

(No Model.)

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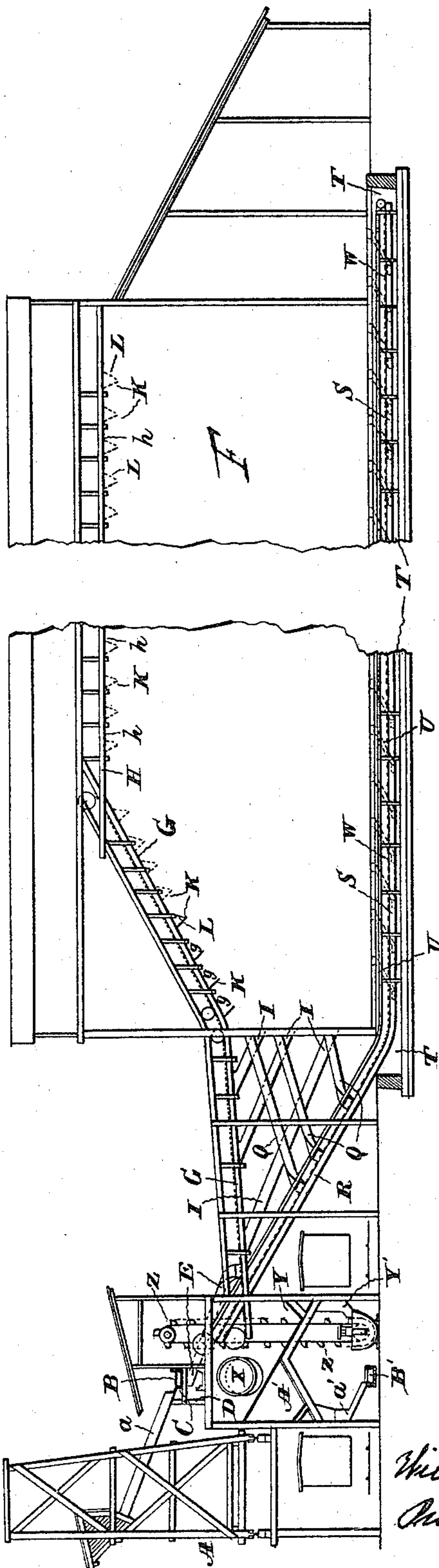
W. A. LATHROP.

MECHANISM FOR UNLOADING, STORING, AND RELOADING COAL.

No. 572,900.

Patented Dec. 8, 1896.

Fig. 1.



Witnesses:
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Henry C. Hazard.

Inventor:
William A. Lathrop
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(No Model.)

