A. A. MOORE.

ASH HANDLING DEVICE.

APPLICATION FILED DEC. 6, 1917.

1,309,905.

Patented July 15, 1919.

4 SHEETS—SHEET 1.

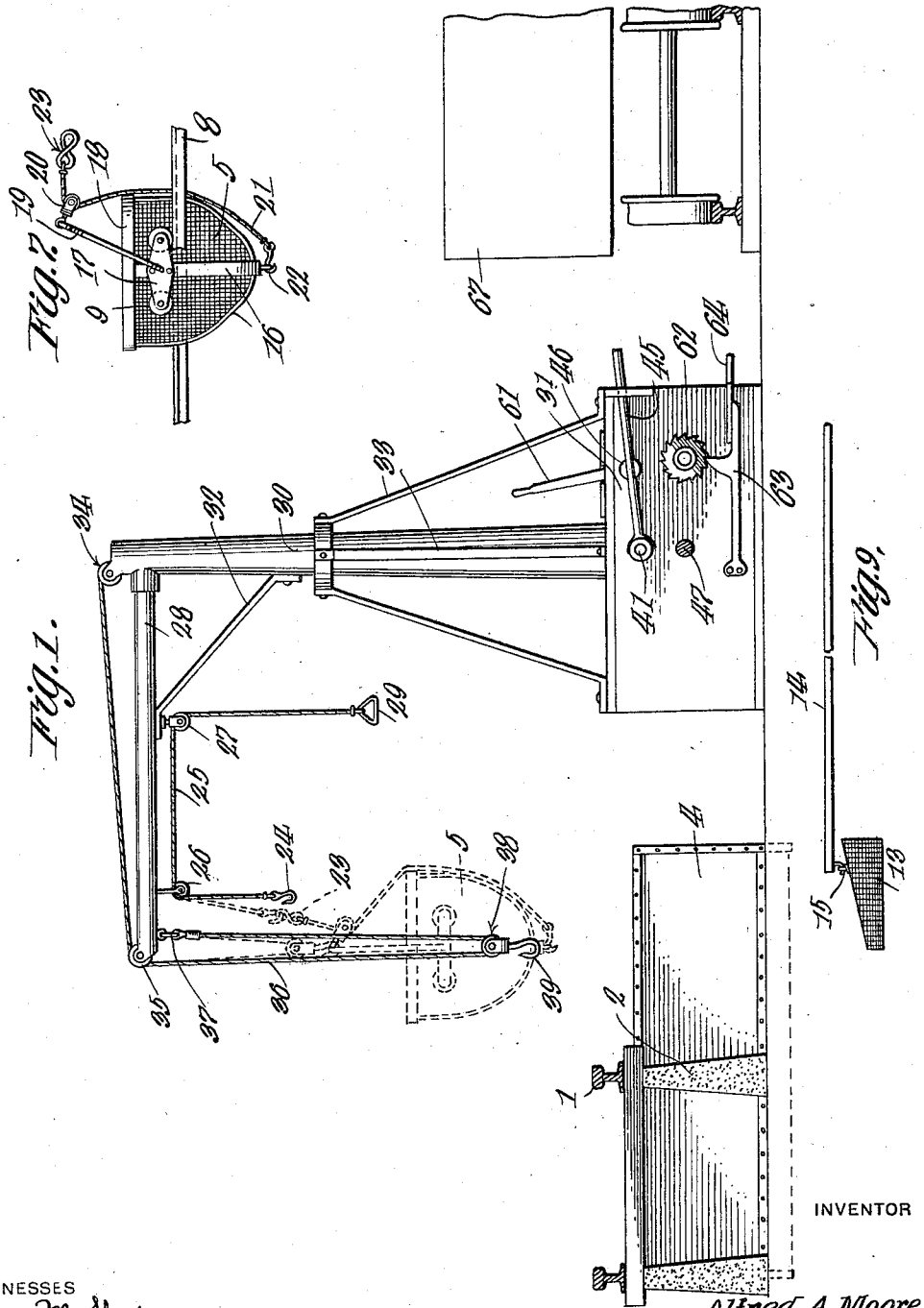


Fig. 1.

Fig. 2.

Fig. 4.

