

(No Model.)

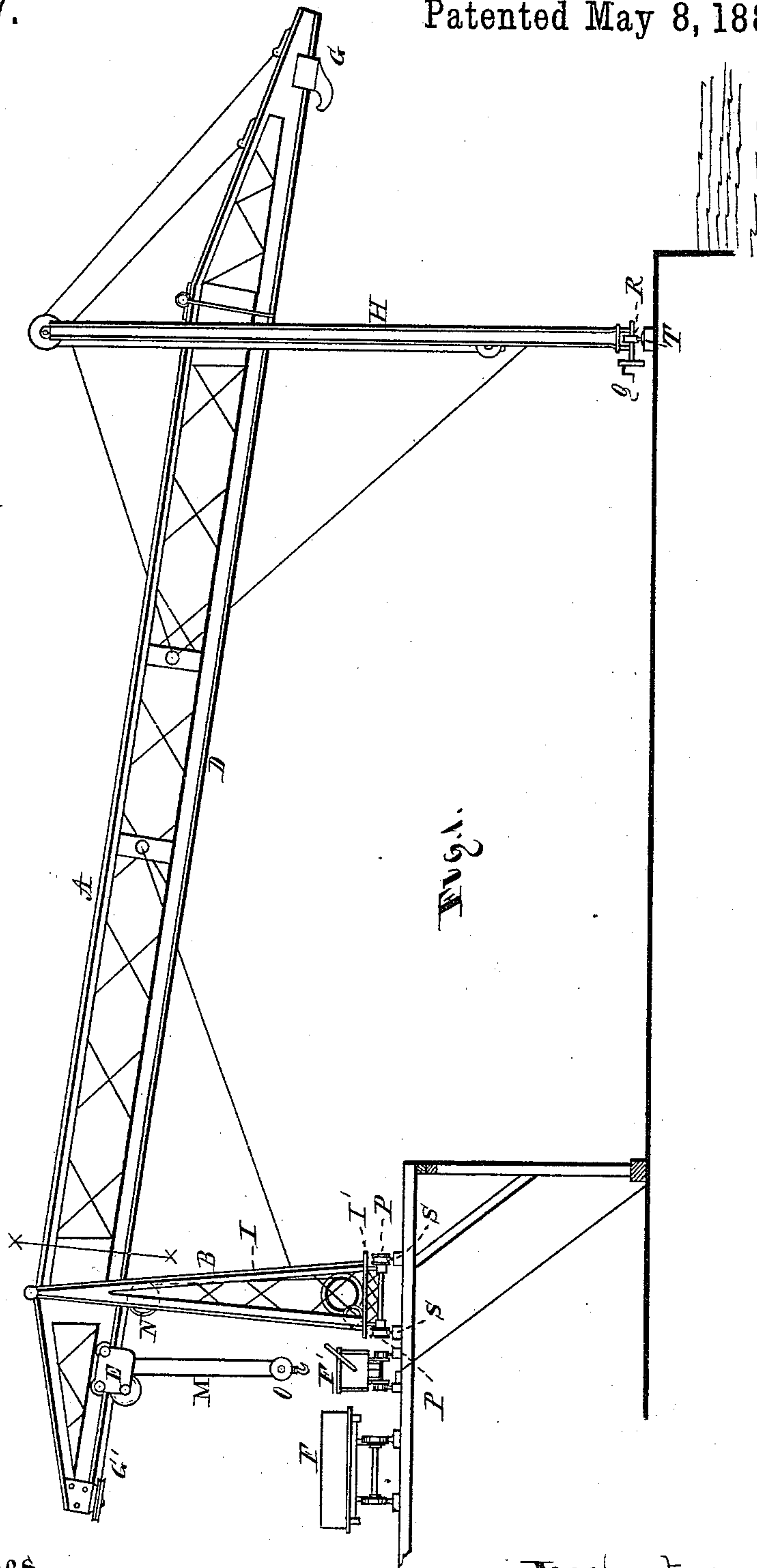
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F. MURGATROYD.

MECHANISM FOR HOISTING AND TRANSMITTING FREIGHT, COAL, &c.

No. 277,327.

Patented May 8, 1883.



