

April 16, 1929.

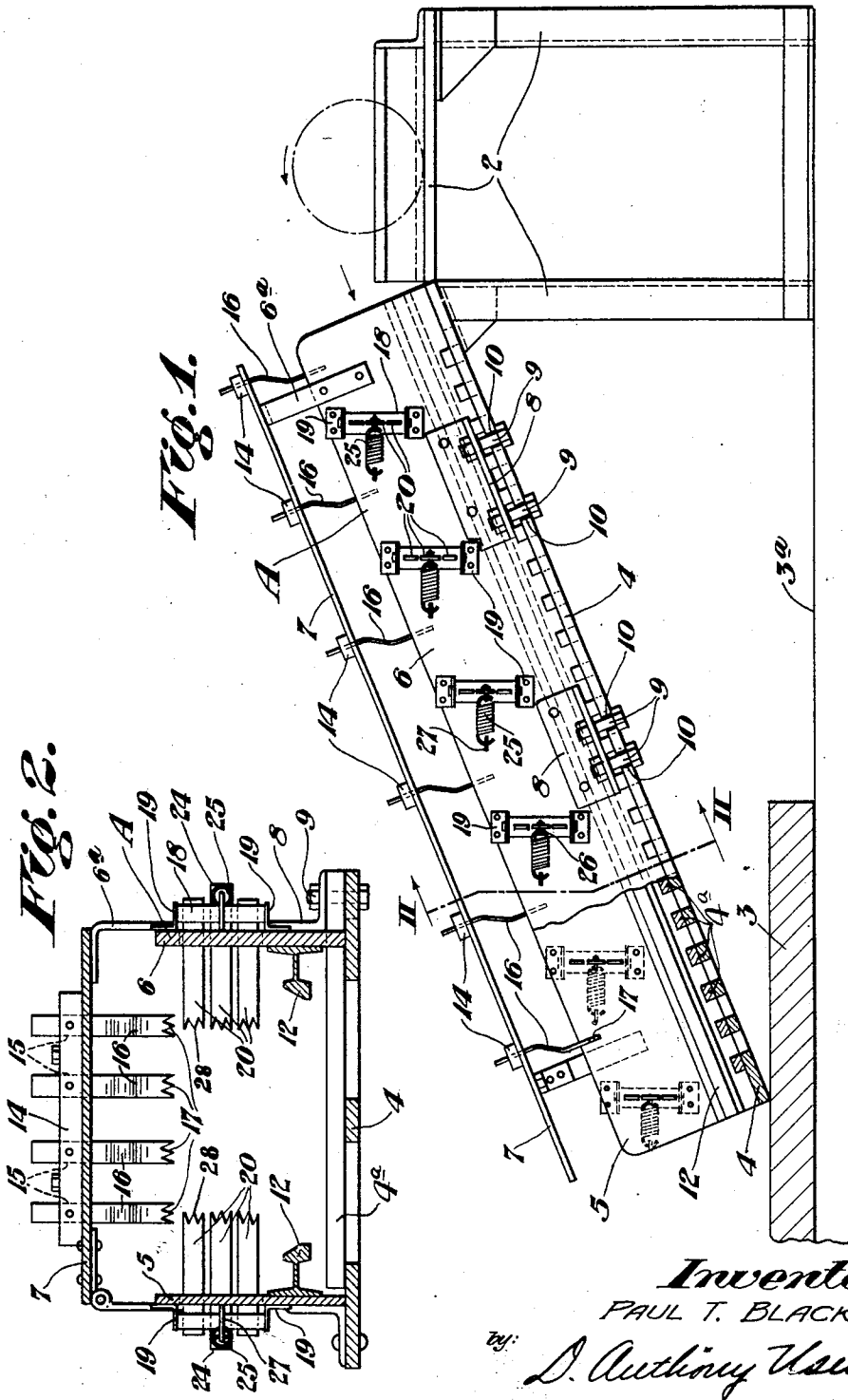
P. T. BLACK

1,709,111

SCALE REMOVING APPARATUS

Filed July 19, 1928

2 Sheets-Sheet 1



Inventor:
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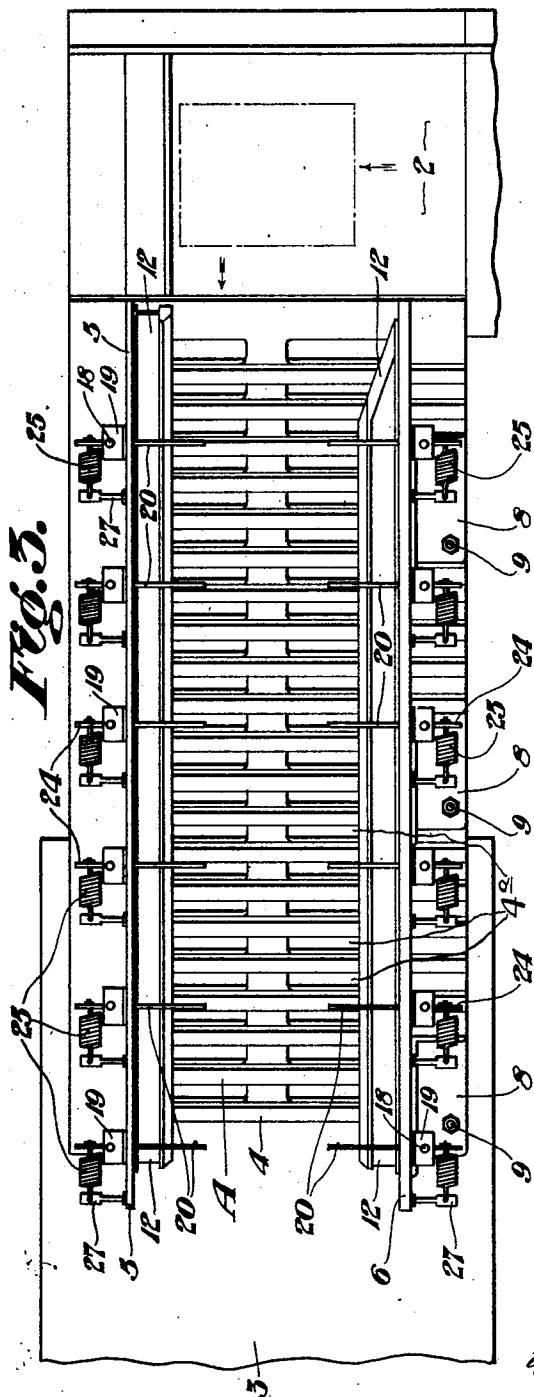
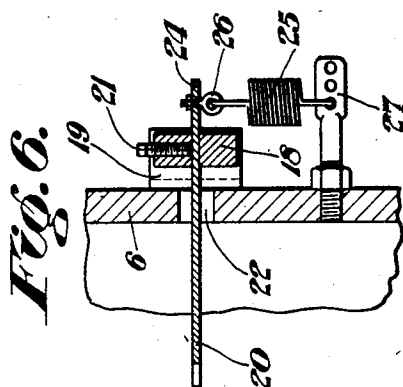
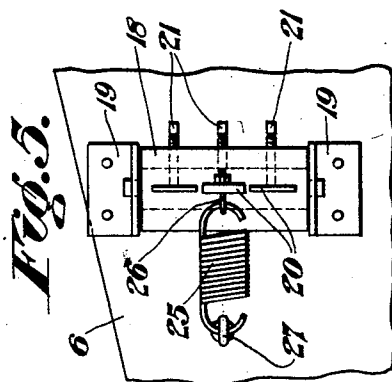
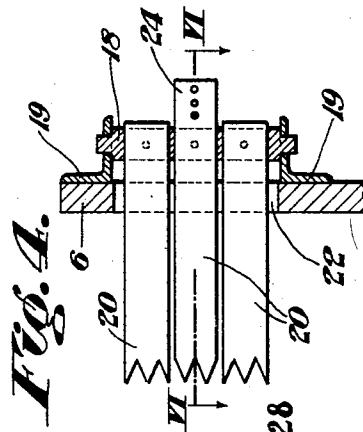
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SCALE REMOVING APPARATUS

Filed July 19, 1928

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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SCALE-REMOVING APPARATUS.

