Oct. 4, 1938. D. C. TURNBULL 2,131,771

LOADING APPARATUS

Filed Nov. 28, 1936 3 Sheets-Sheet 1

Fig. 1

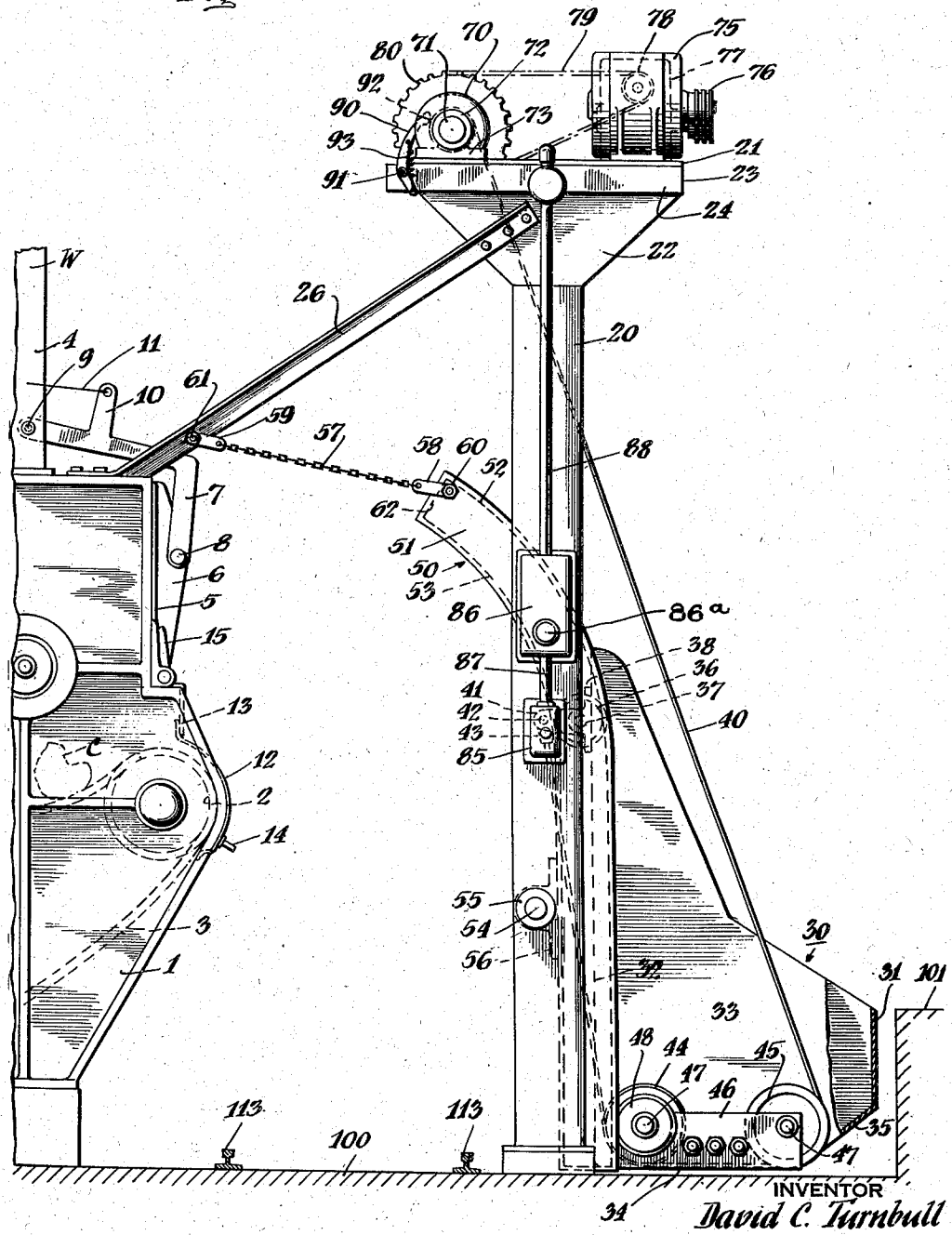

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Fig. 2

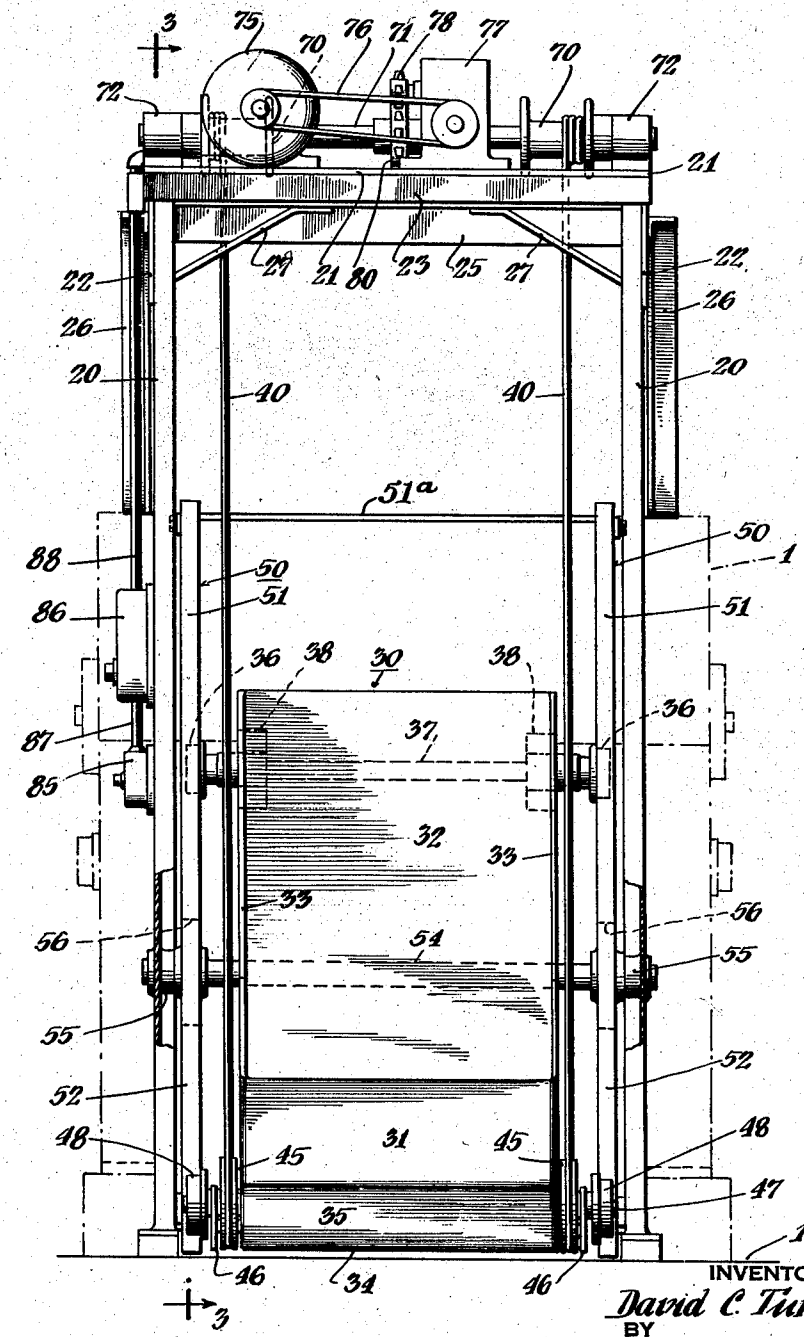

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Fig. 3

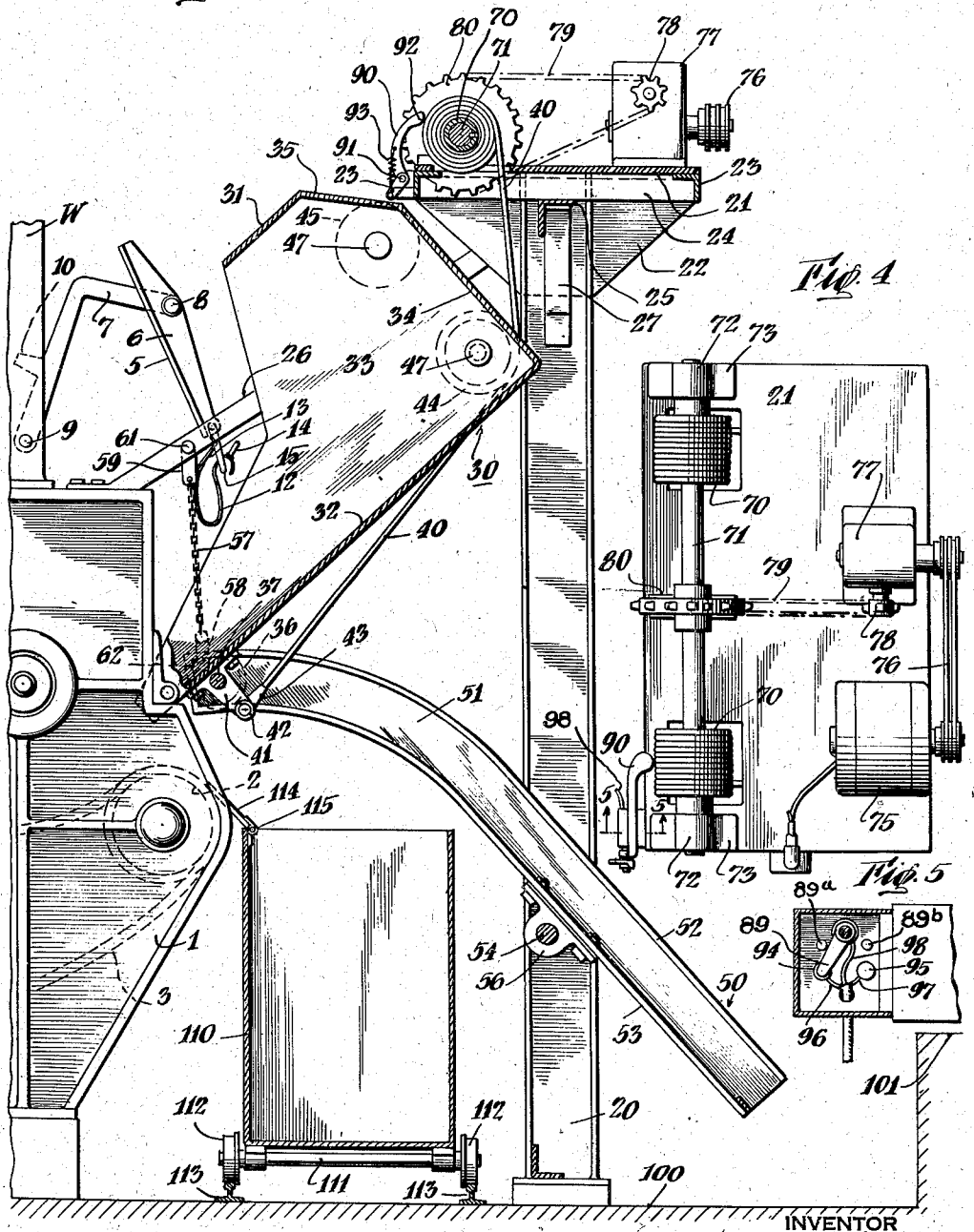

Fig. 4

Fig. 5

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UNITED STATES PATENT OFFICE

2,131,771

LOADING APPARATUS.

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Application November 28, 1936, Serial No. 113,093

13 Claims. (Cl. 214—120)

This invention relates to loading apparatus, and more particularly to an improved apparatus whereby castings, forgings and similar articles to be cleaned or treated may be mechanically loaded into the cleaning and treating machine.

Castings, forgings and other metallic parts are now commonly cleaned by tumbling the same in a tumbling mill within a stream of abrasive projected at blasting velocities. The tumbling chamber of such mills is generally