G. H. BENEDICT.

ELECTROTYPE PLATE OR CAST CLEANER OR THE LIKE.

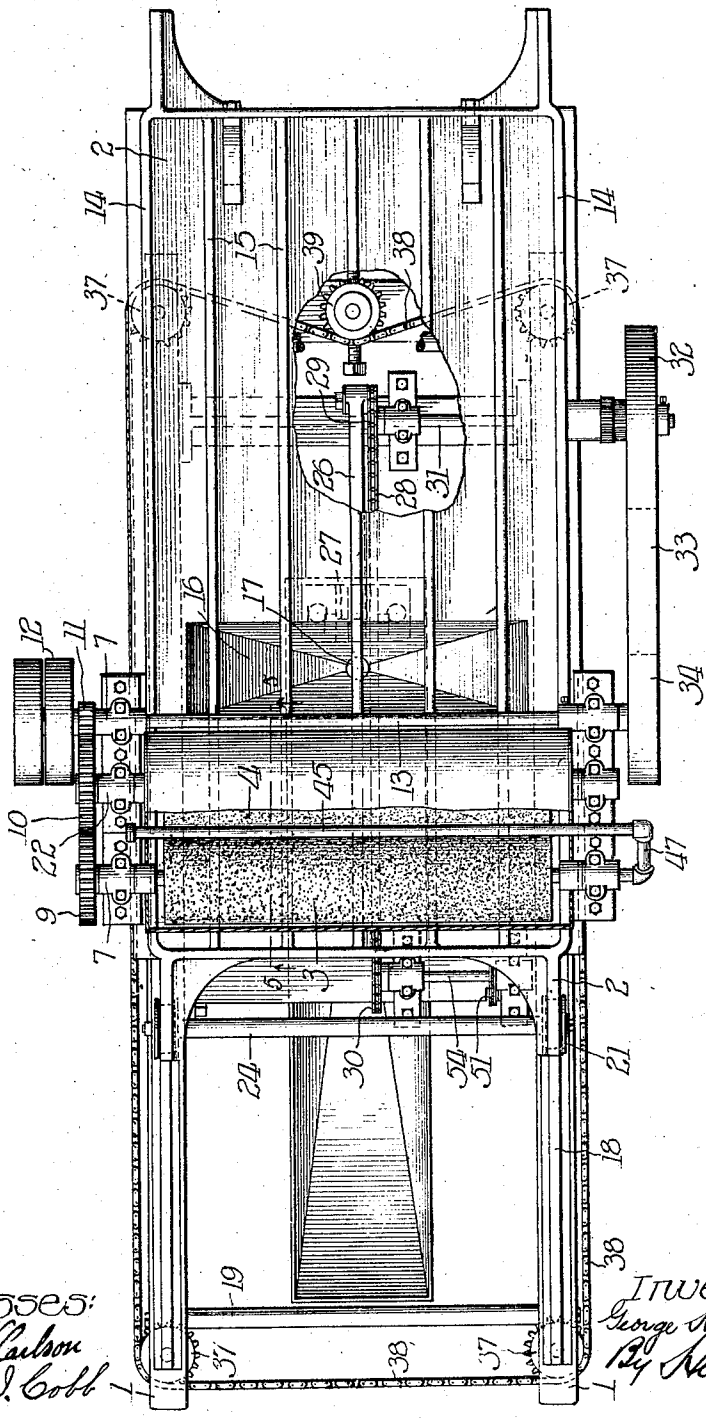
APPLICATION FILED MAY 16, 1910.

1,072,902.

Patented Sept. 9, 1913.

4 SHEETS—SHEET 1.

Fig. 1.