Application filed July 19, 1928. Serial No. 294,016.

This invention relates to scale removing apparatus and, while not limited thereto, relates more particularly to a scale removing apparatus for removing the scale from round blanks such as used for making forged steel railway car wheels, fly-wheels and similar articles.

One object of this invention is to provide a scale removing apparatus through which the round blanks will roll by gravity, and having scale removing members adapted to automatically remove the scale as the blanks roll through the apparatus.

Another object is to provide a scale removing apparatus which is adjustable to operate on different sizes of blanks.

In the drawings:

Figure 1 is a side elevation of a scale removing apparatus constructed in accordance with this invention.

Figure 2 is a transverse section taken on the line II—II of Figure 1.

Figure 3 is a top plan of the body of the apparatus, with the top removed.

Figure 4 is an enlarged fragmentary section showing the mounting for the side scrapers.

Figure 5 is an enlarged fragmentary elevation showing the mounting for the side scrapers.

Figure 6 is a sectional plan on the line VI—VI of Figure 4.

Referring more particularly to the drawings, the letter A designates the trough-like body of the scale removing apparatus as a whole, which is mounted in an inclined position with its rear end supported on an elevated platform 2 and its forward end on a plate 3 on the floor 3^a.

The body A comprises a bottom or base 4, side members 5 and 6, and a top or cover member 7. The base 4 is provided with a series of breaker bars 4^a secured to its upper face and adapted to cause a series of blows to be delivered to the side surfaces of the blanks as the blanks roll over the bars in their travel through the apparatus, so as to dislodge and loosen the scale. The one side member 5 is rigidly secured to the base 4 while the other side member 6 is provided with angle-iron brackets 8. Bolts 9 are passed through holes in the brackets 8 and slots 10 in the base 4 so as to provide for adjusting the side member 6 toward and away from the side member 5 to permit the

passage of various sizes of blanks through the apparatus.

The top or cover member 7 is hingedly secured on the side member 5 and is adapted to rest on brackets 6^a on the side member 6 so as to permit access to the apparatus and also permit the side member 6 to be free for adjustment.

The side members 5 and 6 are provided with guide-rails 12 on their inner faces for guiding the blanks as they pass through the apparatus.

The top or cover member 7 is provided with a plurality of transversely arranged scraper holding blocks 14 having slots 15 therein, which aline with other slots in the cover member and in which flexible scraper tongues or blades 16 are removably mounted. The scraper tongues 16 project down through the top or cover and into the body member in the path of the blanks as they roll through the body and are adapted to engage the side surfaces of the blanks and scrape the scale therefrom. The lower or scraping ends of the tongues or blades 16 are serrated to provide cutting teeth 17.

A plurality of vertically disposed scraper blade holders 18 are pivotally mounted in brackets 19 secured to the side members 5 and 6 and are provided with slots in which the rear or outer ends of rigid scraper blade members 20 are mounted. Set-screws 21 are provided for holding the blades 20 in position. The scraper blades 20 project through slots 22 in the side members 5 and 6 into the path of travel of the blanks as they roll through the apparatus. The slots 22 are of sufficient width to permit the blades 20 to swing in the direction of travel of the blank and thereby rotate the pivotally mounted blade holders 18.

One of the blades 20 in each holder 18 projects rearwardly an appreciable distance beyond the holder, as at 24, and a coil spring 25 has its one end connected thereto by an eye 26 and has its other end connected to a lug 27 secured to the side of the body of the apparatus.

The forward or inner ends of the scraper blades 20 are serrated to form cutting teeth adapted to cut the scale from the ends of the blanks.

In operation, the blanks from which the scale is to be removed are deposited on the platform 2 and are then permitted to roll by

gravity down through the trough-like body of the scale removing apparatus. As the blank rolls through the body A of the apparatus it will be guided by the rails 12, and its side face will be engaged by the scale removing tongues or blades 16 while its end faces will be engaged by the scale removing tongues or blades 20. As the surfaces of the blank are engaged by the blades 16 and 20 the serrated ends thereof will cut and remove the scale.

