

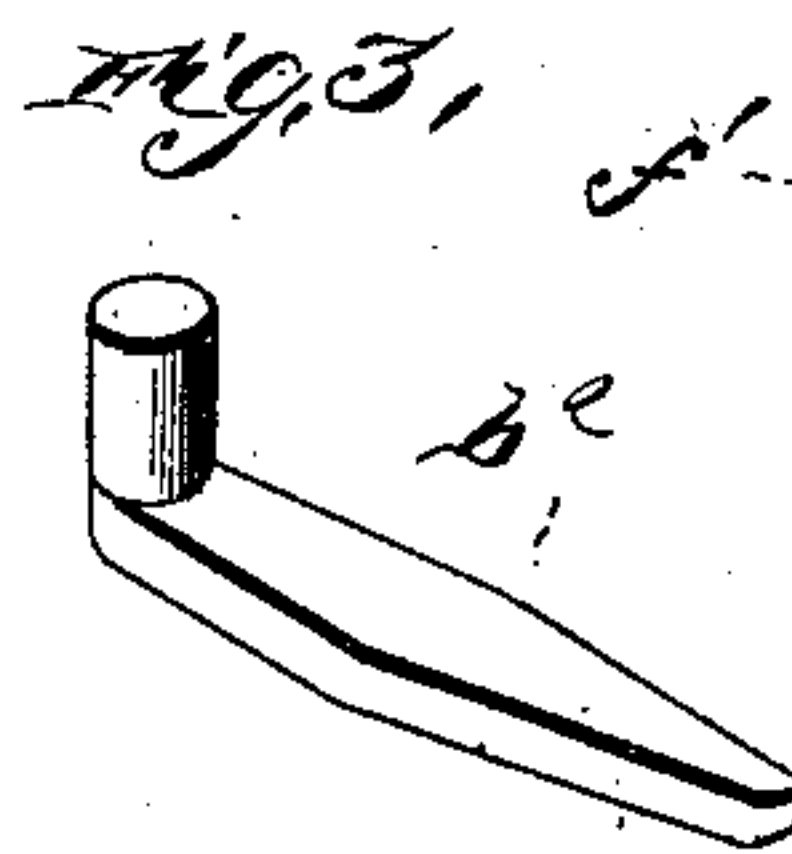