positioned some distance above the floor of the shop, and where large cleaning capacity is desired, considerable time and labor can be saved in the provision of a mechanical loader for loading and filling the tumbling chamber with the desired charge or quantity of the castings or other material to be cleaned. Floor space in shops and foundries where castings, forgings and the like are to be cleaned, is often at a premium and the loading apparatus should therefore be so constructed as to occupy a minimum of floor space and at the same time permit quick mechanical loading of the castings into the tumbling chamber and in such a manner as to place the castings gently within the tumbling chamber without serious jars to the tumbling apparatus. Room should also be provided for a suitable conveyor into which the castings and forgings may be discharged from the tumbling mill when cleaned and thereafter conveyed to other parts of the shop where other operations necessary to produce the finished product may be performed thereon.

An object of this invention is to provide an improved loader whereby metallic castings, forgings and the like may be quickly, economically and efficiently deposited in the mill within which they are to be cleaned.

Another object of this invention is to provide apparatus adapted to be associated with a mill for cleaning metallic castings, forgings and the like which includes improved loading mechanism whereby the articles to be cleaned can be efficiently, economically and quickly deposited within the mill and improved conveying mechanism into which the cleaned articles can be quickly, economically and efficiently discharged and conveyed away.

A further object of this invention is to provide an improved loading mechanism adapted to receive and gently discharge into a tumbling mill the desired charge of metallic articles to be cleaned, which device can be operated entirely automatically, which occupies a minimum of floor space, which may be economically made to contain any desired quantity of the articles to be cleaned, and which is strong and sturdy in construction and lasting in use.