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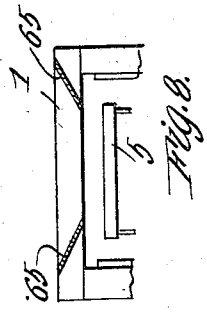
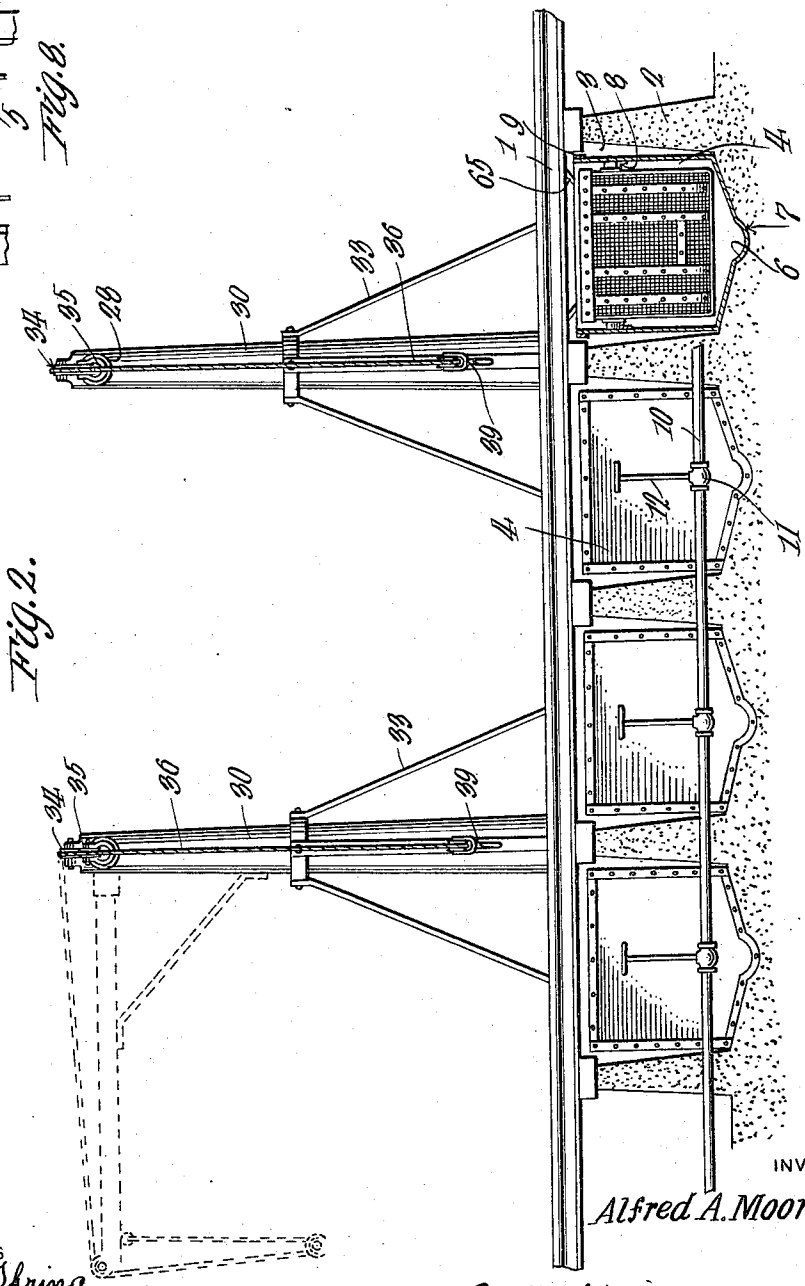


Fig. 2.



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4 SHEETS—SHEET 3.

