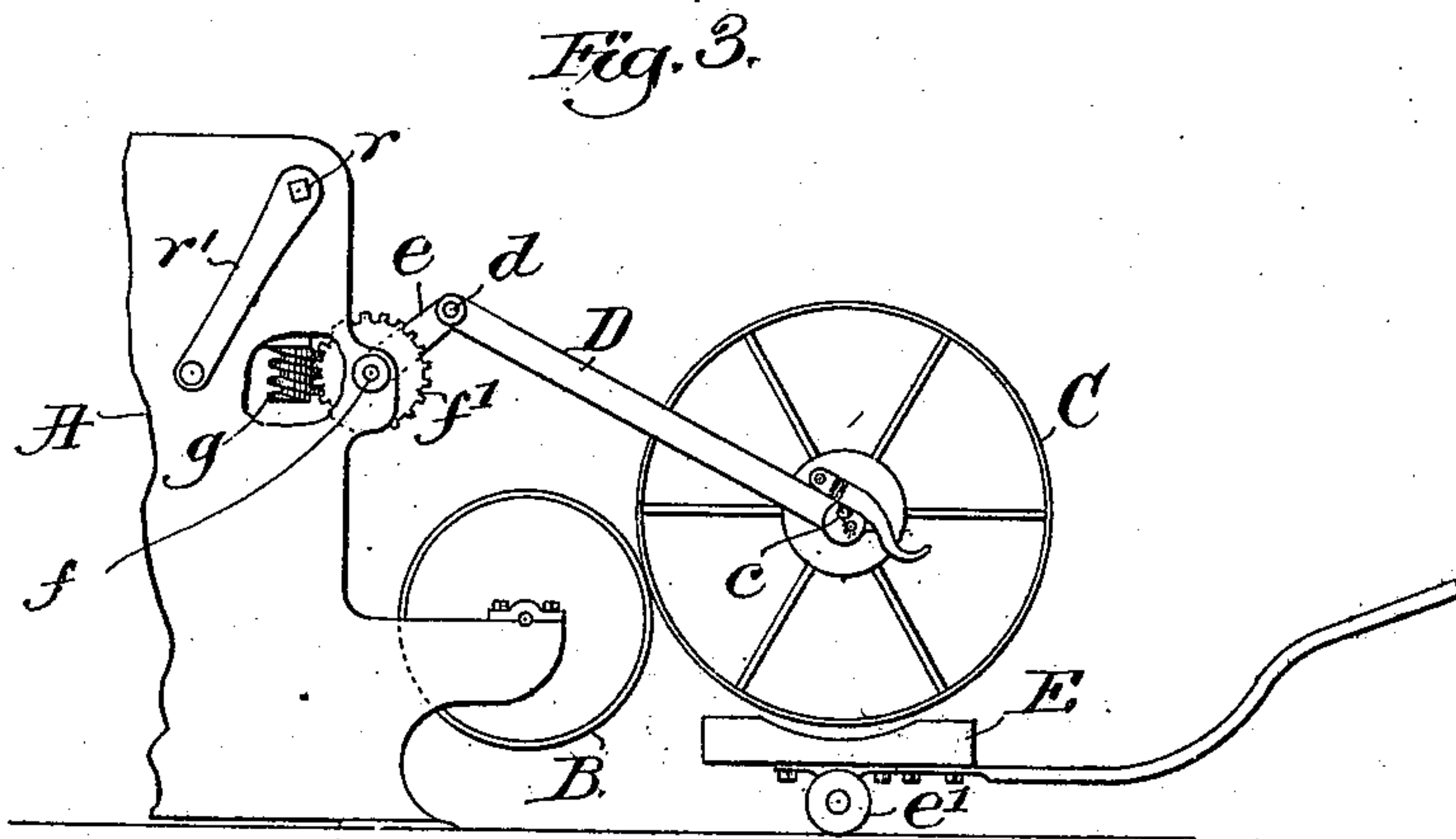