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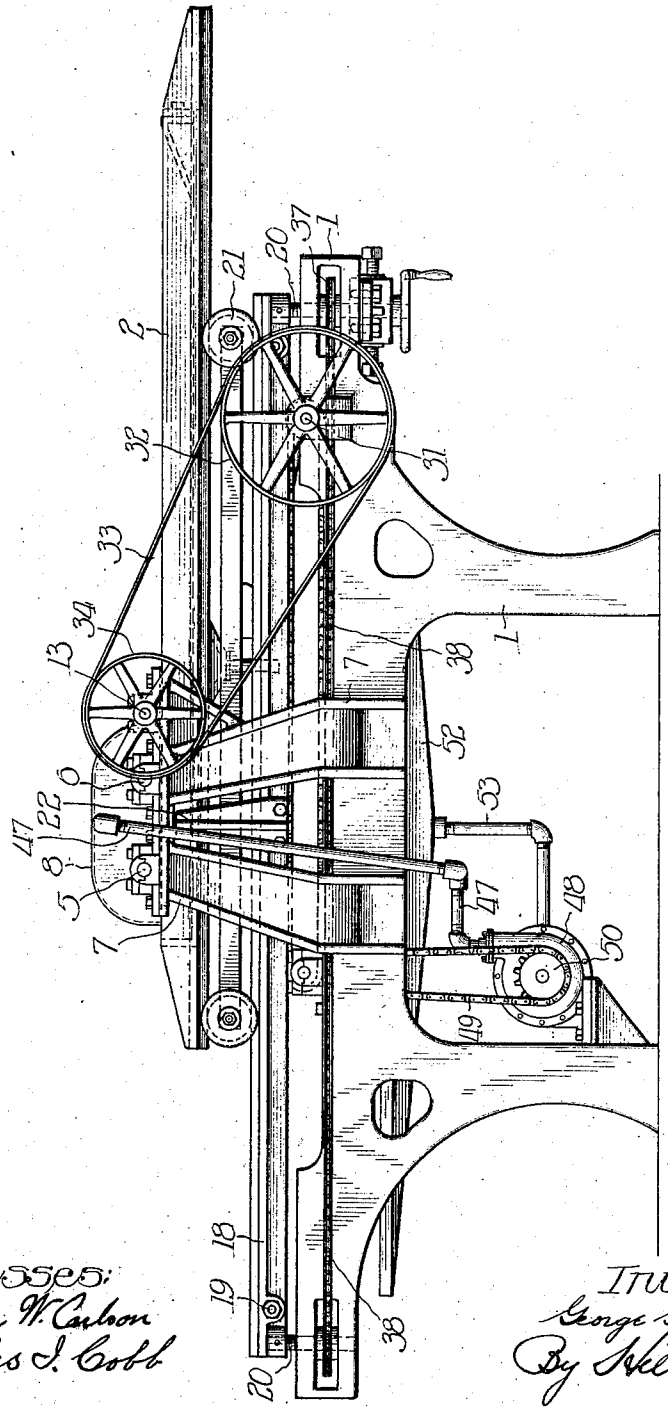
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4 SHEETS—SHEET 2.