The tongues or blades 16 and 20 also serve to retard the movement of the blank so as to prevent the blank travelling at too great a speed through the apparatus.

The springs 25 and the resilient structure of the tongues 16 serve to permit the tongues 16 and 20 to yield sufficiently to allow the blanks to pass through the apparatus and, at the same time, force the tongues or blades against the blank with sufficient force to remove the scale.

While I have shown and described one specific form of my invention, it will be understood that I do not wish to be limited thereto, since various modifications may be made without departing from the scope thereof as defined in the appended claims.

I claim—

1. A scale removing apparatus for cylindrical blanks comprising a through-like inclined body, a hinged cover member mounted on said body, a plurality of resilient scraper tongues secured to said cover and extending down into said body, and other scraper members secured to the sides of said body and extending into said body.

2. A scale removing apparatus for cylindrical blanks comprising a closed body of substantially rectangular cross-section, said body comprising a base member, a pair of upright side members mounted on said base member, at least one of said side members being adjustable toward and away from the other side member, and a top member secured to at least one of said side members, a plurality of scraper tongues secured to said top member and extending down into said body so as to engage the sides of said blanks as said blanks are rolled through said body, and other scraper members secured to said side members of said body and extending into said body so as to engage the ends of said blanks as said blanks are rolled through said body.

3. A scale removing apparatus for cylindrical blanks comprising a closed body of substantially rectangular cross-section, said body comprising a base member, a pair of upright side members mounted on said base member, at least one of said side members being adjustable toward and away from the other side member, and a top member secured to at least one of said side members, a plurality of flexible scraper tongues

secured to said top member and extending down into said body so as to engage the sides of said blanks as said blanks are rolled through said body, and other scraper tongues secured to said side members of said body and extending into said body so as to engage the ends of said blanks as said blanks are rolled through said body.

4. A scale removing apparatus for cylindrical blanks comprising an inclined trough-like body, at least one side member of said trough-like body being adjustable toward and away from the other side member, metal guide-rails secured to said side members to guide the blanks through said trough-like body, a hinged cover member mounted on one of said side members, a plurality of resilient scraper tongues secured to said cover and extending down into said body so as to engage the sides of said blanks as they roll through said trough-like body by gravity, and other scraper members secured to said side members of said body and extending into said body so as to engage the ends of said blanks as they roll through said trough-like body.

5. A scale removing apparatus for cylindrical blanks comprising an inclined trough-like body, at least one side member of said trough-like body being adjustable toward and away from the other side member, metal guide-rails secured to said side members to guide the blanks through said trough-like body, a hinged cover member mounted on one of said side members, a plurality of resilient scraper tongues secured to said cover and extending down into said body so as to engage the sides of said blanks as they roll through said trough-like body by gravity, a plurality of scraper blade holders pivotally mounted on the said side members of said body, and scraper blades secured in said holders and extending into said body so as to engage the ends of said blanks as they roll through said trough-like body.

6. A scale removing apparatus for cylindrical blanks comprising an inclined trough-like body, at least one side member of said trough-like body being adjustable toward and away from the other side member, metal guide-rails secured to said side members to guide the blanks through said trough-like body, a hinged cover member mounted on one of said side members, a plurality of resilient scraper tongues secured to said cover and extending down into said body so as to engage the sides of said blanks as they roll through said trough-like body by gravity, a plurality of scraper blade holders pivotally mounted on the said side member of said body, a plurality of rigid scraper blades secured in said holders and extending into said body so as to engage the ends of said blanks as they

roll through said trough-like body, and said body, a plurality of resilient scraper 10
spring means for normally tending to retain tongues secured to said top member and
said scraper blade holders in position to extending down into said body, and other
retain said scraper blades at right angles scraper members secured to the sides of
5 to the path of travel of said blanks as they said body and extending into said body.
roll through said trough-like body.

7. A scale removing apparatus for my hand. In testimony whereof, I have hereunto set 15
cylindrical blanks comprising a trough-like
inclined body, a top member mounted on

PAUL T. BLACK.