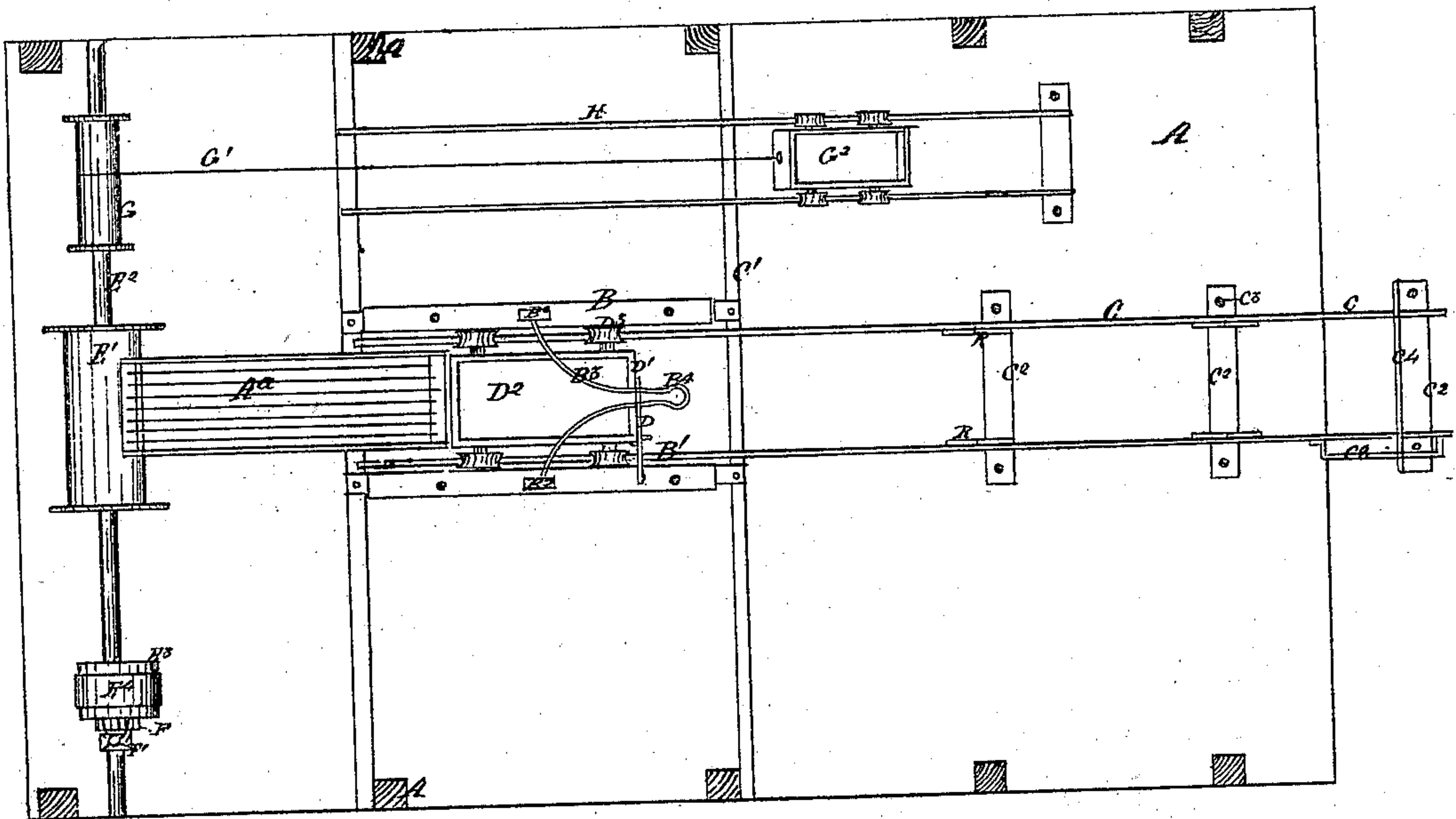
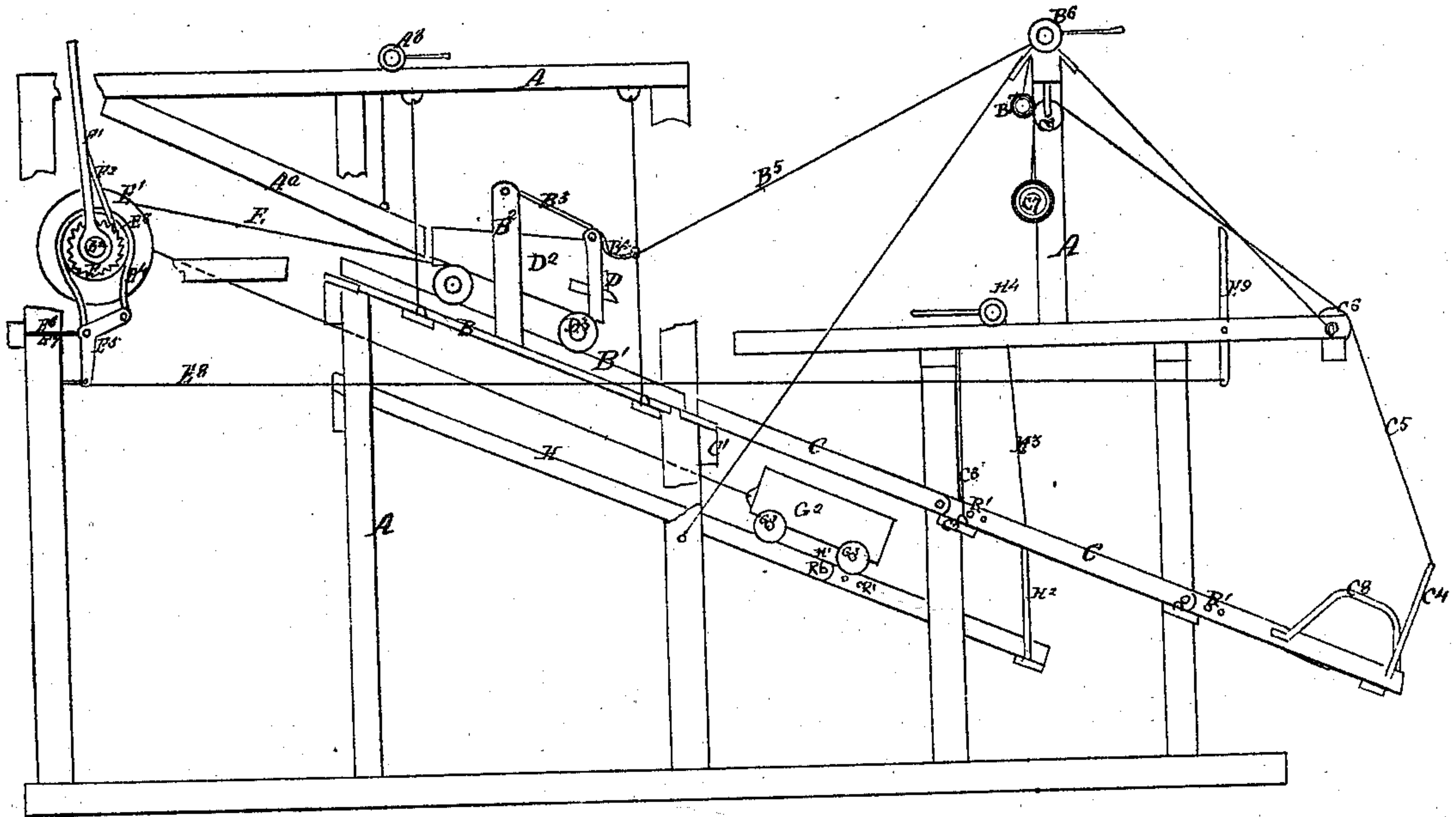


