Stump Elevator.

No. 81,462. Patented Aug. 25, 1868.

Fig. 1



Witnesses.
J. R. Drake.
Geo. W. Miatt.

Inventor:
A. B. Beaumont.
by
J. Fraser & Co
Atty's

A. B. Beaumont,

2 Sheets, Sheet 2.

Stump Elevator.

No. 81,462. Patented Aug. 25, 1868.

Fig. 3.

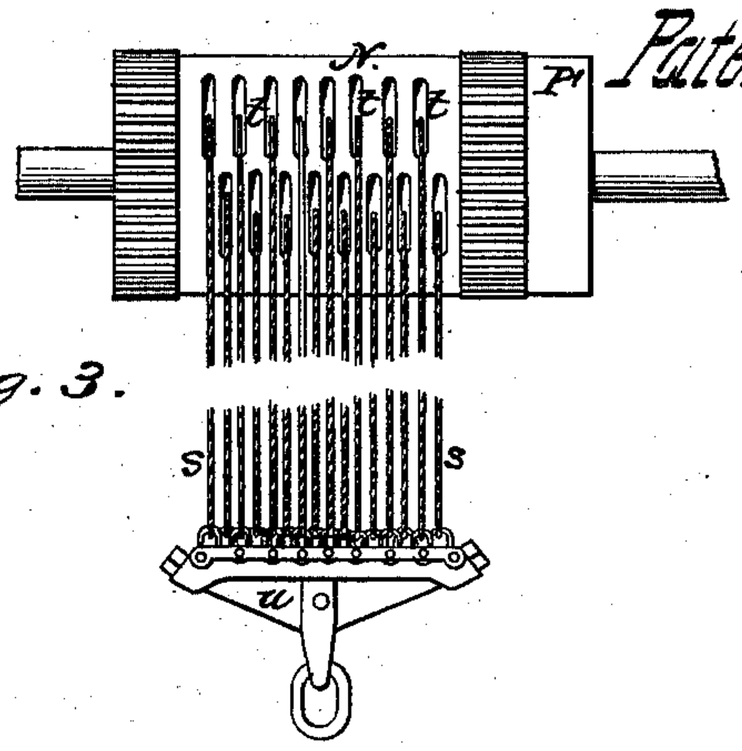


Fig. 2.

