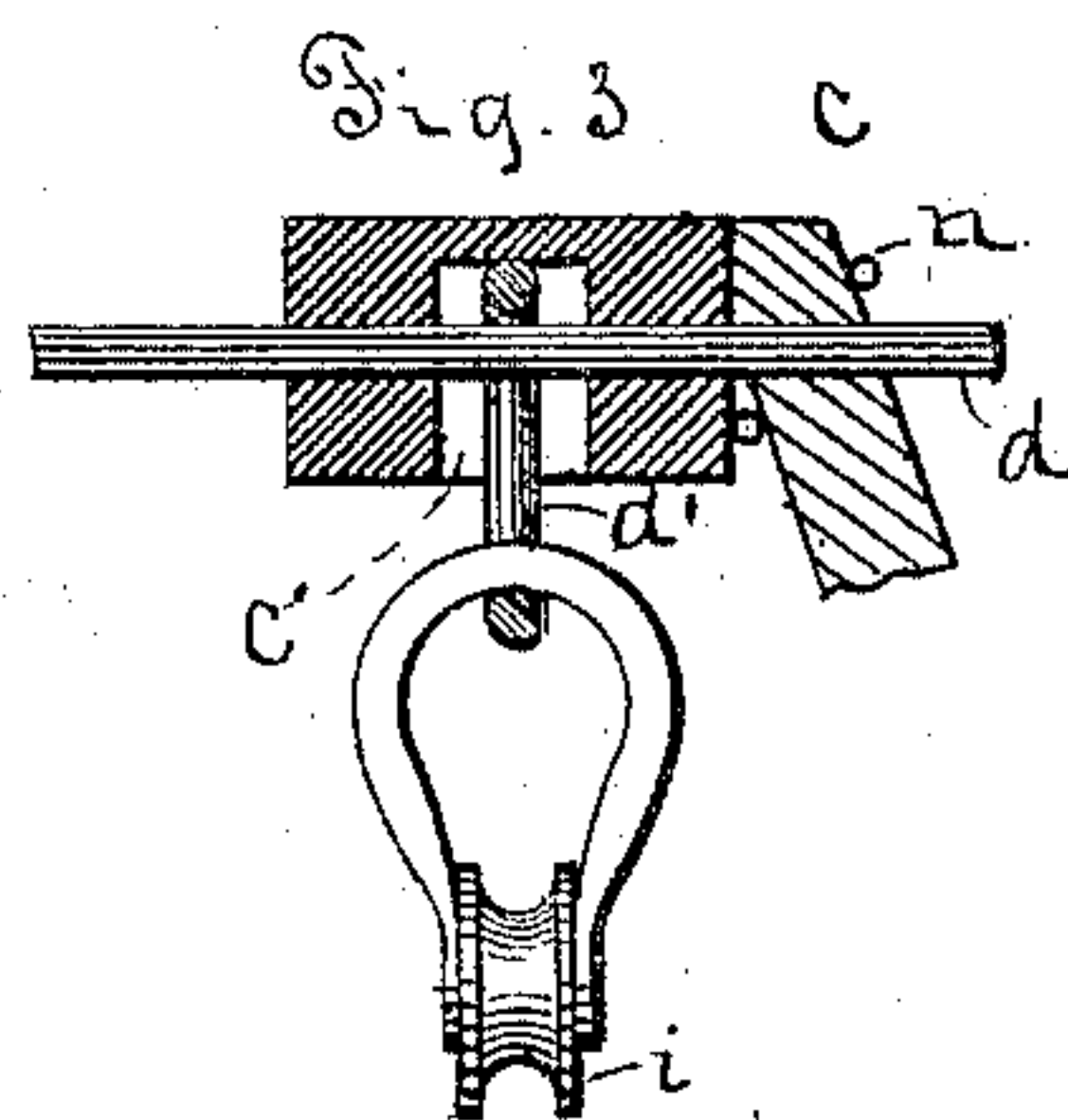