*J. F. Logan,
Coal Chute.*

No. 98,782.

Patented Jan. 11, 1870.



WITNESS
Percival Beckett.
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INVENTOR
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JOHN F. LOGAN, OF COAL BLUFFS, PENNSYLVANIA.

Letters Patent No. 98,782, dated January 11, 1870.

IMPROVEMENT IN COAL-LOADING DEVICE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN F. LOGAN, of Coal Bluffs, in the county of Washington, and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Loading Coal; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and use of devices, as hereinafter described, whereby coal or other material can be readily loaded into boats or other means of transportation, without deterioration from breakages into smaller pieces than required.

In the accompanying drawings—

Figure 1 is a side elevation of my invention.

Figure 2, a sectional plan thereof.

Letters of reference denote parts.

A frame-work, A, of suitable construction, supports and carries the devices used, at the upper part of which, and pendent therefrom, is an ordinary inclined screen, A^a, which may be raised or lowered by the action of an ordinary wheel and lever, A^b.

The mouth of said screen projects over an inclined platform, B, constructed of suitable material, and pendent and connected to the levers of any ordinary weighing-scale, situated above the frame A, said platform being provided, longitudinally, with rails, B¹, of any suitable form, and attached thereto in any suitable manner.

Rising vertically from said platform B, are standards, B², to which is pivoted a curved arm, B³, terminating with a hook, B⁴, to which is affixed a rope or chain, B⁵, attached to an ordinary drum and lever, B⁶, to which is also attached a counterpoise, B⁷, situated at the upper part of said frame A.

By the manipulation of said wheel and lever B⁶, said hook B⁴ can be raised, and by the falling of said counterpoise B⁷, will fall to its original position.

At the lower end of said platform B, and in line with the same, are rails or tracks, C, being supported at one end by the cross-beam C¹, said rails being spliced together and joined together by means of the plate R and pins R', in such a manner, as each successive section of rail can be raised and depressed, as required, into separate and distinct planes.

