

G. Martz.  
Dumping Car.

No. 14,671.

Patented Apr. 15, 1856.

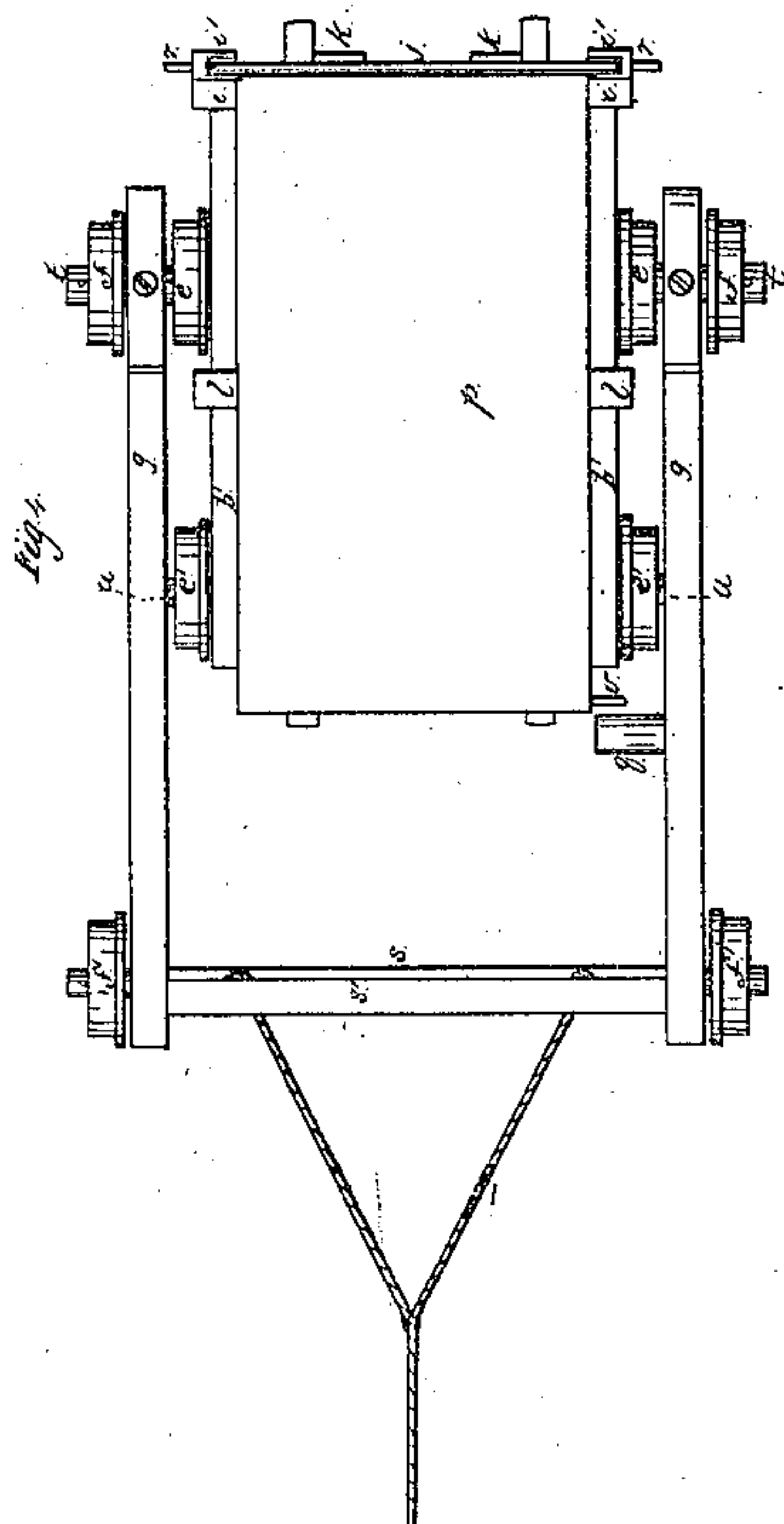
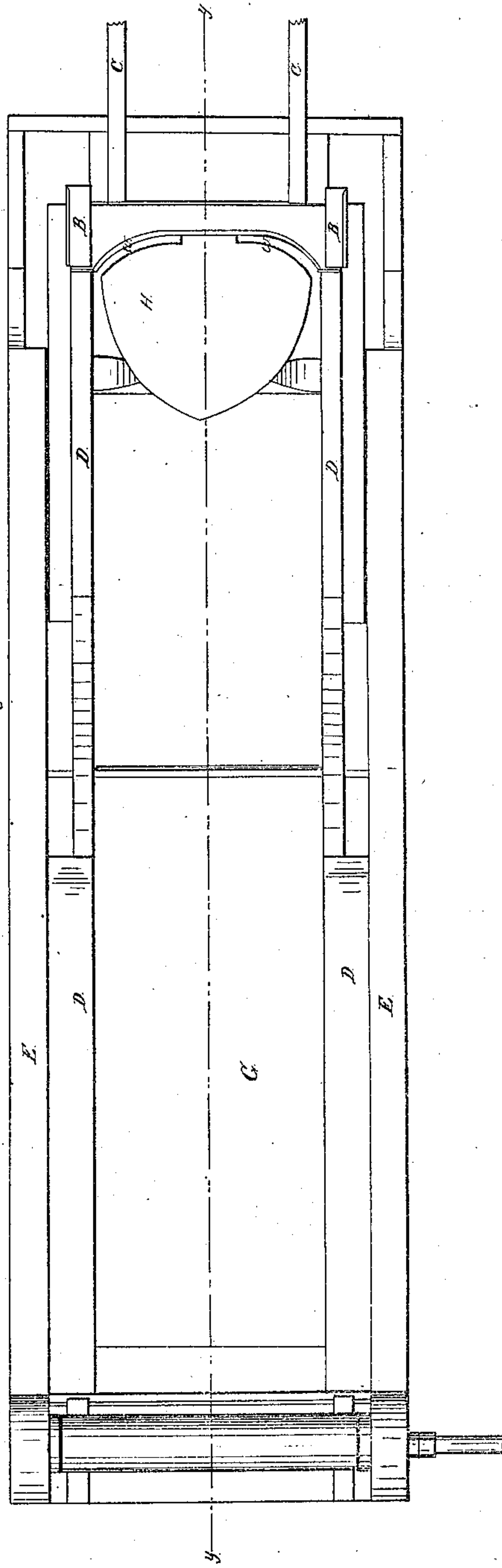


