No. 889,507. PATENTED JUNE 2, 1908.

G. A. CHAMBERS.

CLEANING DEVICE FOR PRINTING CHAINS.

APPLICATION FILED APR. 9, 1907.

Fig. 1.

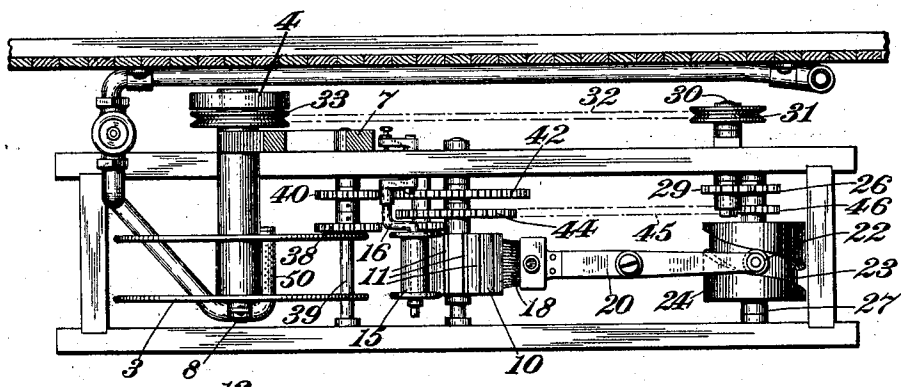


Fig. 3.

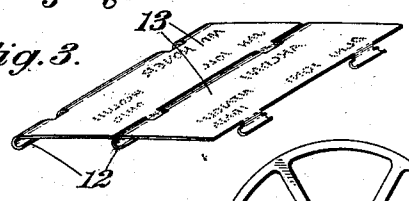
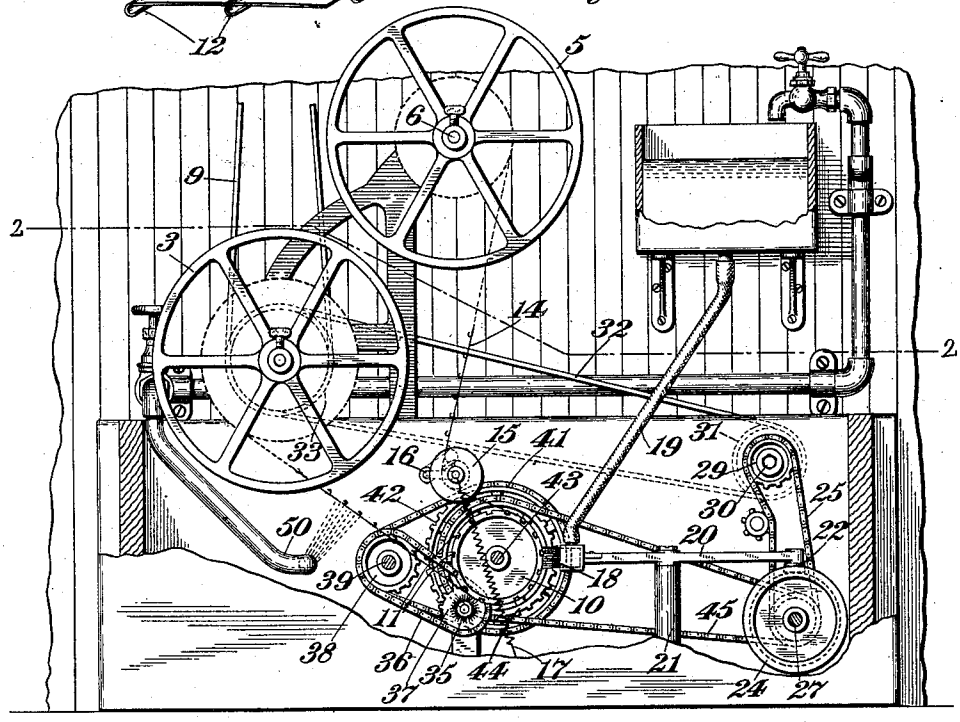


Fig. 2.



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CLEANING DEVICE FOR PRINTING-CHAINS.

No. 889,507. Specification of Letters Patent. Patented June 2, 1908.

Application filed April 9, 1907. Serial No. 367,285.

To all whom it may concern:

Be it known that I, GEORGE A. CHAMBERS, a citizen of the United States, residing in West Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Cleaning Devices for Printing-Chains, of which the following is a specification.

This invention relates to an apparatus that operates to remove the accumulated ink from printing surfaces in the form of a web, or a chain of printing plates.

The object of the invention is to provide an apparatus that will operate on a web or chain during its advancement and by combined action of water and brushes will effectually remove the ink from the irregular surface of the printing plates.

In the accompanying drawing representing an embodiment of my invention, Figure 1 is a plan view of the device on line 2—2 indicated in Fig. 2. Fig. 2 is a side elevation; and Fig. 3 shows one form of printing chain that is formed by a series of hinged plates.

The printing chain may be wound on a suitable reel 5 that is slipped on a shaft 6 and suitably secured theron, the shaft being rotatably mounted on a frame 7. A similar reel is secured on a shaft 8 rotatably carried by the frame 7. The shaft 8 may be driven from a belt 9 by any suitable means, such as an electric motor. The web from the roll 5 has its end passed through the cleaning device and then secured to the roll 8, and wound up thereon, by driving the pulley 4.

