

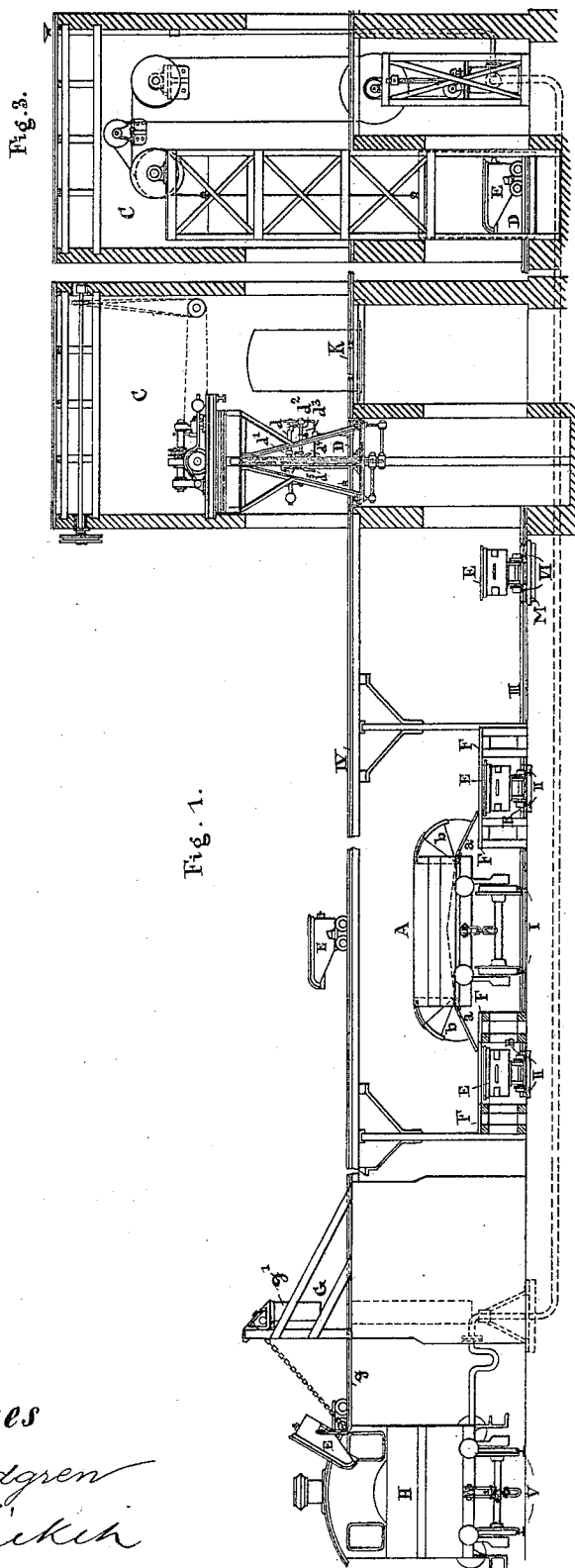
(No Model.)

3 Sheets—Sheet 1.

J. HERRMANN.
MEANS FOR HANDLING COAL.

No. 461,576.

Patented Oct. 20, 1891.