Various other features and advantages of the invention will be apparent from the following particular description and from an inspection of the accompanying drawings.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, and the manner in which it may be carried out, may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which:

Fig. 1 is a side elevational view of my improved loader shown in association with a tumbling mill for cleaning metal castings, forgings and the like, this view showing the bucket in position to be filled;

Fig. 2 is a front elevational view of my improved loader shown in Fig. 1;

Fig. 3 is a transverse vertical cross-sectional view through the loader showing the bucket in position to dump or discharge the castings, forgings or the like into the tumbling mill, this view being taken on line 3—3 of Fig. 2;

Fig. 4 is a top plan view of the loader showing particularly the driving mechanism and control devices therefor; and

Fig. 5 is a fragmentary perspective view of the stop switch which halts the motor at the respective dumping and loading positions of the bucket.

Similar reference characters refer to similar parts throughout the several views of the drawings and specification.

In accordance with this invention, a tumbling mill 1 is provided within which castings, forgings and the like metallic articles may be cleaned by tumbling the same within and through a stream of abrasive particles projected at blasting velocities. The tumbling mill 1, illustrated in the drawings, has associated therewith a horizontally mounted roller 2 which supports a wide belt 3 upon which the castings or other articles *c* to be cleaned are positioned. The abrasive throwing device, such as an abrasive throwing wheel *w* contained within a casing 4, is positioned at the top of the mill cabinet and so arranged as to project the abrasive downwardly at blasting velocities against the article *c* supported on the belt 3 as the belt moves in a counter-clockwise direction around the roll 2, as viewed in Fig. 1.

The cabinet is closed by a suitable door 5 which

is pivotally connected to one leg of a pair of elbow-shaped members 7 by means of pins or a rod 8 pivotally connected to the frame members 6 of the door. The other end of the elbow-shaped members 7 is suitably pivotally connected to the casing 4 or other fixed part of the cabinet, as by means of hinge pins 9. Both members 7 are provided with an arm portion 10 to which is connected a suitable cable 11. The door 5 may be swung from the closed position, shown in Fig. 1, to the open position, shown in Fig. 3, and back into closed position by manipulating the cables 11. A suitable winch which may be operated either by a crank arm or by electrical motor, is provided to open and close the door. A suitable apron or blanket 12 formed from rubber or rubber fabric material, may be secured to an angle-shaped member 13 fixed to the lower edge of the door 5, the blanket 12 sealing the opening and preventing the escape of abrasive and other particles through the opening. The blanket 12 may be provided with a suitable handle or handles 14 to lift the same when the door is to be opened. A suitable hook 15 may be provided on the door 5 upon which the handle 14 is supported when the door is to be opened, as shown more particularly in Fig. 3.

It is understood that my improved loading apparatus about to be described may be associated with various different types of tumbling mills and tumbling barrels and is not limited solely to the type of tumbling mill as illustrated in Figs. 1 and 3 of the drawings, which is shown for purposes of illustration only. It is also understood that the door for closing the opening in the tumbling mill or tumbling barrel may be of various different forms best suited to the mill or tumbling barrel with which it is associated; and it will, therefore, be further understood that the door and its associated operating mechanism shown in Figs. 1 and 3, is presented for illustration only.

My improved loader is preferably supported by a pair of standards or uprights 20, which rest upon the floor 100 upon which the tumbling mill or barrel 1 is supported. The spaced standards 20 support a table 21 at the top thereof upon which the driving mechanism, hereinafter described, may be supported. The table 21 may be reinforced by a framework comprising the bars or angle irons 23 extending along the front and rear edge of the table platform 21, and bars or angle irons 24 extending transversely along the side edges of the table 21. The transverse bars 24 rest upon and are supported by a longitudinally extending member 25, the ends of which are fixed to the spaced standards 20. The construction may be further strengthened by the provision of gusset plates 22, one of which is secured to each of the transverse bars 24 and the adjacent standard 20. Cross-bracing 27 secured to the longitudinally extending member 25 and the standards 20 may also be provided to further strengthen the construction.

A bucket 30, of suitable shape, receives the castings or other articles c to be cleaned. The bucket 30 may be positioned to normally rest upon the sunken floor 100 upon which the standards 20 and the tumbling mill 1 are supported. A raised floor or runway 101 is preferably provided at approximately the level of the top edge of the front wall 31 of the bucket to facilitate loading. The rear wall 32 of the bucket is preferably of considerable height so as to retain the castings therein and conduct them into the mill when the bucket is raised to the position shown in Fig. 3. The side walls 33 of the bucket are so shaped as not to interfere with normal operation. The bottom wall 34 of the bucket is sturdily constructed to adequately support heavy material such as metal castings and forgings to be cleaned. If desired, the front lower edge of the bucket may be provided with a beveled wall 35 to facilitate dumping of the articles into the cleaning mill when the same is raised to the dumping position shown in Fig. 3. The bucket is preferably constructed from heavy sheet steel suitably reinforced and strengthened to withstand the abuse which it receives in operation.

