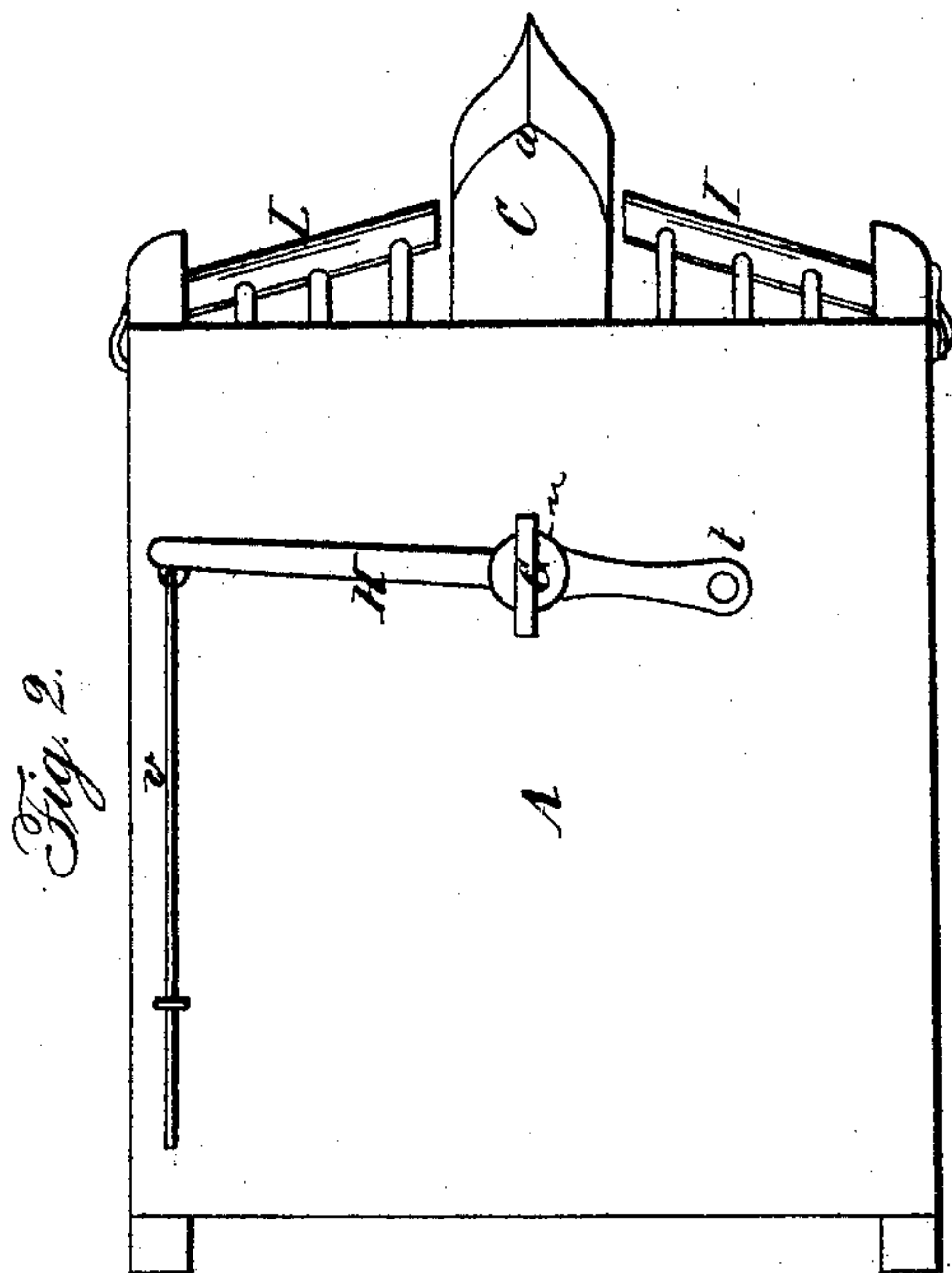
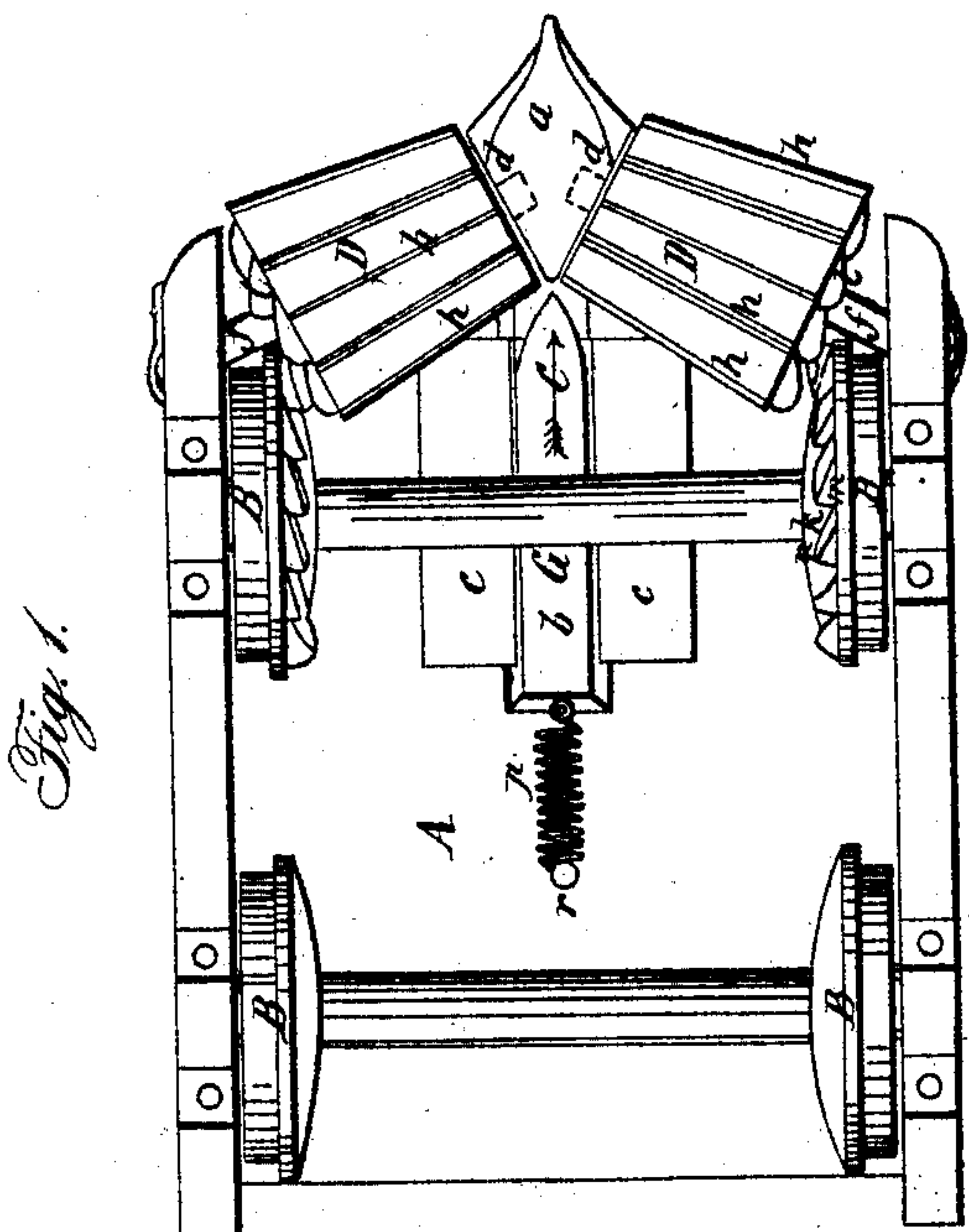