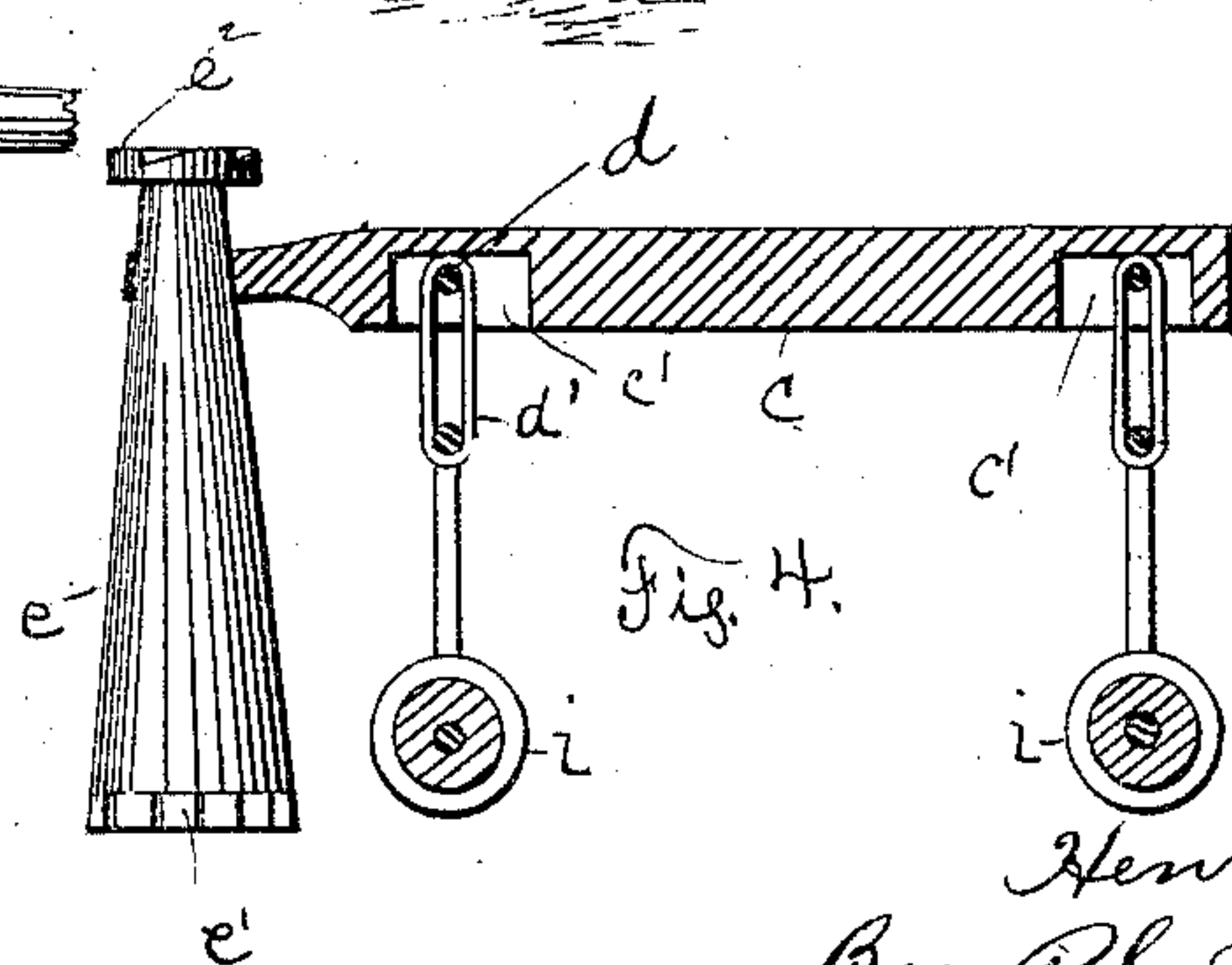
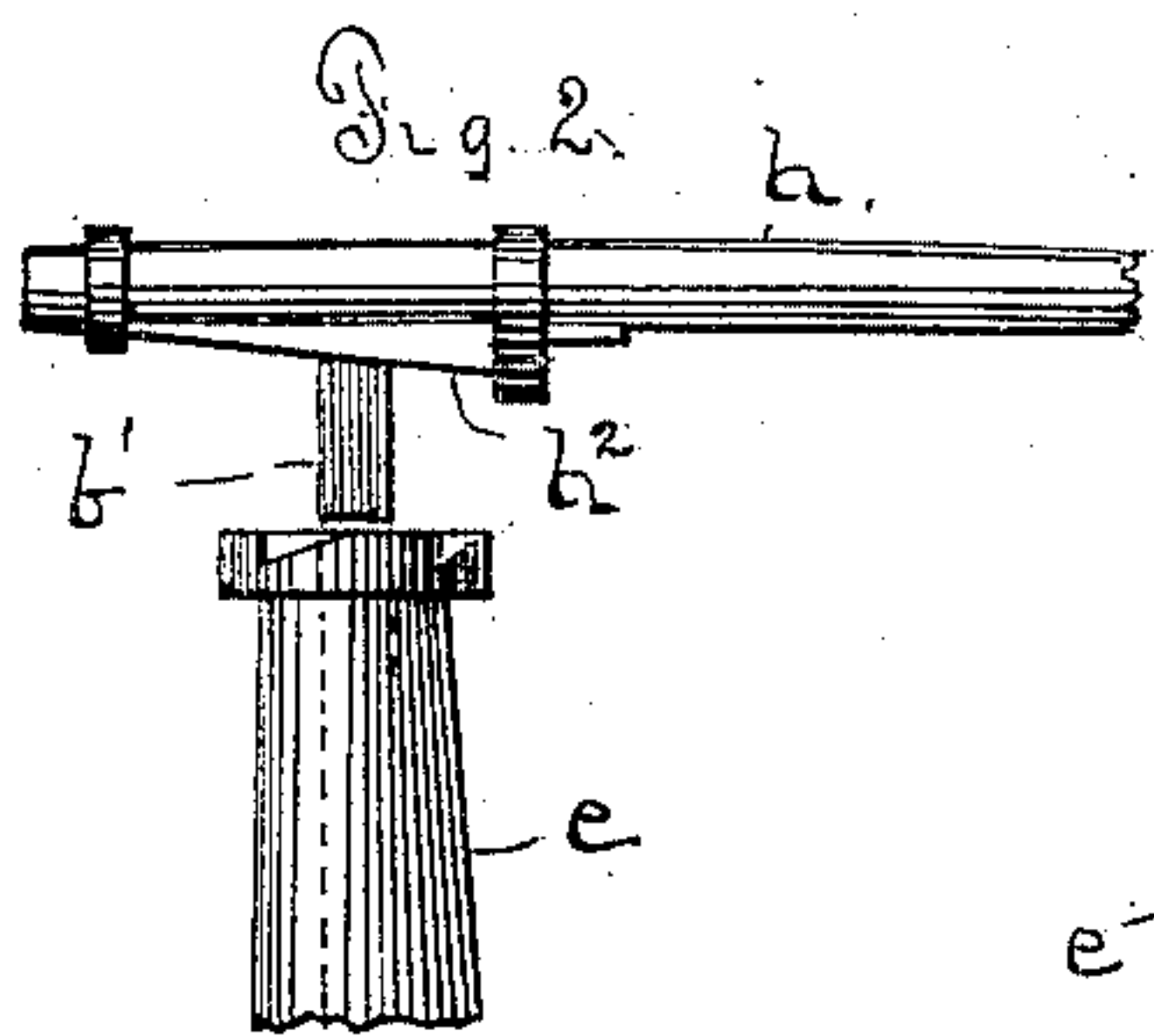