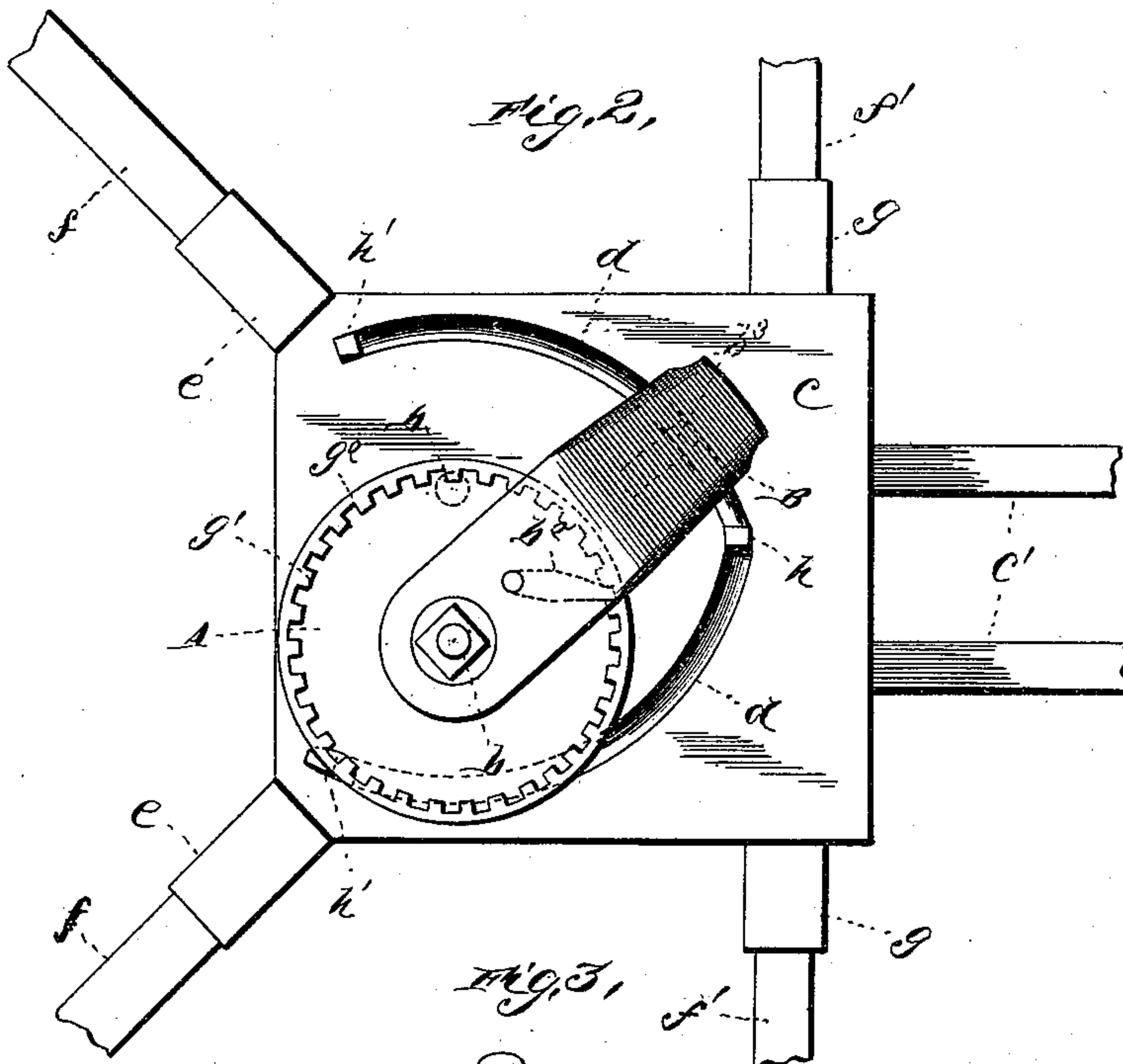
