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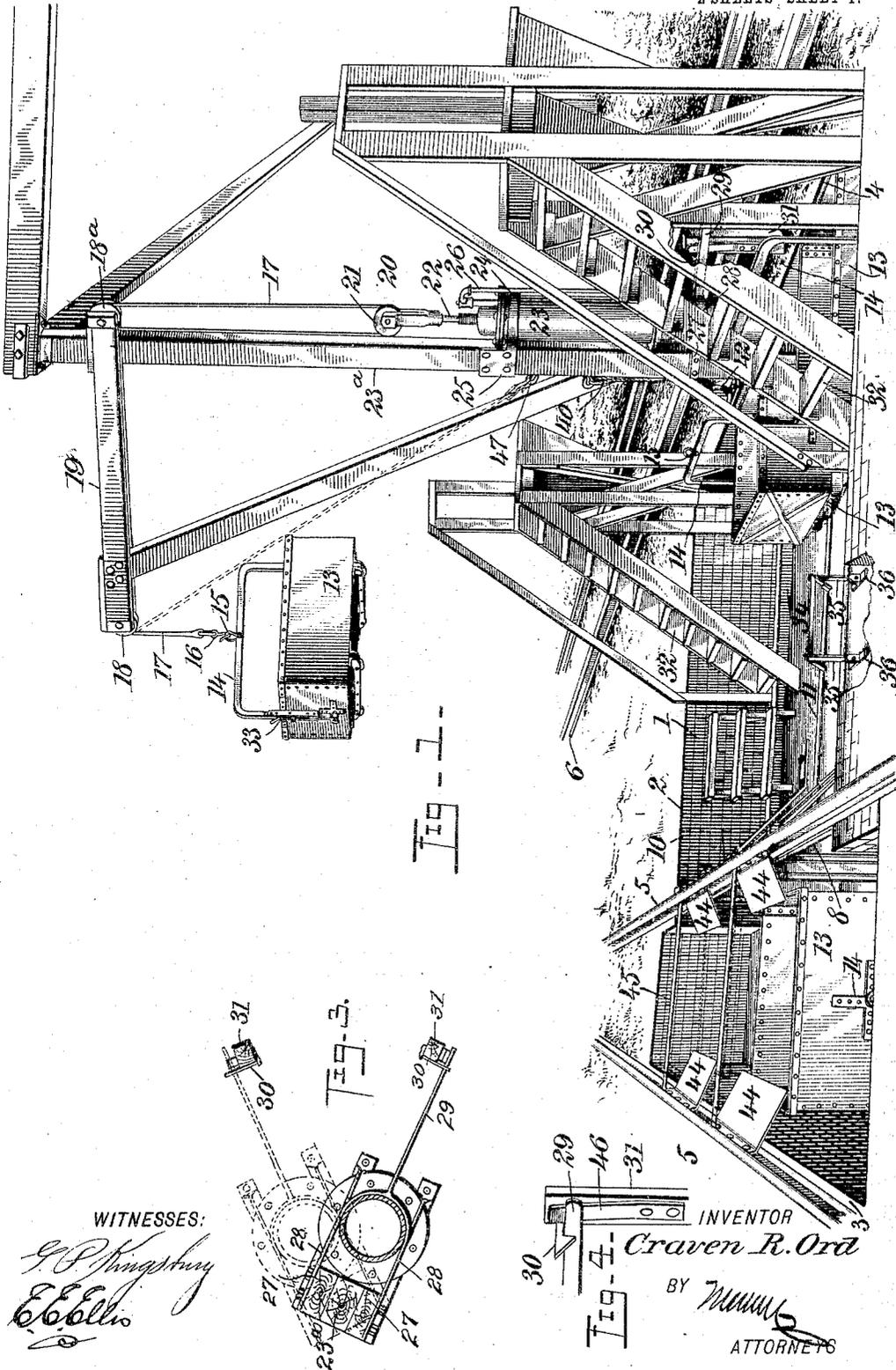
PATENTED MAY 2, 1905.