Witnesses
Edmundgren
John Bickel

Inventor
Julius Herrmann
by *attorneys*
Prosser & Giesbold

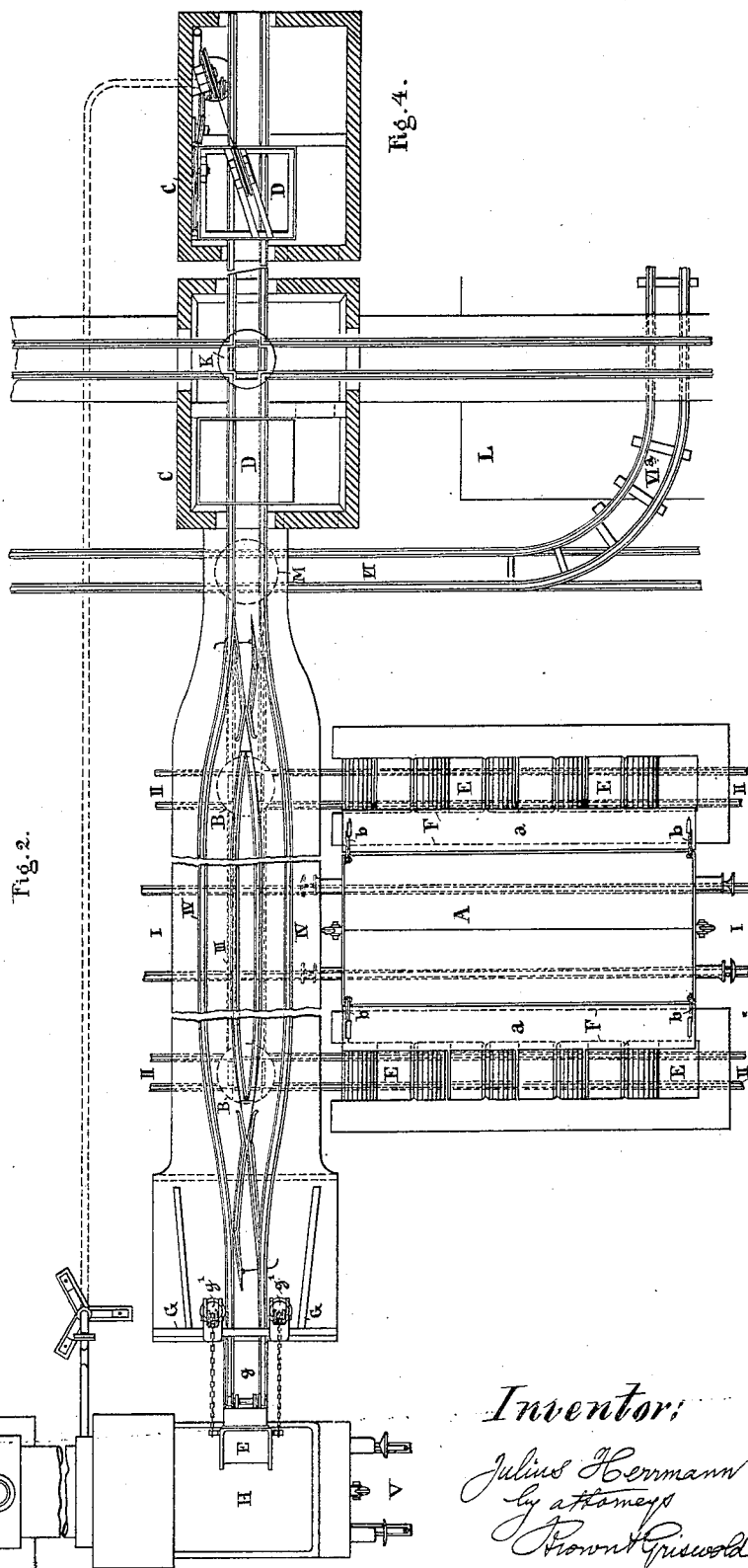
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3 Sheets—Sheet 2.

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Witnesses:

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Inventor:

Julius Herrmann
by attorneys
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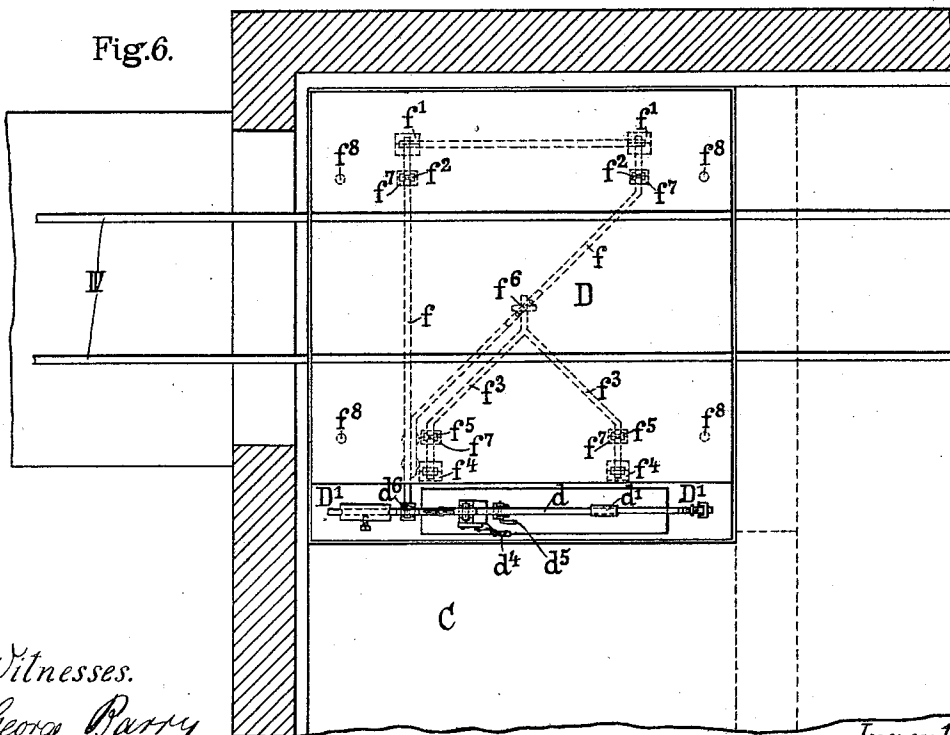
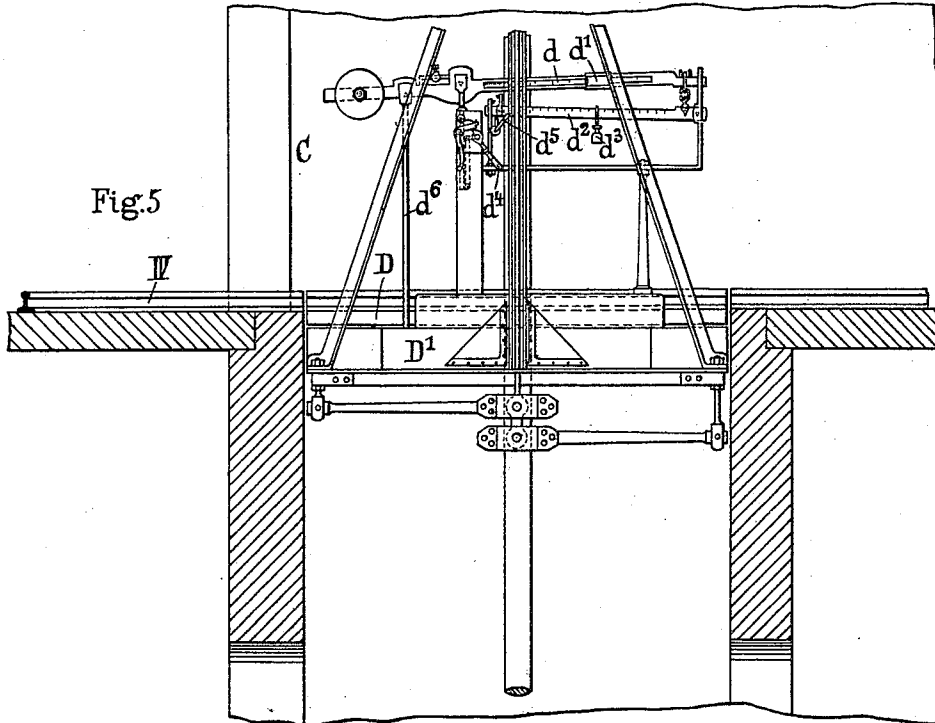
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3 Sheets—Sheet 3.

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MEANS FOR HANDLING COAL.

No. 461,576.

Patented Oct. 20, 1891.



Witnesses.

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UNITED STATES PATENT OFFICE.

JULIUS HERRMANN, OF DRESDEN, SAXONY, GERMANY.

MEANS FOR HANDLING COAL.

SPECIFICATION forming part of Letters Patent No. 461,576, dated October 20, 1891.

Application filed July 30, 1889. Serial No. 319,207. (No model.) Patented in Belgium February 25, 1889, No. 85,148; in England February 25, 1889, No. 3,387; in France May 1, 1889, No. 197,893; in Austria-Hungary May 17, 1889, XXXIX, 1,208, and XXIII, 1,158; in Germany January 15, 1890, No. 54,909, and in Switzerland January 20, 1890, No. 1,842.

To all whom it may concern:

Be it known that I, JULIUS HERRMANN, of Dresden, in the Kingdom of Saxony, German Empire, have invented a certain new and useful Improvement in the Means for Handling Coal, (for which I have obtained patents in Belgium, dated February 25, 1889, No. 85,148; in Great Britain, dated February 25, 1889, No. 3,387; in France, dated May 1, 1889, No. 197,893; in Austria-Hungary, dated May 17, 1889, Tome No. 39, folio 1,208, and Tome 23, folio 1,158; in Switzerland, dated January 20, 1890, No. 1,842, and partly in Germany, dated January 15, 1890, No. 54,909,) of which the following is a specification, reference being had to the accompanying drawings.

This invention is more particularly designed for dealing with coal used in locomotives. By my present invention I am enabled to load the tilting cars on a low level from the coal-carrying railway-car, then convey the tilting cars to the hoisting device and raise them to a higher level by mechanical power and ascertain the weight of same simultaneously with the hoisting operation, and then deliver the contents of the tilting cars from the high level into a tender of a locomotive by means of a pivoted tilting part attached to the high-level track, or the contents may be dumped into a bin.