The cleaning of the web or chain is effected while it is passing around a drum 10, that is preferably provided with longitudinal groove 11 into which enter hinge portions 12 of the hinge printing plates 13, that compose the chain, denoted generally by 14. The printing chain from the supply roll 5 is first passed around a guide roll 15 mounted above the roll 10, that is supported on a swinging arm 16, that is connected with a spring 17 to prevent undue strain on the chain. The chain 14 is passed around the guide roll 15 and thence around the drum 10, and then has its end secured to the roll 3 on which it is wound.

Adjacent one portion of the roll or drum 10 around which the chain passes, is a brush 18 that presses against the outer face of the chain plates that contain the raised letters in the form of an address or other inscription. A stream of water passes through a pipe 19 to the brush to assist in the scrubbing operation. If desired, a fountain brush may be used of any suitable type and the water passed between the bristles of the brush onto the printing chain. In order to thoroughly clean the raised letters and especially the transverse portions thereof, the brush is given a reciprocating motion parallel with the axis of the drum, during the movement of the chain. The brush 18 is shown as secured on the end of a lever 20 that is pivoted on a post 21. The rear end of the lever has a roller 22 engaged by the opposite walls of a cam slot 23 in a drum 24. The drum 24 may be driven by a chain 25 passing around a sprocket 26 on the shaft 27 of the drum 24 and also engaging a sprocket 29 fast on a short shaft 30. A pulley 31 on shaft 30 is driven by a belt 32 passing around a pulley 33 on the driving shaft 8. By this means, the brush is reciprocated, and will be given a double movement over the raised type on the chain of printing plates, by reason of the advance of the chain and the movement of the brush transversely thereto.

As the plates continue their movement around the drum from the reciprocating brush, they are engaged by a rotary brush 35 supported to engage the printing chain at the lower portion of the drum. This brush is driven by a chain 36 passing around a sprocket 37 connected with the brush and also around a sprocket 38 mounted on a short shaft 39. A sprocket 40 on the latter shaft is engaged by a chain 41 passing around a sprocket 42 on the shaft 43 of the drum 10. Another sprocket 44 on the drum shaft is engaged by a chain 45 that is driven by a sprocket 46 on the shaft 27 of the cam drum 24. By the latter means, the rotary brush 35 is given a surface speed much greater than that of the printing chain, and any remaining portions of ink on the plates are effectually removed.

The portion of the printing chain passing between the drum 10 and the roll 8 on which it is wound, is engaged by a stream of water from a pipe or nozzle 50, that will serve to rinse off the plates and finally remove any matter that might still adhere thereto.

By this construction it will be seen that the printing chain will have its type effectually and thoroughly cleaned by the two brushes

and the two streams of water. The first reciprocatory brush in combination with the supply of water will loosen and remove a large part of the ink on the type. And the rapidly moving rotary brush will throw off the loosened particles not discharged by the other brush; while the stream of water from the nozzle 50 will serve to wash off any particles that might remain on the plates. The several motions given to the brushes will also remove ink that would tend to accumulate at the hinged portions of the plates.

Having thus described my invention, I claim:

1. In a device of the character described, the combination with means for supporting and winding up the web, of a movable member on which the web is passed, a brush arranged to engage the web on said member, means for reciprocating the brush, a brush rotatably supported adjacent the supporting member to engage the web passing around the movable member beyond the reciprocatory brush, means for rotating said brush, means for supplying cleaning liquid to the reciprocatory brush, and means for directing a stream of liquid onto the treated web passing between the support and the winding up means.

2. In a device of the character described, the combination with means for supporting and winding up the web, of a supporting drum rotatably mounted around which the web is passed, a brush arranged to engage the web passing around the drum, means for reciprocating the brush parallel with the axis of the drum, a brush rotatably supported adjacent the drum to engage the web passing around the drum beyond the reciprocatory brush, means for rotating said brush, and means for directing a stream of water onto the web passing between the drum and the winding-up means.

3. In a device of the character described, the combination of a supply roll, a winding-up roll, means for driving the winding-up roll, a slotted drum for engaging the printing chain at its hinge portions, means for rotating the drum, a pivoted lever on which the brush is mounted, a drum carrying a cam slot, the lever having a roller engaged by the walls of the cam slot in the drum whereby the brush is reciprocated parallel with the axis of the chain drum, a rotary brush adjacent the chain drum for engaging the printing chain, and means for driving the rotary brush.

4. In a device of the character described, the combination of a supply roll, a winding-up roll, means for driving the winding-up roll, a slotted drum for engaging the printing chain at its hinge portions, means for rotating the drum, a brush arranged to engage the chain passing around the drum, a pivoted lever on which the brush is mounted, a drum carrying a cam slot, the lever having a roller engaged by the walls of the cam slot in the drum whereby the brush is reciprocated parallel with the axis of the chain drum, a rotary brush adjacent the chain drum for engaging the printing chain, means for driving the rotary brush, means for supplying water to the reciprocatory brush, and means for directing a stream of water onto the printing chain passing between the chain drum and the winding-up means.

Signed at Nos. 9 to 15 Murray street, New York, N. Y., this 8th day of April, 1907.

GEORGE A. CHAMBERS.

Witnesses:
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