

(No Model.)

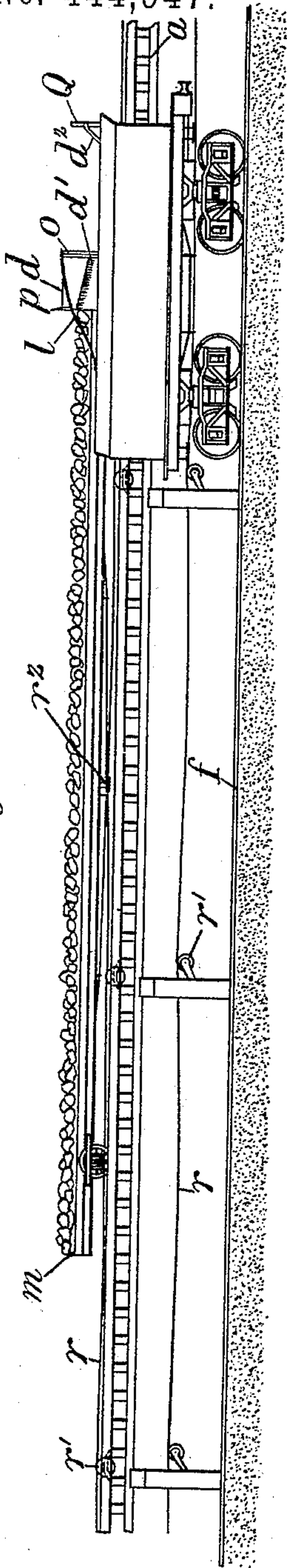
3 Sheets—Sheet 1.

J. VAN NEST, Jr., & W. B. KINNEY.
APPARATUS FOR TRANSFERRING COAL TO MOVING LOCOMOTIVE TENDERS.

No. 444,947.

Patented Jan. 20, 1891.

Fig. 1



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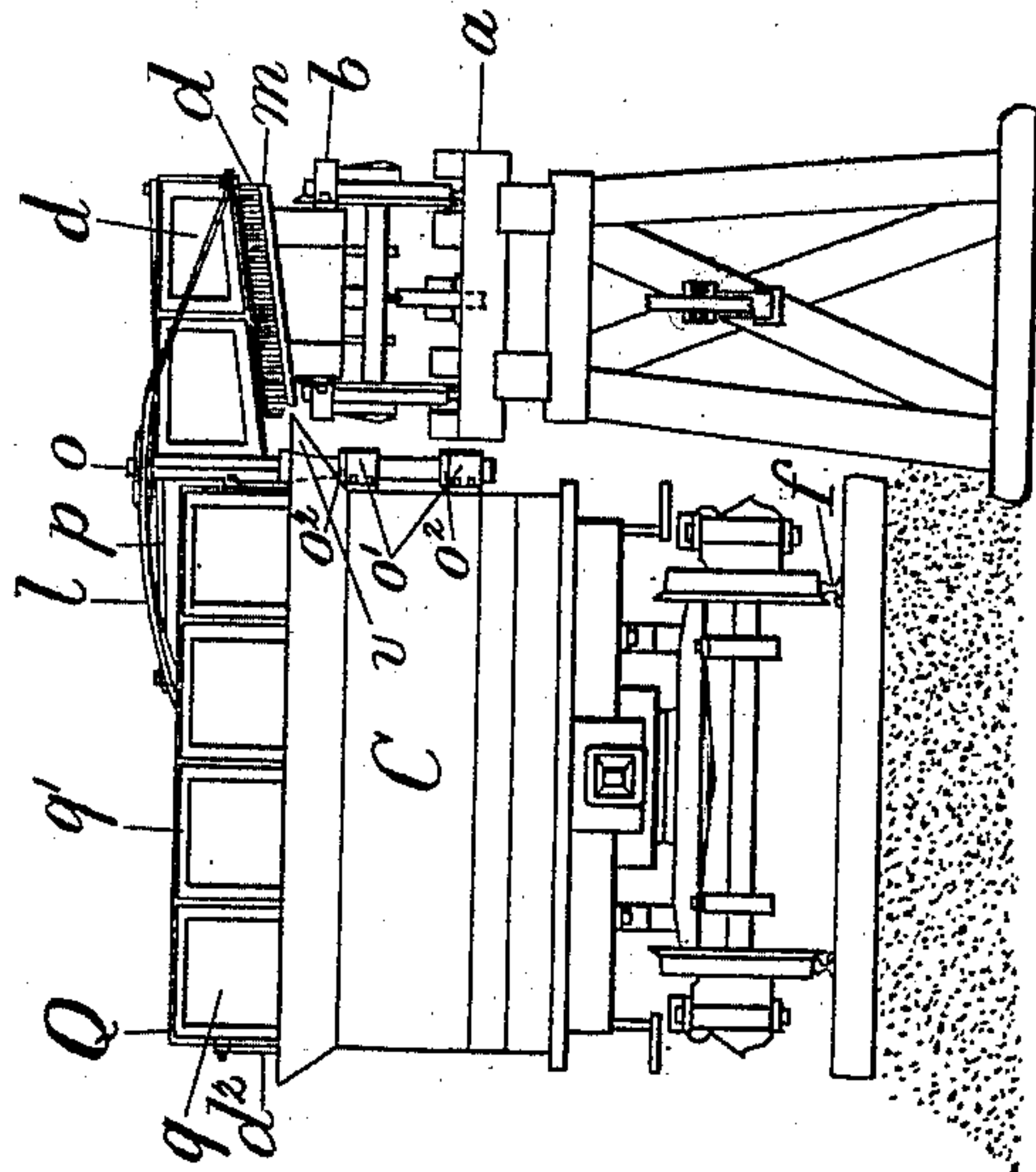


