Jan. 1, 1935. R. RUEMELIN 1,986,413

TROLLEY

Filed June 3, 1932 2 Sheets-Sheet 1

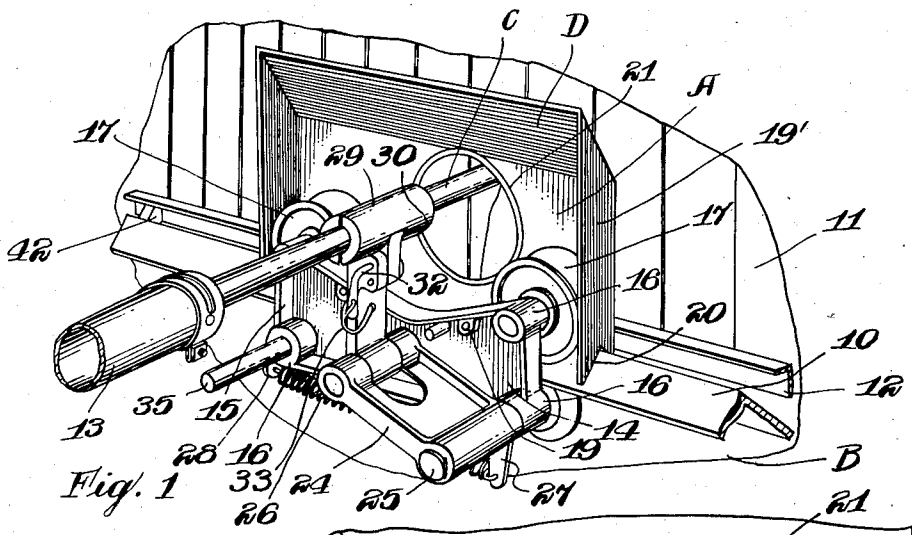


Fig. 1

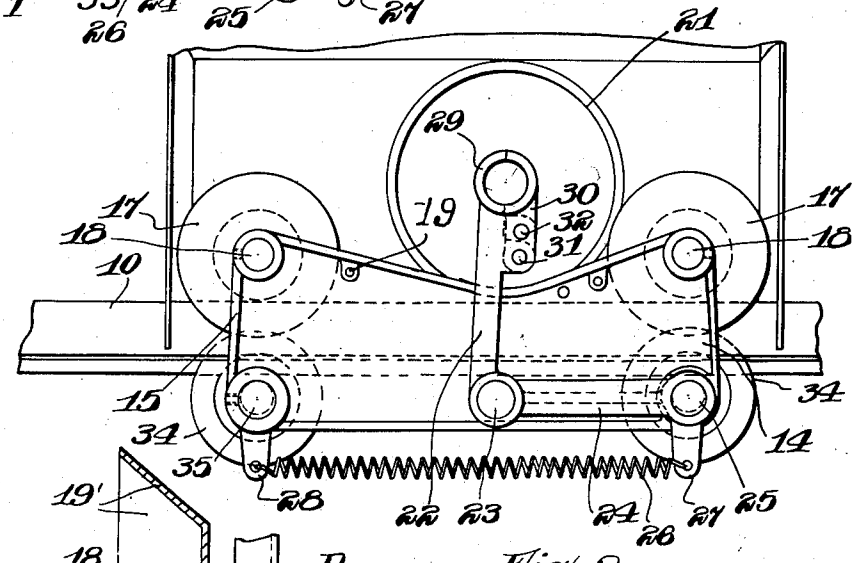


Fig. 2

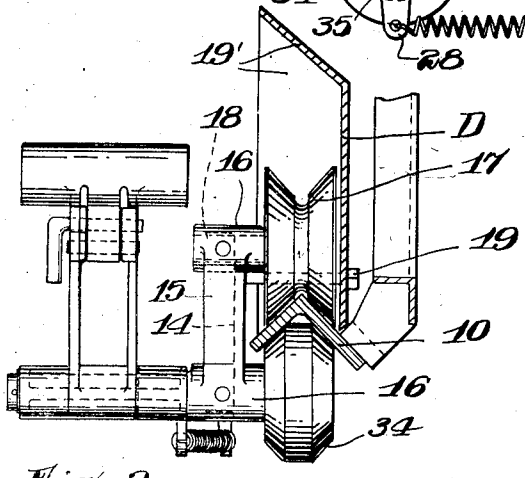


Fig. 3

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TROLLEY

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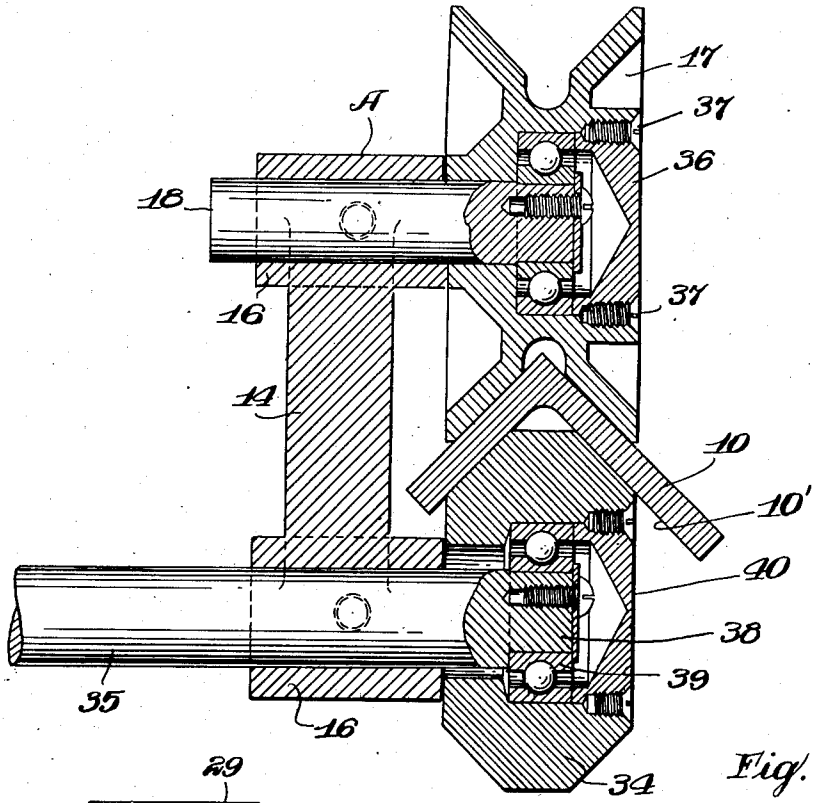


Fig. 4

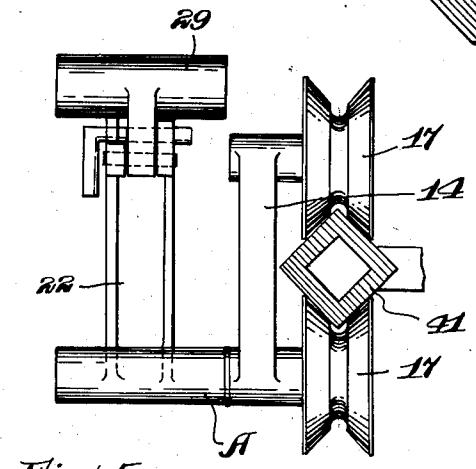


Fig. 5

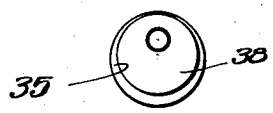


Fig. 6

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UNITED STATES PATENT OFFICE

1,986,413

TROLLEY

Richard Ruemelin, Milwaukee, Wis.

Application June 3, 1932, Serial No. 615,148

10 Claims. (Cl. 105—153)

My invention relates to a nozzle trolley for sand blast nozzles and is designed to provide a means of supporting the nozzle so that the operator can move it in the direction desired without having to carry the weight in his hand.

A feature of my nozzle trolley resides in a means of holding the sand blast nozzle freely movable with a circular motion and supported on the trolley so as to be easily moved transversely while the weight of the nozzle is carried by the trolley and the nozzle is held virtually at right angles or square with the trolley and with the work being sand blasted in the cabinet to which the trolley is attached.