Fig. 2



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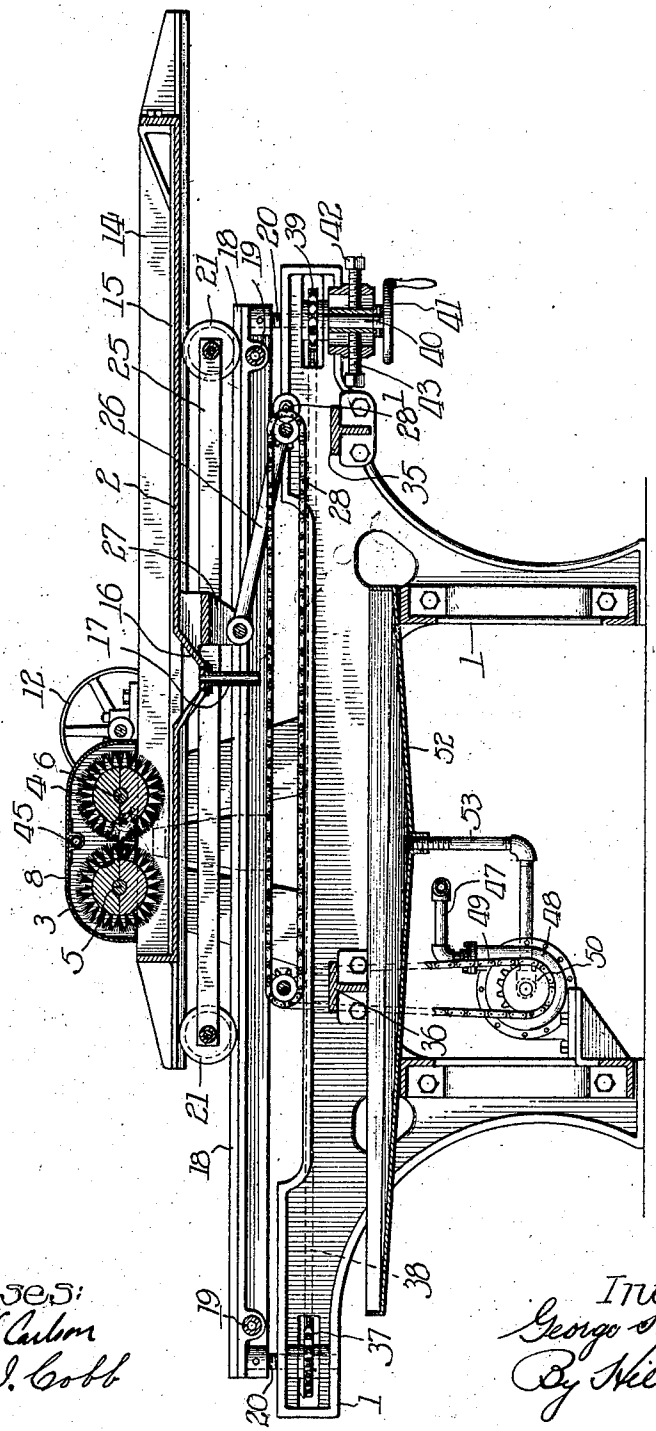
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4 SHEETS—SHEET 3.

Fig. 3.



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ELECTROTYPE PLATE OR CAST CLEANER OR THE LIKE.

APPLICATION FILED MAY 16, 1910.

1,072,902. **Patented Sept. 9, 1913.**

4 SHEETS—SHEET 4.

Fig. 4.

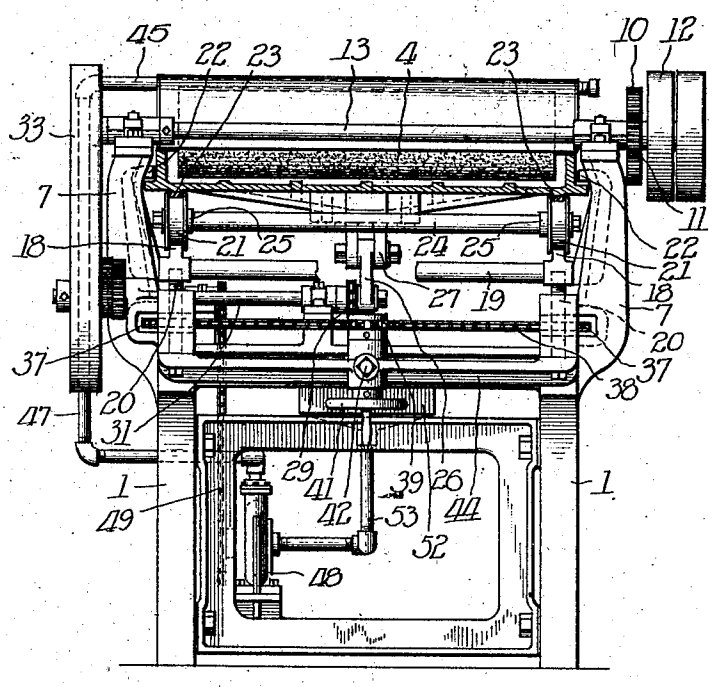
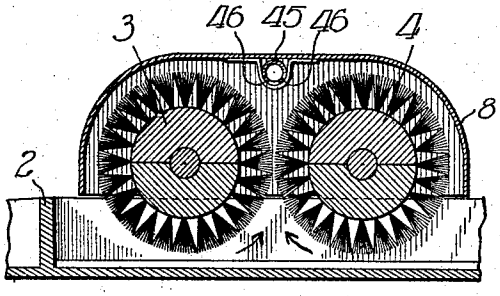


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ELECTROTYPE PLATE OR CAST CLEANER OR THE LIKE.