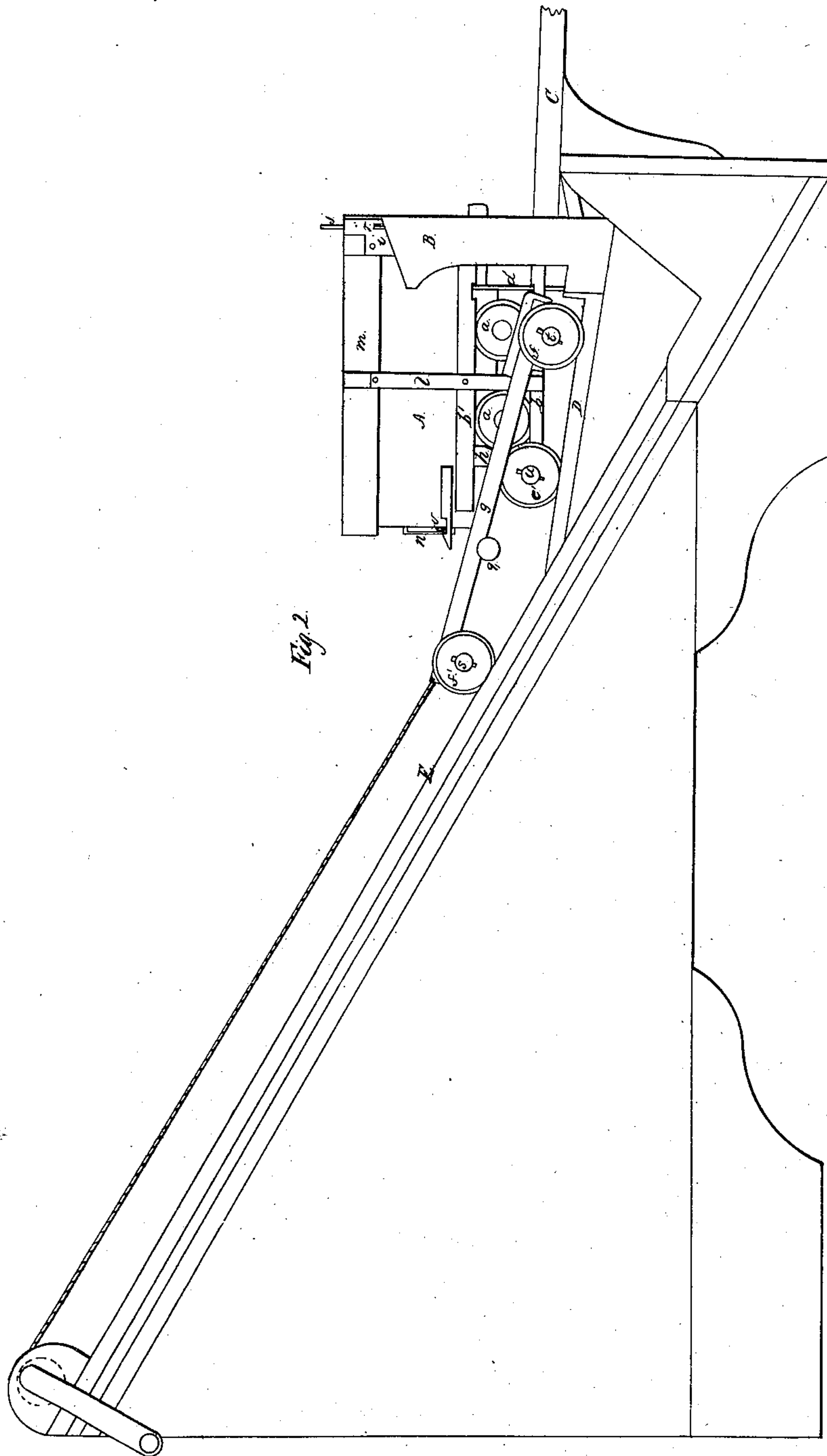
Fig. 1



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