Witnesses.
G. A. Hyde
J. H. Burridge

Inventor.
F. Murgatroyd
W. H. Burridge, atty

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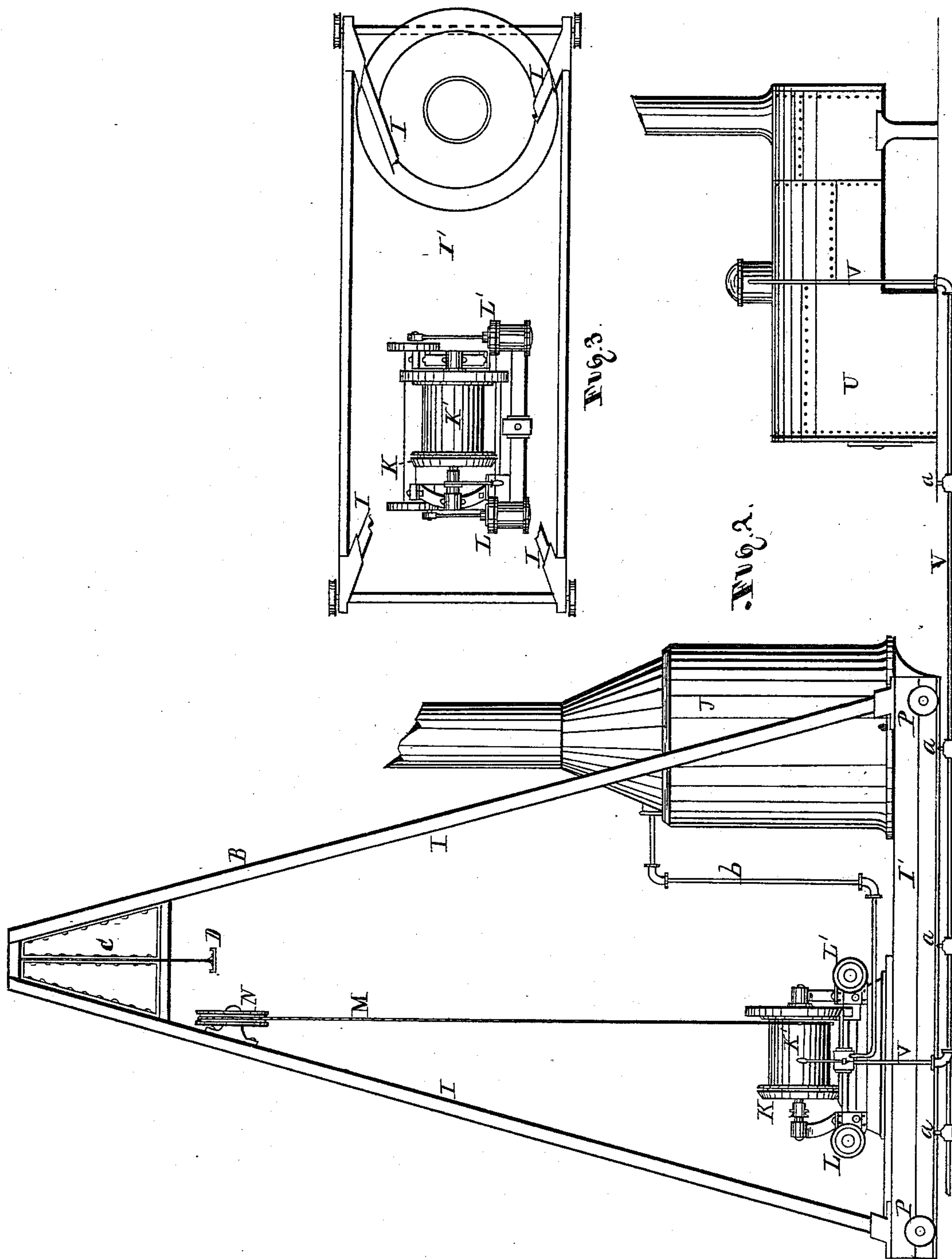
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UNITED STATES PATENT OFFICE.

FRANK MURGATROYD, OF CLEVELAND, OHIO.

MECHANISM FOR HOISTING AND TRANSMITTING FREIGHT, COAL, &c.

SPECIFICATION forming part of Letters Patent No. 277,327, dated May 8, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRANK MURGATROYD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Mechanism for Hoisting and Transmitting Freight, Coal, Ore, &c.; and I do hereby declare that the following is a full, clear, and complete description thereof.

This invention is an improvement on that class of mechanism for hoisting and transmitting freight, coal, ores, &c., from cars to docks, vessels, yards, and vice versa. By means of this improvement much of the time and labor required in the transferring of the coal and ores in the usual way is avoided and a saving in the breakage and reduction in the coal is obtained.

That the improvements may be fully understood, reference will be made to the following specification, and to the annexed drawings, making part of the same, in which—

Figure 1, Plate 1, is a side view of the apparatus or mechanism above referred to. Fig. 2, Plate 2, is an enlarged view taken in front of the line *x x*, Fig. 1, showing an elevation of the tower with its motor-connections. Fig. 3 is a plan view, showing the base of the tower with the motor and boiler attached.

Like letters of reference refer to like parts in the several views.

The improvement referred to relates to a bridgeway supported by a tower or towers at one end and a standard or standards at the other for supporting the load as it traverses across the bridge. The structure is mounted upon wheels, having a track or rails by which it is moved from point to point as may be required, as in loading and unloading coal, freight, &c., and farther within the tower is arranged a hoisting mechanism, in connection with a steam engine and boiler, by which power is obtained for the purpose of taking up and conveying the freight across the bridge to the place of discharge, as hereinafter more fully set forth.