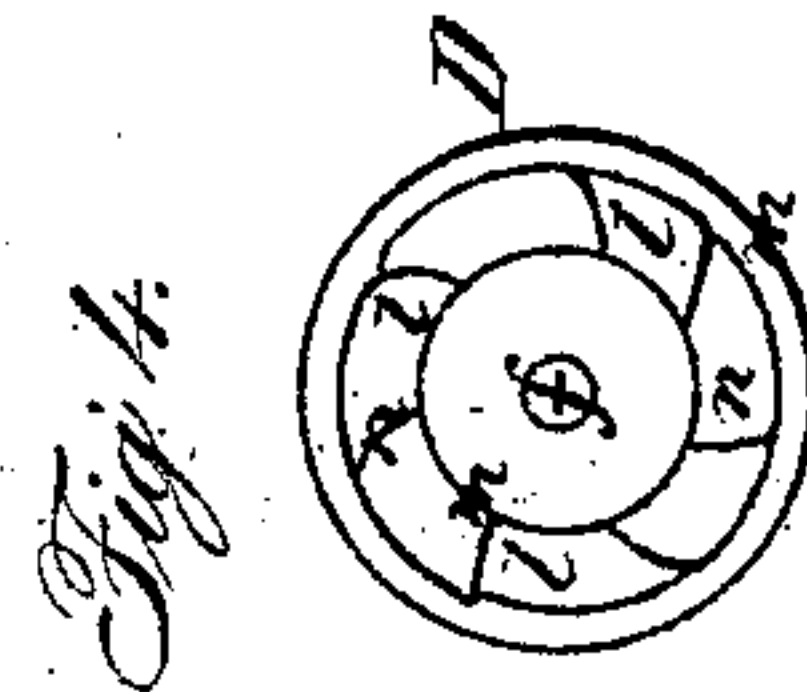