I will now describe my invention with reference to the accompanying drawings, and afterward point out its novelty in claims.

Figure 1 represents a sectional elevation of the apparatus employed in carrying out my invention. Fig. 2 is a plan view corresponding with Fig. 1. Fig. 3 is a vertical sectional view representing a modification of part of the apparatus. Fig. 4 is a horizontal sectional view corresponding with Fig. 2. Figs. 5 and 6 are enlarged views of the weighing-scales attached to the hoisting device.

Similar letters of reference designate corresponding parts in all the figures.

The coal-carrying railway-wagon A, Figs. 1 and 2, to be unloaded is moved or put upon the normally-gaged railway-line I. On the sides of this railway-line are two railway-lines II of narrow gage, crossing the turn-tables B B,

which communicate with the narrow-gaged railway-line III, crossing the railway-lines II at right angles or at any convenient angle. This line III terminates in the building C upon the platform D of a hoist, if this platform is at its lowest level. The platform is provided with rail-track, so as to receive the tilting cars hereinafter referred to. Upon the lines II, alongside of the coal-wagon A to be unloaded, the tilting cars E are placed. The body or receptacle of these tilting cars is made of sheet-iron, each car capable of receiving about ten hundred-weight of coal. The side boards *a* of the coal-wagon A are capable of turning downwardly, and are provided at their sides with vertical rims of sheet-iron *b b*, arranged in a fan-shaped manner, which do not decrease the loading capacity of said wagon A, but which rims prevent the coal from falling off sideways. By turning down the side-boards *a* of the coal-wagon A these boards will rest on the wooden gangways F and will form sliding surfaces over which the greatest part of the coal will unload automatically into the tilting cars, and it will require but little manual labor to completely unload the wagon A and to fill the tilting cars E. The bottom of the coal-wagon A may be roof-shaped, so as to be highest in the middle and forming inclines toward both sides, thus facilitating the tendency of the coal to run down into the tilting wagons or cars E. From the gangways F small boards may be arranged of triangular form, with the edge upside, projecting over the tilting cars and covering the space between two cars, so that the coal is prevented from falling between the cars E. Loading the next series of tilting cars from the same coal-wagon A may be easily accomplished by pushing or drawing down the coal on the inclined side-boards, which have not automatically unloaded by the opening of the side-boards of wagon A, and sliding down the inclines formed by the bottom of wagon A and its side-boards. The tilting cars E are thereafter individually transported over the turn-table B to the railway-line III and to the platform D of the hoist and lifted by mechanical power through the hoist to the high-level line IV. The hoist may be worked by any motor which happens

to be in or near the engine-house; or, if there is no motor, a small steam-engine or gas-engine may be provided for the purpose. Where gas is to be had, a gas-motor may be used advantageously on account of the intermittent working of the hoist.

Instead of working the platform of the hoist by a separate motor or gas-engine, it may be worked by a double-acting steam-hoist fed by the steam from the locomotive. In this case each locomotive may hoist the coal required for its tender or for any future loading purposes and lift the tilting cars up to high-level railway IV. Thus an opportunity is given for using up the steam of locomotives returning home from service and retiring into the shed. Conducting the steam from the locomotive-boiler into the working cylinder of the steam-hoist may be done by one of the locomotive-valves and a hose or a fixed tube in combination with a hose.

In the drawings the hoist is shown as being adapted to be operated by a separate motor or by steam from a locomotive. The separate motor is not shown; but the hoist worked by it is shown in direct connection with high and low level railways.

The steam-hoist fed by the locomotive-steam is shown as a modification in Figs. 3 and 4 separately from the high and low level railways. It is to be noted that such double-acting steam-hoists are well known, and I do not limit myself to a special construction of steam-hoist, and I do not claim a steam-hoist as my invention; but I consider it to be a part of my invention to lift coal for the purposes set forth by means of a steam-hoist worked by the steam of the locomotive, the tender of which has to be provided with coal by the means forming my present invention.

The platform D of the hoist is arranged as the platform of a scale or weighing-machine, so that the net weight of the coal in the tilting car E may easily be ascertained, the tare weight of the car itself being known.

