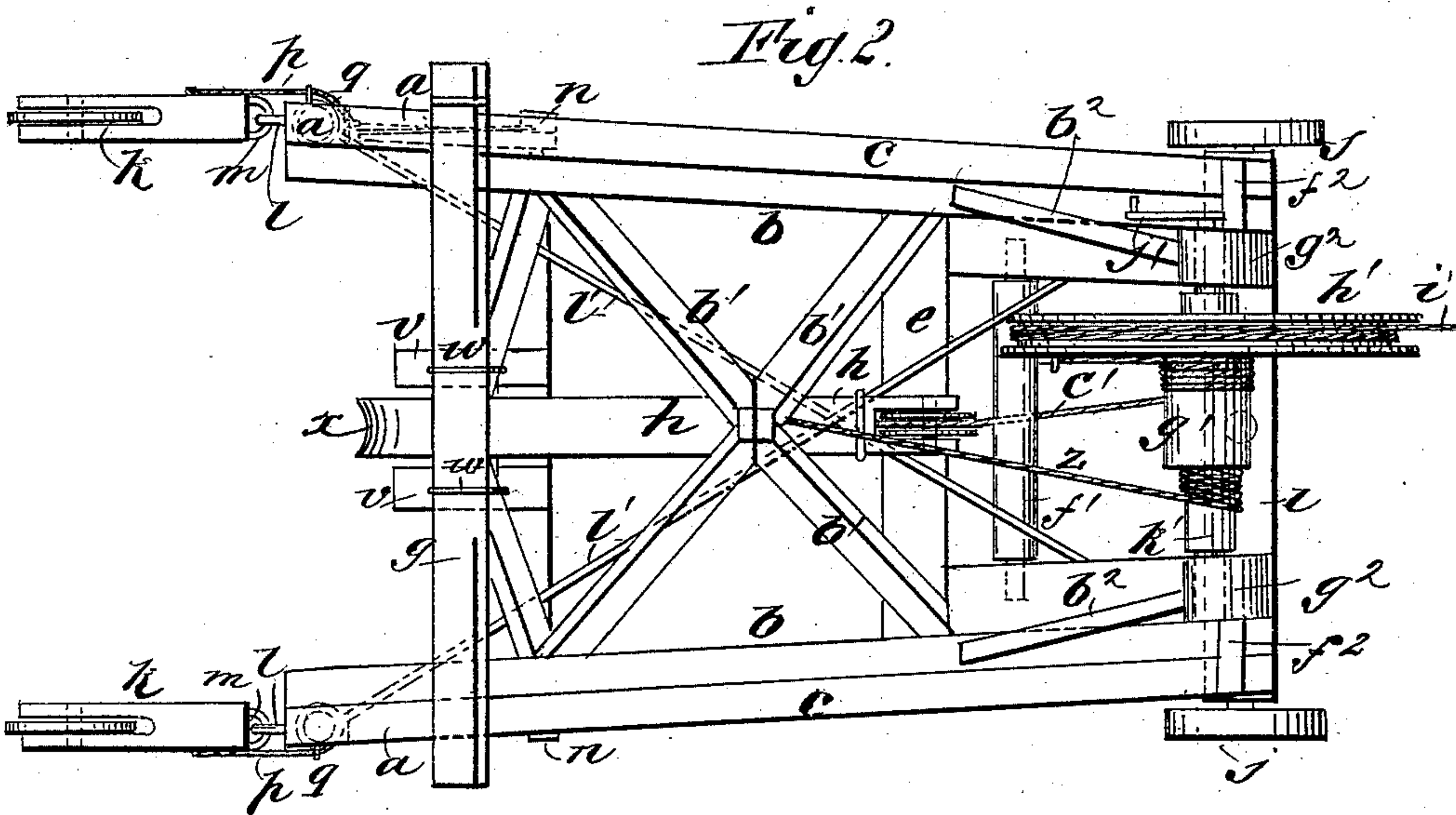
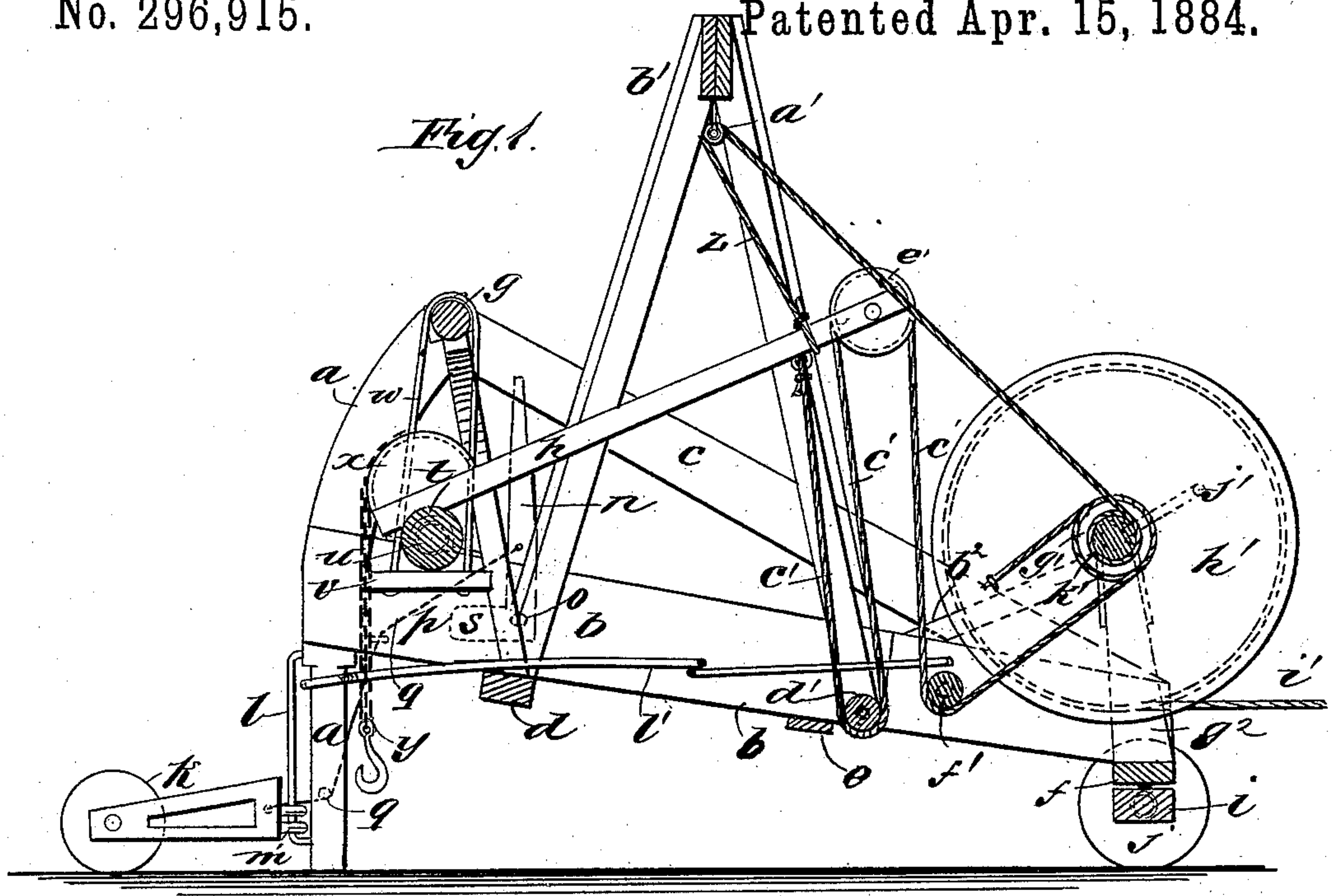