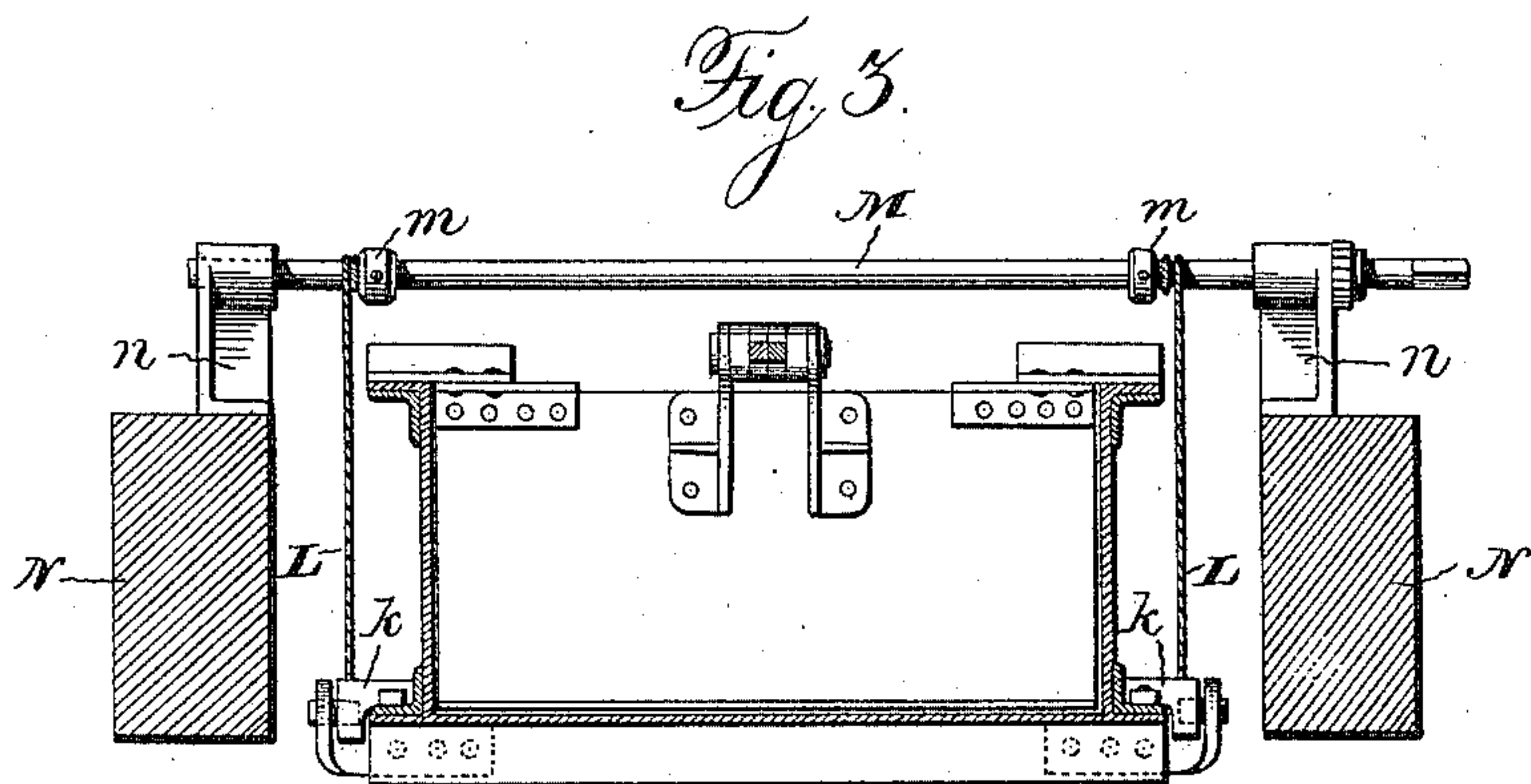
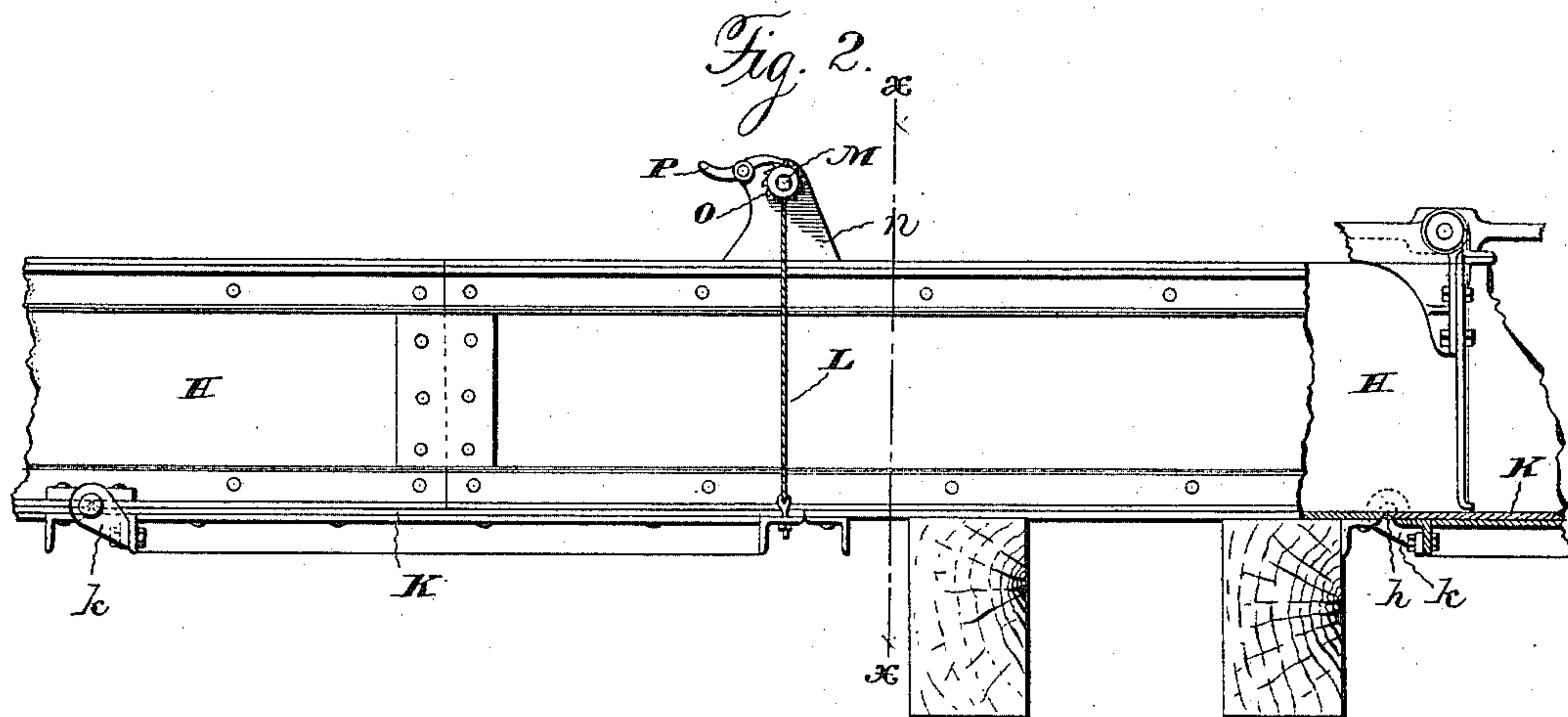
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No. 572,900.