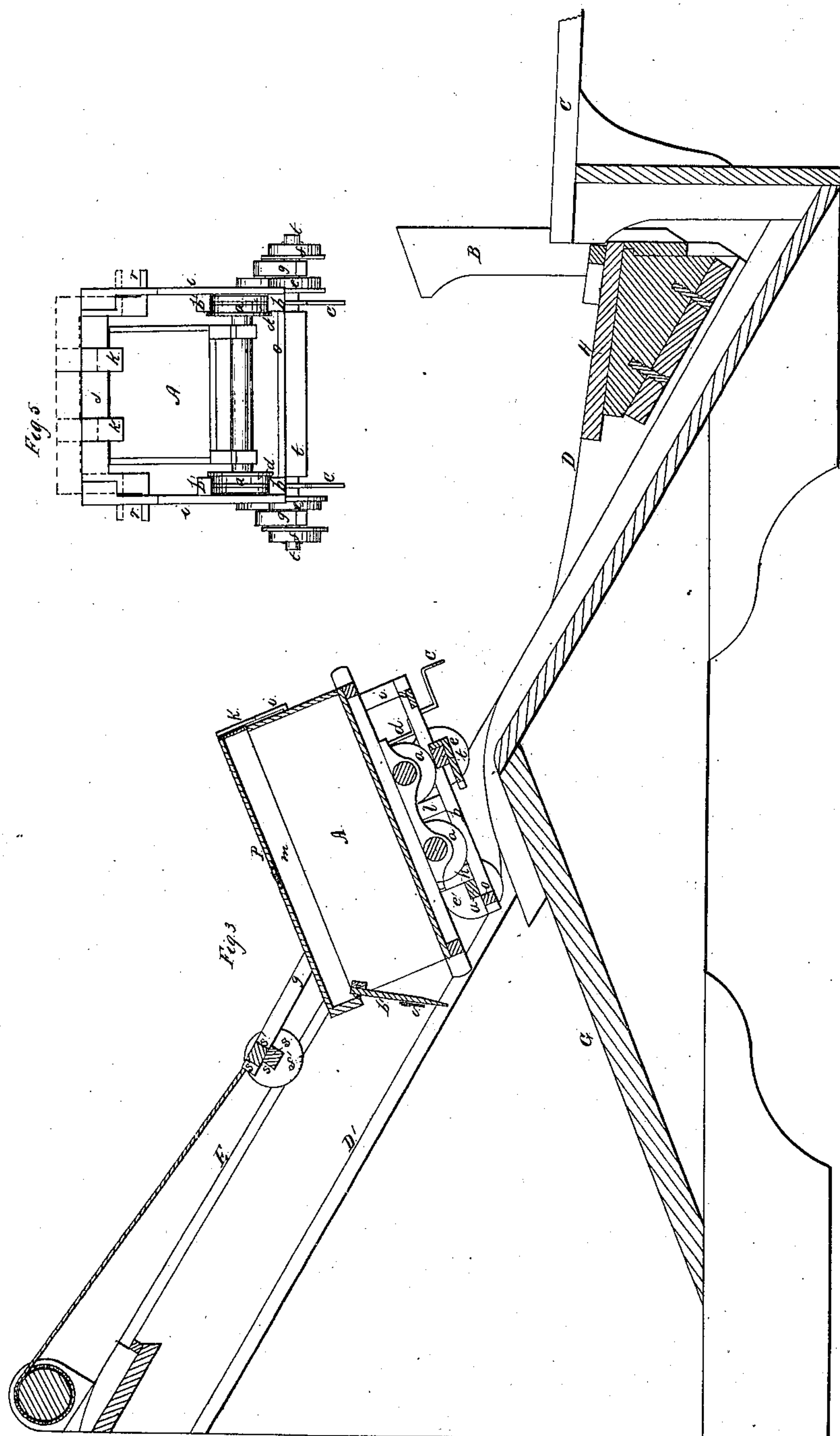
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# UNITED STATES PATENT OFFICE.