(No Model.)

C. A. BLUME.
STUMP PULLER.

No. 296,915.

Patented Apr. 15, 1884.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES ALFRED BLUME, OF UNION CITY, INDIANA.

STUMP-PULLER.

SPECIFICATION forming part of Letters Patent No. 296,915, dated April 15, 1884.

Application filed February 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALFRED BLUME, of Union City, in the county of Randolph and State of Indiana, have invented a new and Improved Stump-Puller, of which the following is a full, clear, and exact description.

My invention consists of a simple and effective windlass, pulley, and lever contrivance adapted for the application of great power for pulling stumps by a lever and chain, all mounted on a portable frame having contrivances for readily lowering the end where the pulling is effected from the wheels on which the machine is moved about onto the legs for sustaining the thrust of the pulling, and for raising the frame onto said wheels again when the stump has been pulled up, so that it can be carried away by the machine, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional elevation of my improved stump-pulling machine, and Fig. 2 a plan view.

I make a strong frame consisting, essentially, of two legs, *a*, main side timbers *b*, and upper side timbers, *c*, with suitable cross-bars, *d*, *e*, and *f*, for the support of a strong top cross-beam, *g*, from which to suspend the stump-pulling lever *h*, and adapted to be supported at the front end on a truck-axle, *i*, and wheels *j*, with center wheels, *k*, fitted to the legs *a*, suitably for shifting up and down along the pivot-rods *l*, to which they are connected by eyes *m*, so that the frame may be supported on the legs or on the caster-wheels at will, according as the machine is to stand on the legs for pulling the stump or be supported on the wheels for being shifted or rolled about.

For shifting the legs up and down on the caster-wheel, I have an elbow-lever, *n*, pivoted to each side of the frame at *o*, and connecting with the caster-wheel stocks by cords *p*, passing through suitable guide-pulleys, *q*, and adapted to be drawn both by the pulling of the lever forward and by the lifting of the arms *s*, so as to raise the legs up and support them on the wheels.