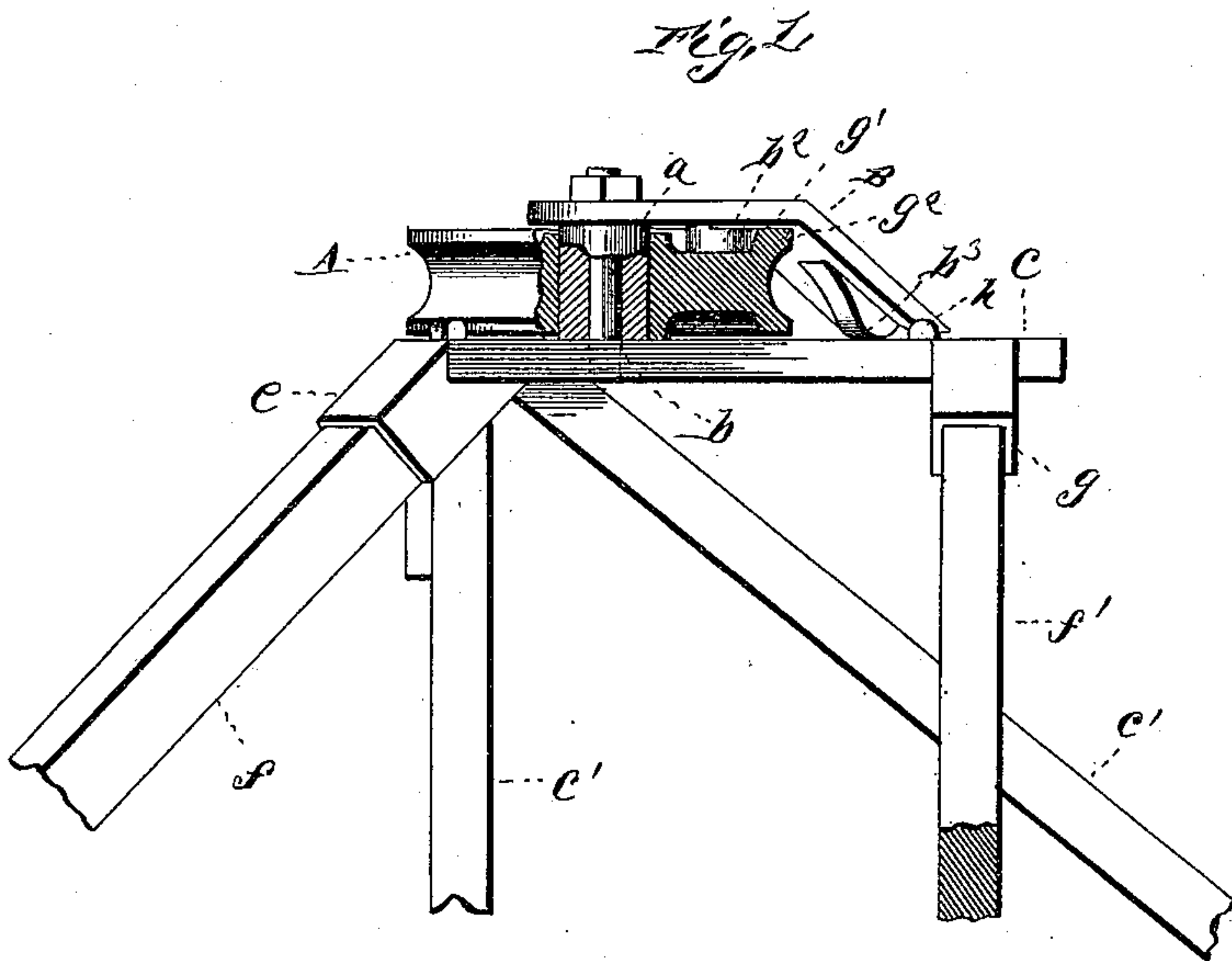
(Model.)

