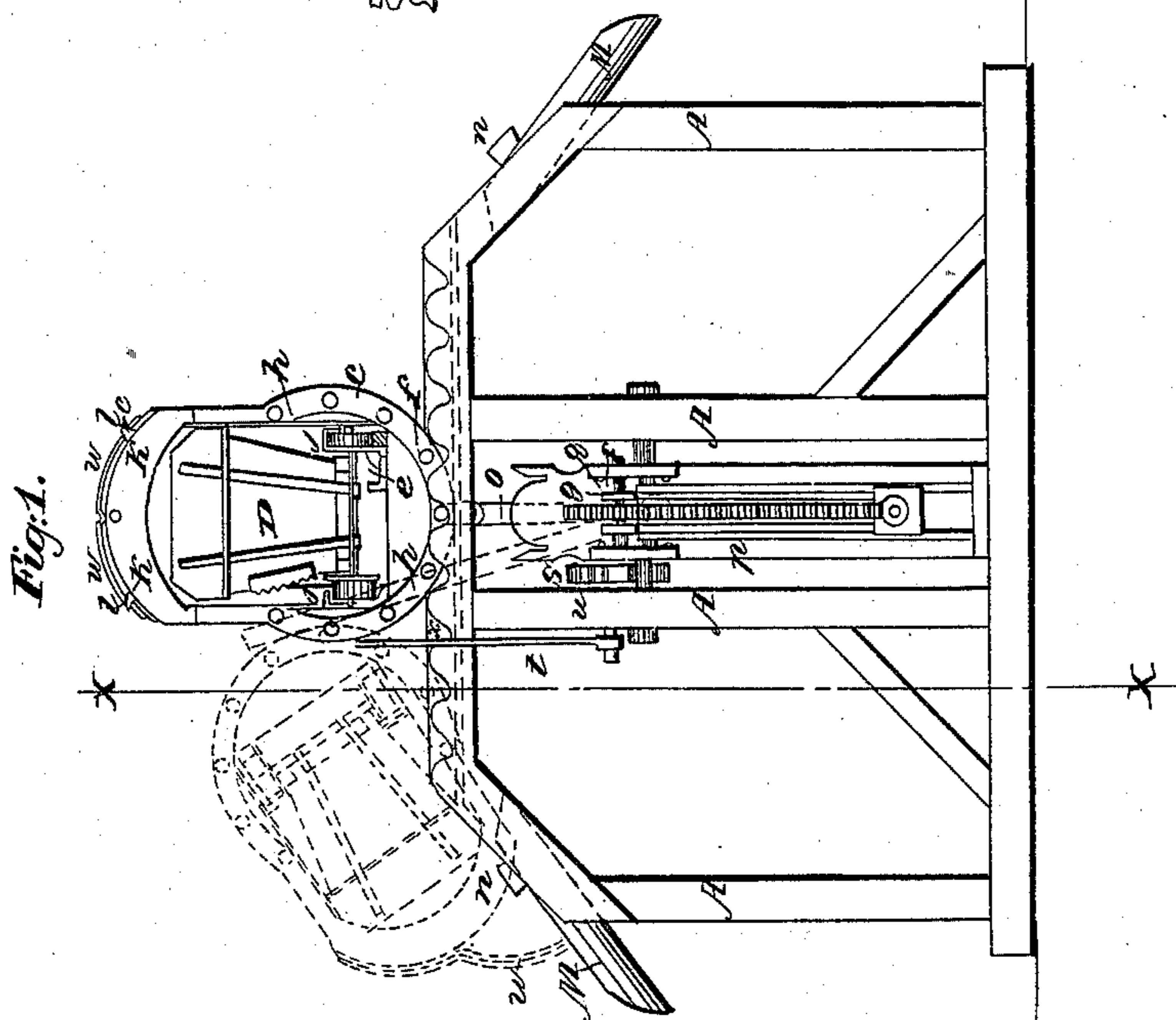
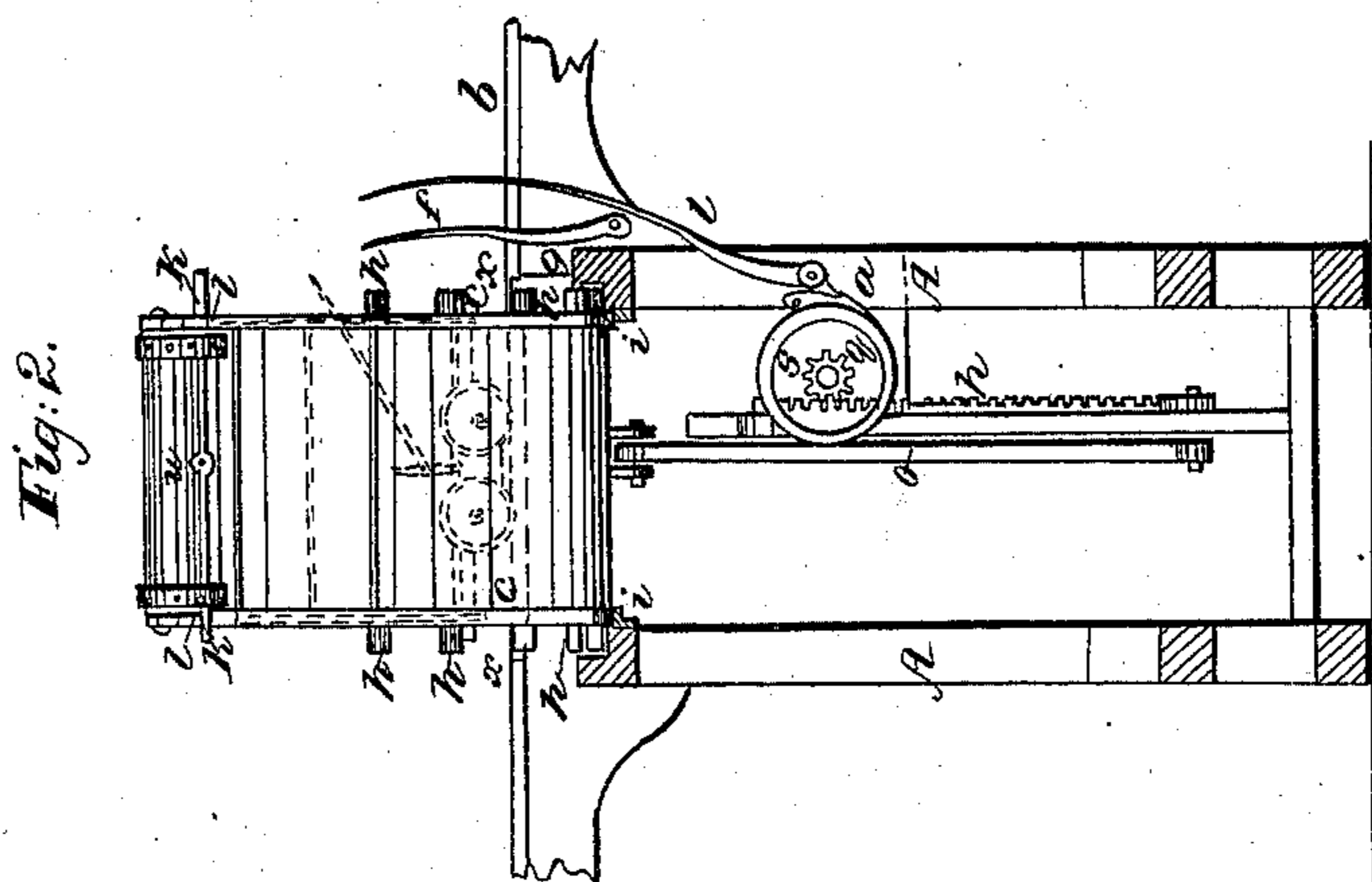