The bridge A may be constructed in any desirable manner suitable for the purpose designed, and secured to the tower B by means of iron plates C, which form a part of the bridge, and from which depends a track, D, Figs. 1 and 2, upon which the carrier E travels forward and backward from one end to the other

of the bridge for transferring coal, ore, merchandise, and other articles from the cars at F F' to the place of discharge at the other end, G, of the bridge. By the same means coal and freight at a point at or below the end G may be conveyed to the end G' and discharged.

The mechanism or apparatus for conveying the articles to and fro across the bridge is not a part of the improvement herein claimed. Hence a description thereof is not deemed essential in this specification, as I design to fully set forth the construction and operation of the said apparatus in a separate application for a patent.

The tower, bridge, and standard H, Fig. 1, are preferably made of iron or steel. The standard supports the bridge at one end and the tower at the other; or there may be similar towers at both ends. Any particular or peculiar construction of the tower or standard is not essential, only so far as it is suitable for the purposes desired. The standard is preferably of a triangular form—that is, having a wide base and contracted at the top connection with the bridge similar to the general form of the tower seen in Fig. 2, so as to secure a strong and firm support for the bridge, thus making the standard of two parts more or less apart at the base, and verging together toward the contact of the bridge. The tower, however, is preferably made up of four columns, I, secured to the bed-plate I' and connected together and with the bridge at the top, forming a conical four-sided tower.

To the bed-plate I' is attached the engine and hoisting apparatus, in connection with the boiler J, as seen in Fig. 2.

The hoisting apparatus K is operated by means of the engines L L', with which it is so connected that the drum K' may be rotated and reversed in motion in winding up and unwinding the rope M, as the carrier E traverses the track D in transferring articles and material from one end to the other of the bridge. The rope M extends over the pulley N, Figs. 1 and 2, to and over the pulley in the carrier E, to which rope the fall-hook O is connected for attaching the load.

The tower is mounted upon four or more wheels corresponding to P, Figs. 1 and 2, which wheels are provided with axles secured to the base of the tower in such way as will

firmly secure the base and tower to the wheels. The two posts comprising the standard H at the other end of the bridge are arranged in relation to each other, the bridge and base in an angular or inclined position, substantially the same as I I in Fig. 2, and are mounted upon a wheel under each post, the same as seen at R, Fig. 1, the shaft of each being secured to the base of each post, and provided with a crank, Q. These wheels of the tower and standard are made to run upon the tracks upon which they rest, by which means the entire structure of the bridge, tower, standard, and the engine and boiler may be moved along on the track S T in either direction without disturbing the general structure or causing delay in the practical working of the entire apparatus.

In some cases it may be desirable and convenient to have the boiler stationary outside of the tower, as seen at U, Fig. 2, with a steam-conducting pipe, V, from the boiler to the engine, as shown in the drawings. At different points along the pipe are couplings or connections *a*, by which disconnections and new connections of the engine and steam-pipe may be made when moving the entire apparatus or structure with its appliances from one position to another along the tracks, as may be required in hoisting or transmitting coal, freight, &c. The connection of the steam-induction pipe V is shown in Fig. 2 as extending from the boiler to the engine; and *b* represents the steam-pipe from the boiler J to the engine. Only one of the boilers need be used at a time.

I am aware that transmitters and hoisters for coal, ores, &c., have been used in connection with ways for conveying the load to the place of discharge, and I am also advised that a derrick frame-work or booms have been employed and arranged to traverse upon rails.

The distinguishing features of my improvement relate to the arrangement of the engine and elevating-machine within the tower, and so connected with the boiler that both together may be moved with the tower, bridge, and standard without any derangement or detachment of the appliances connected with the structure.

The improvement also relates to the bridge,

tower, and standard for the support of the traversing load across the bridge, which may be moved over a track with the engine within the tower, and arranged to disconnect and connect with a steam-pipe leading from a stationary engine outside of the tower.

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

1. In a coal or ore hoister and transmitter, the combination of the bridge, tower, and standards with the engine and hoisting apparatus, arranged within the said tower, substantially as and for the purpose set forth.

2. A coal and ore loader and transmitter consisting of the bridge A, with a tower, B, and standard H, mounted upon rollers or wheels arranged to move upon rail-tracks, in combination with an engine and hoisting apparatus adjusted within the said tower and adapted to operate mechanism for transporting a load from one end of the bridge to the other, substantially as set forth.

3. In combination with a tower, A, bridge B, and standard H, conjointly arranged and mounted upon wheels or rollers upon a track or rails, in combination with the hoisting mechanism, and engine adjusted within the tower, and provided with a steam-pipe connection from the boiler to the engine, substantially as and for the purpose specified.

4. In combination with a hoister and transmitter having the engine located within the tower in connection with the hoisting mechanism, and arranged to traverse upon a track or tracks, a steam-boiler outside of the tower, with a pipe-connection extending along the line of the track from said boiler to the engine within the tower, and provided with couplings *a*, whereby disconnections and connections of the engines and boiler may be made at various points, as required in moving the structure upon the track, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK MURGATROYD.

Witnesses:

W. H. BURRIDGE,
J. H. BURRIDGE.