In sand blasting it is desirable to provide a cabinet in which the work which is to be sand blasted is positioned. A curtain usually closes the front of the sand blast cabinet so that the sand and dust will not come back against the operator. I have illustrated only a portion of the cabinet, mainly a portion of the frame which supports the trolley and a portion through the self-closing shutters which close around the nozzle as it is moved back and forth, keeping the cabinet closed excepting for the point through which the nozzle projects in the self-closing shutter.

The trolley is carried on an angle iron frame member with sets of wheels positioned so as to balance the trolley freely movable on the angle iron frame and the trolley is formed with a shield on the side of the upper caster wheels which are adjacent to the self-closing shutter curtain. This shield is provided with an opening through which the nozzle projects and which permits the nozzle to be rotated by rotating motion by the operator. The nozzle supporting bracket of the trolley is spring counterbalanced making it easy for the operator to handle the nozzle.

It is a feature to provide a trolley having ball bearing wheels on either side of the angle iron track of the frame which carries the trolley. This steadies the trolley and holds it so that it runs very freely on the track. It is important that the trolley be held steady because this trolley is the means of support of the nozzle. It is also essential that the whole trolley with the nozzle move freely guided by the hand of the operator. The trolley is of a simple structure effective as pointed out in operation.

In the drawings forming part of this specification:

Figure 1 illustrates the trolley in perspective, supporting a sand blast nozzle as associated with a curtain and automatic closing shutter employed on the front of the sand blast cabinet (the cabinet not being illustrated).

Figure 2 illustrates a front view of the trolley looking toward the inside of the shield which guards the casters and which has the nozzle opening therein.

Figure 3 is a side view of the trolley nozzle, showing a section through the shield and track which carries the trolley.

Figure 4 is a section through the track and the upper and lower wheels of the trolley.

Figure 5 illustrates an end view of the trolley with the shield removed and showing a different form of track for supporting the trolley.

Figure 6 is an end view of the shafts which support the lower wheels, showing the cam end thereon.

My trolley A is adapted to be supported upon the angle iron track 10 which extends across the curtain B, only a portion of the curtain being illustrated. The curtain is provided with overlapping flexible self-closing shutter members 11 which extend to the lower frame member 12, being hung with the bottom ends free, while the upper ends, not illustrated, are secured to a portion of the curtain B.

The track 10 and the frame 12 extend transversely across the curtain B so that the trolley A may be moved back and forth very freely on the track 10.

The trolley A is for the purpose of supporting a sand blast nozzle C which is connected to a sand hose 13. The hose 13 leads from a source of supply of sand and air and is adapted to force the sand and air through the nozzle C so as to provide a sand blasting device which makes it more easy for the operator to keep the nozzle C squarely pointed toward the work being sand blasted in the cabinet to which the curtain B is attached on one side of the sand blast cabinet.

The trolley A is formed with a frame portion 14 which has a web-like nature and which is reinforced around the outer edge thereof by the flange 15 so as to strengthen the frame 14 and to provide boss portions 16 in the corners of the same through which the various shafts pass to support the wheels which carry the trolley A.

The upper wheels 17 are carried by the short shafts 18 which support the wheels 17 in position to bear against the top of the angle track member 10. The inner surfaces of the wheels 17 are V-shaped to fit the track 10 in a manner to give a good substantial bearing between the wheel and the track in the operation of the trolley.

The wheels 18 form the upper supporting members for the frame 14 of the trolley A. I provide a shield D which is supported on the frame 14 between the wheels 17 by the rods 19 and which is formed with a backwardly extending flange 19' which extends along the top and down the sides thereof. The side portions of the flange 19' are cut at 20 to the shape of the upper surface of the track 10 and fit fairly close thereto, thus guarding the wheels 17 at the ends of the trolley. The shield D protects the wheels and track 10 against the rebound of any sand which might work back around the nozzle C as it projects through the shutters 11. A nozzle opening 21 is formed in the shield D which permits the nozzle to project therethrough and also permits the operator holding the nozzle C to rotate it or move it with a rotary motion in sand blasting. It is desirable that the nozzle C be held so that it may be easily moved back and forth and at the same time with a rotary motion, and my trolley A accomplishes this means in a better way than has been done heretofore.

