

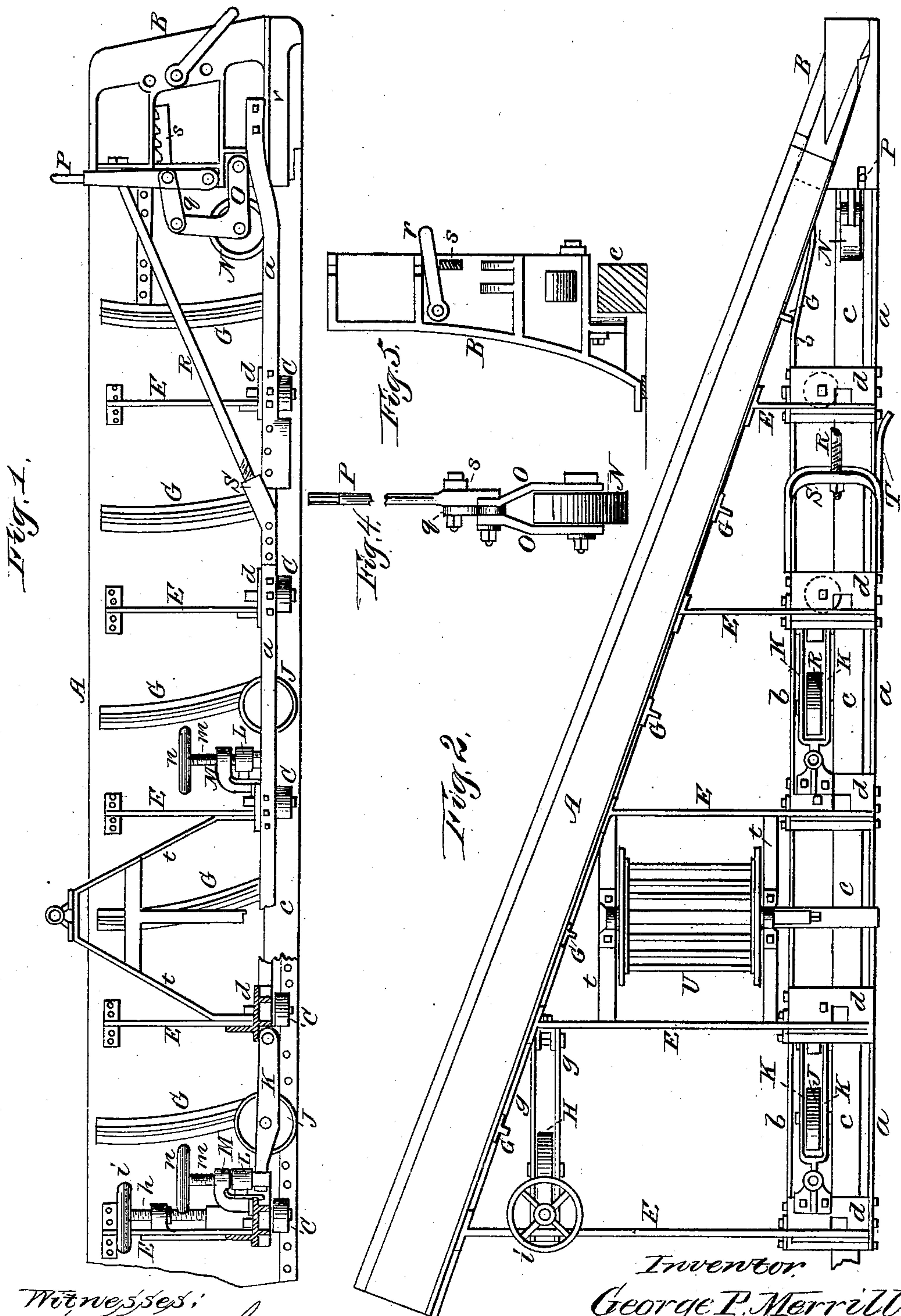
(No Model.)

2 Sheets—Sheet 1.

G. P. MERRILL.
Device for Unloading Cars.

No. 243,389.

Patented June 28, 1881.