Fig. 2

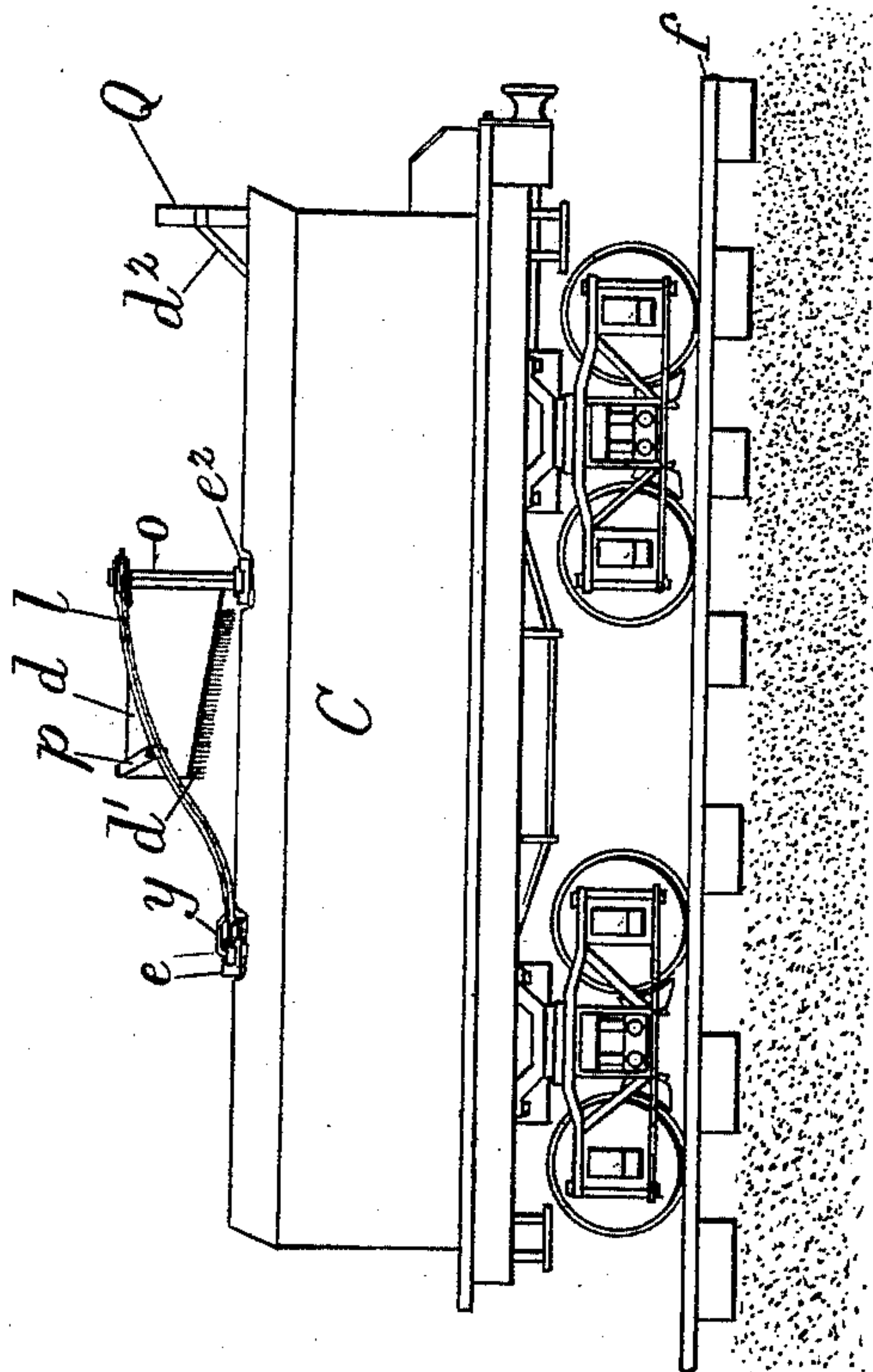


Fig. 3

Inventors,
J. Van Nest Jr.
William B. Kinney.