In practice the levers *n* may have a rope or chain extending forward to the evener, by which

the team is to be hitched on the machine for drawing the stump away after it has been pulled up, so that the pull of the evener will first take effect on the levers to raise the machine and then on the machine to draw it away, carrying the stump.

The posts *a* support the rear ends of the side timbers *b* a suitable distance above the ground to afford the requisite space under said timbers for the stump, and they extend sufficiently above the timbers *b* for holding up the beam *g* the height necessary for suspending the pulling-lever *h* from it, and they join at the top the rear ends of the upper side timbers, *c*, which descend therefrom to the timbers *b* at the front end, whereon they are secured for stays to the upper ends of the posts, and from the timbers *b* up to timbers *c* the posts incline toward the ends of timbers *c*, which are shorter than timbers *b*, to stay the one by the other with great strength to support the pulling-lever. The lever has an axle, *t*, which has pivot-bearings *u* at the end on the side timbers *b*, and each side of the lever said axle is supported by a stirrup, *v w*, suspended from the string-beam *g*. The lever *h* has a semicircular block, *x*, to work the chain *y*, and said block is located a little eccentric to the axis of axle *t*, for drawing up the chain quickly at the beginning, and for increasing the pulling effect when the greatest resistance occurs. The free end of the lever is suspended by a cord, *z*, and a pulley, *a'*, from a derrick, *b'*, suitably mounted on the frame *b c d*, for conveniently raising the lever to lower the chain for hooking onto the stump, and for applying the power to pull the lever down a strong rope, *c'*, is attached to the lever and extended down around a pulley, *d'*, attached to beam *e*, thence up around a pulley, *e'*, fitted in the end of the lever *h*, thence down under a roller, *f'*, supported in the timbers *b*, and thence around the axle *g'* of a powerful windlass, consisting of said axle and a drum, *h'*, on it, with a rope, *i'*, to which the team is to be hitched to turn the windlass by unwinding the rope from the drum. The axle *g'* is journaled in standards *g''* on the cross-beam *f*, which standards are strengthened by lateral and cross-braces *b''* and *f''*.

A hand-crank, *j'*, is attached to the axle of the drum, for unwinding the rope *c'* and winding up the rope *i'* when the lever *h* is to

be set again, and the cord *z*, for raising up the lever, is so attached to the axle *g'* that it will be wound on said axle to raise the lever by the windlass at the same time that the rope *c'* is slacked off and rope *i'* is wound on. The part *k'* of the axle on which the cord *z* winds is a little smaller than that on which the rope *c'* winds, so that each will give plenty of slack when the other is wound on.

10 The frame is suitably stayed for resisting lateral thrusts or strains by the diagonal cords *l'*, attached to the posts *a*, and the diagonally-opposite ends of the timbers *b*. It will be seen that the power is multiplied, first, by the
15 windlass; second, by the cord *c'* and pulleys, and then by the lever *h*, so that very great effect may be had on the stump.

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

20 1. The combination, in a portable supporting-frame, of the pulling-lever *h*, chain *y*, windlass *g' h'*, ropes *c'* and *i'*, guide-pulleys *d' e'*, and the roller *f'*, substantially as described.

2. The combination, in a portable supporting-frame, of the pulling-lever *h*, eccentric block *x*, axle *t*, chain *y*, and the windlass and ropes and guide-pulleys for working the lever, substantially as described.

3. The improved supporting-frame for a
30 portable stump-puller, consisting of legs *a*, main side timbers *b*, upper side timbers, *c*, cross-timbers *d, e*, and *f*, cross-beam *g*, and the derrick *b'*, said side timbers being upwardly

inclined from cross-bar *f* to the parts *a*, and said parts being inclined above timbers *a* to the ends of timbers *c*, substantially as described. 35

4. The lever-axle *t*, having bearings on the timbers *b*, and re-enforced between said timbers by the stirrups *v w*, suspended from the cross-beam *g*, substantially as described. 40

5. The improved stump-pulling machine, consisting of the frame *a, b, c, d, e*, and *f* and the derrick *b'*, having the pulling-lever *h*, chain *y*, and the windlass, rope, and pulley mechanism, substantially as herein described, for working said lever, and said frame having the truck *i j* for supporting the front end, and the adjustable casters *k*, attached to the hind end, as specified. 45 50

6. The combination of the elbow-levers *n*, cords *p*, and suitable guides, *q*, for said cords, with the casters *k*, adjustably attached to the legs *a* by the pivot-rods *l* and eyes *m*, substantially as described. 55

7. The combination, with the pulling-lever *h*, hoisting-cord *z*, and the pulling-rope *c'*, of the windlass-shaft *g'*, for working said lever by said cord and rope, said shaft having a smaller section, *k'*, for the cord *z* than the section whereon the rope *c'* winds, substantially as described. 60

CHARLES ALFRED BLUME.

Witnesses:

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WILLIAM COMMONT.