Witnesses:
A. C. Arthur
Leona S. Miller

Inventor:
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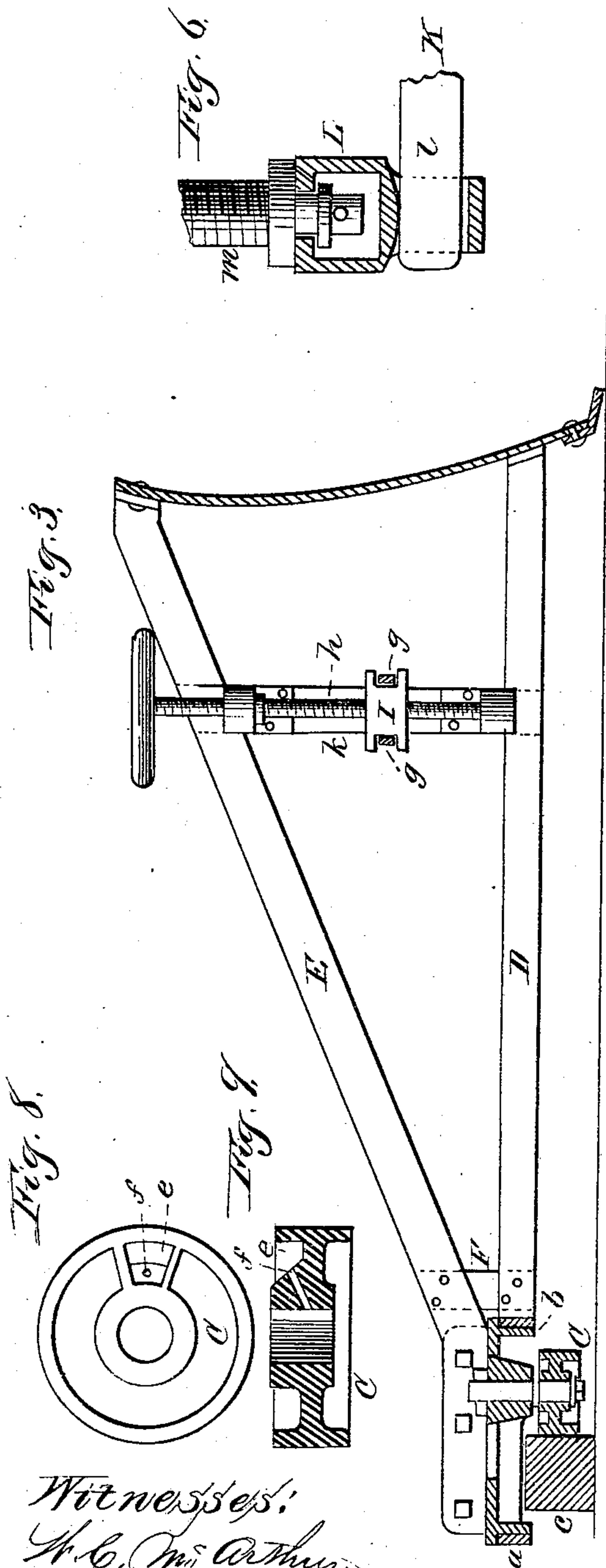
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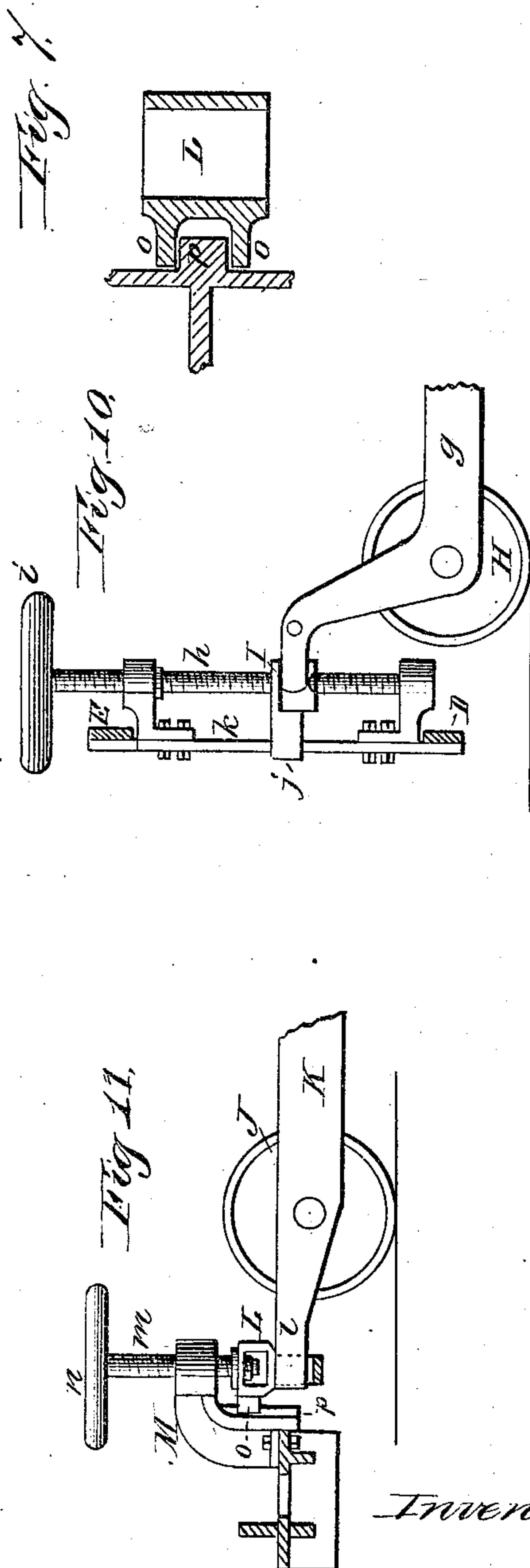
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Witnesses:
H. C. McArthur
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UNITED STATES PATENT OFFICE.