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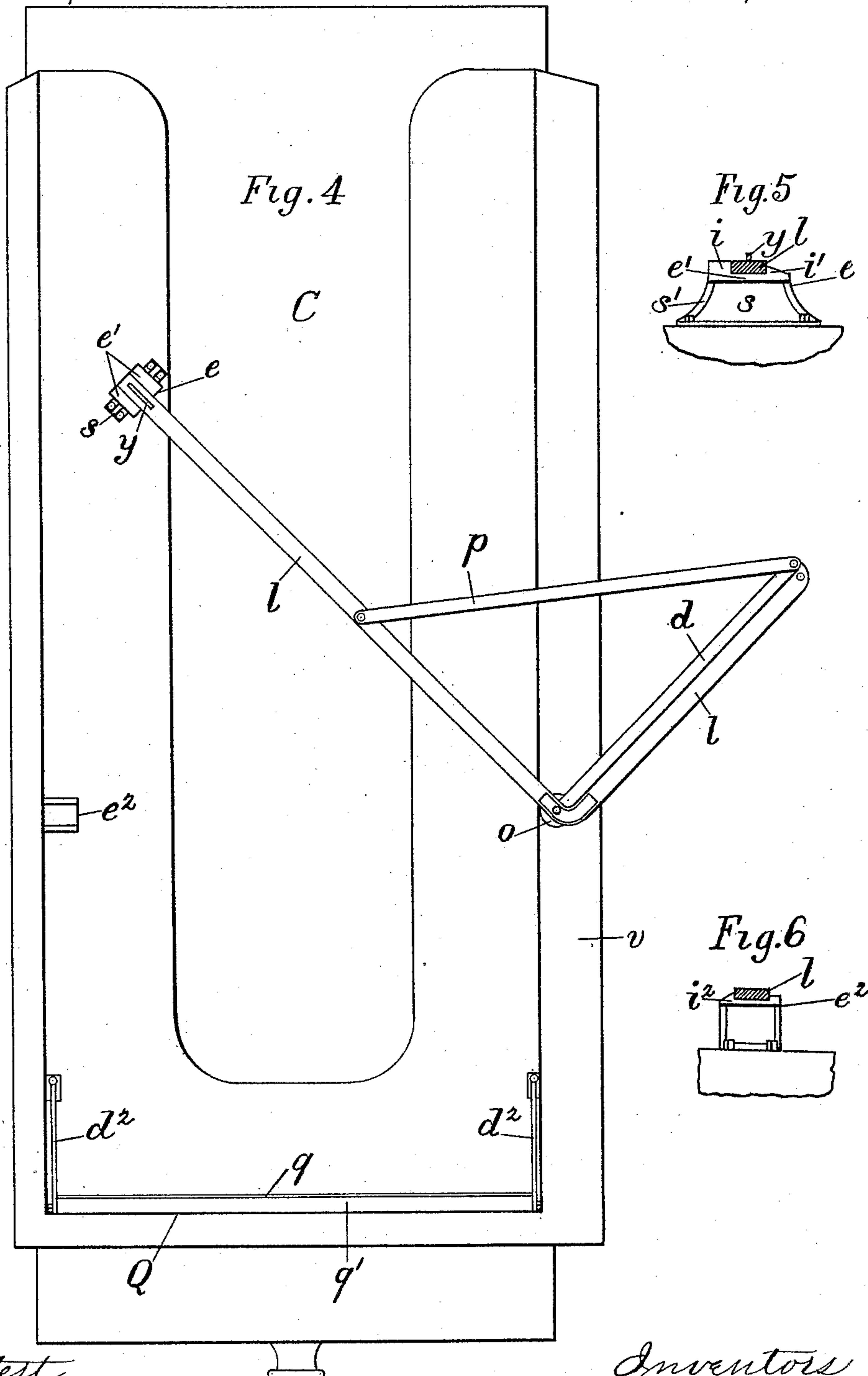