C. R. ORD.

MEANS FOR RECEIVING AND LOADING ASH DUMPS OF LOCOMOTIVE ENGINES.

APPLICATION FILED APR. 11, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

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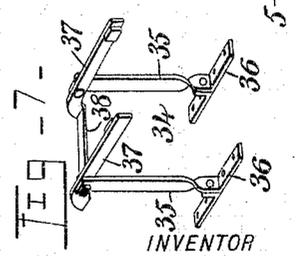
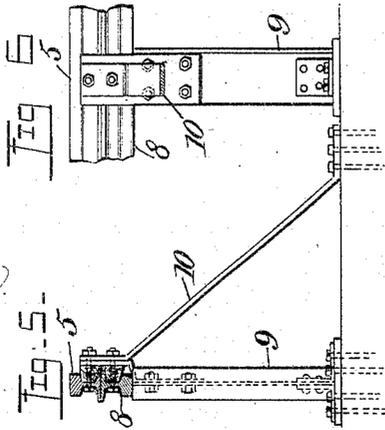
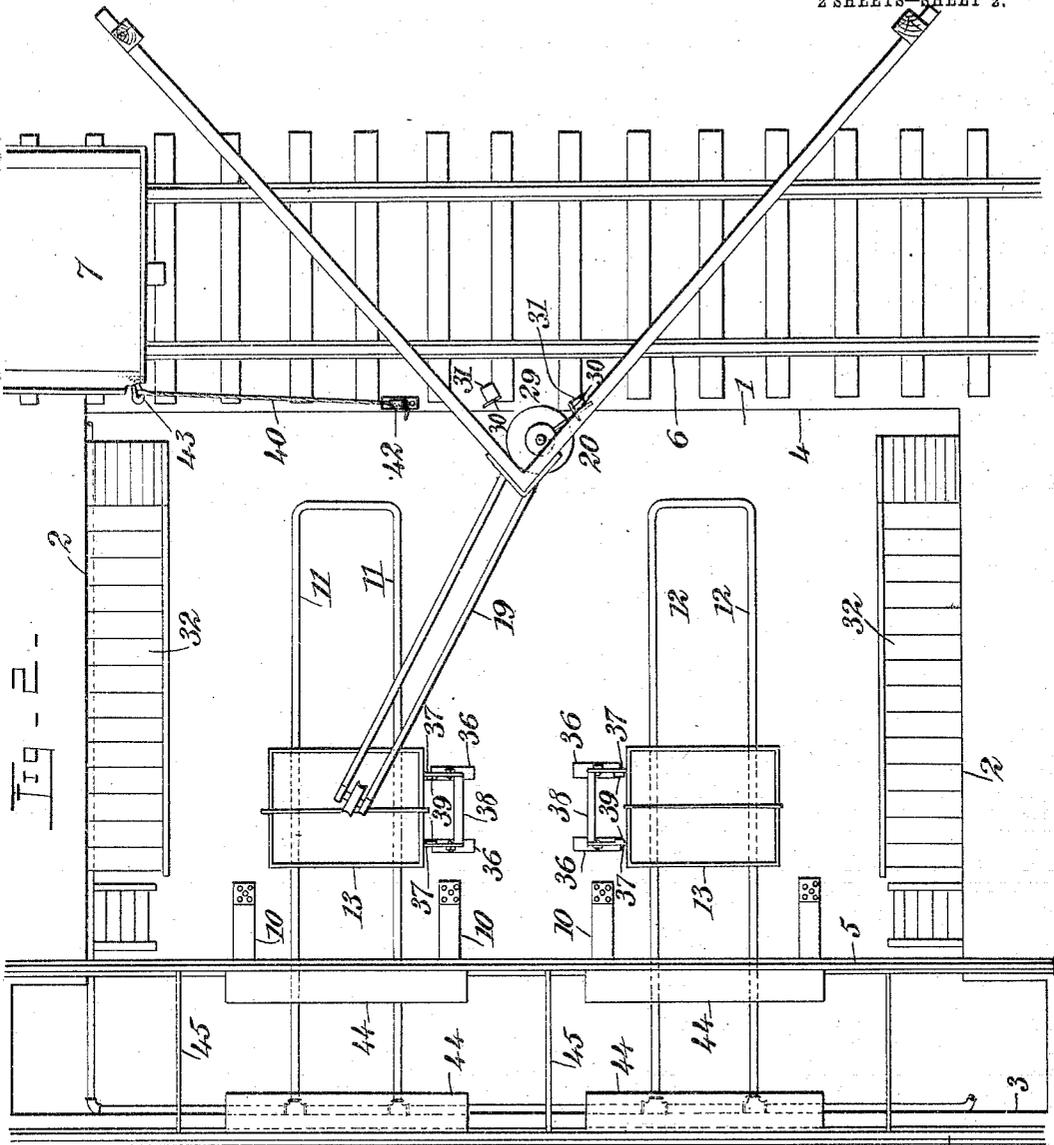
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# UNITED STATES PATENT OFFICE.

