F. Godfrey,

Stump Elevator.

No. 36,648. Patented Oct. 14, 1862.

Fig. 1.

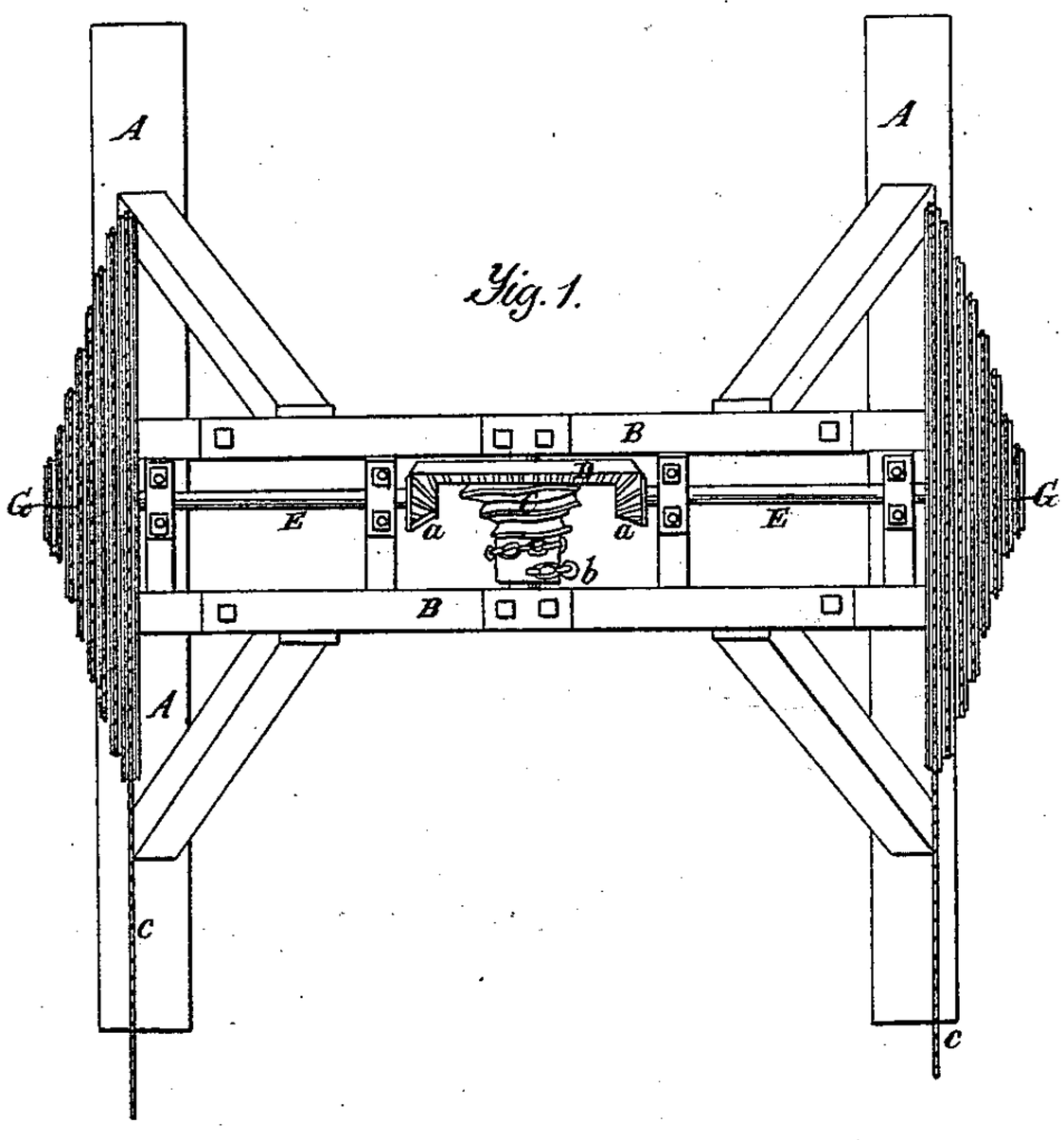
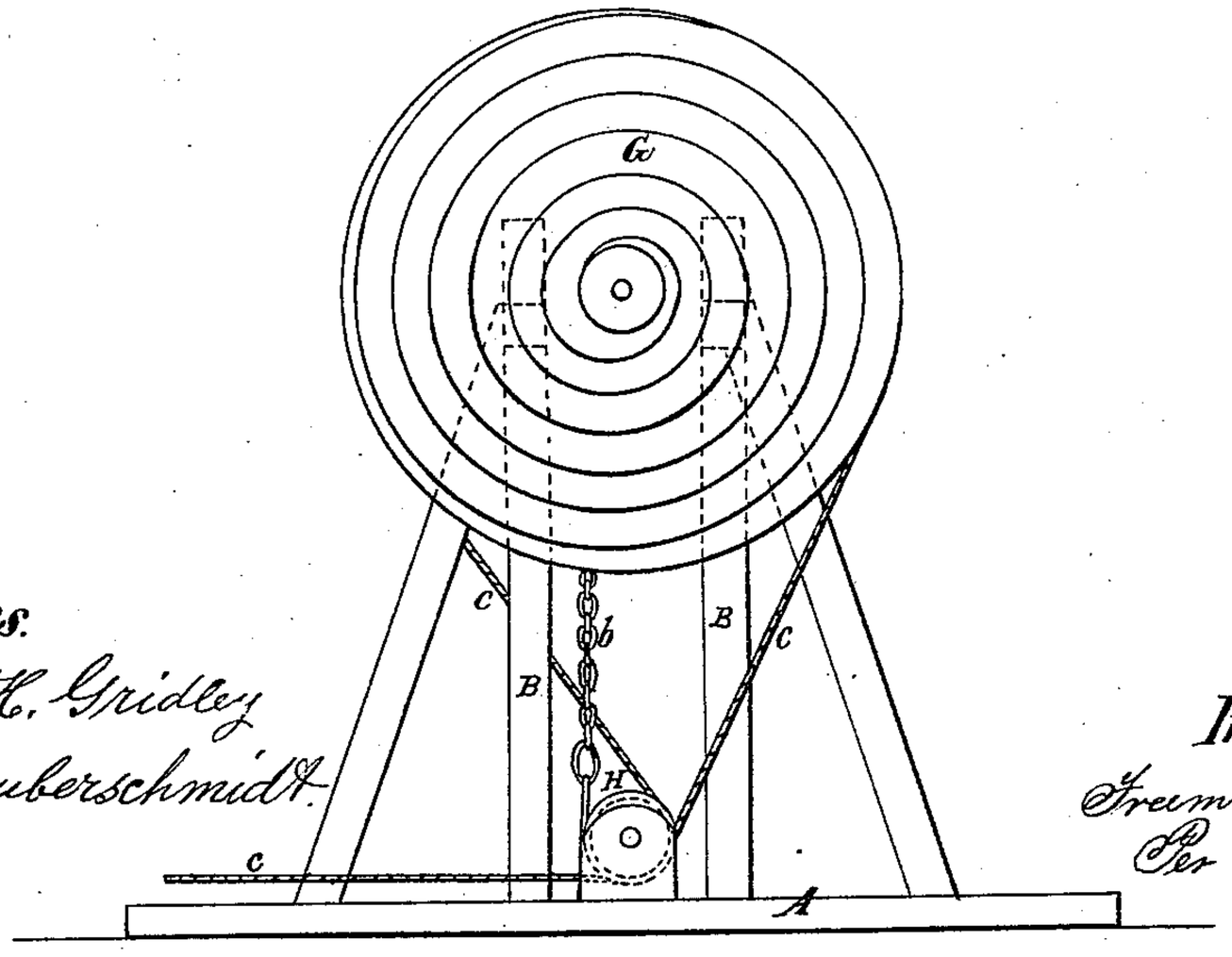