The nozzle C is adapted to be supported by the bracket arm 22 which is pivotally attached at 23 to the arm 24, while the arm 24 is pivoted on the shaft 25. I provide a counter-balancing spring 26 which is connected to the short lug 27 extending from the bearing of the bracket arm 24 which extends around the shaft 25. This spring 26 is secured on its other end to the lug 28 projecting from the shaft boss 16 on the opposite sides of the frame 14 to the boss 16 which carries the shaft 25. The bracket arm 22 is formed with a clamping jaw 29, one side of which is formed integral with the arm 22, while the other side 30 is pivoted at 31 and is adapted to be held in clamped position to engage around the nozzle C by the pin 32 which is carried by the flexible cord 33. When it is desired to remove the nozzle C from the jaw 29, the pin 32 is withdrawn and the portion 30 of the jaw 29 may be moved so as to release the nozzle C.

The trolley A is held steady on the track 10 by the lower wheels 34. These wheels 34 are positioned virtually directly below the wheels 17 and act to engage the under surface of the track 10, being formed with engaging surfaces which fit the shape of the under surface of the track 10. The shaft 25 supports one of the wheels 34 while the shaft 35 supports the other wheel 34, however, each of these shafts 25 and 35 are virtually the same and extend out beyond the boss 16, as illustrated in Figure 1, to protect the nozzle supporting bracket 24 to be attached thereto. This provides means so that the bracket 24 can be attached on either end of the trolley frame 14. As illustrated herein, the bracket 24 is attached to the shaft 25.

Each of the wheels 17 and 34 are supported by ball bearings as illustrated in Figure 4, on the respective shafts 18, 25 and 35. The ball bearings in the wheels 17 are concealed entirely within the wheel by the cap 36 held by the screws 37. This permits the ball bearings to be packed in grease and concealed against any dust or dirt.

The shafts 25 and 35 are formed with a cam end 38 which carries the ball bearings 39 for supporting the casters 34. The object of this cam end 38 is to offset the bearing 39 of the wheels 34 so that when either of the shafts 25 or 35 are rotated in the boss 16, the wheels 34 may be brought into engagement with the under surface 10' of the track 10. A cap 40 covers the end of the shafts 25 and 35 and conceals the ball bearings 39 therein in the same manner as the cap 36. With the adjustment of the wheels 34 the trolley frame 14 may be adjusted so that the wheels 17 will bear against the top surface of the track 10 and the lower wheels 34 will bear against the under surface 10' of the track 10 with just sufficient freeness between the engagement of the wheels 17 and the wheels 34 to permit the trolley A to run freely on the track 10. This provides a means of adjusting the trolley A so that it may run true on the track 10 and with a minimum amount of play between the track and the trolley. By this means the trolley is held steady and yet runs freely movable upon the track 10.

In Figure 5 I have shown the trolley A supported by a track 41 which is of a square formation in cross-section rather than of an angle iron formation like the track 10 and in this case the trolley A is supported by the same kind of wheels on the bottom as are used on the top, namely, the wheels 17. The lower wheels, however, are adjustable as I have just set forth by the cam ends 38 on the shafts 35 or 25, so as to hold the trolley A steady on the track 41.

The trolley A operates to support the nozzle C so that the operator may engage the same and with only a small effort move the nozzle in the direction desired. With this trolley better work may be done in sand blasting because it not only supports the weight of the sand blast nozzle C, but holds it square with the work counter-balanced for free movement in small rotations and free to move transversely as the operator desires. The curtain B, while only illustrated fragmentally, is movable up and down and the trolley A moves with the curtain for the reason that the track 10 is supported to the frame 12, as illustrated at 42, on the ends of the track 10, as illustrated in Figure 1, and thus the trolley moves up and down when the curtain is adjusted in this manner. It will therefore be apparent that free movement of the trolley A is accorded in any direction, so as to speak. The trolley has a peculiar formation which is of importance in carrying out the operation thereof and is shielded by the shield or guard D which fits closely to the track 10 and permits the wheels 17 to run freely over the track. The adjustment of the support of the trolley A is of a simple nature and the trolley may be readily run off of the track at the end thereof when it is not desired, it being easy to slip the trolley back onto the end of the track 10 when it is wanted.