Said tracks are pendent from frame A, by means of the cross-bars C² and chains C³. The extremities of these tracks C are furnished with a cross-bar, C⁴, to which is attached a rope, C⁵, passing over pulleys C⁶, affixed in any suitable manner to frame A, the end of said cord being furnished with a counterpoise, C⁷, so arranged, that by raising or lowering the same, the last

section of track C will be raised or depressed, which section C is also furnished, on the side, with a curved catch, C⁸, so arranged that the latch D, of a pivoted door, D¹, of a coal-car, D², will meet the same, raising said latch D, which raises the door D¹ thereof.

Said coal-car D² is furnished with ordinary wheels and axles, D³, and runs upon before-named track C, said car D² being so arranged, that when resting on before-named platform B, the hook B⁴ will pass over the said coal-car D², retaining it in its position thereon.

The rear end of said car D² is provided, in any suitable manner, with a rope or chain, E, which is attached to and encircles an ordinary drum, E¹, affixed on an ordinary shaft, E², running transversely with frame A, in which it revolves, in suitable bearings thereon; and said shaft is, furthermore, provided with a wheel, E³, encircled by an ordinary clip-brake, E⁴, connected to an ordinary cranked lever, E⁵, attached to frame A, at E⁶, by means of a bolt, E⁷, the lower end of said lever E⁵ being connected, by a rod or chain, E⁸, to an ordinary lever, E⁹, pivoted in the forward part of frame A. By the movement of the same, said brake E⁴ tightens on the wheel E³.

Said shaft E² is also provided, in any suitable manner, with an ordinary ratchet-toothed wheel, F, and also with a lever, F¹, carrying a spring-pawl, F², so arranged, that by pulling over the lever F¹, the pawl F² engages in the teeth of the wheel F, which, being firmly attached to the shaft E², causes it to revolve a quarter turn or more, in ratio with the distance said lever F¹ is pulled over. This movement slackens the rope E, leaving the coal-car D² supported only by the hook B⁴, save and except the platform B, on which it rests. Said car is then in position for weighing.

Said shaft E² is also provided with an ordinary drum-wheel, G, encircling which, and attached thereto in any suitable manner, is a rope or chain, G¹, attached to an ordinary carriage, G², supported by ordinary wheels and axles, G³, and resting upon rails H, running parallel, or thereabout, with before-mentioned track C, said track H being jointed, at H¹, by means of the plates R and pins R'.

At the end of said rails H is a cross-bar, H², to which is attached a rope, H³, passing upward to an ordinary wheel and lever, H⁴, by the manipulation of which, said rails H can be raised and depressed, as required.

Said car G² is filled with any ordinary heavy weights.

The mode of operating with my devices is as follows, viz:

Coal being delivered from the ordinary coal-mine wagons on to the screen A^a, the smaller coal falls through the same, and may be carried away in ordinary manner. The larger lumps of coal fall into the coal-car D², which is resting upon the platform B, in such a manner that the hook B⁴ passes over and rests

against the door D^1 of said car D^2 , which is also kept in place by the tension of the rope E on the drum E^1 , said car D^2 being filled by the manipulation of the pawl F^2 of the lever F^1 . The shaft E^2 being partly revolved, the said rope E is slackened, leaving the car D^2 held in position only by the hook B^4 , said car being then supported only by said hook B^4 , and platform B is ready for the operation of weighing, which being completed, said hook B^4 is withdrawn from contact with said car D^2 , by the manipulation of wheel and lever B^6 . The car D^2 then runs down the track C , until the latch D , of the door D^1 , meets the catch C^3 , which lifts up said door D^1 , allowing the coal to fall out wherever it be required.

During the downward travel of the car D^2 , the carriage G^2 ascends the track H , which, descending after the coal is removed from the car D^2 , draws up the said car D^2 to its original position.

Heretofore, no provision has been made, in coal-chutes or loaders, for the altering of the incline of the tracks, which chutes, being situated on the banks of rivers, and the stage of water being low, stand high from the boats or other modes of transport; consequently, the coal being delivered from that height, is liable to be broken in small pieces, besides causing excessive injury to the boats.

Coal-loaders being constructed according to my be-

fore-described devices, overcome this difficulty, as the track, being jointed and hinged, allows the track to be raised or depressed to suit any required height.

Having thus described the nature, construction, and operation of my invention,

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

1. The arrangement of the jointed track C , supports C^3 C^4 , rope C^5 , pulleys C^6 , counterpoise C^7 , catch C^8 , in combination with the jointed track H , carriage G^2 , wheel and lever G , rope G^1 , substantially as and for the purpose described and set forth.

2. The arrangement of the platform B , with its track B^1 , standards B^2 , hook B^4 , rope B^5 , carriage D^2 , screen A^2 , in combination with the hinged track C , substantially as described, and for the purpose set forth.

3. In combination with the above, the shaft E^2 , carrying the drums E^1 and G , brake-wheel E^3 , clip E^4 , lever E^5 , rod E^6 , ratchet-wheel F , lever F^1 , and pawl F^2 , substantially as described, and for the purpose set forth.

In testimony that I claim the foregoing as my own, I affix my signature, in presence of two witnesses.

JNO. F. LOGAN.

Witnesses:

PERCEVAL BECKETT,
BENJAMIN FALLOWS.