1,072,902. Specification of Letters Patent. Patented Sept. 9, 1913.

Application filed May 16, 1910. Serial No. 561,600.

To all whom it may concern:

Be it known that I, GEORGE H. BENEDICT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electrotype Plate or Cast Cleaners or the Like, of which the following is a description.

My invention belongs to that class of devices for cleaning electrotype plates or casts or the like, and relates particularly to a machine for cleaning or scrubbing the plates or casts by suitable brushes and the application of a suitable fluid such as kerosene, benzin or the like, or some preferred solution applicable for the purpose.

The machine does away with a disagreeable hand-scrubbing process or cleaning, which is injurious to the health of the operator as well as less efficient.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described and more particularly pointed out in the claims.

In the drawings wherein like reference characters indicate like or corresponding parts, Figure 1 is a plan view of my machine, Fig. 2 is a side elevation of the same, Fig. 3 is a longitudinal sectional view of the same, Fig. 4 is an end elevation of the machine and sectional view of the plate carriage, and Fig. 5 is a cross sectional view of the brushes taken substantially on line 5—5 of Fig. 1.

Referring to the drawings, 1 is the main frame, 2 the plate carrier or support, and 3 and 4 brushes for scrubbing or cleaning the plates. In the preferred form of device I provide suitable means for rotating the brushes and for reciprocating the carriage thereunder, one part being adjustable relative to the other. As shown, the carriage 2 is adjustable relative to the brushes. The brushes 3 and 4, two or more being preferably provided, are supported and driven by shafts 5 and 6 carried by suitable bearing boxes on the extended parts 7 of the frame 1. To rotate the brushes, gears 9 and 10 or their equivalents are provided, the same being driven by a pinion 11 which may be driven from a pulley 12, the arrangement being preferably so that the brushes rotate in opposite directions with the under sides or working faces approaching each other, as indicated by the arrows in Fig. 5. A suitable covering or guard 8 is also preferably provided over the brushes.

The carriage or plate carrier 2 is provided with edges or side walls 14 and ridges or ribs 15 or the equivalent on the bottom, upon which the plates to be cleaned may be supported. I also preferably provide a sloping pocket 16 in the carriage having a discharge pipe 17 therefrom, it being understood that the bottom of the carriage may slope slightly from the ends toward the pocket 16. For supporting the carriage I provide tracks 18 which are preferably made adjustable relative to the frame 1 so that the carriage may be adjusted relative to the brushes 3 and 4. The carriage is supported upon the tracks 18 by wheels or rolls 21 which may be connected by the side bars 25 and rods 24 to form a frame. The wheels 21 are provided with flanges, as most clearly shown in Fig. 4, arranged to coöperate with the tracks 18 and the extended parts 23, which are substantially tracks on the carriage so that the same is maintained in position on the wheels and the wheels maintained in position on the tracks 18. Members 22 or their equivalent on the frame prevent the carriage leaving the wheels 21. In this construction the travel of the carriage relative to the frame is twice the travel of the wheels, obviating the necessity of a long frame and tracks 18 to get the desired travel of the carriage.

Any suitable mechanism may be provided for reciprocating the carriage, a very simple construction consisting of a rod 26 secured to a bracket 27 on the carriage and to one of the links of a sprocket chain 28 carried by the sprockets 29 and 30, one sprocket wheel, as shown 29, being arranged to drive the chain. The sprocket 29 may be driven by a shaft 31 which is driven by the shaft 13 and pulley 12 through pulleys 32 and belt 33. As is obvious, as the chain is driven in the desired direction the carriage is pushed to one end of its travel and then pulled back to the opposite end, etc.

A simple construction is shown for adjusting the tracks, the arrangement being such that the tracks may be elevated and lowered at a plurality of points by the operation of a hand-wheel positioned at a convenient part of the machine. Bolts or

screws 20 are arranged at suitable points on the frame and support the tracks, the bolts being supported by sprocket wheels 37 arranged thereon so that the rotation of the sprocket wheels will raise or lower the bolts. A sprocket chain 38 connects the sprocket wheels and is operated by a sprocket 39 arranged on a shaft 40 which is provided with a hand-wheel 41. As most clearly shown in Fig. 4, the sprocket wheel 39 and the operating mechanism for the same may be supported by a cross bar or beam 44 or its equivalent, and the support chain 38 may be strained or slacked as required by adjusting the bolts 42 and 43.