In accordance with the patent statutes I have endeavored to describe the best embodiment of my invention and, its adaptation, use and structure should be considered within the scope of the following claims.

I claim:

1. A trolley for sand blast nozzles having a frame, ball bearing wheels mounted on said frame, a track on which said wheels are adapted to travel, auxiliary wheels mounted on said frame oppositely disposed to said first wheels to support said trolley on said track against rotation about the longitudinal axis of the track, a counter-balanced nozzle arm pivotally connected to said frame having means for gripping a nozzle, and a shield on said frame having an opening through which the nozzle is adapted to project extending in front of said first wheels and closely to said track to protect the wheels and the

hands of the operator in the operation of the nozzle supported by said trolley.

2. A trolley for a sand blast nozzle in combination with a track comprising, wheels for holding said trolley movable on said track, a sand blast nozzle supporting means secured to the trolley, and a shielding member on the trolley through which said nozzle projects into a sand blast cabinet said shield protecting the operator's hands and the exposed portion of said trolley adjacent the sand blast cabinet.

3. A sand blast nozzle trolley including, wheels, a track upon which said wheels are adapted to run, means for holding said wheels engageable on either side of said track, and a sand blast nozzle support carried by said trolley to support the sand blast nozzle freely movable in relation to the trolley, and the trolley being free to be moved on said track by the hand of the operator.

4. A sand blast nozzle trolley in combination with a track for carrying said trolley comprising, a frame, wheels mounted on said frame, means for mounting some of said wheels to support said trolley against rotation about the longitudinal axis of said track, and a sand blast nozzle support carried by said frame and pivotally movable with relation thereto.

5. A nozzle trolley in combination with a track of other than round cross-section for supporting the trolley including, a frame, pairs of wheels adjustably positioned in relation to each other to engage around said track, the shape of said track acting to steady the frame of the trolley in relation to the track, a nozzle gripping means including pivotally supported bracket members mounted on said frame and adapted to hold the nozzle at substantially right angles with relation to said frame.

6. A nozzle trolley in combination with an angle iron track including, pairs of wheels engageable on either side of said track, means for adjustably supporting some of said wheels, the formation of said track acting to steady said trolley in relation to said track, and means for supporting a nozzle by said trolley freely pivotally movable with respect thereto to permit the nozzle to be moved along said track.

7. A trolley for a nozzle and the like including, a frame, wheels carried by said frame, some of said wheels being adjustable in relation to others, a track for said wheels, said wheels being arranged in a manner to engage on different sides of said track to steady the trolley by adjusting the adjustable wheels, and means for flexibly supporting a nozzle on said frame, freely movable with respect to said trolley in a plane at right angles to said trolley.

8. A nozzle trolley including, a frame, a track along which said trolley is adapted to travel, wheels adjustably engageable with said track to hold said trolley steady on said track, a nozzle supporting bracket arm pivotally supported on said frame, a spring connecting said bracket arm and said frame for counter-balancing said arm, a second arm pivotally supported on said first arm and having a nozzle gripping jaw whereby a nozzle may be removably supported thereby.

9. A trolley including, a frame, a track for carrying said trolley having an angular engaging surface, pairs of wheels for engaging the sides of said track adjustably positioned in relation to said track to hold said frame steady in relation thereto, a flexible nozzle support, and means for securing said nozzle support to either end of said frame.

10. A trolley including, a frame, a track for supporting said trolley having angularly disposed faces, ball bearing wheels adjustable in relation to said track and adapted to support said frame spaced from said track, a flexible supporting arm including pivotally connected bracket members, one of said bracket members having a gripping jaw adapted to receive a member to be supported by said trolley whereby the member supported by said trolley may be carried with the trolley as a vehicle therefor to permit it to be moved longitudinally with the trolley and rotatably with respect to said trolley.

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