2 Sheets—Sheet 1.

L. H. PAUL.
RETURN PULLEY.

No. 447,199.

Patented Feb. 24, 1891.



WITNESSES

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(Model.)

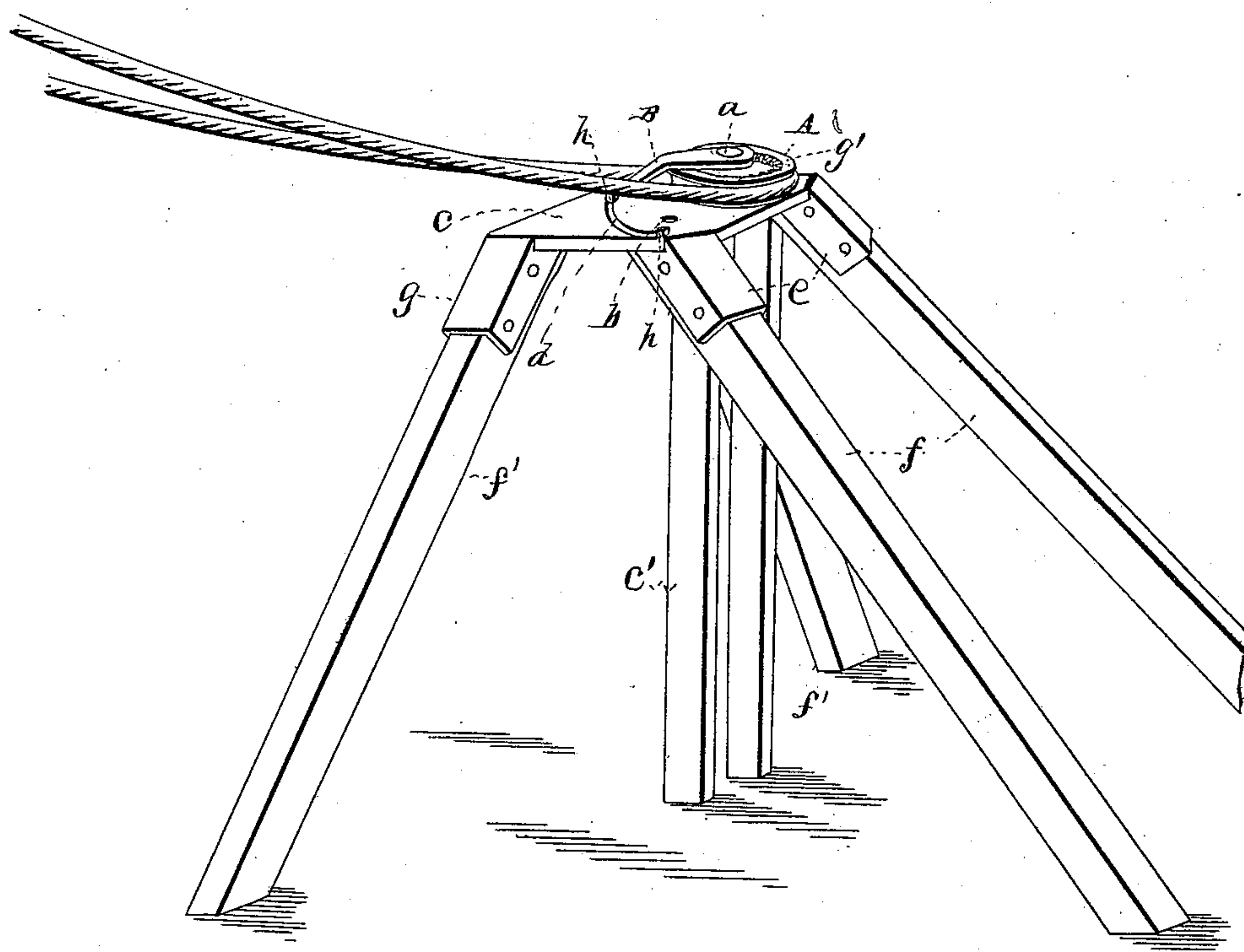
2 Sheets—Sheet 2.

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Fig. 4.



WITNESSES:

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LAWRENCE H. PAUL, OF WYOMING, IOWA.

RETURN-PULLEY.

SPECIFICATION forming part of Letters Patent No. 447,199, dated February 24, 1891.

Application filed July 19, 1890. Serial No. 359,297. (Model.)

To all whom it may concern:

Be it known that I, LAWRENCE H. PAUL, a citizen of the United States, and a resident of Wyoming, in the county of Jones and State of Iowa, have invented certain new and useful Improvements in Return-Pulleys; 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 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.

Figure 1 of the drawings is a vertical section. Fig. 2 is a top plan view. Fig. 3 is a detail view. Fig. 4 is a view showing the device mounted in operative position, two of the supports c' not shown.

This invention relates to certain improvements in pulleys; and it consists in the construction and combination of parts, as will hereinafter appear.

In the drawings, A refers to the pulley, whose axle or journal a is held or journaled in either of two openings b in a base c , arranged between the heel ends of a horseshoe-shaped groove d in said base, said journal having preferably a rivet-head at its lower end and a screw-thread and nut upon its upper end. The base c is suitably secured upon supports c' , and has projecting downwardly and outwardly from two corners thereof, at that end near to which the journal-openings b are arranged, two inclined bifurcated brackets e , to each of which is connected a brace f , while near the opposite corners of said base are two other similar brackets g , to each of which is connected a laterally-inclined brace $f' f'$.