To supply the cleansing fluid such as for example, kerosene, benzin or any equivalent that is desired and suitable for the purpose, I provide one or more pipes 45 preferably arranged above and between the brushes 3 and 4, the pipe being provided with apertures or slots 46 therethrough for the discharge of the fluid upon the plates. The fluid used may be supplied from any source and in the device shown it is used repeatedly, being pumped to the pipe 45 and thence taken from the carriage and pumped back again. Simple mechanism for doing this is shown in which 52 is a suitable trough or receptacle arranged so that the pipe 17 will discharge thereinto. The fluid from the receptacle 52 is drawn through a pipe 53 by the pump 48 which may be operated by a sprocket 50 and a sprocket chain 49 driven by a sprocket 51 arranged on the shaft 54, which shaft may be driven by the sprocket 30 and chain 28. The fluid is forced from the pump through the pipe 47 to the pipe 45. It is of course obvious that a supply tank or receptacle may be arranged between the receptacle 52 and the pump 48 (not shown). One of the advantages of this construction shown is that when the carriage is stopped to remove the plates after they have been sufficiently scrubbed, the pump also stops operating and the cleansing fluid is therefore not discharged during that time.

The operation of the device may be briefly described as follows: Assuming that the plates to be cleaned are placed in the carriage 2 and the machine is started, they are carried back and forth under the rotating brushes 3 and 4 and thoroughly scrubbed with a cleansing fluid. The brushes rotating in the directions indicated by the arrows not only scrub the plates both ways, but also prevent excessive splashing inasmuch as the splash is from the plates into the brushes, the splashing of the fluid from the supply pipe being prevented by the guard or cover 8. If the brushes were rotated in the opposite directions there would be a tendency for the fluid to be splashed along the plate and under the hood or cover 8 unless the hood extended down and practically contacted with the plate. Also by using two brushes rotating in opposite directions the cleaning effect is the same as if one brush was used which could be provided with means for changing the rotation of the brush while the plate was being scrubbed. From the plate the fluid flows into the bottom of the carriage, the ridges 15 permitting it to flow under the plates, whence it flows through the discharge pipe 17 into the pan 52 and is pumped from there through the pipes 53 and 47 and back to the supply pipe 45, where it again flows upon the plates. If desired, the fluid may be strained or filtered before pumping it back to the plates. It will thus be seen that the services of an operator are only required in removing or positioning the plates and stopping or starting the machine, one operator being able to take care of a number of machines. Likewise the machine is not only more rapid and does more efficient cleaning than the customary hand-scrubbing or other methods of scrubbing, but the great danger and injury to the health of the operator is practically done away with. This in itself is no small feature, as an operator is only able to continue at the old practice of hand-scrubbing for short periods before being affected by the poisonous fumes.

Having thus described my invention it is obvious that various immaterial modifications may be made in the same or that the machine may be used wherever found applicable, hence I do not wish to be understood as limiting myself to the exact construction, arrangement or combination of parts herein shown and described or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. In a device of the kind described and in combination, a reciprocating carriage, means for adjustably supporting the same, means continuously reciprocating said carriage, a plurality of brushes rotatably mounted above said carriage and arranged to brush a plate carried thereby, means for rotating said brushes in opposite directions to scrub the plate carried by said carriage and means operatively connected with said last mentioned means for conducting a cleansing fluid between said brushes at a point thereabove.

2. In a device of the kind described and in combination, a frame, a movable plate carriage, supporting rolls therefor, a plurality of tracks for said rolls, supporting members for said tracks adjustably carried by said frame, means common to said supporting members for operating the same, means for reciprocating said carriage, scrubbing means carried by said frame and means for conducting a cleansing fluid to said carriage.

3. A device of the kind described, comprising a frame, a pair of tracks, adjustable means carried by said frame for supporting said tracks, a plurality of flanged rolls mounted upon said tracks, a pan shaped carriage mounted upon said rolls, means for maintaining the carriage thereupon, means for reciprocating said carriage, a pair of rotatable brushes arranged above said carriage and supported by said frame, means for rotating said brushes in opposite directions with the lower faces approaching each other, a pipe positioned above said carriage and arranged to discharge a cleansing fluid thereon, and means for conducting the fluid from said carriage and returning the same to said discharge pipe.