CRAVEN R. ORD, OF McADAM, CANADA.

MEANS FOR RECEIVING AND LOADING ASH-DUMPS OF LOCOMOTIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 788,789, dated May 2, 1905.

Application filed April 11, 1904. Serial No. 202,596.

*To all whom it may concern:*

Be it known that I, CRAVEN R. ORD, a British subject, and a resident of McAdam, in the Province of New Brunswick and Dominion of Canada, have invented a new and Improved Means for Receiving and Loading Ash-Dumps of Locomotive-Engines, of which the following is a full, clear, and exact description.

This invention relates to devices or means for receiving and loading ash-dumps from locomotive-engines; and it consists, substantially, in the improvements hereinafter particularly described, and pointed out in the claims.

The principal objects of the invention are to expedite and facilitate the operations of receiving and loading ash-dumps from locomotive-engines as well as to lessen the expense attending such operations and to overcome numerous disadvantages and objections common to many other devices hitherto employed for similar purposes.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a view in perspective representing the construction and operation of my improvements. Fig. 2 is a plan view in outline illustrating the organization of the devices more clearly. Fig. 3 is an enlarged horizontal section in detail of certain parts. Fig. 4 is a detail view in perspective also of certain parts, and Figs. 5, 6, and 7 are detail views of other parts.

Before proceeding with a more detailed description it may be stated that in the form of my improvements herein shown I construct a pit at the part or section of a railway-track at which a locomotive-engine on the track is to be stopped for the purpose of dumping the ashes therefrom, said pit being of suitable depth and length and extending from beneath said track to or near to an adjacent or side track traversed by suitable cars into which the ashes may be dumped. I employ buckets moving on tracks therefor at the bottom of the pit for receiving the ashes directly from the ash-pan of the engine as well as special devices for elevating and swinging the buckets

to and from position over the cars for dumping, and I also employ special devices for directing or guiding each bucket to and upon the rails of one of the tracks therefor as the same is lowered into the pit for use, besides other special devices for enabling the ash-cars to be successively moved into position to be loaded without the use of a locomotive for that purpose. I have herein shown a certain selected embodiment of my improvements; but it will be understood, of course, that I am not limited to the precise details thereof in practice, since immaterial changes therein may be resorted to coming within the scope of my invention.

Specific reference being had to the drawings by the designating characters marked thereon, 1 represents a pit which, as already stated, is constructed at the part or section of a railway-track at which a locomotive-engine on the track is to be stopped for the purpose of dumping the ashes therefrom, the end walls of said pit being indicated at 2 and the side walls thereof at 3 and 4, respectively, the upper surface of said side wall 3 being preferably located directly beneath the base of the outermost one of the rails 5 of the track for an engine, (not shown,) while the said side wall 4 is located at or near the innermost one of the rails 6 of an adjacent or side track for the car (or cars) 7, into which the ashes are to be dumped. The base of the innermost one of the rails 5 is preferably seated upon the top of a subrail 8, extending lengthwise of the pit and supported by posts or standards 9, suitable side braces 10 being also employed to strengthen the two said rails, as shown. Located at the base of the pit and extending for a suitable distance from the said side wall 3 thereof are the rails 11 and 12 of preferably duplicate tracks, upon each of which run the wheels of at least two buckets 13, (see Fig. 1,) each having a bail 14, provided with a ring or other device 15 for connection therewith of a hook 16 at one end of a cable or chain 17, running over pulleys 18 and 18<sup>a</sup> at the ends of the horizontal arm 19 of a crane 20, and thence over a pulley 21, carried at the projecting end portion of a vertically-reciprocating piston-rod 22, working through an operating air-