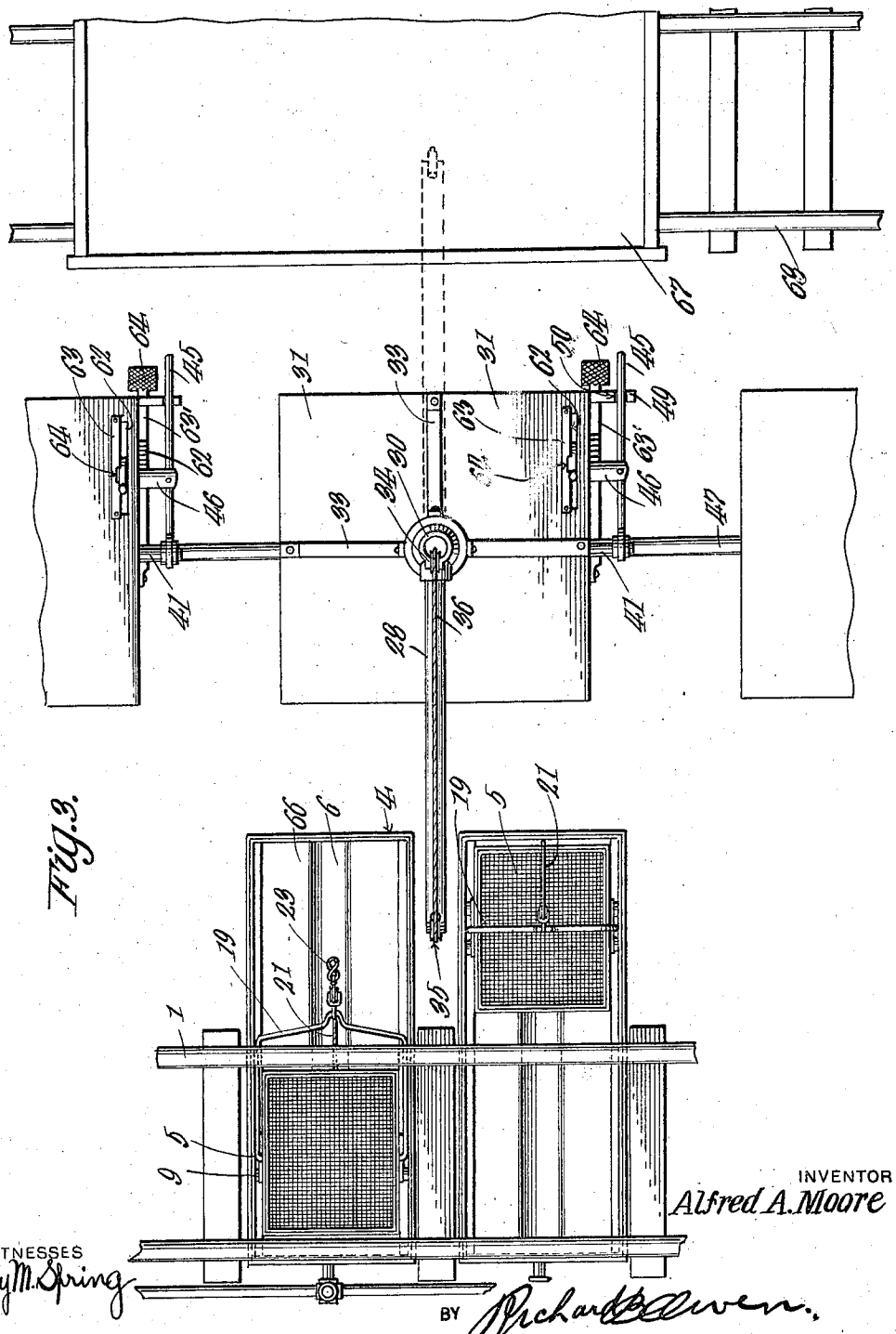


Fig. 3.

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4 SHEETS—SHEET 4.

Fig. 6.

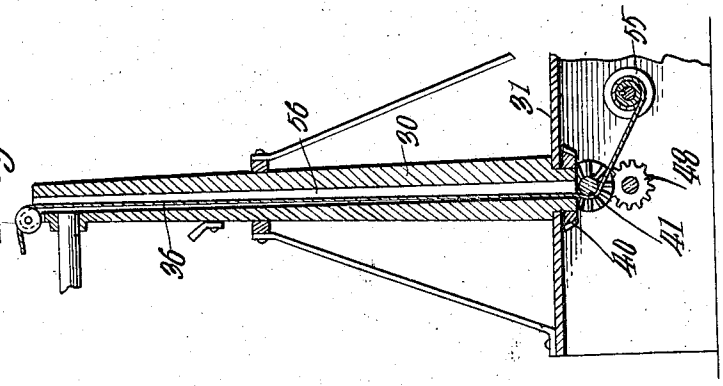


Fig. 5.