The bucket seats against or is supported by a tilting rack 50 which comprises a pair of channel-shaped members 51 each provided with a top flange 52 and a bottom flange 53. The rack members 51 may be connected adjacent the upper end thereof by a structural strut 51a. The rack is constructed to seat between the standards 20 and is pivotally mounted to the standards 20 by means of a horizontal shaft 54 which is mounted to rotate in suitable journals 55 carried by the respective standards 20. A pair of block members 56 through which the shaft 54 extends are suitably bolted or otherwise secured to the flange 53 of the channel-shaped members 51 of the rack. The upper portion of the channel members 51 are curved rearwardly as shown in Figs. 1 and 3, to facilitate tilting of the rack. A pair of chains 57, which limit the tilting movement of the rack 50, is connected to the channel members 51 at the upper end thereof through a suitable link connection 58 pivotally secured to the channel member by a suitable hinge pin 60. The other end of the chains 57 is provided with a suitable link 59 connected to a strut 26 extending and secured to each of the standards 20 and the tumbling mill 1. The link 59 is pivotally connected to the strut 26 as by a hinge pin 61. The pair of chains 57 are of such length as to limit the forward tilting movement of the rack 50 when the bucket 30 is in proper loading position and also to limit the rearward tilting movement of the rack 50 when the bucket 30 is in dumping position, as shown respectively in Figs. 1 and 3.

The upper end of the bucket is equipped with a pair of rollers 36 which seat respectively within each of the channel members 51 and roll between the flanges 52 and 53 thereof and which thus serve as a track for the rollers. Each of the rollers 36 is rotatably mounted on a suitable stub shaft 37 fixed to the bucket adjacent the rear wall 32 thereof by suitable brackets 38. The bucket otherwise seats between and is generally free of the rack 50.

The bucket is raised into dumping position and lowered into loading position by means of a pair of cables 40, one end of which is secured to a bracket 41 fixed to the upper end of the bucket adjacent the rear wall thereof. A suitable link 43 attached to the end of each cable is pivotally connected to the bracket 41 by means of a suitable hinge pin 42. Each of the cables 40 extends around a pair of guide sheaves 44 and 45 adjacent the bottom wall 34 of the bucket. To strengthen the construction, each pair of sheaves 44 and 45 is rotatably supported upon a stub shaft 47 fixed to an angle iron bracket 46 suitably secured as by bolts or welding to the adjacent side wall 33 or bottom wall 34 of the bucket. The guide sheaves 44 and 45 are preferably positioned between the side walls 33 and the angle iron bracket 46, thus protecting them from possible injury or damage during operation.

Each of the cables 40, after passing around its respective guide sheaves 44 and 45, extends upwardly and is secured to a suitable winding drum or reel 70 supported upon the platform 21. The winding drums 70 may be fixed to a common shaft 71 which rotates in suitable bearings 72 positioned at each end thereof. The bearings 72 may be supported by suitable brackets 73 fixed to the platform 21. The shaft 71 may be driven in either a clockwise or counter-clockwise direction by means of a suitable reversible motor 75 supported upon the platform 21. More particularly, the motor 75 may be connected, as by means of a drive belt 76, to reducing gears 77. The reducing gears 77 operate to drive a sprocket wheel 78 which is connected, as by means of a drive chain 79 to a sprocket wheel 80 fixed to the shaft 71.

The loading apparatus may be automatically operated from a push button switch box 85 conveniently mounted upon one of the standards 20. The switch box 85 is electrically connected by a conduit 87 to a power box 86 housing certain safety devices, and switch devices. A power line 88 extends from the power box 86 to the motor 75. A suitable device is provided for throwing a switch in the power box 86 to halt the motor when the bucket 30 has been elevated into its proper dumping position as shown in Fig. 3, or when lowered into its proper loading position as shown in Fig. 1. Such device may be constructed in numerous ways within the purview of those skilled in the art. For purposes of illustration only, I have shown a rider arm 90 which is mounted upon a suitable pivot pin 91. The upper or head end 92 of the rider arm 90 is held, as by a suitable spring 93, in constant riding engagement with the cable 40 being wound upon one of the winding drums or reels 70. A two-way switch comprising the switch arm 89 may be electrically connected to and operated by the rider arm 90. Electric conductors 96 and 97 are connected to the switch terminals 94 and 95 and a conductor 98 is electrically connected directly to the rider arm 90. When the rider arm 90 has been moved into either loading or unloading position, electrical contact is made which operates to energize switch arm attracting elements 89a or 89b respectively, which draws the switch arm 89 into electrical contact with switch terminal 94 or switch terminal 95, in a manner well known in the art. The conductors 96, 97 and 98 lead to the power box 86 and operate to throw a switch therein and halt the motor when the rider arm 90 throws the switch arm 89 so that it electrically contacts either the terminals 94 or 95.