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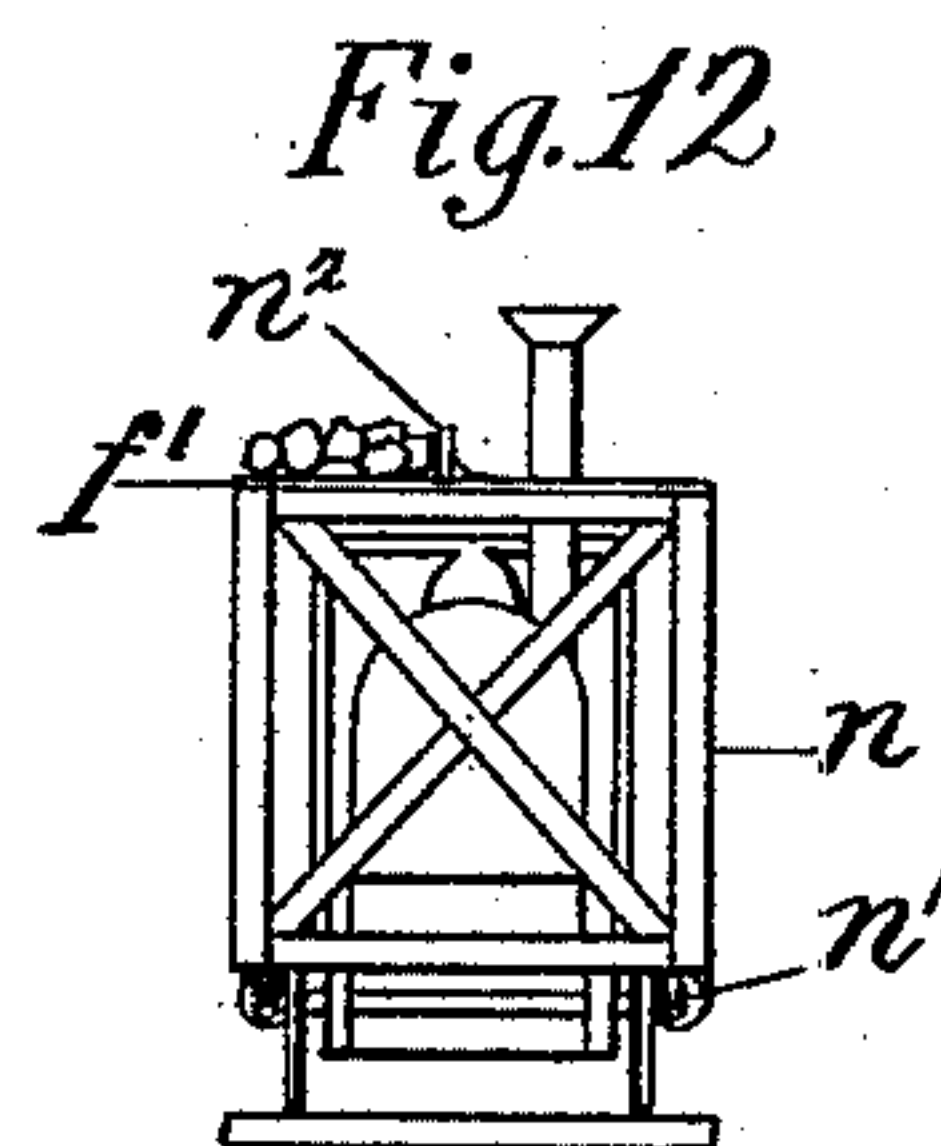
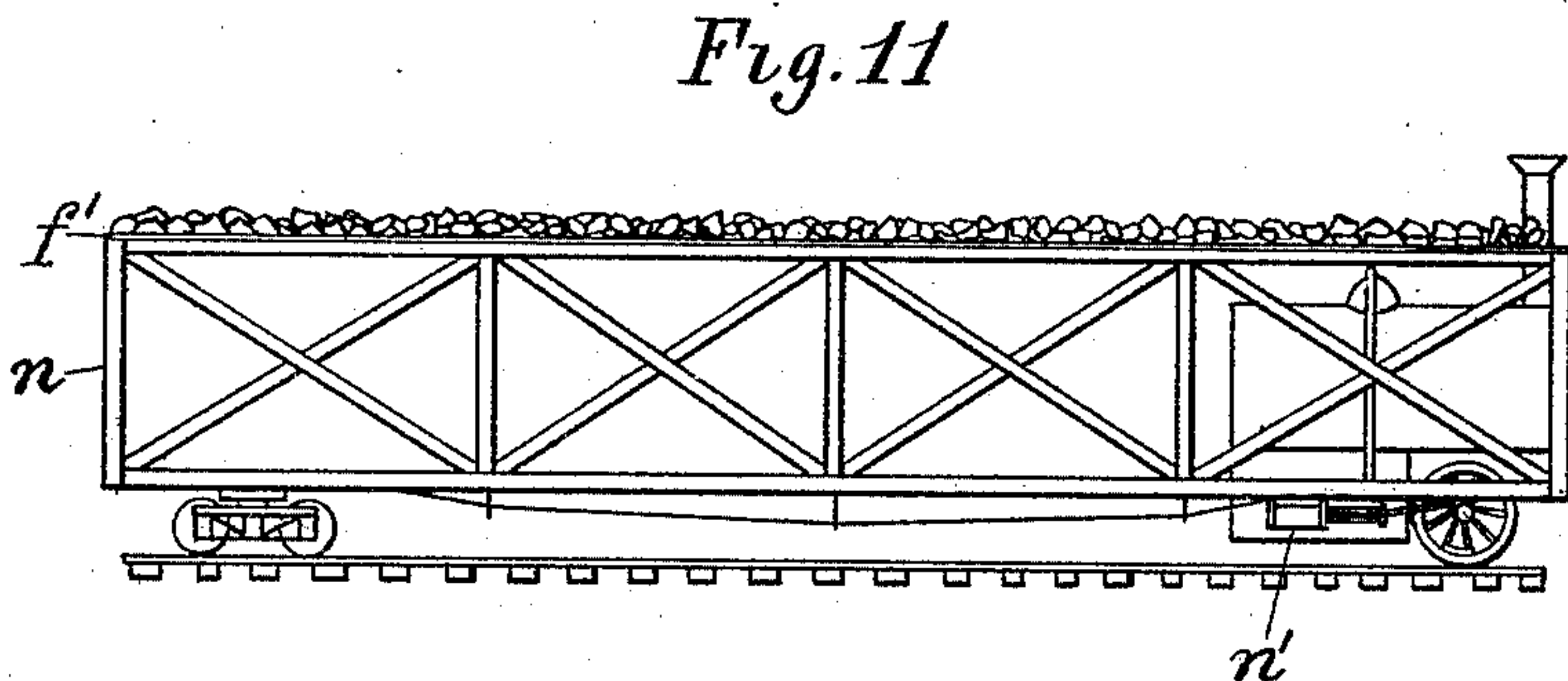