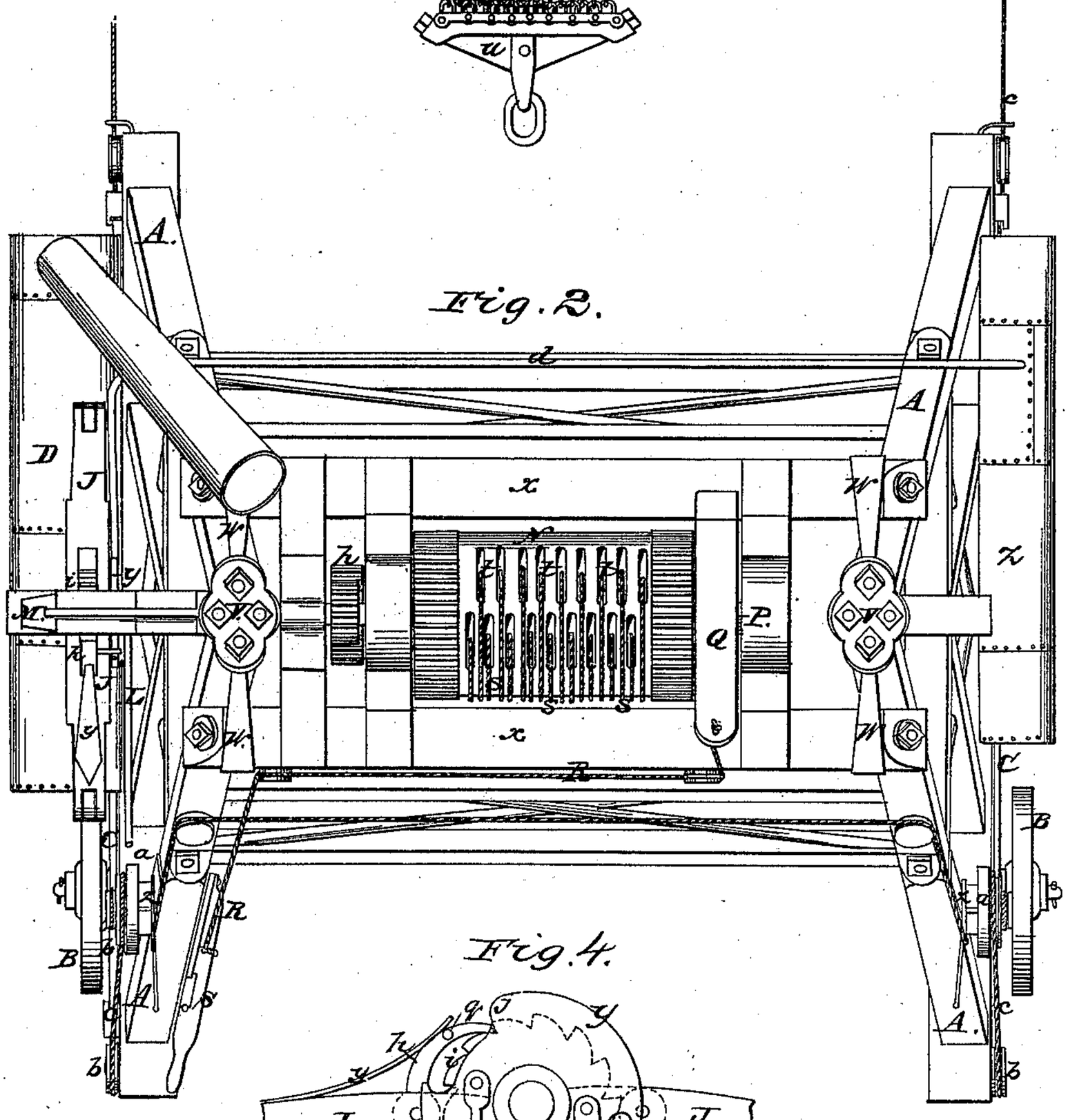
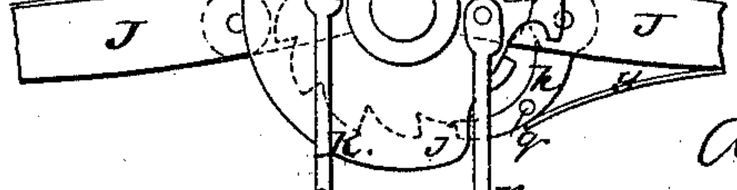


Fig. 4.



Witnesses:

J. R. Blake

Geo. H. Miatt.

Inventor:

A. B. Beaumont.

by

J. Fraser & Co.

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United States Patent Office.

ALFRED B. BEAUMONT, OF AUSTERLITZ, MICHIGAN.

Letters Patent No. 81,462, *dated August* 25, 1868.

IMPROVED STEAM-MACHINE FOR EXTRACTING STUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ALFRED B. BEAUMONT, of Austerlitz, in the county of Kent, and State of Michigan, have invented certain new and useful Improvements in Steam-Machines for Extracting Stumps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of my improved machine.

Figure 2, a plan.

Figures 3 and 4, detail views.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in combining a steam-engine with a machine for drawing stumps, in the manner hereafter described, and in the arrangement of parts consequent to such combination.

In the drawings—

A A represent a triangular wooden frame or derrick, with central uprights, U U.

The tops are surmounted by iron caps, V V, having descending lugs, against which come the ends of the side-timbers or braces.

W W are iron loops or stirrups, depending from the caps, and sustaining the ends of the timbers.

X X are side-timbers of the frame, sustaining the bearings of the roller-shaft, and the ends setting in loops W W.

The whole frame is suitably strengthened and supported by iron rods and wooden braces, and arranged with wheels B B, for transporting the same, said wheels revolving on false axles or gudgeons rigidly attached to sustaining-bars, C C, pivoted at *y' y'* to the side of the frame, which bars raise or lower the machine by means of large pulleys, *a a*, and small grooved wheels, *b b*, and having cords or chains, *c c*, attached to the ends of the sustaining-bars C C, and passing around the pulleys and grooved wheels down to side-piece of wooden frame, where the cords either extend through or are connected to an iron rod running in cleats having hooks at the ends, and operated by attaching horse or other power thereto.

By means of this arrangement the machine can be elevated at pleasure, by drawing at either end of the cords, and changed to any position, according to which end the moving power is applied.

z z are spring-catches, which connect with the teeth or pins of pulleys *a a*, and hold the machine in position when raised on the wheels, and prevent it from descending.