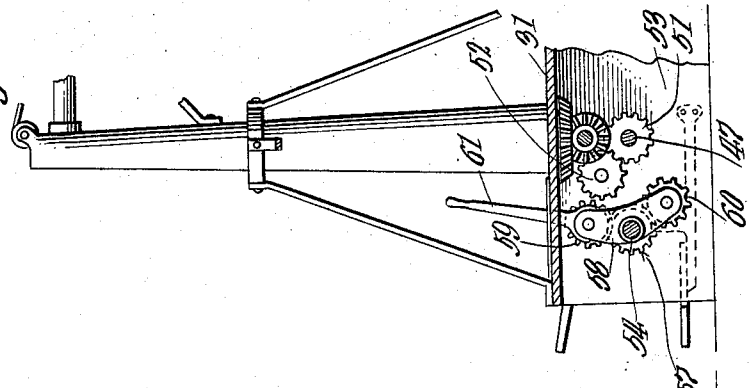
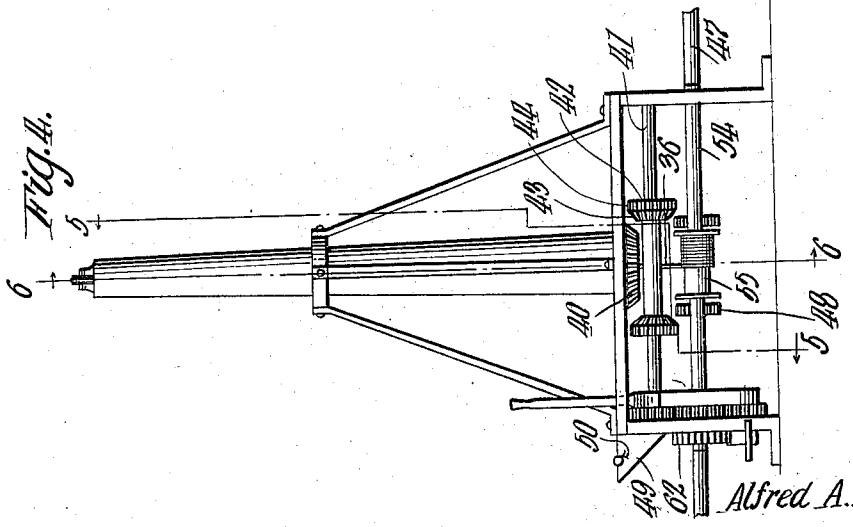


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALFRED A. MOORE, OF ENDEAVOR, WISCONSIN.

ASH-HANDLING DEVICE.

1,309,905. Specification of Letters Patent. **Patented July 15, 1919.**

Application filed December 6, 1917. Serial No. 205,856.

To all whom it may concern:

Be it known that I, ALFRED A. MOORE, a citizen of the United States, residing at Endeavor, in the county of Marquette and State of Wisconsin, have invented certain new and useful Improvements in Ash-Handling Devices, of which the following is a specification.

This invention relates to an ash or cinder handling device and has for its object the production of a simple and efficient means for removing the cinders from the water tank after the cinders have been deposited from the fire box of a locomotive.

Another object of this invention is the production of a simple and efficient means for handling the cinders after the cinders have been dumped from the fire box of a locomotive and depositing the cooled cinders into a car whereupon the cinders may be transported to any suitable place of disposition.

With these and other objects in view this invention consists of certain novel constructions, combinations and arrangements of parts as will be hereinafter fully described and claimed.

In the drawings:—

Figure 1 is a side elevation of the derrick used in connection with the present invention, certain portions of the track way being shown in section,

Fig. 2 is a front elevation of a series of derricks,

Fig. 3 is a top plan view of one of the derricks, the ash pits being shown in conjunction therewith,

Fig. 4 is a rear elevation of the derrick,

Fig. 5 is a section taken on line 5—5 of Fig. 4,

Fig. 6 is a section taken on line 6—6 of Fig. 4,

Fig. 7 is a side elevation of the cinder or ash receiving basket,

Fig. 8 is a longitudinal sectional view through the locomotive supporting track way, showing the chute plates which may be carried thereby for delivering the cinders or hot coals from the fire box of a locomotive to the cinder receiving basket,

Fig. 9 is a side elevation of a cleaner which may be used in connection with the present invention for cleaning out the tanks used in connection with the present invention.

By referring to the drawings, it will be seen that 1 designates the track way upon which the locomotive is adapted to travel and this track way is supported upon suitable supporting braces 2, which supporting braces are arranged in spaced relation for constituting a plurality of ash receiving pits below the track way 1.

A tank 4 is placed within each ash receiving pit 3 and extends under the track way 1, each tank projecting to one side of the track way as shown in Fig. 3, for the purpose of permitting the ash or cinder receiving basket 5 to be removed therefrom. Each of these tanks 4 is provided with a longitudinally extending channel 6 along the bottom thereof which fits within a substantially concaved channel 7 formed in the bottom of the pits 3. Each of these tanks 4 is provided with a roller supporting flange 8 upon the inner face thereof for the purpose of supporting the rollers 9 carried by the basket 5. In this way the roller supporting flange 8 will constitute an efficient track way for the rollers 9. A water supply pipe 10 extends longitudinally of the track way 1 and communicates with each tank 4. A plurality of valves 11 are carried by the pipe 10 at proper intervals for controlling the supply of water to the tanks 4 and these valves 11 are operated by means of an operating handle 12.