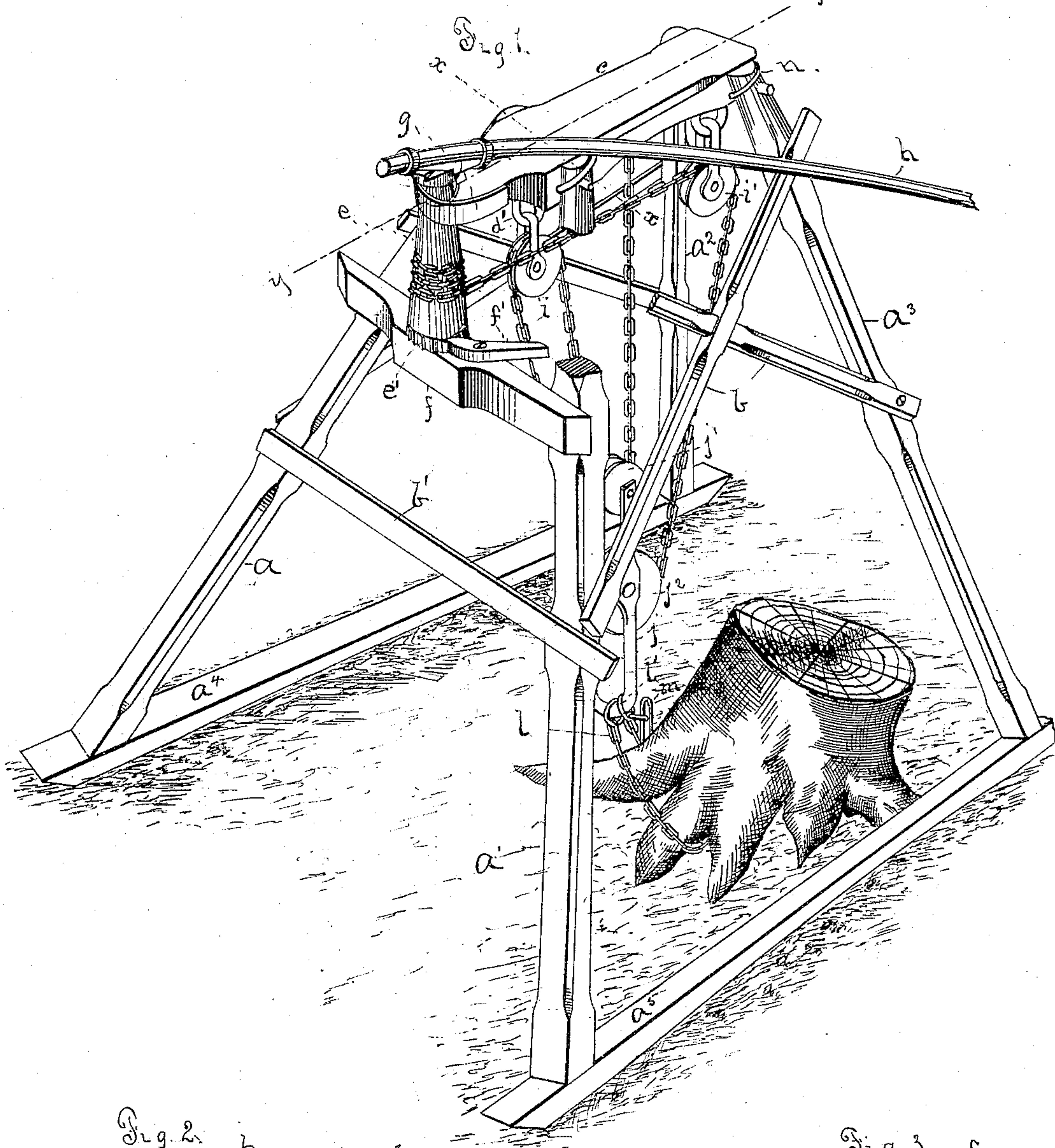