4. In a device of the kind described and in combination, a frame, a movable plate carriage, supporting rolls therefor, a plurality of tracks for said rolls, supporting members for said tracks adjacent opposite ends thereof adjustably carried by said frame, means common to said supporting members for adjusting the same, and scrubbing means arranged above said carriage.

5. In a device of the kind described and in combination, a pan shaped carriage having an outlet, automatic means for continuously reciprocating the carriage, a receptacle in the path of the outlet, a movable brush arranged above the carriage, and means for introducing cleansing fluid from said receptacle to a point above the carriage adjacent said brush.

6. In a device of the kind described and in combination, a pan shaped carriage having an outlet intermediate its ends, a receptacle beneath the carriage in the path of the outlet, a movable brush arranged above the carriage and means for continuously reciprocating the carriage and means operatively connected with the last mentioned means for forcing fluid from the receptacle to a point adjacent the brush and discharging the same at this point.

7. In a device of the kind described and in combination, a pan shaped reciprocating carriage having on the upper surface of its bottom a plurality of ribs whereby to support an electrotype plate or the like, brushing instrumentalities arranged above the carriage, and power driven means for moving the carriage back and forth beneath said brushing instrumentalities, and means operatively connected with the last mentioned means for forcing fluid to said brushing instrumentalities.

8. In a device of the kind described and in combination, a runway, a receptacle having a side border extending therearound and an opening in the bottom intermediate the ends thereof positioned on the runway, a truck for supporting the receptacle having anti-friction bearings for engaging the runway, means reciprocating the truck with the receptacle back and forth along the track, a plurality of oppositely acting rotatable brushes positioned above the receptacle and projecting thereacross, and means operatively connected with the truck driving means for forcing fluid delivered from the outlet opening back to said brushes.

9. In a device of the kind described and in combination, a runway, a pan shaped receptacle positioned on the runway, a truck for supporting the receptacle having anti-friction bearings for engaging the runway, means reciprocating the truck with the receptacle back and forth along the track, a plurality of oppositely acting rotatable brushes positioned above the receptacle and projecting thereacross, and means at opposite ends of the track for vertically adjusting the same, and a common means for operating said last mentioned means.

10. In an electrotype plate cleaner, the combination of brushing instrumentalities, a supporting carriage arranged beneath the brushing instrumentalities, means for moving the plate back and forth beneath the brushing instrumentalities comprising a pitman connected to the carriage, and a rotatable drive member for said pitman, a conduit adapted to discharge a cleansing fluid adjacent the brushing instrumentalities, and a pump interposed in the conduit and operatively connected with said drive member.

11. In an electrotype plate cleaner, the combination of brushing instrumentalities, a supporting carriage arranged beneath the brushing instrumentalities, means for moving the plate back and forth beneath the brushing instrumentalities comprising a pitman connected to the carriage, an endless chain connected to the pitman, and means operatively connected to the chain to introduce water from a suitable receptacle to a point adjacent said brushes.

12. In an electrotype plate cleaner, the combination of a supporting carriage for the plates, oppositely acting rotatable brushes supported by the carriage, a receptacle below the carriage to receive water discharged therefrom, driving means for moving the carriage back and forth below the brushes, and mechanism operatively connected to said driving means for rotating the brushes and for feeding water from the receptacle to said brushes.

13. A device of the kind described comprising a frame, a pair of tracks, adjustable means carried by said frame for supporting said tracks, a plurality of rolls mounted upon said tracks, a carriage mounted upon said rolls, means for reciprocating said carriage, a pair of rotatable brushes arranged above said carriage and supported by said frame, means for rotating said

brushes in opposite directions with the lower faces approaching each other, a pipe positioned above said carriage and arranged to discharge a cleansing fluid thereon, and means for conducting the fluid from said carriage and returning the same to said discharge pipe.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE H. BENEDICT.

Witnesses:

ROY W. HILL,

CHARLES I. COBB.