GEORGE P. MERRILL, OF TOLEDO, OHIO, ASSIGNOR TO F. W. STEWART, OF
SAME PLACE.

DEVICE FOR UNLOADING CARS.

SPECIFICATION forming part of Letters Patent No. 243,389, dated June 28, 1881.

Application filed April 28, 1881. (No model.)

To all whom it may concern :

Be it known that I, GEORGE P. MERRILL, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Devices for Unloading Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a side elevation of my invention, showing its interior construction. Fig. 2 is a top-plan view of the same. Fig. 3 is a cross-section on an enlarged scale. Fig. 4 is a detail view of the forward roller, with its bell-crank and lever connections. Fig. 5 is a detail view, showing the interior construction of the nose-casting. Fig. 6 is a detail view of the bell-crank lever, connecting-sleeve, and operating screw-rod. Fig. 7 is a sectional view in detail of the sleeve and guides. Fig. 8 is a top-plan view of one of the horizontal anti-friction rollers, showing the oil-chamber and feeding-outlet. Fig. 9 is a longitudinal vertical central section thereof, taken through the oil-chamber and outlet. Fig. 10 is a side elevation in detail of one of the vertical anti-friction rollers with its connections and operating screw-rod, and Fig. 11 is a detail view of one of the side rollers and attachments.

This invention has relation to certain new and useful improvements in devices for unloading cars from one side only at a time, the advantages of such a device being fully set forth in the patent granted to me November 30, 1880, No. 234,883.

The object of the present invention is to improve the construction and operation of these side ballast-unloaders covered by my former patent, which object I attain by the construction substantially as shown in the drawings, and hereinafter described.

In the accompanying drawings, A represents the inclined scraper or mold-board, having two draw-bars, *a b*, running parallel with a rail, *c*, secured to the platform of the car lengthwise and at one side thereof. These bars *a b* are located one upon each side of the rail *c*,

and are connected together at suitable intervals by heel-plates *d*. The scraper or mold-board A and bars *a b* are connected at their forward ends to a nose-casting, B, said scraper or mold-board being disposed at an acute angle with the draw-bars. These heel-plates *d* have connected to them in any suitable manner horizontal anti-friction rollers C, the periphery of which bears against the inner side of the rail *c*, to prevent the unloader from being pushed over by the pressure of the ballast. Each of the rollers C is formed with a chamber, *e*, for oil, and from this chamber to the axial opening of the roller is an inclined passage, *f*, so that the oil in the chamber may be fed through said passage automatically to the journal of the roller, thereby making the several horizontal rollers self-lubricating.