Patented Dec. 8, 1896.



Witnesses:
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(No Model.)

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W. A. LATHROP.

MECHANISM FOR UNLOADING, STORING, AND RELOADING COAL.

No. 572,900.

Patented Dec. 8, 1896.

Fig. 4.

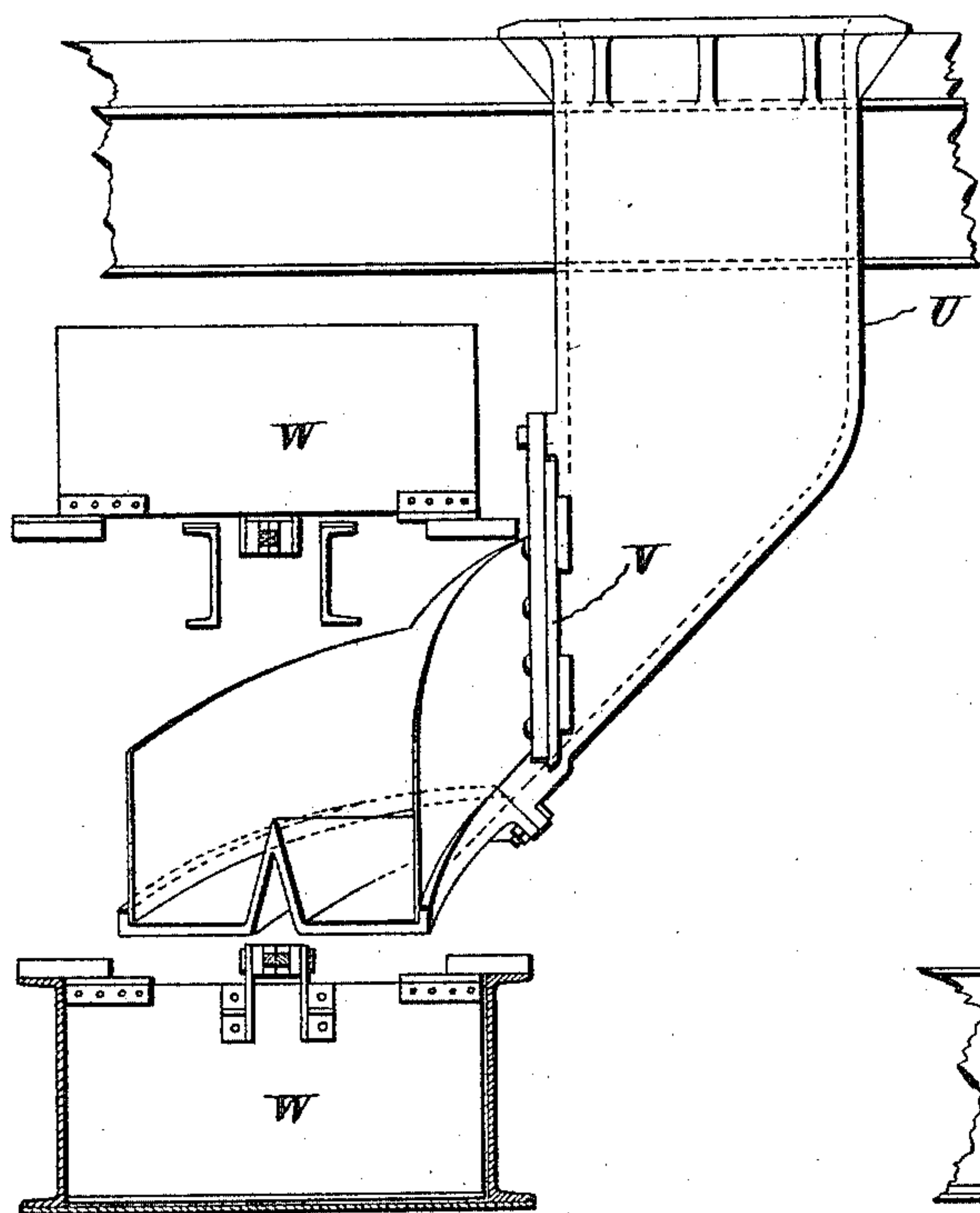
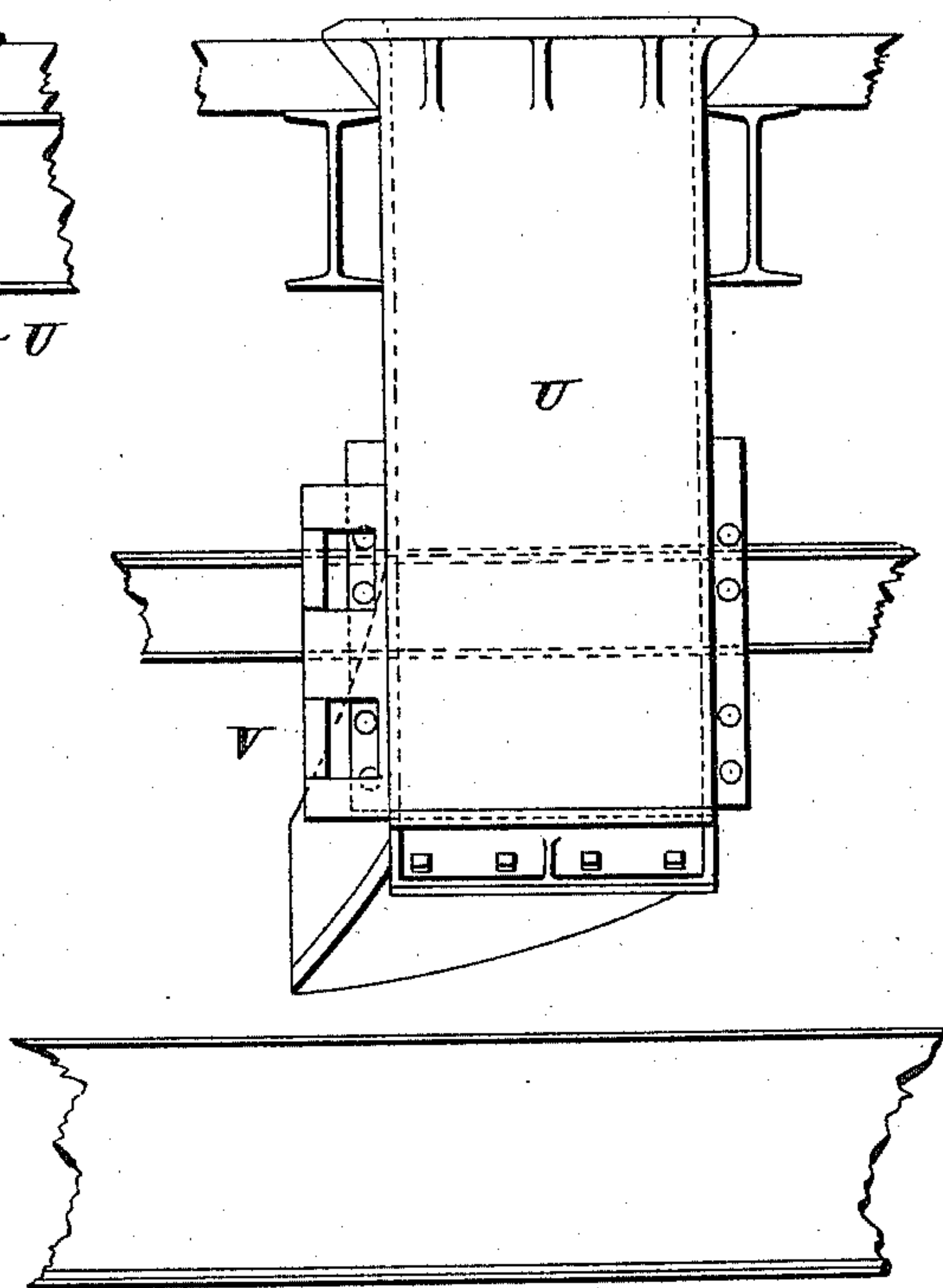