In view of the fact that it may be necessary at certain periods to clean out certain deposit accumulating in the bottom of the tanks 4, a special cleaner has been provided which comprises a substantially conical wire mesh scoop 13 which is hingedly or otherwise connected to an elongated handle 14, at a point indicated at 15. The long handle 14 will permit the tank to be cleaned out from either end thereof.

The basket 5 is formed of a wire mesh body and is reinforced by means of the metal straps 16 which extend vertically around the body of the basket 5. The rollers 9 above mentioned are carried by plates 17 supported upon the end straps 16 and the upper end of the basket 5 is reinforced by means of a metallic band 18. A supporting bail 19 is secured at its respective ends to the plates 17 and a pulley block 20 is connected to the bail 19. A dumping cable 21 is connected to an eye 22 carried by the lower end of the basket 5 and this dumping cable 21 is passed

over the pulley block and engages a loop 23 which loop 23 is adapted to be engaged by a hook 24 carried by a tripping cable 25. This tripping cable 25 is supported upon a pulley 26 and passes over a pulley 27 carried by the derrick arm 28. A grip link 29 is carried by the inner end of the tripping cable 25.

A derrick standard 30 is supported upon a base 31 and it should be understood that any number of these derrick standards may be employed without departing from the spirit of the invention and these derrick standards may be arranged between every two pits 3 as shown clearly in Fig. 2 of the drawings. Each derrick standard 30 carries a derrick arm 28 which is braced by means of a brace 32. The standard 30 is braced by means of a plurality of braces 33 which braces are secured at their lower ends to the base 31. A guiding pulley 34 is carried by the upper end of the standard 30 and a guiding pulley 35 is carried by the outer end of the derrick arm 28. A lifting cable 36 passes over these pulleys 34 and 35 and is anchored at one end to a link 37 carried by the outer end of the arm 28. A pulley block 38 is carried by the cable 36 and this block 38 carries a hook 39 which is adapted to engage the bail 19 for supporting the basket 5 as shown in dotted lines in Fig. 1.

The standard 30 is rotatably mounted upon the base 31 and carries a beveled gear 40 at its lower end. A derrick turning shaft 41 is carried by the base 31 and this derrick turning shaft is provided with spaced gears 42 which gears are provided with a beveled gear face 43 and a straight gear face 44. A shifting arm 45 is carried by the base 31 and this shifting arm 45 engages the shaft 41 and is pivotally mounted upon a support 46 for permitting the shaft 41 to be shifted longitudinally for throwing either one of the gears 42 in engagement with the beveled gear 40.

An operating shaft 47 is carried by the base 31 and this operating shaft 47 is provided with a pair of spaced straight gears 48 which are so arranged as to cause the gears 48 to mesh with the straight gears 44 of one of the gears 42 when the beveled gear face 43 has been brought into engagement with the teeth of the beveled gear 40. The shaft 47 is adapted to continuously rotate in one direction and it should be understood that by shifting the arm 45, one of the gears 42 may be thrown in mesh with one of the gears 48 and the beveled gear 40. By swinging the lever 45 in the opposite direction the opposite gear 42 may be thrown into engagement with the other gear 48 and the opposite side of the gear 40, in this manner changing the direction of rotation of the standard 30. The arm 45 is adapted to rest upon a locking plate 49 and is adapted to spring into the notch 50 formed upon the locking plate 49 for holding the gears 42 in a neutral position.

The shaft 47 carries a pinion 51 placed near the side wall of the base 31 and this pinion 51 meshes with an idle pinion 52 secured to the side wall 53 of the base 31.