cylinder 23 therefor, the other end of said chain or cable being secured in any suitable way to a part of the crane. The upright member 23<sup>a</sup> of said crane is suitably supported at its base and upper end to rotate, and the air-cylinder is mounted to the side thereof by means of a bracket 24, secured to said member at 25, said cylinder being provided with the usual pipe connection 26 for admitting air to the interior thereof at the ends. Within convenient reach of an operator in the pit the upright member 23<sup>a</sup> has secured thereto at 27 the arms 28 of a lever 29 for swinging the crane in either direction, said arms embracing the cylinder and said lever being engaged in either position to which the crane may be swung by means of a catch 30, pivoted to the side of a support 31 therefor located a suitable distance beyond the upright member, as shown. A stairway 32 is disposed at either end of the pit, extending to a suitable height for the operator to ascend and dump the contents of each bucket after releasing the engaging dog or pawl 33 for the bucket, whereupon he may again descend to the pit for the purpose of swinging the crane reversely in order that the bucket may be properly directed in its descent over and upon the track-rails therefor at the base of the pit. For preventing the accumulation of ice and snow thereon in cold seasons said rails 11 and 12 may, if desired, be constructed of ordinary piping for the admission of steam thereto, and in order to assist in guiding the wheels of the buckets thereto I preferably (though not essentially) employ at the inner side of each set thereof a guide 34, comprising duplicate standards 35, secured to the base of the pit at 36 and supporting at the upper ends thereof a pair of pivoted arms 37, having a connecting member 38 at their inner ends and provided with counterbalancing-weights 39 at the free or outer ends thereof, tending to maintain said arms normally in substantially oblique position. By placing his foot upon said connecting member of the guide at either set of said rails the operator may readily operate or work the guide for the purpose mentioned. To enable one after another of a number or train of ash-cars to be moved into position to properly receive the ashes from the buckets, I preferably employ an extra cable or chain 40, which may be connected at one end to the chain or cable 17 of the crane, said cable 40 passing over a snatch-block 42, secured to the adjacent side of the pit and having its other end connected to the car, as shown at 43, it being apparent that the movement of the car may be thus effected from the air-cylinder of the crane instead of employing a locomotive for the purpose. Secured to the inner sides of the rails 5 in line with the tracks formed by the said rails 11 and 12 for the buckets are reversely-disposed downwardly and inwardly inclined plates 44 for directing or

guiding the ashes from the ash-pan of the engine, and said rails 5 are preferably connected above the pit by means of strengthening rods or braces 45 therefor.