The two catches, on opposite sides, are suitably attached, and work simultaneously.

D is a boiler attached to the frame, with furnace, *g*, and smoke-stack, *l*. A water-heater may also be used, if desired.

E is the cylinder, and *d* the water-supply pipe running from a large reservoir, Z, which is attached to the derrick opposite the boiler, to counterbalance the weight.

m is the rod which operates the cocks or plug-valves in the steam-chest; *n n*, projections on this rod, with which clavicular projections, *o*, from the cross-head, come in contact to operate the valves.

G is the guide for cross-head H, which latter is made of such length that the line of resistance from the connecting-rods I I, being continued downward, would strike about the centre of the piston.

By this arrangement there is scarcely any friction on the guides.

These connecting-rods I I are pivoted at lower ends to the cross-head, and at the upper ends to arms, J J, turning on centre or shaft M, said arms being provided with pawls, *h h*, one pointing up and the other down, and operating alternately on the ratchet-wheel *i*.

The pawls are held in contact with the ratchet-wheel by springs *y y*, attached to arms J J, and have lateral projecting pins or studs, *q q*.

As the arms are raised, the pawl on one side engages with a tooth on that side of the wheel, and carries around, while the pawl on the other side rides over the teeth, and on the descent of the arms this pawl catches,

and the other one slips in turn, thus alternating in action, but producing a forward turning movement of the ratchet-wheel, both in the up and down action.

In order to throw these pawls out of gear, when a stump is to be lowered after having been extracted, a cam-plate, *y*, is provided with cams, *j j*, which, when turned to the proper position, strike the pins *q q*, thus elevating them.

The cam-plate is operated by jointed rods, K K, connecting with hand-lever L.

The ratchet *i* works one end of shaft M. The other end is provided with a pinion, *p*, giving motion to a train of gears that actuate roller N. I arrange on and attach to this roller a number of iron or steel-wire ropes, *s s s*, with loops darned on the ends, and then put into recesses, *t t t*, in roller N; then a rod is passed through the roller and through each of these loops. The other ends of these wire ropes are firmly secured to an iron yoke, *u*, which is provided with suitable chains and hooks for attaching to and extracting stumps.

P′ is a brake-head, operated upon by the brake Q, with connecting-cord or rod, R, which passes down over suitable pulleys to and is actuated by lever S, attached to frame A, and having suitable holding-attachments.

The operation of the machine is so simple as to hardly need explanation. With the derrick elevated over the driving-wheels, and horses or oxen attached, it is drawn over the stump to be extracted, and the roller operated to let down the wire ropes and tackle, which are then connected to suitable fastenings about the stump, then steam applied, and the stump drawn out.

By uniting a steam-engine to a derrick, much of the labor of moving two machines and arranging the connections is saved, and I am not aware that the two have ever been combined in one machine before.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement, with the derrick A A, mounted upon wheels B B, of the steam-engine D E *g*, with stack *l* and the reservoir Z, the whole being in portable form, whereby the machine may be moved over a stump, and the steam applied for extracting it, as herein set forth.

2. The combination and arrangement of the connecting-rods I I, jointed arms J J, pawls *h h*, with the ratchet-wheel *i*, whereby the forward turning of the ratchet is produced at both strokes, in the manner and for the purpose specified.

3. The combination, with the pawls *h h*, of the cam-plate *y*, having cams *j j*, rods K K, and lever L, for throwing said pawls out of gear, as herein set forth.

4. The arrangement of the wire ropes *s s* passing through slots *t t*, and retained by a rod passing through the loops, as set forth.

5. The arrangement of the brake Q, connecting-cord or rod R, and lever S, with the brake-wheel P, as herein described.

6. The combination and arrangement, with the wheels B B, of the swing or sustaining-bars C C and the rope or chains *c c*, pulleys *a b*, and holding-devices *z z*, as herein set forth.

7. The arrangement, as a whole, consisting of the derrick A, steam-engine D E *g*, connecting-rods I I, arms J J with pawls *h*, ratchet-wheel *i*, roller N with wire cords or chains *s s s*, and adjusting-wheels B B, all as herein set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

ALFRED B. BEAUMONT.

Witnesses:

T. SINCLAIR,

JACOB FERRIS.