GEORGE MARTZ, OF POTTSVILLE, PENNSYLVANIA.

## APPARATUS FOR HOISTING COAL.

Specification of Letters Patent No. 14,671, dated April 15, 1856.

*To all whom it may concern:*

Be it known that I, GEORGE MARTZ, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Hoisting Coal Out of Slopes and Discharging the Same; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, Figure 1 being a top view of a slope; Fig. 2, a side view of the same and of the apparatus employed in hoisting the coal; Fig. 3, a vertical section in the line  $y-y$  of Fig. 1; Fig. 4, a top view of the coal-hoisting apparatus detached, and Fig. 5 a rear end elevation of said apparatus.

Similar letters indicate like parts in all the figures.

In the accompanying drawings C, C, are the rails of the track which leads from the lower extremity of the slope, by means of suitable branches, to the different chambers of the mine.

D, D, are the rails of the slope-track, which leads from a plane situated a short distance below the level of the track C, C, up the slope to the discharging chute G; the said slope track curves over and runs down the said chute G, a short distance, and then inclines upward for a few feet, as shown in Fig. 3.

E, E, are rails placed on the outer sides of each of the rails D, D, and which form a wider track that commences a short distance below the discharging chute G, and thence leads up an inclined plane a distance of something like fifty feet above the said chute. Strong and well secured posts B, B, rise from the lower extremities of the slope-track rails D, D. The lower ends of the said rails D, D, are laid in a level position for a short distance, and they are placed at a lower level than that occupied by the track C, C, for the purpose of enabling the coal cars to be easily run from the track C, C, directly into the hoisting carriage standing upon the lower end of the slope track D, D.

The hoisting carriage has two pair of wheels  $e, e$ , and  $e', e'$ , which are adapted to the slope track of rails D, D, and also two pair of wheels  $f, f$ , and  $f', f'$ , which are adapted to the outer track of rails E, E. The pair of wheels  $e', e'$ , are placed upon the central axle  $u$ , and the pair of wheels

$e, e$ , are placed upon the inner portions of elongated journals on the after axle  $t$ . The wheels  $f, f$ , are placed upon the elongated journals of the axle  $t$ , and the wheels  $f', f'$ , are placed upon the journals of the forward axle  $s$ . The forward axle  $s$ , is connected to the after axle  $t$ , by means of the beams  $g, g$ , whose after ends pass between the wheels  $e, f$ , on the journals of the axle  $t$ , and are securely fastened to the central portion of said journals. The forward ends of the beams  $g, g$ , are connected together by the cross piece  $s'$ , which is secured to the forward axle  $s$ , in any suitable manner. The body of the hoisting carriage which receives the coal car A, rests upon the central axle  $u$ , and the after axle  $t$ . The frame of said carriage body is composed of the respective side rails and uprights  $b, b', h, l, m$ , and  $i$ ,—the bottom cross pieces  $o, o$ , and the top  $p$ , combined with each other in any suitable and proper manner.

The body of the coal car A, is placed upon a truck frame which rests upon pairs of wheels  $a, a$ . The said body of the coal car is a plain box whose front end is composed of the door  $h'$ , which is hung at the top and so arranged that it will, when unfastened, swing freely open when the rear end of the car is elevated above its forward end; and when said car is brought into a horizontal position again, the said door will be closed by force of gravity and its latch  $v$ , by said movement, will pass into its catch and self fasten the door.

When the hoisting carriage is standing upon the lower end of the slope-track D, D, the inner and upper surfaces of the side rails  $b, b$ , of said carriage, will be exactly in line with the inner and upper surfaces of the track of rails C, C, and the after ends of said carriage rails  $b, b$ , will abut against the ends of the rails C, C. The pair of rails  $b, b$ , of the hoisting carriage, are of sufficient strength and stiffness to receive and support the wheels  $a, a$ , of the coal car; consequently, an empty car can be freely run from the carriage out on to the track of rails C, C, and a loaded car can be run from said track directly into the hoisting carriage. The coal car is prevented from running too far into the hoisting carriage by the forward wheels of the car striking against the upright  $h$ , of said carriage.