Fig. 2.



Witnesses.

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FREEMAN GODFREY, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **36,648**, dated October 14, 1862.

To all whom it may concern:

Be it known that I, FREEMAN GODFREY, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and Improved Machine for Extracting Stumps; and I do hereby delare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view or plan of my improved machine. Fig. 2 is an end elevation of the same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in a peculiar combination and arrangement of parts, hereinafter to be described, whereby the desired result is effected in an expeditious manner at a comparatively small expense of power.

To enable others skilled in the art to fully understand my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, A A are two timbers, from which rise the standards and braces, forming a strong frame-work, B, which supports the machinery for pulling up stumps. In the middle of the cross-timbers B B is a shaft on which is rigidly secured a spirally-grooved cone, C, and at one end thereof a large bevel gear-wheel, D. The shaft which these are on has its bearings in boxes, which are bolted down to the cross-timbers B B.

E E are two shafts on each side of the spirally-grooved cone-wheel G.

The teeth of the pinions *a a* engage with the teeth of the wheel D, and by turning the wheels G G in opposite directions the motion thereof will be transmitted to the grooved cone C and to a chain, *b*, on this cone. The grooves in the two wheels G G run in opposite directions to each other, and each groove or each wheel carries a rope, *c*, to which the team is attached, so that by drawing out both ropes *c c* together both wheels will act upon the wheel D, turning it in one direction. The ropes are wound in the spiral grooves on wheels G G from points near their axes to the circumference. The ropes then pass down and under pulleys H, that have their bearings in stationary blocks. When the ropes *c c* commence to draw from the circumference of the wheels G G, or from the farthest point from the axes of these wheels, the chain *b* is over the smallest part of the grooved cone C, and as the ropes are unwound and the leverage decreases the leverage on the cone C increases. Thus the greater effective power is applied at the commencement of the operation, at which time the greatest power is required. Then, as the resistance of the stump decreases, the power of the machine decreases and speed is obtained.

The mode of extracting a stump is to set the machine over the stump and hook the end of the chain *b* to it. Then wind the ropes *c c* in the grooves in wheels G G from their axes to their circumference and attach a team to the ropes and start the machine. At first the motion is very slow, but increases as the ropes are unwound from the wheels G G, as above described.

I am aware that all of the within-described parts in themselves or separately considered are old, and I do not wish to be understood as making any claim to them irrespective of this particular arrangement; but,

Having thus fully described my invention, what I claim as an improvement in stump-machines is—

The spirally-grooved truncated cone C, provided with a journal-bearing at each end, and having rigidly secured upon it at one end a the bevel gear-wheel, D, in combination with bevel-pinions *a a*, shafts E E, and fusees or spirally-grooved wheels G G, when arranged to operate in the manner and for the purpose specified.

FREEMAN GODFREY.

Witnesses:

I. FREDERIC BAEUR,

B. A. HARLAN.