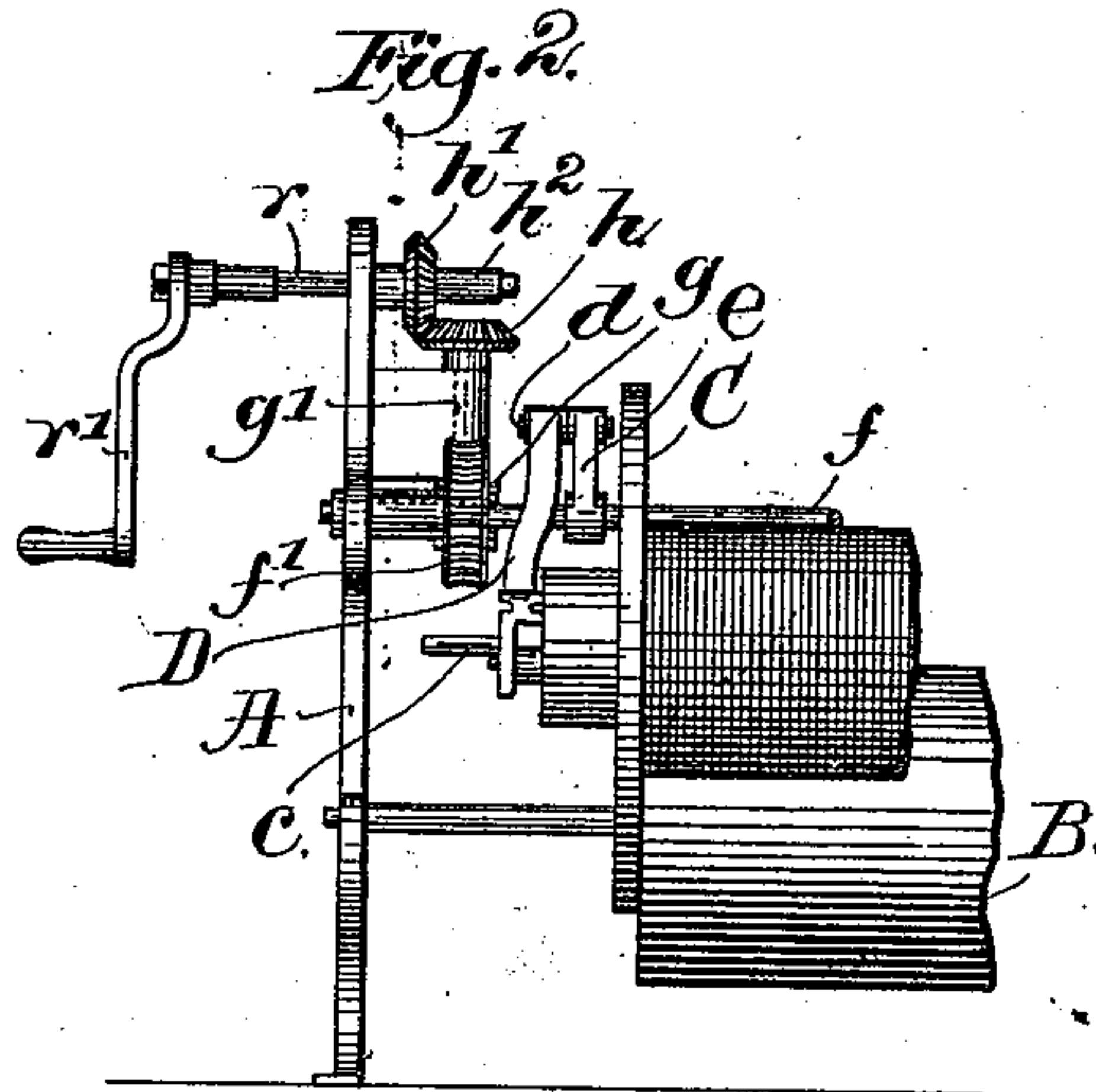