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM A. LATHROP, OF WILKES-BARRÉ, PENNSYLVANIA.

MECHANISM FOR UNLOADING, STORING, AND RELOADING COAL.

SPECIFICATION forming part of Letters Patent No. 572,900, dated December 8, 1896.

Application filed April 1, 1896. Serial No. 585,820. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LATHROP, of Wilkes-Barré, in the county of Luzerne, and in the State of Pennsylvania, have invented certain new and useful Improvements in Mechanism for Unloading, Storing, and Reloading Coal; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a view of my mechanism, partly in side elevation and partly in section; Fig. 2, a detail view of a portion of one of the conveyer troughs or trimmers, partly in side elevation and partly in section. Fig. 3 is a cross-section thereof on the line xx of Fig. 2. Fig. 4 is a detail view, in end elevation, of one of the chutes for the passage of coal from the floor of the building to the conveyer for removing the coal from the building; and Fig. 5 is a detail view, in side elevation, of said chute.

Letters of like name and kind refer to like parts in each of the figures.

The design of this invention is to enable the expeditious and economical unloading and storage of coal and its reloading; and to this end said invention consists in the mechanism having the construction substantially as and for the purpose hereinafter specified.

The particular object had in view in making my invention is the unloading of coal from boats into a store house or building located adjacent to a dock and the removal thereof from such building and its loading upon cars placed upon tracks conveniently located with reference to the building, and in the carrying of my invention into practice, with this object in view, I place alongside of the dock a hoisting-tower A of usual construction, by which coal may be elevated from the boat to be unloaded.

From the tower the coal is delivered by a chute a to a traveling conveyer B, moving through a horizontal trough C of such length as to extend past several storage-buildings and adapted to deliver the coal to any one of the same, as may be desired, or into the pocket, if it is desired to load cars. Only one of such buildings is shown. Said trough is supported in an elevated position by a framework D.

From the bottom of the trough C a chute E for each building F inclines downward to-

ward the latter and discharges coal into the lower end of a trough G, that inclines upward toward the building into which it extends, and the portion inside inclining more than that outside. At its upper end said trough communicates with one end of a trough H, that extends horizontally through the building, very near the roof thereof. Within each of said troughs is a suitable conveyer for moving the coal through the same.

Extending downward and inward at different points from the bottom of the portion of the trough G outside of the building are several chutes I and I, that are adapted to deliver the coal within the building at successively higher and higher points, that one delivering the lowest being the first to receive coal from the trough, and the others receiving the coal in the order that they are successively higher at their points of delivery.

The bottom of the portion of the trough G within the building is provided with a series of discharge-openings g and g , which, owing to the inclination of the trough, will deliver the coal at successively higher and higher points. Similar openings h and h are provided in the bottom of the horizontal trough H.

The passage of coal through the chutes I and I and the openings g and h is controlled in each instance by a gate that consists of a plate K, pivoted at one edge by hinges k and k to the trough, so as to be able to swing downward to uncover the opening and upward to close the same.