The system of braces employed for giving strength and rigidity to the unloading device is one of the many essential and important features of the invention, and consists in part of the horizontal braces D and inclined braces E, extending from the scraper or mold-board A across or transversely to the draw-bars *a b*. These braces D E are formed at their ends with angle-plates for convenience of attaching the braces, by bolts, rivets, or other suitable means, to the inner side of the scraper or mold-board. The opposite ends of the horizontal braces D are formed in like manner and connected to the outer side of the draw-bar *b*, while the opposite ends of the braces E are secured to ribs on the top of the heel-plates *d*. The braces D E, at or near the point of attachment to the draw-bars and heel-plates, have secured to them upright braces F.

To the inner side of the scraper or mold-board A are secured T-irons G, which are bent to conform to the shape thereof, thereby giving additional strength, stiffness, and rigidity to the scraper or mold-board, these T-irons being placed between the cross-braces and connected to the scraper or mold-board in any suitable manner.

To the rear end of the unloading device, and near the inner side of the scraper or mold-board A, is located a roller, H, supported and having its bearings between two angle-arms or bell-crank levers, *g*. These arms or levers

are pivoted at their forward ends to any suitable object or extension of the frame-work of the unloading device, and their rear ends are located between lugs on each side of a carrier,

5 I. This carrier is formed with a screw-threaded opening, through which passes a screw-rod, *h*, provided at its upper end with a suitable hand-wheel, *i*, for turning said screw-rod, which elevates or lowers the carrier I, taking with it
10 the ends of the angle-arms or bell-crank levers *g*, and thus adjusting the height of the roller H. The carrier I is formed with shoulders *j*, the shoulders embracing each side of an upright, *k*, so as to prevent the carrier from turning
15 with the screw-rod, said screw-rod having its bearings in suitable boxes connected to the upright *k*.

Between the draw-bars *a b* are located two or more rollers, J, which, like the roller I, bear
20 upon the platform of the car and act as anti-friction rollers. The means employed for adjusting the height of the rollers J are somewhat different than the construction shown in connection with the roller H.

25 By reference to Figs. 9 and 10, it will be seen that the roller J has its bearings in and is supported by a yoke, K, the shank *l* of which fits loosely within an opening in the lower end of a swivel or sleeve, L. To this sleeve L is swiv-
30 eled the lower end of an operating screw-rod, *m*, provided with a suitable hand-wheel, *n*. This rod *n* engages with a screw-opening in a bracket, M, so that by turning the screw-rod it will be raised or lowered.

35 To avoid the possibility of the swivel or sleeve L turning or twisting laterally when it is being raised by the screw-rod, the sleeve is formed with flanges *o*, between which is located a guide, *p*, upon the bracket M, to steady and
40 guide the sleeve in its vertical movement, said bracket being bolted or otherwise secured to one of the heel-plates *d*.

The forward anti-friction roller, N, is adapted to run on the top of the rail *c*, and is placed
45 in close proximity to the nose-casting B. This roller N, as more clearly shown in Figs. 1 and 6, is connected and supported between bell-crank levers O, the horizontal ends of said levers being pivoted to the nose-casting B, and
50 the upright ends pivoted to a link, *q*, which in turn is pivoted to a hand-lever, P, said lever at its lower end being pivoted to the nose-casting. By pressing down upon the hand-lever P, the forward part or end of the unloader will
55 be elevated, and when it is desired to hold the lever in the position to which it has been brought or desired, a pawl, *r*, is employed, which engages with the teeth upon a rack-bar, *s*, connected to the lever by a suitable pivot, said
60 rack-bar passing through a slot in the partition-rib of the nose-casting.

A tie-rod, R, serves to transfer the pull of the locomotive to the draw-bars *a b*, said rod terminating at its lower end in a screw, and
65 passing through a strap, S, firmly secured to the sides of the draw-bars, and held thereto

by a suitable nut engaging with the screw-threaded end of the tie-rod R.