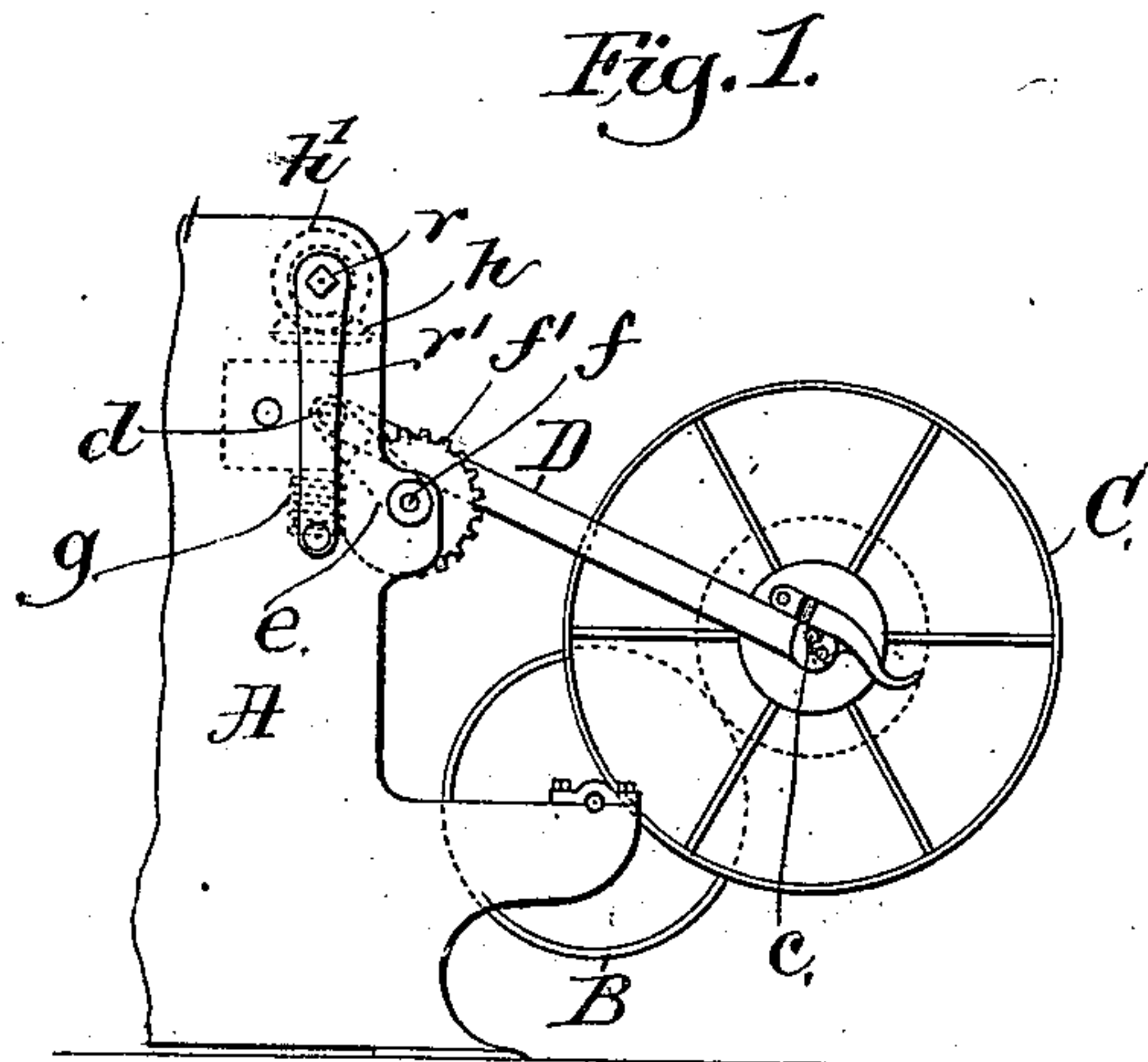