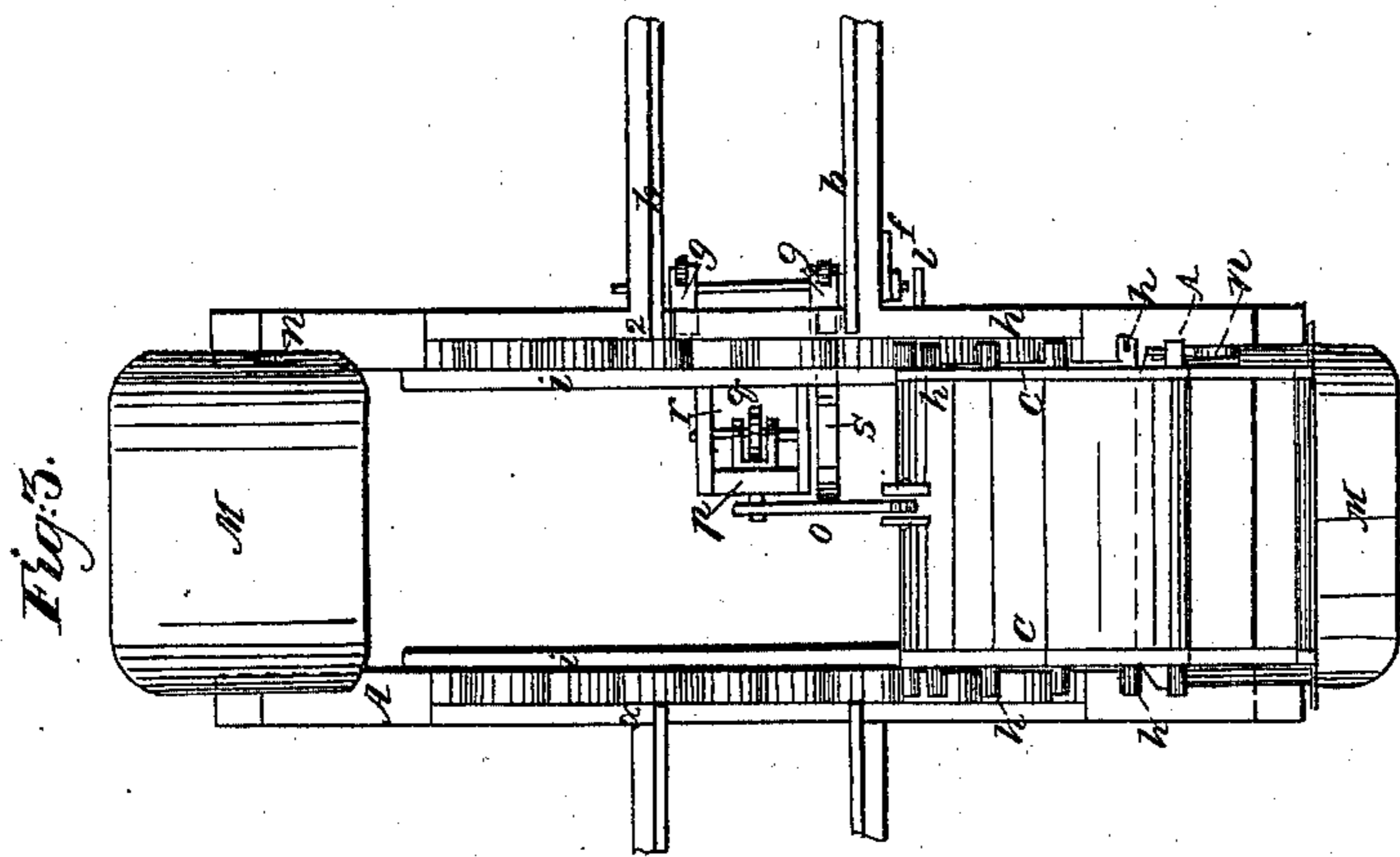