A winding shaft 54 is carried by the base 31 and a winding drum 55 is carried by the winding shaft 54 around which drum 55 passes the lifting cable 36 above described. This lifting cable 36 is guided over the shaft 41 as shown in Fig. 6 of the drawings and also passes up through the vertically extending channel or passageway 56 formed in the standard 30. A gear 57 is carried by the shaft 54 adjacent the side wall 53 and a rocking frame 58 carries an upper gear 59 and a lower gear 60. A handle 61 is secured to the upper end of the frame 58 and passes through the notch 62 formed in the top of the base 31. A locking plate 63 is carried adjacent the aperture 62 and is provided with a notch 64 within which the handle 61 is adapted to fit for holding the rocking frame 58 in a neutral position. It will therefore be seen that as the lever or handle 61 is swung toward the standard 30, the gear 59 will be thrown into engagement with the idle pinion 52 for causing the cable 36 to be wound upon the drum 55. As the lever 61 is swung away from the standard 30, the gear 60 will be thrown into engagement with the gear 51 and thereby cause the drum 55 to rotate in an opposite direction for unwinding the cable 36 therefrom. The shaft 54 carries a ratchet wheel 62 which ratchet wheel 62 is engaged by means of a spring dog or pawl 63′ for normally preventing the cable 36 from unwinding from the drum 55. A treadle plate 64 is carried by the pawl 63 to permit the pawl 63′ to be readily released from the ratchet 62.

The track way 1 may be provided with suitable chute plates which are inclined toward each other and are adapted to overhang the upper end of the basket 5 for the purpose of delivering cinders into the basket 5 and preventing the cinders from dropping into the tank 4.

The operation of the device is as follows:—

A locomotive passes over the track 1 and a basket 5 is dropped into the open end 66 of one of the tanks 4. The basket is then shoved under the track 1 as shown in Fig. 3 for the purpose of receiving the ashes as the same are dumped from the fire box of a locomotive. The basket 5 may of course be moved easily within the tank 4 due to the fact that the rollers 9 travel upon the supporting flanges or rails 8. As soon as the cinders or ashes have been dumped from the locomotive fire box the basket 5 may be moved toward the open end 66 of the tank 4 and the derrick or crane arm 28 is swung

to overhang the basket 5. The hook 9 engages the bail 19 and as the cable 38 is wound upon the drum 55, the basket 5 may be lifted to the position shown in dotted lines in Fig. 1. The hook 24 is then attached to the eye 23 and the standard 30 is rotated upon the base 1 so as to swing the derrick or crane arm 28 over a car 67 adapted to travel upon the track way 68. As soon as the basket is in a position to overhang the car 67, the tripping cable 25 may be pulled by the operator thereby pulling upwardly upon the dumping cable 21 and causing the basket 5 to be dumped and in this manner discharge the cinders from the basket into the car 67.

It should be understood that the tank 4 is adapted to be filled or contain water and after the ashes or cinders are dumped into the basket 5, the water within the tank 4 will readily extinguish the fire from the coals or ashes and cause the cinders to be thoroughly cooled before the basket is lifted from the tank 4. This construction will insure the dumping of the ashes or cinders within the car 67, in a cooled condition.

What is claimed is:

1. An ash handling device comprising a pit, a trackway supported above said pit, a tank extending under said trackway, a wire mesh cinder carrying basket adapted to be placed within said tank, a water supply means communicating with said tank, rollers supported upon the sides of said basket, a bail pivotally secured to said basket, a pulley block secured to the upper end of said bail, and a tripping cable passing over said pulley block and secured to the bottom of said basket for facilitating the dumping of said basket when the same is raised and moved to a desired position.

2. In combination with an immersion tank provided with roller supporting flanges carried by the sides thereof, of an ash handling basket comprising a body formed of a plurality of reinforcing metallic strips, a wire mesh covering for said basket, roller supporting plates carried by the sides of said basket, and extending transversely thereof, rollers carried by the respective ends of said plates and adapted to travel upon said roller supporting flanges, a bail pivotally secured to the center of said plates, and a tripping cable engaging the bottom of said basket and cooperating with said bail for dumping said basket when the same is moved to a desired position.

3. An ash handling device comprising a pit, a trackway supported above said pit, a tank mounted within said pit and extending under said trackway, a porous cinder carrying basket adapted to be placed within said tank for cooling the cinders carried within said basket, said tank provided with a projecting end extending beyond the sides of said trackway and being open at the top thereof for permitting the placing of said basket into said tank and the removal of said basket therefrom to one side of the trackway, and a water supply means connected to said tank for supplying water thereto.

4. An ash handling device comprising a pit, a trackway supported above said pit, a tank extending under said trackway, a cinder carrying basket adapted to be placed within said tank and constructed to permit the circulation of water therethrough, means carried within said tank for permitting the longitudinal movement of said basket within said tank to a position under said trackway, said tank provided with a projecting end beyond one side of said trackway for facilitating the placing of said basket within said tank and under said trackway and the removal of said basket therefrom, and means for supplying water to said tank.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED A. MOORE.

Witnesses:
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H. G. CHURCHILL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."