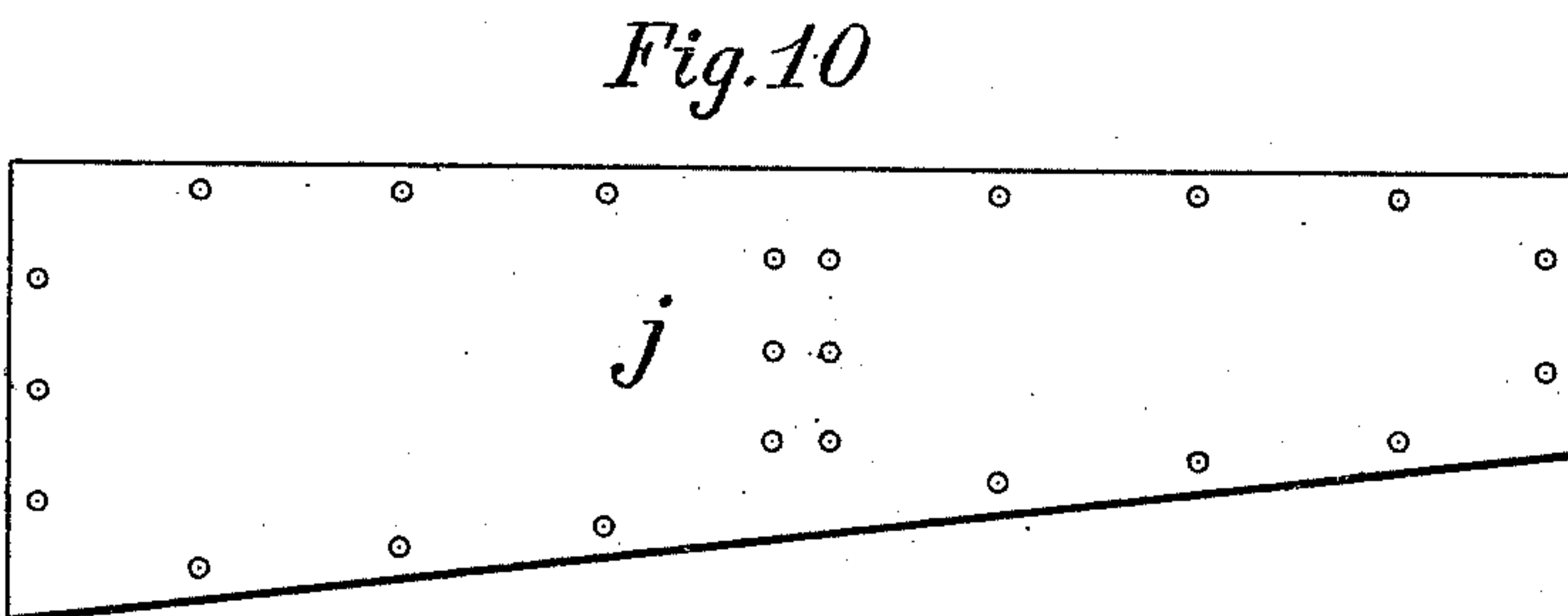
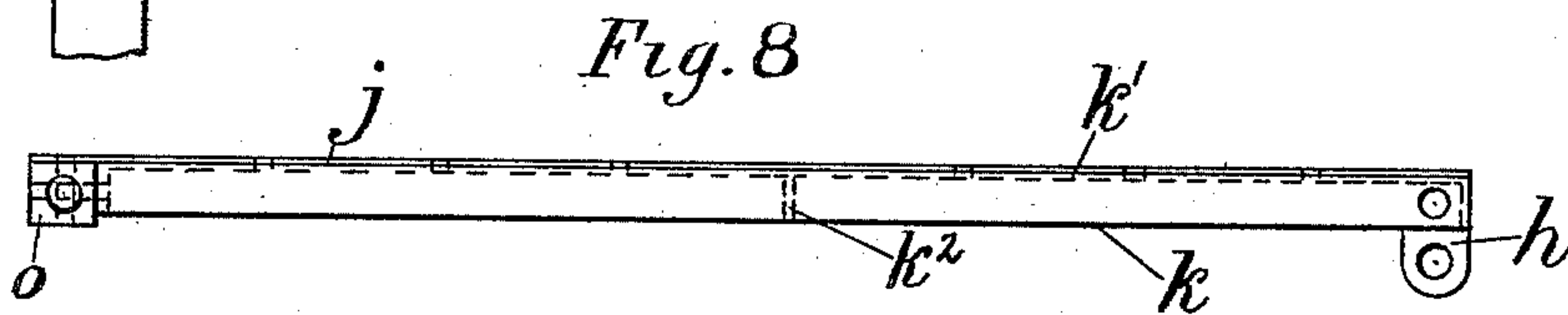