PEARCE & LOWRIE.

Dumping Car.

No. 17,114.

Patented Apr. 21, 1857.



UNITED STATES PATENT OFFICE.

WILLIAM PEARCE AND JOHN LOWRIE, OF PIEDMONT, VIRGINIA.

IMPROVED MODE OF DUMPING RAILROAD-CARS.

Specification forming part of Letters Patent No. 17,114, dated April 21, 1857.

To all whom it may concern:

Be it known that we, WILLIAM PEARCE and JOHN LOWRIE, both of Piedmont, in Hampshire county and State of Virginia, have invented a new and useful Method of Dumping Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, through letters of reference marked thereon, forming part of this specification, in which—

Figure 1 represents an elevation of the same, with the car also shown in its discharging position in red lines. Fig. 2 represents a vertical section, taken on the line xx of Fig. 1. Fig. 3 is a plan or top view showing the car in the position represented in red lines in Fig. 1.

The same letters of reference appearing in the several figures indicate like parts.

In the usual method of discharging coal from railroad-cars the car is constructed with sliding or other gates in the end, side, or bottom, so that when the car is tipped the lump coal discharges over the side or end of the car, and the smaller portions pass out at the gate in its end or side. In this method the large coal is subjected to considerable fall, which breaks it up, making a great deal of fine waste, of which in all bituminous qualities there is always a superabundance, and in these cars (commonly called "hoppers") made with a valve or slide in the bottom, this valve must necessarily be of sufficient size to allow the largest lump to pass through, which materially weakens the car, requiring that it be constructed much heavier, thus rendering it more expensive both in point of material and workmanship, as well as more burdensome for transportation.