(No Model.)

A. E. RHOADES.
MECHANISM FOR HANDLING BEAMS.

No. 504,456.

Patented Sept. 5, 1893.



Witnesses.
Edward F. Allen,
Fred S. Greenleaf

Inventor.
Alonzo E. Rhoades.
By Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

ALONZO E. RHOADES, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE
HOPEDALE MACHINE COMPANY, OF SAME PLACE.

MECHANISM FOR HANDLING BEAMS.

SPECIFICATION forming part of Letters Patent No. 504,456, dated September 5, 1893.

Application filed March 23, 1892. Serial No. 426,106. (No model.)

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Mechanism for Handling Beams, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of textile material it is frequently necessary to handle very heavy beams filled with yarn, or it may be cloth, and for taking such beams from one to another machine two or more strong men are needed to lift the beams from one machine to a truck and thence to another machine because of their great weight.

I have chosen to illustrate my invention in connection with a warp beam of a warping machine, but it may be used in connection with any class or variety of machine wherein material is wound upon a beam, thus making a heavy beam requiring strength to handle it.

Figure 1 of the drawings represents a beam, and means to handle it; Fig. 2, a right-hand side view of the parts shown in Fig. 1; and Fig. 3 is a similar view to Fig. 1, but with the devices therein shown in other positions, and with a skid or truck.

The frame-work A, of suitable shape to contain the working parts, has, as shown, a rotatable drum or winding shaft B which may be rotated in any usual or suitable manner common to warping machines, looms, or paper machinery said drums rotating the beam while resting thereon.

C represents a beam to be wound or filled with yarn or other suitable material, said beam having in practice at its opposite ends like or suitable journals c which rest in suitable bearings in supporting arms D, herein shown as jointed at d to an arm or crank e of an actuator shaft f having suitable bearings in boxes or bearings in the frame A the said arms being thus movable longitudinally. The shaft f has, as shown, a worm gear f' which is engaged and rotated in one or the other direction as desired by a worm g on a worm shaft g' having a suitable bearing in a stand at the loom side, the said shaft, as shown, having a bevel gear h which is en-

gaged by a bevel gear h' fast on an operating shaft r provided with a handle r' of any usual shape. It will be seen that the worm and worm shaft constitute a locking device, to normally restrain the shaft from rotation.

In the drawings E is a skid or truck having suitable rolls or wheels e' to run on the floor, the truck having a suitable handle by which to move it about.

Fig. 1 shows the parts in position to have the beam rotated by the driving drum B, the crank e being then over and back of its top center the supporting arms being at one extremity of their longitudinal movement. Now as the winding drum is rotated with the parts in the position shown in Figs. 1 and 2, the beam will be rotated and the material will be wound thereon. As the material is wound on the beam its axis will be moved away from the periphery of the winding drum B, and this movement is in an arc of a circle having its center at the pivotal point d. By such construction the movement of the beam will be entirely independent of the shaft f, so that the said shaft will not rotate as the beam moves. When the beam has been sufficiently filled, the operator, by the handle r', will rotate the operating shaft r and thereby the shaft g', and will, by the devices previously described, cause the actuator shaft to be so turned as to move the supporting arms longitudinally from the position shown in Fig. 1 to enable the wound beam to gradually roll or slide over the winding drum and down onto the skid E having rolls e' to roll on the floor, and by which truck the beam may be moved from place to place.

This invention is not limited to the means shown for putting the beam in position, or for the winding drum, or for lowering the beam and putting it on the skid, as said devices might be easily modified without departing from my invention.

This invention is not limited to the particular construction of the crank device for moving the supporting arms D employed to grasp the journals of the beam and put it into and out of operative position, as I may use for said crank arms any well known equivalent devices so long as the said supporting arms are moved longitudinally.

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

1. A beam doffing mechanism for warping machines, comprising a driving drum to rotate the warp beam while resting thereon, said beam having journals, and supporting arms provided with bearings for the journals of the said beam, combined with an operating shaft, an actuator shaft to move the said arms longitudinally, and a worm shaft and worm connecting said operating and actuator shafts, substantially as described.

2. The driving drum B, a beam normally resting thereon and having journals, and connecting arms having bearings for said journals, combined with a crank shaft to which said arms are pivotally connected, and devices to rotate it, and thereby move the arms

and beam and a locking device to restrain the shaft from rotation, substantially as described.

3. The driving drum B, a beam normally resting thereon and having journals, and pivoted arms having bearings at their free ends for said journals, combined with a crank shaft to which the other ends of said arms are pivotally connected, and having a worm gear, a worm shaft provided with a worm, and means to rotate the worm shaft, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALONZO E. RHOADES.

Witnesses:

REUBEN A. COOKE,
C. E. LONGFELLOW.