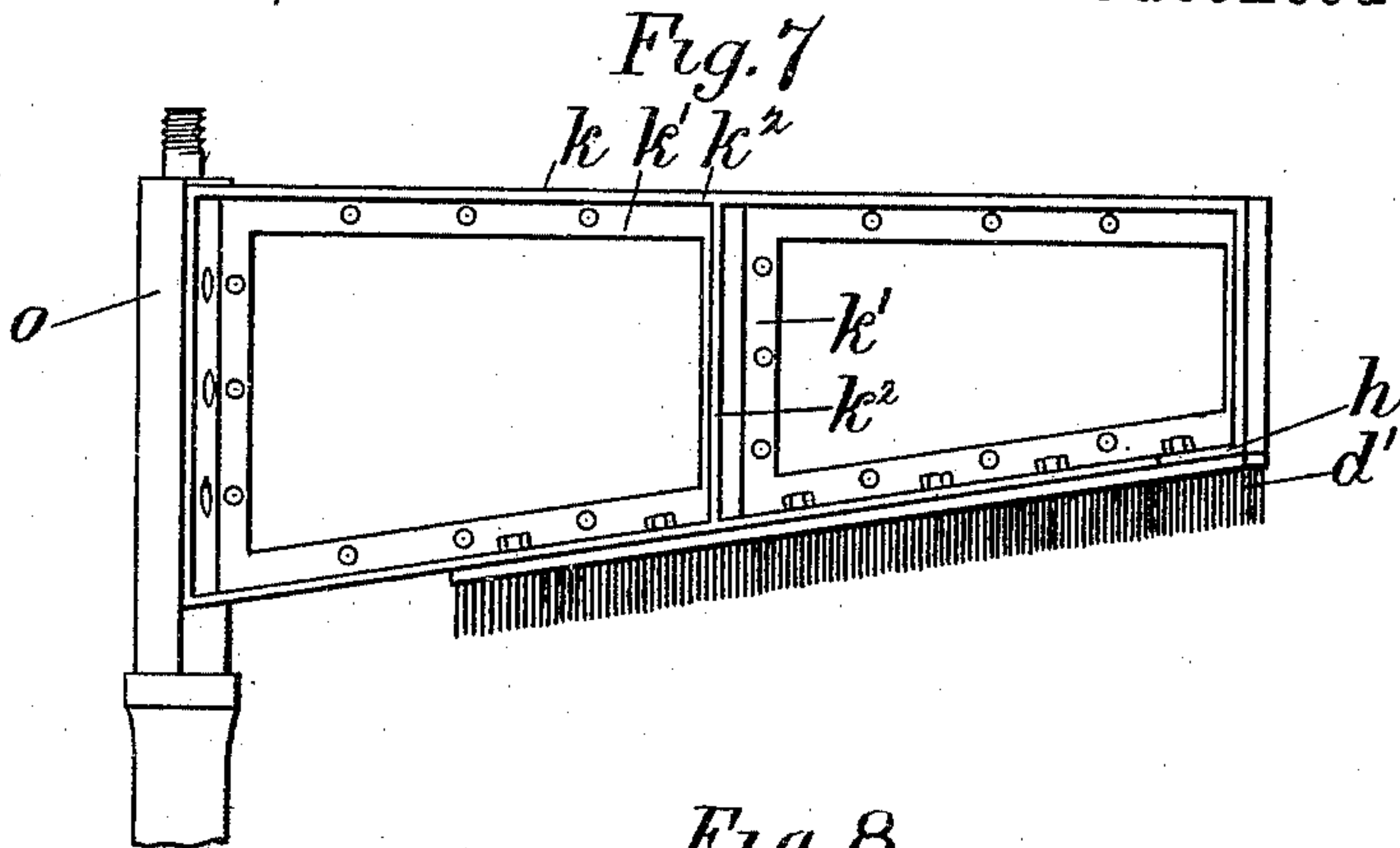
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UNITED STATES PATENT OFFICE.