The object of our invention therefore is to discharge the cargo from the car in such manner that the car may be rendered more durable by constructing it without any openings in the sides or bottoms, by which it may be made much cheaper as regards workmanship, and equally strong with much less weight of material, thus reducing the first cost of a car of equal strength and effecting a great saving in transportation of unprofitable burden; also in such manner that the coal will pass therefrom onto the chute with only a few inches fall, thus saving a large percentage of breakage, and consequent waste; and it con-

sists in running the car from the permanent track onto a rocking track inclosed in such manner that when the car is run onto it it may be rolled sidewise or endwise to such an extent that the coal will pass over the side or end of the car onto a chute arranged in proper position to receive it, by which means openings in the car are unnecessary, and the side of the car is brought to such a position that it forms a connection with the upper edge of the chute when the coal slides down it and the permanent chute to its place of deposit, either on the wharf or in the hold of a vessel, with comparatively no breakage.

To enable others to make and use our invention, we will describe its construction and operation.

A represents the necessary trestle-work to elevate the track to a sufficient height to allow fall for the coal to discharge, the track or main rails b running transversely to this frame-work. A section of the main track (from x to z) is laid on rockers c , which are connected together and inclosed around the bottom and sides with rolled metal or other suitable material, forming a housing of sufficient size to admit a car D, which, being run in, as represented in Fig. 1, is blocked by the lever-stop e to prevent it moving endwise. The lever f is then thrown back to withdraw the shoes g , (which were passed under the projections h , one on each side of the center one, to prevent the housing from rolling while the car was run in,) when it is free to be rolled to either side. Its rockers c , being supported on the rails i , bear the weight, while the projections h strike into the corrugated beds on each side and prevent it sliding. In this manner it is rolled over into the position represented in red lines, the wheels of the car being held on the track by the ribs j , attached to the side of the housing above them, and in tipping the car its top edge, which was in close proximity to the side of the housing, comes in contact therewith, which supports it and prevents any strain upon the car. The upper part of this housing is inclosed with two doors w , which are hinged longitudinally over the center of the car and secured by latch-bars k , with catches l at each end thereof in such manner that they prevent any coal from falling until the top of the housing and car come in contact with the chute M, when the latch-

bar k strikes the cam-stud n , which frees it from the catches and allows the coal to pass out down the chute, which is extended on an incline to the place of deposit. A pitman o is connected at its upper end with the bottom of the housing and at its lower end with a vertical sliding rack p , which gears into a pinion q on the shaft r , on the outer end of which is a brake-wheel s , with a lever t and rubber u suspended against it. When the shoes are withdrawn, the housing and car are easily rolled to either side. The center of gravity being above the center from which the rockers are described, the brake is therefore used to prevent it from going over too rapidly, which might damage either the car or the housing, and when the load is discharged the center of gravity will be found to be below said point, by which it is brought back to its vertical position, the brake being again applied to prevent it rising either too soon or too rapidly. The shoes g are then to be run under the projections h to steady the housing, while the empty car is run out and a full one in, which may be done either by running the empty one back the same way on a switch, or by running it out at the other side on a continuation of the same track. We also construct the cars with their ends raised higher than their sides, to enable them to carry a much greater load, without wasting, than they otherwise would do, up or down a steep incline, which is very desirable, and adds but little to their cost or weight, and at the same time to serve to inclose the ends of the housing, to prevent any coal from discharging on the side of the chute when tipped, as before described.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The method of discharging cargo from cars by means of a rocking track, substantially as specified.

2. The mine-car, as herein described, constructed without any openings in its sides, ends, or bottom for discharging its cargo, and with its ends raised higher than its sides, for the purposes set forth.

3. The ribs or flanges j , in combination with the rocking track, for the purposes and in the manner substantially as herein specified.

4. The shoes g , in combination with the projections h , for steadying the rocking track while the cars are run on and off, substantially as set forth.

5. The method of braking the rocking car (as it is capsized to discharge the coal and afterward raised) by means of the brake u and wheel s , the latter being mounted on the shaft of a pinion v , operated by means of a rack p and pitman o , or their equivalents, substantially as specified.

6. The arrangement of the cam-stud n , in combination with the latch-bar k , by which the doors w of the rocking car are released when it is brought into proper position to discharge its cargo into the chute, as set forth.

In testimony whereof we hereunto subscribe our names this 9th day of February, 1857.

WILLIAM PEARCE.
JOHN LOWRIE.

Witnesses:

ROWLAND RICHARDS,
JAMES KIRKWOOD.