Connected to each side of the gate, near its free end, is a rope L, that thence extends up to and is secured to a collar m on a horizontal shaft M, which is journaled in brackets n and n , bolted to suitable supports N and N. One end of said shaft is squared to adapt it to receive a crank, whereby it may be revolved to wind the ropes thereon to raise the gate, and to hold the latter in its raised position a ratchet-wheel O is secured to the shaft, which is adapted to be engaged by a dog or pawl P, pivoted to the adjacent bracket n . When the pawl is disengaged from the wheel, the gate will open or descend by gravity.

In the use of the mechanism thus far described all of the gates will be closed except that controlling the passage of coal into and through the first chute I, which delivers coal

to the lowest point within the building. When the coal-level reaches the lower end of said chute, its gate is closed and that of the next one opened, and the same process is pursued
5 until all of the various discharge-openings have been successively used.

It will be seen that as a result of this procedure the coal at no time in its delivery into the building falls such a distance as to result
10 in its breakage.

Communicating with the end of the building to which the chutes I and I deliver and at successively lower and lower points are several downwardly and outwardly inclined
15 chutes Q and Q, that at their outer lower ends communicate with an upwardly and outwardly inclined trough R. At its lower end said trough is connected with a horizontal trough S, arranged in a tunnel T, passing
20 beneath the building and into which coal from within the building may be delivered through chutes or passages U and U, extending from the floor of the same into the tunnel. Said
25 chutes are shown in detail in Figs. 4 and 5, from which it will be seen that the lower end of each of the same is turned laterally, so as to have its discharge end directly over the trough S and between the upper and lower sections of a conveyer for moving the coal
30 through the trough. Each chute Q and Q and U and U is adapted to be opened and closed by means of a suitable gate V.

Traveling through both troughs R and S is a conveyer W, by means of which coal delivered to the troughs may be carried to and discharged from the upper outer end of the inclined trough R into a rotary or other screen X, mounted in the framework D and designed
40 to remove the finer coal and dust. The prepared coal is discharged from the screen into a bin or hopper Y, from which it may be loaded directly into cars for transportation, or it may be passed from said hopper through a chute Y' into the hopper Z, through which
45 passes an elevator z for hoisting the coal to and delivering it into the trough B to be removed to pockets or bins for subsequent loading upon cars.

The screenings, consisting of fine coal and
50 dust, are discharged into a hopper or bin A', and from thence are conveyed by a chute a' to a conveyer B', by which they may be removed to a screenings' building, to be subsequently disposed of as may be found expedient or desirable.
55

In removing the coal from the building the

highest chute Q is first opened, and as soon as the level of the pile falls below the same the next highest is opened, and so on in succession. All coal having been drawn off
60 which is possible by use of said chutes, the chutes U and U are used in succession, commencing with the one nearest the end of the building from which coal is taken by the
65 chutes Q and Q.

It will be observed that by the described procedure coal is taken from the pile at such a point that there is no great mass or body thereof pressing down upon the portion nearest to the chute being used, and hence the loss by
70 breakage, due to the grinding action of the coal moving under the pressure of a large superincumbent mass, is obviated.

Having thus described my invention, what I claim is—
75

1. In a mechanism for handling coal, &c., the combination of a storage building or inclosure, a conveyer on the outside of the latter, and a series of chutes or passages communicating with the inclosure at different
80 heights and extending to the conveyer, substantially as and for the purpose specified.

2. In a mechanism for handling coal, &c., the combination of a storage building or inclosure, a conveyer outside of the latter, a conveyer within the building, means for placing
85 the same at a series of points in communication with the space within said building, and a series of chutes or passages extending from the latter at different heights and on the exterior of the building to the first-named conveyer, substantially as and for the purpose
90 shown.

3. In a mechanism for handling coal, &c., the combination of a storage building or inclosure, a conveyer above, and one below, the storage-space, and each adapted to communicate with the latter at a series of points, and running each to the exterior of the building, and chutes or passages exterior to the
100 building and extending therefrom at points at different heights to each of said conveyers, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I
105 have hereunto set my hand this 27th day of January, 1896.

W. A. LATHROP.

Witnesses:

I. R. MORSTER,
FRED. W. CHASE.