In the operation of my improvements the buckets of each set or pair thereof adjacent or nearest to the rails 5 for the engine are moved by the operator along the rails of the tracks therefor against the side wall 3 of the pit, thus to come directly beneath the fire-box of the engine, with each end of the ash-pan lying above one of said buckets. The ashes are now dumped or raked from the ash-pan into these buckets, and after one is filled it is drawn out from beneath the rail 5 and the hook 16 of the cable 17 is connected to the ring 15 of the bail 14 thereof, (it being understood that the crane had previously been swung in proper position to bring the horizontal arm 19 thereof substantially above the bucket,) whereupon the operator operates the air-valve of air-cylinder, admitting compressed air therein, causing the piston-rod 22 therein to move downwardly to elevate the bucket to the full lift of the crane, and of sufficient height to be swung over said car. The operator now grasps the lever 29, and after releasing the same from one of its catches swings the crane in the direction of the receiving-car for the ashes in the bucket. While this bucket is thus swinging and in the event of there still being more ashes to be taken out of the pan or of another engine coming immediately on the pit, the operator runs the empty bucket of the same set to the position beneath the rail 5 previously occupied by the first, and he then ascends one of the stairways 32 and directs the bucket over any part of the car. He then releases the engaging dog or pawl of the now elevated bucket and dumps the contents of the latter into any part of the car not yet filled with ashes and which may be overreached by the horizontal arm of the crane. He now descends to the pit again and by means of the lever 29 swings the crane so as to bring its horizontal arm back to position, so that the bucket hangs directly over center of one of the tracks in the pit, onto which the bucket is to be lowered, this position being determined by the lever 29 coming against the post 31 and being caught by the catch 30. The operator then opens the valve and allows air to escape from the cylinder, the piston-rod and piston being pulled upward by the weight of the bucket and when the latter is nearly on the rails the air-valve is closed partially. The operator then takes hold of the side of bucket, places his foot on the cross-bar of the guide, bringing the arms of the latter to a horizontal position, and the side of bucket now being held against the ends of these arms allows the bucket to settle onto the rails. The filled and empty buckets of the other set are now operated upon in the same way, and so on alternately with the buckets of the two sets as long as may be re-

quired for the removal and loading of ashes from one or more engines. By the employment of the crane I am enabled to dump the ashes from the buckets at different parts of the car without having to shift the car, and whenever one car becomes filled I can readily move the train to bring the next in position by means of the extra cable or chain 40, as already explained. It will also be seen that the described operation can be carried out without moving the engine off or away from the pit, thereby saving much labor and greatly reducing the expense thereof.

To prevent damage to the crane or the lever if swung against the post with too much force, I provide the support for each of the catches with a spring 46.

When the devices are not in use, the cable or chain 17 is of course not in connection with either of the buckets, but is preferably caught upon a hook 47 to hang in convenient reach of the operator in the pit when needed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a track at the base of the pit extending at right angles to the previously-mentioned tracks, buckets movable thereon and means for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars.

2. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a track at the base of the pit extending at right angles to the previously-mentioned tracks, buckets movable thereon and means for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars, and stairways leading from the pit near to said adjacent track.

3. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a plurality of tracks at the base of the pit, extending substantially at right angles to the said rails, buckets movable thereon, and means for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars.

4. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a track at the base of the pit extending at right angles to the previously-mentioned tracks, buckets movable thereon and a crane for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars.

5. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a plurality of tracks at the base of the pit, extending substantially at right angles to the said rails, buckets movable thereon, and a crane for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars.

6. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a plurality of tracks at the base of the pit, extending substantially at right angles to said previously-mentioned tracks, buckets movable thereon, a crane for raising and lowering the buckets, a lever for swinging the crane to carry the buckets to and from position for loading the cars, and catches for holding said lever in either position of the crane.

7. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a plurality of tracks at the base of the pit, extending substantially at right angles to said first-mentioned tracks, buckets movable thereon, means alongside the same for guiding the buckets to position, and means for raising and lowering the buckets, and for swinging them to and from position for dumping in the cars.

8. In devices of the character referred to, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, tracks at the base of the pit, at right angles to said first-mentioned tracks, buckets movable thereon, means for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars, said means comprising a cable, and an additional cable passing over a guide at one side of the pit, with one end for attachment to the cable first named, and its other end for connection with one of said cars.

9. In devices of the character herein described, a pit constructed beneath the rails of a track for locomotive-engines, and extending to an adjacent track for ash-cars, a plurality of tracks at the base of the pit, extending substantially at right angles to the said rails, buckets movable thereon, and means for raising and lowering the buckets, and for swinging the same to and from position for dumping in the cars, said bucket-tracks being constructed of piping.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CRAVEN R. ORD.

Witnesses:

NORMAN E. SHAW,  
FAYETTE C. GATES.