It will be noted that when the bucket 30 is in the dumping position shown in Fig. 3, the cables 40 have become wound upon the winding drums or reels 70 sufficiently to have moved the rider arm 90 to a point where it operates to move the switch arm 89 into electrical contact with the terminal 94 thereby closing the electrical circuit to the conductors 96 and 98 which operate to throw the switch within the power box 86 and halt the motor. When the push-button switch 85 is again operated to throw the motor in reverse, the winding drum or reel will unwind, permitting the bottom end of the bucket to lower until it is seated upon the floor 100. At this point the cable 40 on the winding drum has been moved to the point where the rider arm 90 swings the switch arm 89 so that it electrically contacts the terminal 95, again establishing a circuit to the conductors 97 and 98 which operates to throw the switch in the power box 86 and halt the motor.

Castings, forgings and other articles to be cleaned can be easily rolled or dropped into the loading bucket 30 from the raised floor 101, when the bucket is in the position shown in Fig. 1. The articles c to be cleaned may be brought to and discharged into the bucket mechanically by means of a suitable belt conveyor or dumping cart, or the bucket may be loaded by hand. The bucket should be of sufficient size to hold a full charge of castings, the amount of the charge depending upon the size and capacity of the tumbling mill 1. Generally, several cubic feet of castings can be cleaned in a single charge. After the proper charge has been placed in the bucket, the hand switch 86a is thrown, which starts the motor 75 and causes the cables 40 to be wound up upon the winding drums or reels 70. Since the opposite ends of the cables are secured and extend around guide sheaves 44 and 45 adjacent the bottom end of the bucket, it will be noted that when the winding drums 70 are operated to wind the cables 40 thereon, the bucket will initially be raised substantially vertically by the mechanical principle of block and tackle lift. As soon, however, as the roller 36 associated with the upper end of the bucket reaches a certain point in its upward travel along the channel members 51 of the rack 50, the rack will gradually tilt rearwardly due to the overbalancing action exerted by the rollers 36 against the channel members 51 of the rack. The rack will then tilt rearwardly until limited by the chains 57 which support the upper end thereof. The bottom end of the bucket continues its upward travel as the cables 40 wind upon the drums 70. When the upper end of the bucket reaches the upper end of the channel members 51, the rollers 36 strike against a projection 62 provided at the upper end of each of the channel members 51, which projection halts further rolling movement of the rollers 36. When this point in the upward travel of the bucket is reached, the upper end of the bucket will extend into the loading opening of the tumbling barrel or mill 1, the door 5 of the tumbling mill having first been raised or opened to permit dumping of the castings into the mil. Castings or articles c to be cleaned are then free to slide down along the back wall 33 of the bucket 30 and gently roll onto the tumbling belt 3 or upon the floor of the tumbling barrel. The bottom end of the bucket continues to be raised until such point as all of the articles c have been discharged into the tumbling mill or tumbling barrel, at which point the rider arm 90 will swing the switch arm 89 so as to establish an electrical circuit in the conductors 96 and 98 which throws the switch in the power box 86 and halts the motor 75.

When the charge has been deposited within the tumbling mill, the hand switch 86a is operated to drive the motor in the opposite direction, permitting the winding drums 70 to gradually unwind the cables 40 to permit lowering of the bucket. The rollers 36 will then roll down the channel members 51, the rack 50 will tilt forwardly to a substantially upright position, and finally the bottom wall 34 of the bucket will be brought into seating position upon the floor 100. At this point the rider arm 90 will operate to swing the switch arm 89 into contact with the terminal 95 establishing an electrical circuit with the conductors 97 and 98 which throws the switch in the power box 86, halting the motor. The door 5 of the tumbling mill can then be brought into closed position by unwinding the cables 11 attached to the elbow-members 7 thereof. The

handle 14 of the curtain or apron 12 is then lifted off from its supporting hook 15 and brought down to completely enclose the tumbling chamber within the tumbling mill, preventing the escape of abrasive or other material. When the charge within the tumbling mill has been sufficiently cleaned and treated, the apron 12 is lifted and the door 5 opened. In the tumbling mill illustrated, the roller 2 can be rotated in a clock-dial direction so as to carry out the clean castings and dump them into a suitable receptacle or conveyor supported upon the floor 100.