B is a lever-pawl pivoted upon the projecting portion of the journal or axle a of the pulley A, and provided upon its under side with a pivoted reversible tooth or dog b^2 , engaging a circular series of cogs or teeth g' on the inner surface of a circular flange or rim g^2 on the upper side of said pulley. The lever-pawl B extends downwardly and outwardly, and has upon the under side of its lower end a stud or projection b^3 , which traverses one-half of the horseshoe-shaped groove d in the base c , as said lever-pawl is manipulated to cause its tooth or dog to engage the

teeth or cogs of the pulley A, thus effecting the movement of said pulley. The sweep or movement of the lever-pawl B is limited with the pulley in its present position by the engagement of the projection or stud b^3 with a stop h at the center of the groove d and with one or two stops h' at the ends of said groove. The sweep or movement of said lever-pawl B is limited with the pulley A adjusted to the opposite side of the base c by the engagement of the projection or stud b^3 with the stop h and the stop h' at the opposite end of the groove d .

The shifting of the position of the pulley A to cause it to drive the line or cable to the right or left is effected by adjusting the axle or journal a into either one or the other of the two openings b in the base c . This pulley, which I call a "return-pulley," is used for filling long hay-barns in connection with a carrier, and by its peculiar construction the horse used in its operation with the carrier has to travel but half the distance usually required.

In using the device a post is driven in the ground at a distance from the barn determined by the height and length of the hay-carrier track, and the pulley mechanism described is secured to the top of the post, the braces being placed in position. The horse is attached to the end of the fork and carrier-operating rope and is driven out to and around the post, the braces causing the rope as the horse passes around to be carried up and caught around the wheel or pulley. The horse is then driven back to the starting-point, the distance of the post being such that when he has arrived at this point the fork has been carried to its unloading-point. A backward pull is then given to the rope, causing the pawl b^2 of the lever-pawl B to engage the lugs or teeth g' of the wheel or pulley, said wheel or pulley as it turns backward carrying with it the lever-pawl until the latter is stopped by the stop projection in the horseshoe-shaped groove, when the parts become locked, throwing the line or rope off from the device and leaving it free to allow the carrier and fork to return for another load.

It will be seen that the horse, when one load is at the unloading-point, is itself back to its starting-point, ready to commence with the

next fork-load, instead of being the whole length of the operating-rope away from this point and having to return before being ready to start again. In this manner it has only
5 one-half the distance to travel, and the rope is saved the wear of dragging a greater part of the time upon the ground.

It is evident that this pulley is adapted for other purposes, as well as for the one just described.
10

As soon as the rope is again carried up onto the pulley, as the horse goes out and around with the next load, the lever B and its stop b^3 will be released, and by the movement of
15 the said pulley will be carried around to the stop at the opposite end of its groove or way, where it will remain until the reverse pull is again given the rope.

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

1. The pulley having in its upper side an annular series of teeth or cogs, the base having a horseshoe-shaped groove, at the center
25 and ends of which are stops, the shiftable axle or journal of said pulley adapted to be adjusted into either one of two openings in

said base, and the lever-pawl fulcrumed upon said axle or journal and having a reversible tooth or dog engaging said teeth or cogs, said
30 lever-pawl also having a stud or projection traversing said groove and adapted to engage the center stop and one or the other of the end stops, substantially as specified.

2. The combination, with the pulley and
35 its journal or axle and actuating lever-pawl, of the base having a horseshoe-shaped groove traversed by a stud or projection on said lever, said stud or projection adapted to engage a stop at the center of said groove and one
40 or the other of two end stops, one at each end of said groove, said base having upon one end at the corners, as also at the opposite end near the corners thereof, downwardly and outwardly inclined bifurcated brackets
45 adapted to have connection with braces, substantially as set forth.

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

LAWRENCE H. PAUL.

Witnesses:

WILLIAM P. WILSON,
WALTER GRUNDROD.