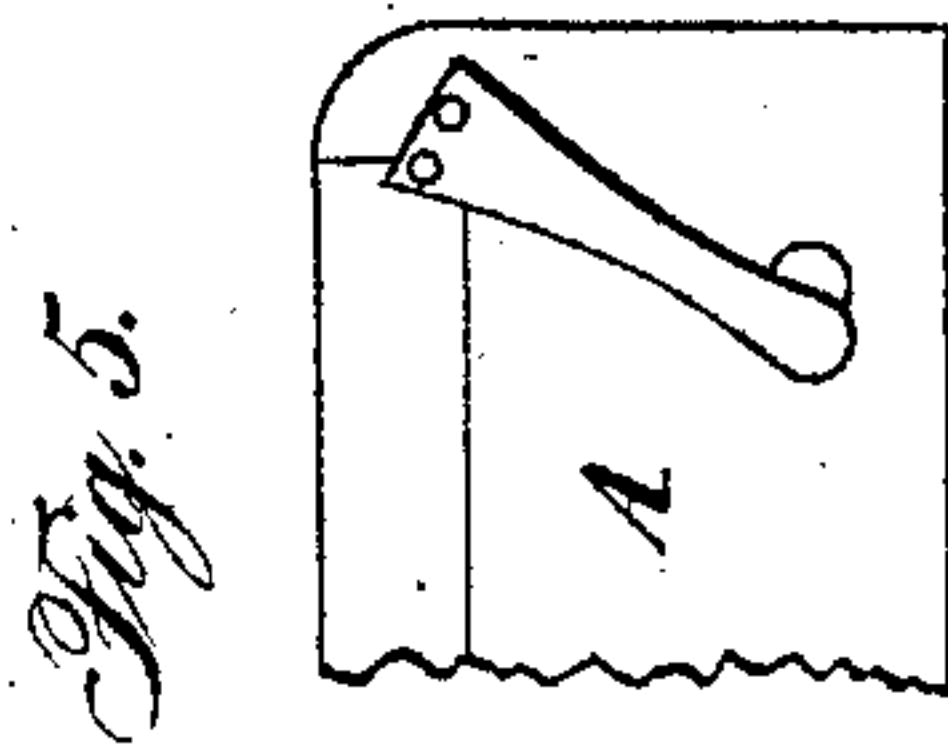
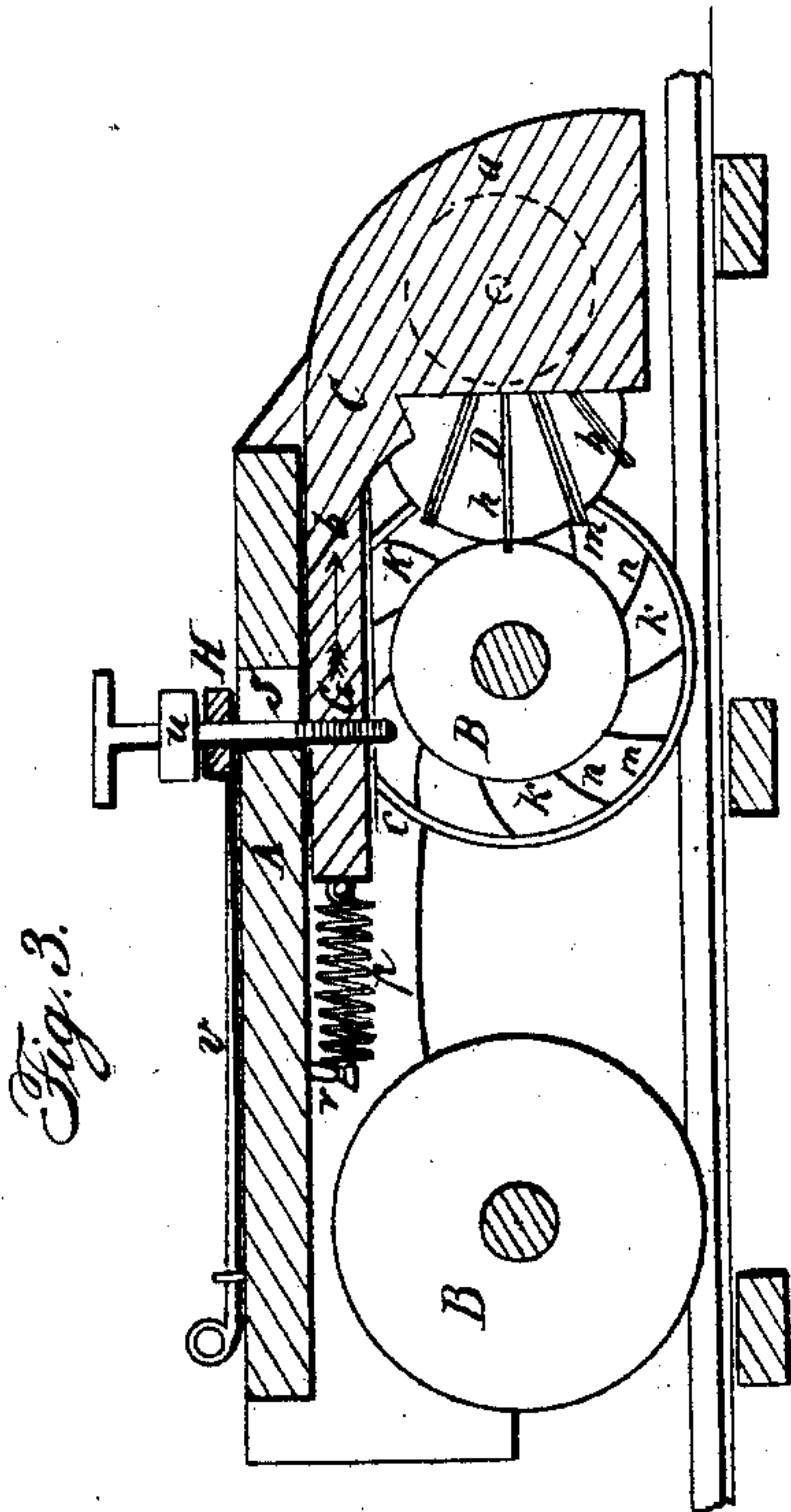