(No Model.)

H. B. HAWES.
STUMP EXTRACTOR.

No. 277,484.

Patented May 15, 1883.



Attest.
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P. B. Turpin.

Inventor,
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Attys

UNITED STATES PATENT OFFICE.

HENRY B. HAWES, OF GRANT, PENNSYLVANIA.

STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 277,484, dated May 15, 1883.

Application filed March 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. HAWES, a citizen of the United States, residing at Grant, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Stump-Extractors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-

My invention has relation to improvements in that class of stump-pullers wherein a supporting-frame and a combination of pulleys and a windlass are employed; and it consists in the construction, combination, and arrangement of the several parts, as will be hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my machine with one of the uprights and braces broken away. Fig. 2 is a detail view of the upper part of the windlass and the sweep. Fig. 3 is a detached cross-sectional view on line $x x$, Fig. 1; and Fig. 4 is a vertical section on line $y y$, Fig. 1, as will be described.

The framing of my machine is composed of the uprights or standards $a a' a^2 a^3$, mounted on skids or runners $a^4 a^5$, so that the machine may be moved readily from place to place, and also to provide a good foundation and prevent the standards from sinking into the ground in the operation of the machine. The uprights are braced on the sides by the cross-braces $b b$ and on the ends by the horizontal bars or braces $b' b'$. The standards converge at their upper ends, and between them I secure the head-block c , which is secured in the manner hereinafter described.