As shown more particularly in Figs. 1 to 3, the clean castings may be transported from the tumbling mill 1 by means of a cart having a container body 110 which extends substantially up to the discharge point of the belt 3. The container 110 may be suitably supported upon axles 111 having wheels 112 rotatably mounted thereon, which roll over suitable tracks 113 supported upon the floor 100. The container may be provided with a flange 114 at the upper end thereof adjacent the tumbling mill, which may be hinged to the adjacent wall of the container by means of suitable hinges 115. The free edge of the flange 114 may rest against the belt 3 and assist in removing the castings therefrom which insures that all the castings will be placed within the container 110. The tracks 113 may lead to any desired point in the plant where the next succeeding operation may be performed upon the castings c. It is understood that any suitable belt conveyor may, if desired, be provided to convey away the castings from the tumbling mill.

My improved device provides a convenient means for quickly loading a tumbling mill or tumbling barrel with castings, forgings or other articles to be cleaned. The loader may be operated automatically, and thrown into and out of operation by the simple expedient of turning a switch or operating a push-button. The loader is so designed as to occupy a minimum of floor space so that it can be conveniently used in plants where floor space is at a premium. The loader is sturdily constructed and simple in design, so that it can be inexpensively produced. A small amount of power only is required to operate same due to the action of the tilting rack 50. Ample space is provided for a suitable unloading conveyor between the loader and the tumbling mill. The loading apparatus is sturdy in construction and substantially foolproof in operation. The loader may be built in any capacity desired and may be associated with any type of tumbling mill or tumbling barrel, and is especially advantageous where large quantities of castings, forgings and the like are to be cleaned and treated daily.

While certain novel features of the invention have been disclosed and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. A machine for loading castings, forgings and the like into a cleaning mill which includes, an upright supporting frame, a dump bucket, a rack supporting said bucket, means pivotally mounting said rack at a point intermediate the ends thereof to said frame, and means for manipulating said bucket into dumping and loading positions, said means including a winch supported on said frame, guide sheaves attached to said bucket adjacent the lower end thereof, a flexible member operatively connected to said winch and trained around said guide sheaves, a motor for driving said winch, and means for halting the winding movement of said winch when said bucket has been raised into dumping position.

2. Loading apparatus including, a supporting frame including spaced uprights, a rack including spaced channel-shaped rack members having the flanges thereof extending inwardly, said rack members being pivotally mounted intermediate the ends thereof to said uprights, guide means connected to said bucket adjacent the upper end thereof, said guide means being movable along but retained between the channel flanges of said rack members, said bucket being free to pivot about said guide means, mechanism for applying a lifting force to said bucket adjacent the lower end thereof to lift the bucket upwardly along said rack members to a point where the weight of said bucket overbalances and tilts said rack members and thereafter to further lift the lower end of said bucket upwardly away from said rack members to eject the contents, and means for limiting the tilting position of said rack.

3. Loading apparatus including, supporting uprights, a rack pivotally mounted on said supporting uprights intermediate the ends of said rack to permit tilting movement thereof, a dump bucket, said bucket having a bottom wall, side walls and a relatively high rear wall, cooperating guide means associated with said bucket and said rack member, and means for applying a lifting force to the lower end of said bucket to move said bucket along said rack member until the rack has assumed a tilted position and thereafter to lift the lower end of said bucket away from said rack to a point where the articles contained in said bucket will slide out of the bucket along the rear wall thereof.

4. Apparatus for loading castings, forgings and the like into a cleaning mill having a loading opening spaced from the floor upon which said mill is supported, a loading apparatus including supporting uprights spaced from said loading opening, a dump bucket, a rack supporting said bucket, means pivotally connecting said rack to said uprights at a point intermediate the ends of said rack so that the upper end of said rack when tilted will be in a position adjacent said loading opening, and hoisting means for applying a lifting force to the lower end of said bucket to move said bucket along said rack until said rack is tilted to a point where the upper end of the rack is positioned adjacent said loading opening and thereafter to lift the lower end of said bucket away from said rack to empty the bucket into said opening.

5. Loading apparatus including, spaced uprights, a loading bucket, a pair of rack members pivotally mounted on said uprights at a point intermediate the ends of said rack members, means for limiting the pivotal movement of said rack members, winding mechanism mounted on and supported by said uprights, and a pair of flexible cables associated with said winding mechanism for lifting said bucket along said rack members, tilting said rack members, and further lifting one end of said bucket away from said rack members to bring the bucket into position to discharge the contents.

6. Apparatus for loading castings, forgings and the like into a cleaning mill having a loading opening positioned above the floor upon which the mill is supported, said apparatus including uprights spaced from said loading opening, a loading bucket, a rack supporting said loading

bucket, said rack being pivoted to said uprights intermediate the ends thereof so that the upper end of said rack when tilted will be positioned adjacent said loading opening, and hoisting means operative to move said bucket along said rack and tilt said rack thereby to place the discharge end of said bucket supported on said rack in discharge position relative to said loading opening, and thereafter to lift the lower end of said bucket away from said rack to a point where the articles contained in said bucket will slide out of said bucket.