In order to prevent the unloader from being disengaged with the rail *c* when the cars are
70 not standing in a straight line or on a curve, a strap, T, is employed, which is connected to the draw-bar *a*, the forward part or end thereof being curved outwardly. This strap, which has to extend downward low enough that its
75 bottom edge will never be as high as the top of the rail *c*, will prevent the forward part of the draw-bars, and accordingly the unloader, from being pushed over toward the middle of the car, as the strap will strike the guide-rail
80 *c*. The nose-casting might be formed so as to have a guide on both sides of the rail.

The drum or windlass U is supported by a suitable frame-work, *t*, which may be of any
85 desirable construction, the frame-work being preferably formed of a series of inclined braces connected by a band or strap and lateral braces.

The nose-casting B is formed upon its under side with guides *v*, which fit over the guide-
90 rail *c*.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for unloading cars provided with self-lubricating anti-friction rollers, substan-
95 tially as and for the purpose set forth.

2. In a device for unloading cars, a suitable nose-casting having connected thereto two draw-bars disposed parallel to each other and adapted to extend upon each side of the guide-
100 rail of the car-platform, in combination with a tie-rod extending from the nose-casting to the draw-bars, substantially as and for the purpose set forth.

3. In a device for unloading cars, a tie-rod
105 connected at its upper end to the nose-casting and at its lower end to a stirrup or strap secured to the draw-bars, and means, substantially as shown and described, for adjusting the tension of said rod, for the purpose speci-
110 fied.

4. In a device for unloading cars, the combination, with two draw-bars arranged parallel with each other and extending from the nose-casting to the rear of the device, of a series of
115 horizontal anti-friction rollers adapted to bear against the side of the guide-rail of the car-platform, substantially as and for the purpose described.

5. In a device for unloading cars, a nose-
120 casting having pivoted thereto bell-crank levers, between which is connected a suitable roller, in combination with a hand-lever pivoted to said nose-casting and connected to the upper end of the bell-crank lever by a link or
125 strap pivoted thereto and to the hand-lever, substantially as and for the purpose specified.

6. In a device for unloading cars, a roller secured or supported between two bell-crank
130 levers pivoted to the nose-casting at their lower or horizontal ends, and at their upper ends to a link or strap, in combination with a hand-lever

pivoted to the nose-casting and carrying a rack-bar, which engages with a pawl or other similar device for holding said hand-lever in position, substantially as and for the purpose set forth.

7. In a device for unloading cars, the combination, with two draw-bars extending from the nose-casting to the rear thereof and arranged parallel with each other, of a series of heel-plates connected at intervals to the draw-bars along their entire length, substantially as and for the purpose specified.

8. In a device for unloading cars, the combination, with two draw-bars extending from the front to the rear thereof, of a series of heel-plates connected to said bars and having journaled thereto horizontal anti-friction rollers, substantially as and for the purpose described.

9. A device for unloading cars having connected to the mold-board or scraper thereof, upon its inner side, a series of T-irons, and horizontal and inclined braces extending transversely across the device, substantially as and for the purpose set forth.

10. In a device for unloading cars, one or more vertical rollers suitably journaled between the arms of a yoke or other like connection, the shank thereof loosely fitting within a slot or opening in a sleeve, in combination with an operating screw-rod engaging with a screw-opening in a bracket and swiveled at its lower

end to said sleeve, substantially as and for the purpose specified.

11. A device for unloading cars having its several vertical rollers journaled to a yoke, bell-crank lever, or other suitable support, the same being pivoted at one end to a suitable object and connected at its opposite end to an operating screw-rod, hand-lever, or other similar device for raising or lowering the same, substantially as and for the purpose set forth.

12. A device for unloading cars provided with a series of horizontal anti-friction rollers having a receptacle for oil or other lubricant, and an inclined passage therefrom to the axial opening of said rollers, for automatically feeding the oil or lubricant to the bearings or journals, substantially as and for the purpose described.

13. In a car-unloader, the combination, with the draw-bars, of a strap connected to the side thereof, the forward part having its end bent outwardly, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GEO. P. MERRILL.

Witnesses:

J. R. OSBORN,
SYLVESTER LAMB.