JOHN VAN NEST, JR., AND WILLIAM B. KINNEY, OF NEWARK, NEW JERSEY.

APPARATUS FOR TRANSFERRING COAL TO MOVING LOCOMOTIVE-TENDERS.

SPECIFICATION forming part of Letters Patent No. 444,947, dated January 20, 1891.

Application filed April 14, 1890. Serial No. 347,838. (No model.)

To all whom it may concern:

Be it known that we, JOHN VAN NEST, Jr., and WILLIAM B. KINNEY, citizens of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Apparatus for Transferring Coal to Moving Locomotive-Tenders, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain new and useful improvements in transferring coal to a moving locomotive-tender from a stationary or moving platform by the application of an adjustable scoop attached to the tender. When in use, the scoop projects laterally forward from the top edge of the tender at an angle to the side, but when not in use is retracted to the side of the tender and does not project therefrom. The scoop is fitted on its under side with a heavy brush, which when the scoop is in use just clears the surface of the adjacent platform parallel to the track and of suitable dimensions to carry a load of coal, so that when the tender is in motion the coal is drawn by the scoop and brush into the tender from the aforementioned platform. This platform may be slightly inclined toward the track, in which case the under side of the scoop is correspondingly inclined and the operation facilitated. The train or tender must move at a low speed if the platform is stationary; but if the platform be the surface of a flat car running on an adjacent and parallel siding the train may maintain as high a rate of speed as will be proportionate to that of the flat car, the difference in their rates being sufficiently small to avoid shock from the contact of the scoop with the coal. To avoid a gap between the tender and platform of the car, the tender is furnished with a lip which is of the same height as the rear and opposite lips, but projects outward at such an angle as to bring its upper edge in close proximity to the platform.

In reference to the annexed drawings, Figure 1 is a side elevation and Fig. 2 an end elevation showing the apparatus in combination with a flat car which runs on an adjacent and elevated siding parallel to the track. Fig. 3 is a side elevation of the tender and

apparatus, looking from the side opposite the platform; and Fig. 4, a plan of the tender and apparatus. Figs. 5 and 6 show the lever-sockets in side elevation and the lever in section. Fig. 7 shows the scoop-frame, brush, and upper part of the spindle at an angle of forty-five degrees. Fig. 8 is a plan of the scoop and the spindle. Fig. 9 is a plan of the scoop-plate. Fig. 10 is a side elevation of the scoop-plate. Fig. 11 is a side elevation, and Fig. 12 an end elevation, of a steam coal-car running on surface tracks adjacent and parallel to the main track.

f represents a railroad-track, and *a* represents a parallel elevated and adjacent siding, on which runs a flat car *b*, with its surface *m* slightly inclined toward the track, of dimensions suitable to carry a load of coal, and the lower edge about two or three inches higher than the top edge of the tender *C*, which tender is fitted with the scoop *d*. The scoop consists of a flat plate *j*, securely bolted to the frame *k* and the spindle *o*, which frame is of the same length and height as the plate. It is one piece, as shown, and is constructed with the flat faces *k'*, strengthened by the ribs *k²*, which project backward, and the outer extremity *h* of the lower rib projects outward far enough to permit of the lever attachment, hereinafter described. The length of the scoop is such that when in working position it may project outward enough to take a desired amount of coal. Its height is suitable for the same purpose. The under side is constructed with an inclination similar to that of the platform of the car, to be used in combination with the platform *f'* of the steam coal-car *n*. It would be constructed parallel with that platform, so that when in use the heavy brush *d'* may just clear and sweep over the entire platform of the car. The scoop is attached to the upright spindle, which is pivoted in the bearings *o'* and rests on them by means of the collars *o²*. The spindle, which is cylindrical from its lower extremity, fits loosely in cylindrical holes in its bearings and freely revolves in them. The collars are located on the spindle at such positions that they both rest on the upper surface of their respective bearings. From the upper collar the spindle slightly expands, and

at the top of the lip becomes rectangular, affording flat surfaces for the scoop attachment, hereinafter described. The height of the spindle above the lip is about two feet, and its diameter sufficient to withstand the strain imposed upon it. The lever l , rigidly secured to the top of the spindle, is designed to throw the scoop into working position, or vice versa, and runs from the opposite side of the tender perpendicular to the scoop in an upward curve to the top of the spindle, (so as not to interfere with or be struck by the coal,) where it takes a turn of ninety degrees, running parallel and contiguous with the rear of the scoop downward to the lowest outermost point h of the scoop, to which it is securely bolted. The lever is of convenient dimensions, the thickness being slightly increased at the right angle for few inches along each arm to give strength to the attachment with the spindle, and on being turned (to facilitate which a handle y is attached at the extremity of its long arm) will move the scoop and keep it in the desired position by means of the open socket e , hereinafter described, in which the lever rests. The lever may be constructed having any angle at the spindle and the bearings located at such places on the tank, and when the scoop is in use the lever rests in one, and when unemployed rests in the other. If desirable, more than two sockets may be used, so as to give the scoop several working positions.

e represents the open socket in which the lever is held when the scoop is in use, and is located at a position on the tank where it may hold the lever and scoop in a desirable working position. It is a casting of a proper height to keep the lever from contact with the coal, consisting of a block e' , having a rectangular groove in which the lever fits easily, the forward side i of the groove being as high as the thickness of the lever and strong enough to withstand the pressure of the lever, the rear side i' of the groove being less than half as high and inclined, as shown, toward the rear to permit the easy introduction of the lever, the lower part being in the middle, a thin sheet s , with thicker extremities s' , ending in a plate bolted to the top of the tank.

e^2 represents an open socket located at a proper position upon the tank to hold the lever when the scoop is unemployed. It has a rectangular groove with sides of suitable height and strength, the foremost i^2 being inclined for the easy introduction of the lever. The lower part is constructed like that of the first socket, but differs slightly in shape, and is likewise bolted to the top of the tank.