The scale or weighing-machine is provided with two superposed beams d and d^2 , divided into graduations. On the upper beam d a sliding or running weight d' is provided for indicating the weight up to one hundred-weight, whereas a sliding weight d^3 on the lower beam d^2 is provided for indicating any weight above one hundred-weight. To put the platform of the scale at rest, the lever d^4 is raised so that the knife-edges of the scale are raised from their seats, so as to prevent the knife-edges becoming blunt by superfluous use. The lever d^5 will, if turned, bring the beams d and d^2 at rest after the weight of the load has been ascertained. The upper beam d , as indicated in Figs. 5 and 6, is connected by means of the rod d^6 with the beam f , which rests on fixed supports $f' f'$ within the frame-like lower part D' of the hoist-platform D, said beam f carrying on its upper surface the edges $f^2 f^2$. Again, within the fixed frame part D' a carrying-beam f^3 rests

on fixed supports $f^4 f^4$, said beam f^3 carrying on its upper surface the edges $f^5 f^5$. The beam f^3 is connected to and carried by the beam f at f^6 by means of edge and socket. The platform D of the hoist is provided at its lower side with four sockets f^7 , with which said platform during the act of weighing rests on the above-named edges $f^2 f^2 f^5 f^5$. If the weighing-machine is put out of action by raising of the lever d^4 , so that the connecting-rod d^6 is lowered and the edges $f^2 f^2$ come out of contact with their sockets, the platform D rests on points f^8 , provided for this purpose in the frame part D', and the cars may, without interference of the weighing-machine, be pushed on and off the platform D.

The high-level line IV, being about ten to twelve feet above the line III, terminates at one end in the framing G, to which a part of said line IV is pivoted, so that it may be turned by the weight of loaded tilting car from its vertical position into horizontal position in order to bring the tilting car above the tender H, into which the coal of the tilting car is emptied by tilting the receptacle or body of the car. The tilting of the car is caused by withdrawing a bolt on the car, which can easily be accomplished by the man in attendance. As soon as the car is removed from the pivoted part g of the high-level rail this part will return by the action of the counter-weight g' into its vertical position, so that the line V is always free for locomotives if the emptying of a car into the tender is finished. I prefer to construct the high-level line IV between the hoist and the tilting-railway part g with double track, so as to be able to cause a series of tilting cars to be unloaded or emptied into the tender without loss of time and in quick order.

The foregoing description refers to the means for emptying the tilting cars directly into the tender. In order to be able to empty them into the coal-reservoirs for storing or piling, the emptying or unloading of the coal-wagon A into the tilting cars is accomplished in the same manner as above described. In this case the tilting cars are also shifted from line II over the turn-table B upon the line III to the hoisting-machine, and the weight may be ascertained during hoisting or not; but, instead of bringing the tilting cars toward the framing G, they are pushed on high level IV the opposite way onto the high-level turn-table K, from where the cars E may be pushed on one of the lines leading over the stores or piles or coal-reservoirs, one of which is indicated at L. In this manner the unloading of the wagon A and the filling of the reservoirs L are accomplished in an easy, quick, and cheap manner.

In order now to load the tender H with coal from these reservoirs L, a low-level line VI is arranged, to the one end of which a transportable track VI^a is connected. This track may be prolonged at will and with the

necessary curves, so as to be able to bring the tilting cars at every desired spot at low level within the reservoirs for filling these cars, which when loaded are pushed on the track VI to the point where this track crosses the line III. On this crossing-point a turntable M is provided, so that now the tilting cars are again ready to reach the platform D of the hoist and to be hoisted to high level (with or without ascertaining the weight during the hoisting operation) and to be emptied at g into the tender H. In this manner the filling of the tender H with stored coal is also accomplished in an easy, quick, and cheap manner. The room C may be intended as an office for the coal-master.

The lines and track named in the foregoing specification may be, of course, altered in the direction and level at will and according to local circumstances without parting thereby from the main idea and feature of the present invention.

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

1. In means for handling coal, the combination, with high and low level lines, of a pivoted

tilting part at the end of one of the high-level lines, a hoisting device connecting said high and low level lines, means for operating the hoisting device, and suitable weighing mechanism attached to the hoisting device, substantially as set forth.

2. In means for handling coal, the combination, with a series of high and a series of low level lines, of a pivoted tilting part at one end of one of the high-level lines, which part is adapted to be operated by the weight of a car, a hoisting device for connecting one of the high and one of the low level lines, and a pipe, one end connected to the hoisting device and the other end being fitted for attachment to the boiler of a locomotive, whereby steam from the locomotive may be used for operating the hoisting device, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JULIUS HERRMANN.

Witnesses:

WILHELM WIESENHÜTTER,
GEORG RICHTER.