E. & A. WYCKOFF.

Car-Track Clearer.

No. 38,622.

Patented May 19, 1863.



Witnesses:

R. F. Good  
W. A. L. L. L.

Inventor:

Elias Wyckoff  
Arcalous Wyckoff  
by J. J. Fraser & Co.



# UNITED STATES PATENT OFFICE.

ELIAS WYCKOFF AND ARCALOUS WYCKOFF, OF ELMIRA, NEW YORK.

## IMPROVEMENT IN REVOLVING RAILWAY-PILOT.

Specification forming part of Letters Patent No. 38,622, dated May 19, 1863.

*To all whom it may concern:*

Be it known that we, ELIAS WYCKOFF and ARCALOUS WYCKOFF, of Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Revolving Railroad-Pilots for Removing Obstructions from the Track; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a plan of our improved arrangement as applied to the front of a locomotive, the same being shown bottom upward; Fig. 2, a plan of the top of the same; Fig. 3, a central longitudinal section; Fig. 4, an end view of one of the pilot-rollers; Fig. 5, a view of a portion of the frame, showing more particularly the spring for holding the axis of the rollers in place.

Like letters of reference indicate corresponding parts in all the figures.

Our improved machine is of that class in which revolving rollers or wheels are used in front of the locomotive for striking obstructions and throwing them from the track; and the invention consists in the peculiar arrangement of these rollers and the parts connected therewith, whereby the same are most effective in use, and whereby they are engaged and disengaged from the truck-wheels by a simple forward or backward movement of their inner contiguous journals.

The forward portion, A, of the locomotive, with which the operating parts are connected, may be of ordinary construction and mounted on the usual supporting-wheels, B B. Centrally under the forward end of the frame is situated a longitudinal support, C, consisting of a nose or deflector, *a*, in front and a sliding shank, *b*, in the rear, which rests and slides in suitable guides, *c c*, Fig. 3. The sides of the nose *a* are beveled off to form plane surfaces *d d*, Fig. 1, which receive the inner ends of journals *f f* of pilot-rollers D D, situated on either side, inclining backward gradually at such an angle as is best adapted to throw obstructions which they strike from the track. The opposite ends of the journals rest in the sides of the frame, and have pressing against their outer ends to keep them in place springs *g g*, Fig. 5, or some equivalent arrangement is