Heretofore in stump-extractors of the class to which my invention belongs the pulleys have been secured to the framing by screw-eyes and in other well-known manners, and in operation the machine would be soon racked to pieces under the severe strains applied in extracting stumps. To obviate this difficulty and provide a convenient and secure support for the pulleys is one object of my invention.

I secure the head-block c to the standards or uprights by means of pins or iron bars d , which

are passed horizontally through the head-block c and through the bars or uprights of the framing, as shown in Fig. 3. Midway the sides of the head-block c , and on the under side thereof, I cut a mortise, c' , which extends up above the opening for the bar d , as clearly shown in Fig. 3.

In setting up the machine the links d' , which connect the pulleys and the framing, are placed up in the mortise c' , and the bar d is passed through suitable holes bored in the standards and the head-block and through the link d' . Thus when strain is exerted by the operating force on the pulleys it is applied to the rod or bar d . This bar, being supported by the head-block as well as the standards, draws the head-block and standards closer together. Thus all force or strain exerted tends to more firmly connect the standards and head-block, rather than rack them apart, as in machines of ordinary construction. I use two of these rods d , it will be seen—one at the forward side of the machine, connecting the head-block and the standards $a a'$, and the other at the rear side, connecting the head-block and the standards $a^2 a^3$.

The windlass e is arranged at the forward side of the machine. Its lower end is journaled in a supporting-beam, f , extended between and made fast to the uprights $a a'$, and its upper end is held to the head-block c by a strap, g , passed around the windlass with its ends secured to the head-block c , providing a journal for the upper end of the windlass. On the side of the windlass, at its lower end, I form the rack-teeth e' , which are engaged by the pawl f' , pivoted on the beam f , in order to prevent any backward movement of the windlass. A suitable spring may be arranged to actuate the pawl f' , or it may be operated by the workman using the machine, as is desired. The windlass is made largest at the bottom, and tapers toward its upper end, on which are formed the teeth e^2 , made with a square face on their forward side, and tapering on their rear side, so that the pawl or engaging portion on the sweep will move back readily from one tooth to another. The sweep h has its free or swinging end bent down close to the ground, so that a horse may be hitched thereto, and it is provided with the stem h' , projected down from its opposite end and entering a socket in the

top of the windlass. On the sweep, and close to the stem h' , I form the portion h^2 , adapted to engage the teeth e^2 , and act as a pawl in transferring the motion of the sweep to the teeth e^2 , and thence to the windlass.

In rigging my machine I arrange the pulley i at or near the forward end of the head-block c , and the pulley i' at the rear end of the same, and secure them thereto in the manner hereinbefore described. I also provide a suitable sheave-frame, j , in which I support the pulleys j' j^2 , the pulley j' being arranged above the pulley j^2 , as shown in Fig. 1. One end of the chain k is secured to the head-block c , and it is carried down under pulley j' , thence up over pulley i , thence down under pulley j^2 , thence over pulley i' , whence it extends to and is made fast to the windlass e . The connecting-chain l is made fast at one end to the sheave-frame j , and carried around the root of the stump to be extracted, and its opposite end is carried through a ring, l' , secured to the sheave-frame, and the chain is secured by a bar, m , of hair-pin form, dropped through its last link, as shown in Fig. 1.

In order to strengthen the upper ends of the standards, I provide rings n , which are passed around the standards and the rods or bars d . These rings, it will be seen, are so arranged that their outer sides will be above and their inner sides will be below the rod d , and, being made of iron or other suitable metal, they provide additional strength to the standards and aid to enable the machine to stand great strain.

By means of the racks e' e^2 and pawl f' , before described, the sweep may be drawn forward for part a revolution of the windlass and then backed, permitting the machine to be used close to a fence, house, or other obstruction.

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

1. In a stump-puller, the combination, substantially as set forth, of the standards, the head-block c , arranged between the upper ends of the standards, the rod d , passed through the standards and the head-block, securing the same together, and the pulleys connected to the rod d by means of a suitable link, substantially as described.

2. In a stump-puller, the connection between the pulleys, the head-block, and the standards, consisting in the combination, with said-named elements, of the bar d , passed horizontally through the head-block c and the standards, and supporting the pulleys, and the rings n , passed around the standards and the rods d , substantially in the manner and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY B. HAWES.

Witnesses:

A. W. CREERY,
HENRY SEBRING.