To avoid a gap between the tender and coal-car, the lip v of the tender nearest the platform projects outward about one foot from the side along its entire length, thus filling the horizontal gap between the platform and the tender.

Upon the rear of the tender, and running along its entire breadth, is shown the shield

Q , the function of which is to check the backward movement of the coal. This shield consists of a rectangular sheet q , about three-eighths of an inch thickness, supported and strengthened by the frame q' , which is of the same height and width as the sheet fitting upon its rear. This frame is of the ordinary construction, having slats to support the sheet and ribs projecting backward to offer resistance. The shield is about a foot and a half higher than the lip of the tender, is fastened to the tank, and, for additional strength, the braces d^2 are bolted to each side about midway of the height and to the tank about one foot forward. The steel brush d' is bolted on the lower rib of the scoop-frame and extends entirely over the platform when the scoop is adjusted in a working position.

p represents a bar, of suitable dimensions, extending from the upper outer extremity of the scoop-frame to the lever at about the middle of the tender and is bolted to them.

r represents a cable (which is the motive power of the coal-car) attached to the car by means of the cable-grip r^2 , and r' represents the wheels upon which the cable runs and which support it. The cable is wound upon a drum conveniently located and revolved by a stationary reversible engine, so that when the engine is in motion the car also moves, and may go in the opposite direction when the engine is reversed.

The steam coal-car n , running on adjacent and parallel surface tracks, is so constructed that its platform f' equals or slightly exceeds in height the top of the tender. It is impelled by the locomotive-engine n' , located in a convenient part of the car. A board n^2 may be placed upon the edge of the coal-bearing platform just beyond the path of the scoop, running parallel to the side of the car along the entire length of the platform, to keep the coal from spreading over the top of the car.

From the above description of the apparatus the operation performed in combination with a stationary platform will be readily seen to consist in having the scoop properly adjusted and the tender in motion at a proper rate past that platform, in which case the coal will be drawn into the tender. It will also be seen from the above description that if the operation is performed with a platform movable parallel with the track the operation will be according to the following description.

When a train approaching at a proper rate wishes to take coal, the scoop is correctly adjusted and upon its arrival at a signal placed at a proper distance from the coal-station the car is set in motion in the direction the train is going, and just after, or at the moment it acquires its greatest velocity, it is overtaken by the tender, and the scoop strikes the coal with sufficient force not to produce shock, but to draw the coal into the tender, while the brush, being flexible, when pressed upon the platform of the coal-car by the rocking and swaying of the tender and coal-car, yields,

thus averting all danger of mishap that would arise from the iron scoop striking the platform.

We are aware that means for the transfer of passengers or freight between parallel moving trains and receiving and discharging freight or passengers by a moving train have heretofore been proposed, as shown in United States Patents Nos. 157,514 and 355,927, and we hereby disclaim said patents. Our invention differs from theirs in the novel features of transferring coal to a moving tender from a coal-platform when they run at different speeds and without connection.

Having thus set forth the nature of our invention, what we claim herein is—

1. The combination, with a tender moving on a railroad-track, of a coal-platform movable parallel with the track at a rate different from that of tender, and an adjustable scoop movable laterally to and from the tender over the platform, substantially as and for the purpose set forth.

2. The combination, with a tender moving upon a railroad-track, of a coal-platform movable parallel with the track at a rate different from that of tender, and an adjustable scoop movable laterally to and from the tender over the platform, and provided with a brush to sweep the coal from the platform, as and for the purpose set forth.

3. The combination, with a tender moving upon a railroad-track, of a coal-platform movable parallel with the track at a rate different from that of tender, an adjustable scoop movable laterally to and from the tender over the platform, provided with a brush to sweep the coal from the platform, and means for

locking the scoop in its operative position, substantially as and for the purpose set forth.

4. The means for drawing coal into a tender, consisting in a scoop fixed to the spindle, pivoted in bearings upon the side of the tender; and a lever attached to such spindle for adjusting the scoop, substantially as herein described.

5. The means for drawing coal into a tender from a platform, consisting in an upright spindle pivoted at the side of the tender, a scoop projecting from the spindle, a lever attached to the scoop and projected across the tender, and sockets to retain the lever at the ends of its throw, as and for the purpose set forth.

6. The combination, with a tender moving upon a railroad-track, of a coal-platform movable parallel with the track at a rate different from that of tender, a scoop movable to and from the tender over the platform, and a shield at the rear of the tender to arrest the coal, substantially as herein set forth.

7. The combination, with a tender moving upon a railroad-track, of a coal-platform movable parallel with the track at a rate different from that of tender, a lip extended from the side of the tender contiguous to the platform, and a scoop movable to and from the tender over the platform, as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN VAN NEST, JR.
WILLIAM B. KINNEY:

Witnesses:

H. J. MILLER;
FRED. C. FISCHER.