employed to accomplish the same purpose. The pilot-rollers are preferably made somewhat conical, gradually increasing outward, as represented, (though they may be made cylindrical with a similar effect,) and provided with longitudinal ribs *h h* on their periphery. The angle of the rollers and their length is such as to bring their outer ends in engagement or gear with the inner sides of the forward truck-wheels, B, as clearly represented in Figs. 1 and 3. By this contact the engaging-surfaces of the wheels and rollers may be so formed that the latter may be driven by friction alone, as not much power is required to give them motion, and the great momentum which they attain at ordinary speed of the locomotive is sufficient to throw ordinary obstacles from the track. We prefer, however, to use a peculiar gear adapted to this particular purpose, whereby not only are the pilot rollers easily driven at the angle at which they stand, but also without danger of breaking the cogs or teeth from the great motion, or from suddenly bringing them into gear, as will presently be described. This gear consists of peculiarly-shaped cam teeth or cogs *k k* on the side of the truck-wheels, and similar teeth or cogs, *l l*, on the end of the pilot-rollers, as shown most clearly in Figs. 1, 3, and 4. These teeth gradually project out from the plane and bevel of the roller and wheel at *m* to the edge *n*, which is rounded off to such a shape that when they come in gear with the opposite set the contact shall not be so positive and unyielding as to endanger the breaking of the parts, but shall be gradual and with a rolling or cam action, the rounded parts fitting together so as to accomplish the action with but very little friction. The bevel of the inner surface of the wheels B is such as to give the teeth *k* an angle adapted to meeting the teeth *l* on the rollers. The teeth of the contiguous wheel and roller point in the same direction.

As it is not desirable at all times and under all circumstances to keep the pilot-rollers in action, our arrangement is adapted to throwing them out of engagement. For this purpose, as before described, the support C is made to adjust or slide forward and backward in its guides *c c*. The reaction is produced by means of a coiled spring, P, or its equivalent,



secured at one end to the extremity of the shank *b*, and at the opposite to a projection, *r*, of the frame.

The forward movement to disengage the parts is produced as follows: A hand-screw, *G*, screwing into the shank, passes up through a gage-slot, *s*, in the top of the frame and through a lever, *H*, pivoted at *t*, Fig. 2, having thereon a head or shoulder, *u*, for holding on top of the lever to fix it in any position. To the opposite end of the lever *H* is attached a sliding rod, *v*, by which the support *C* is adjusted forward and back. The position of the slot *s* is such that when the screw *G* strikes its rear end the wheels and rollers will be brought into just the proper position to engage, without being thrown back so far as to produce undue bearing, friction, and grating. It therefore serves as a perfect gage under all circumstances, so that the spring *P* produces only the proper reaction to engage the parts.

By means of the set-screw *G*, when the parts are thrown forward to disengage or ungear the rollers, the whole may be held in that position rigidly by merely turning said screw, thus holding the shank *b* closely to the frame. This arrangement is very convenient, the screw thus answering the double purpose of a stop and set. The rollers thus arranged have several peculiar advantages. By turning vertically in an upward direction, instead of horizontally, they have a tendency to throw obstructions up away from the track, and at the same time by being set at the angle or in the inclined direction described above they have a tendency to throw them outward. These two actions of the rollers combined have the best effect in clearing the track of all obstructions, whereas a horizontal wheel has only a single one of the actions. By this arrangement, also, there is no occasion for intermedi-

ate gearing in imparting motion to the pilot-rollers, which, by any other arrangement, could hardly be dispensed with. The simple engagement of the wheels and rollers gives motion to the latter. An especial effect, and one that we regard as an important part of our invention, is that the wheels and rollers are engaged or disengaged by a single simple forward or backward movement of the inner ends of the rollers themselves, produced by the sliding of the support *C*. So far as we are aware, the arrangement for producing this result is new in this connection. A suitable guard, *I*, Fig. 2, may be employed above the pilot-rollers.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The vertically-revolving pilot-rollers *D*, driven from the truck-wheels *B B* of the locomotive, or in an equivalent manner, and having their axes placed at such an angle that they can be thrown out of gear by a single forward movement of their contiguous journals, substantially as herein set forth.

2. The cam-tooth gear *k l*, by which the pilot-rollers may be thrown in or out of gear by an easy rolling motion, when at the highest speed, without the liability of stripping the teeth, substantially as herein specified.

3. In combination with the sliding support *C*, the set-screw *G*, with its shoulder *u*, the gage-slot *s*, and lever *H*, arranged substantially as described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

ELIAS WYCKOFF.  
ARCALOUS WYCKOFF.

Witnesses:

ROBERT SWAN,  
M. TILLOTSON.