The coal car may be securely self fastened in the hoisting carriage, by means of the



pair of double cranks  $d, c$ , placed in the after angles of said carriage, which are of such a shape and so arranged that the curved slits  $w, w$ , at the after side of the cam H, (which is placed between the lower extremities of the rails D, D,) will so operate said cranks as to throw their upper portions  $d, d$ , inward against the rear sides of the after wheels of the coal car at the moment of starting; and will throw the said portions  $d, d$ , of the cranks outward, clear of the wheels of the coal car, just at the moment of arriving at the lower extremity of the slope track. This is accomplished by the lower extremities  $c, c$ , of the cranks passing into the curved slits  $w, w$ , at the moment that the carriage reaches its stopping place, which forces inward the said portions  $c, c$ , of the cranks and throws their upper portions  $d, d$ , outward entirely clear of the wheels  $a, a$ , of the coal car, so that it can be freely run out on to the track C, C.

At the moment of starting the hoisting carriage, the wrists  $c, c$ , of the said double cranks, following the direction of the curved slits  $w, w$ ,—will be forced outward, which will throw the portions  $d, d$ , of said cranks inward into the rear of the after wheels of the coal car, and thereby perfectly secure said car within the hoisting carriage. The coal car may also be secured within the hoisting carriage by means of the descending ears K, K, on the board  $j$ , which works in guiding slits in the upper extremities of the uprights  $i, i$ , which form the after angles of the hoisting carriage. By means of the arms  $r, r$ , which project from the said board  $j$ , out through the slits in the uprights  $i, i$ , and the inclined upper ends of the posts B, B at the lower ends of the slope track D, D, the said fastening ears K, K, may be made self operating, viz; as the hoisting carriage reaches its station in descending, the said projecting arms  $r, r$ , will be carried up the inclined ends of the posts B, B, which will elevate the said board  $j$ , so high as to carry its ears K, K, above the hind end of the coal car and allow it to pass freely out of the hoisting carriage. And in starting said carriage, the board  $j$ , will descend as its arms  $r, r$ , pass down the inclined planes at the upper ends of the posts B, B, and thereby cause said board to rest upon the hind end of the coal car, and its ears K, K, to project below the same, and securely hold it within the hoisting carriage while it is passing up the inclined track of the slope.

It will be perceived that the hoisting carriage and its load, rests entirely upon its inner wheels  $e, e$ , and  $e', e'$ , until in ascending the outer sets of wheels  $f, f$ , and  $f', f'$ ,

are brought upon the wider track of rails E, E. The forward end of the coal car at all times rests entirely upon the inner pair of wheels  $e', e'$ , and consequently, when the said wheels, in ascending, reach the chute G, they will follow the slope track down said chute, while the after end of said car will rest upon the outer wheels  $f, f$ , and the outer track of rails, which will throw the said coal car into a position sufficiently inclined to cause its contents to be discharged into said chute. The descent of the forward end of the coal car A, down the chute G, brings the latch  $v$ , of its door in contact with the projection  $g$ , from the inner side of the left hand beam  $g$ , of the carriage, which will throw up said latch and cause the car to self-discharge its load of coal into the chute while it is in the aforesaid inclined position. The portion D', D', of the slope track which inclines upward again, after curving down the discharging chute for a suitable distance, enables the coal car to be carried upward in an inclined position a short distance with its forward end resting upon the track D', D', while the after end of said car is resting upon the broader track of rails E, E; which prevents the coal from clogging the chute as it is discharged from the car. As soon as the hoisting carriage is relieved from the elevating power, it will run backward by the force of gravity all the way to the bottom of the slope track D, D, and will there discharge the coal car out on to the mine track of rails C, C, and put itself in proper trim for receiving another loaded coal car.

What I claim as my invention and desire to secure by Letters Patent, is—

1. Supporting the hoisting carriage upon outer and inner sets of wheels arranged in such a manner in relation with the double sets of railway tracks and the discharging chute, that the coal car in said hoisting carriage, is made to self-discharge its load of coal into said chute, substantially as herein set forth.

2. I also claim so proportioning and arranging the respective parts of the hoisting carriage and the coal car, that as soon as the elevating power is detached from said carriage, it will, by force of gravity, run back to the bottom of the slope-track and restation itself in the proper position for discharging its empty coal car and receiving a loaded car, substantially as herein set forth.

GEORGE MARTZ.

Witnesses:

HOWELL FISHER,  
SAML. REED.