7. Loading apparatus including, spaced uprights, a loading bucket, and mechanism for manipulating said bucket into dumping and into loading position, said mechanism including, a rack member pivotally mounted intermediate the ends thereof to said spaced uprights to permit tilting movement of said rack, guide means associated with upper end of said bucket to guide the upper end of the bucket along said rack, a guide sheave associated with the lower end of said bucket, a flexible member trained around said sheave and secured relative to said bucket, and lifting mechanism associated with said flexible member operative to lift said bucket along said rack, thereafter to tilt said rack and lift the lower end of said bucket off said rack to empty the contents from the bucket.

8. A machine for loading castings, forgings and the like into a cleaning mill having a loading opening spaced from the mill-supporting floor including, a dump bucket having a relatively low front wall and a relatively high rear wall, and mechanical means for lifting said bucket bodily to place the top edge of said rear wall adjacent the loading opening of said mill and thereafter to raise the bottom end of said bucket into an elevated position whereby the articles contained in said bucket will slide into the mill along the rear wall thereof, said mechanical means including a rack member, a support pivotally mounting said rack intermediate the ends thereof to permit tilting of the rack to a point where the upper end of the rack is positioned adjacent said opening, and means associated with said bucket for applying a lifting force thereto and cause said rack to assume a tilted position whereby the upper end of said rear wall is positioned adjacent the loading opening of said mill.

9. Loading apparatus including, spaced uprights, a loading bucket having a bottom wall, side walls and a rear wall, spaced rack members pivotally mounted on said uprights intermediate the ends of said rack members, a horizontally extending shaft carried by said bucket adjacent the upper end thereof, a guide roller mounted on each end of said shaft adapted to roll along the adjacent rack member, means for applying a lifting force to the bottom end of said bucket whereby to lift said bucket a predetermined distance while said rack member remains relatively stationary and thereafter upon further upward advance to pivot said rack members and lift the lower end of said bucket away from said rack members to position said bucket so that the article contained therein will slide out of the bucket along the rear wall thereof.

10. Loading apparatus including, a supporting frame, a loading bucket having a bottom wall, side walls, a rear wall and an open top, a rack member pivotally mounted on said frame, means associated with the upper end of said bucket and said rack causing the upper end of said bucket to move along said rack, and means for lifting and tilting said bucket so as to bring the open discharge end thereof into a predetermined dumping position and to elevate the bottom end of said bucket to cause the contents therein to slide out of said bucket along the rear wall thereof, said means including a pair of flexible members, guide means attached to said bucket around which said flexible members are trained, and a winding device operatively connected to said flexible members for applying a lifting force to said bucket.

11. Loading apparatus including, spaced uprights, a loading bucket having a bottom wall and enclosing side walls, a rack member pivotally mounted on said uprights, means for retaining the upper end of said bucket in movable association with said rack, a cable secured relative to the upper end of said bucket, a sheave attached to the lower end of said bucket over which said cable is trained, and a winding device operative to wind and unwind said cable thereby to pivot said rack member and bring said bucket into loading and into unloading position.

12. A machine for loading castings, forgings and the like into a cleaning mill having a loading opening including, a dump bucket having a bottom wall, side walls and a relatively high rear wall, a pair of spaced supporting members, a bucket-supporting rack pivotally mounted between said supporting members, guide rollers adjacent the upper end of said bucket and movable therewith, said guide rollers being movable along the adjacent rack members, a supporting platform adjacent the upper end of said supporting members, a driving motor supported on said platform, a pair of winding winches supported on said platform, means operatively connecting said driving motor to said winding winches, a flexible winding cable associated with each of said winding winches, and guide sheaves operatively connecting said cables in spaced relationship to said bucket, said winding winches being operative upon energization of the motor to raise and lower said bucket to and from said loading opening by means of said cables.

13. A machine for loading castings, forgings and the like into a cleaning mill having a loading opening spaced from the mill-supporting floor including, spaced uprights, a pair of spaced rack members positioned between said uprights, a shaft pivotally mounting said rack members to said uprights at a point intermediate the ends of said rack members, a loading bucket movable along said rack member, said bucket having a shaft fixed thereto adjacent the upper end thereof, a roller on each end of said shaft movable along the adjacent rack member, a sheave fixed to each side of said bucket adjacent the lower end thereof, a flexible cable trained around each of said sheaves, means for securing one end of each of said cables, and a winding winch associated with each of said cables to lift said bucket bodily along said rack members and thereafter to tilt said rack members and raise the bottom end of said bucket into an elevated position whereby the articles contained in said bucket will slide into the loading opening in said mill.

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