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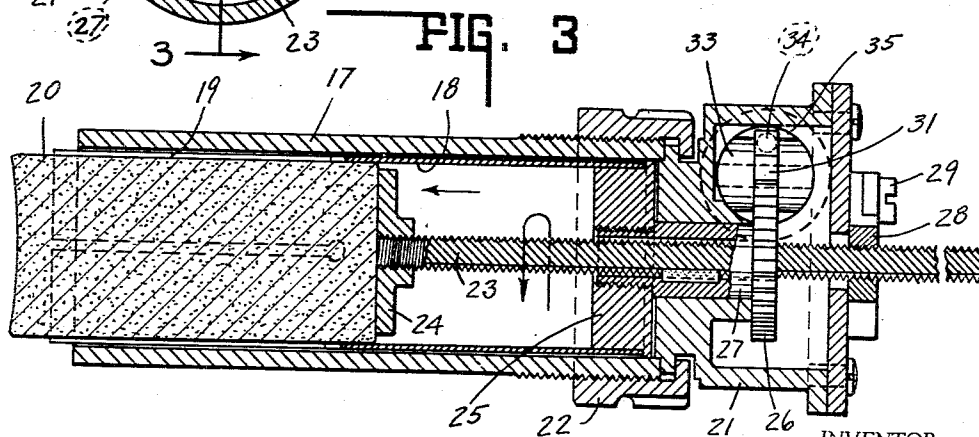
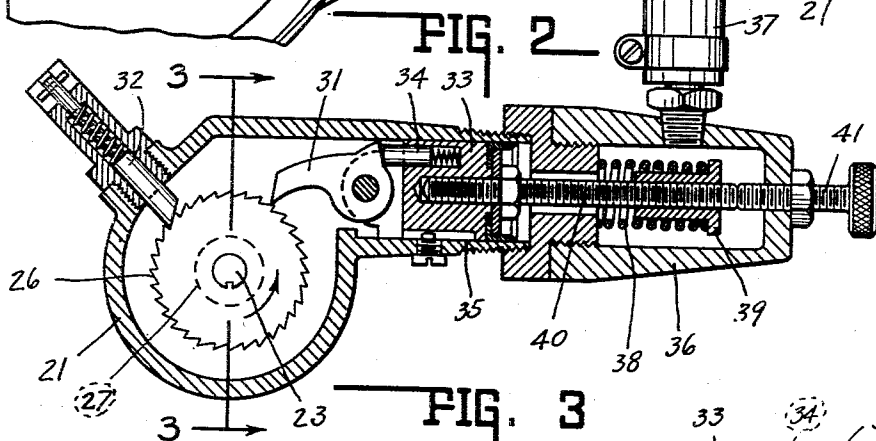
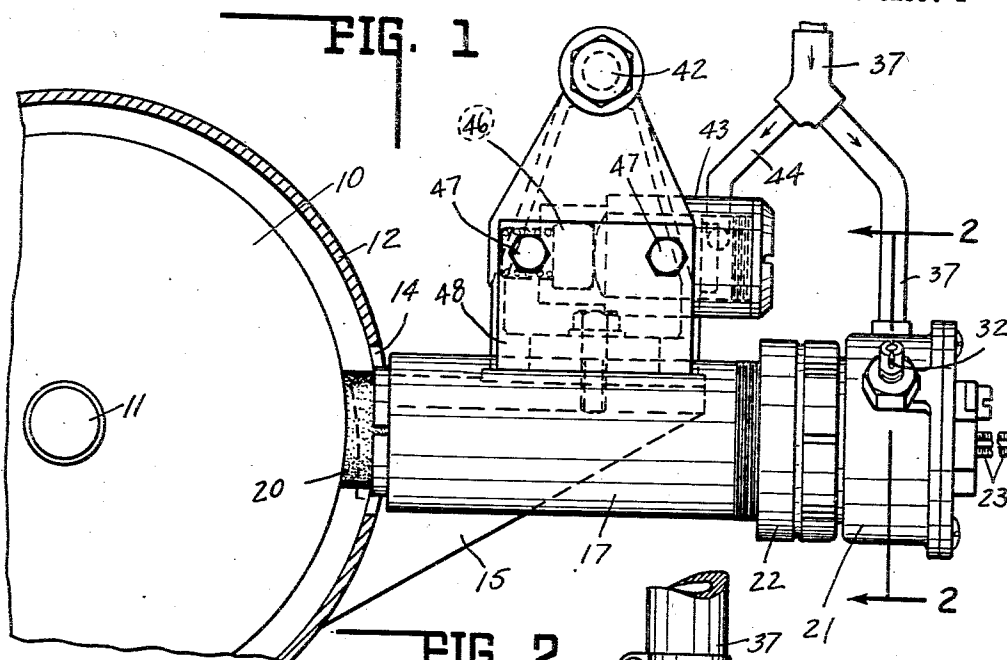
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2,177,992

ROUGHING DEVICE FOR BUFFING WHEELS

Filed June 23, 1938

2 Sheets-Sheet 1



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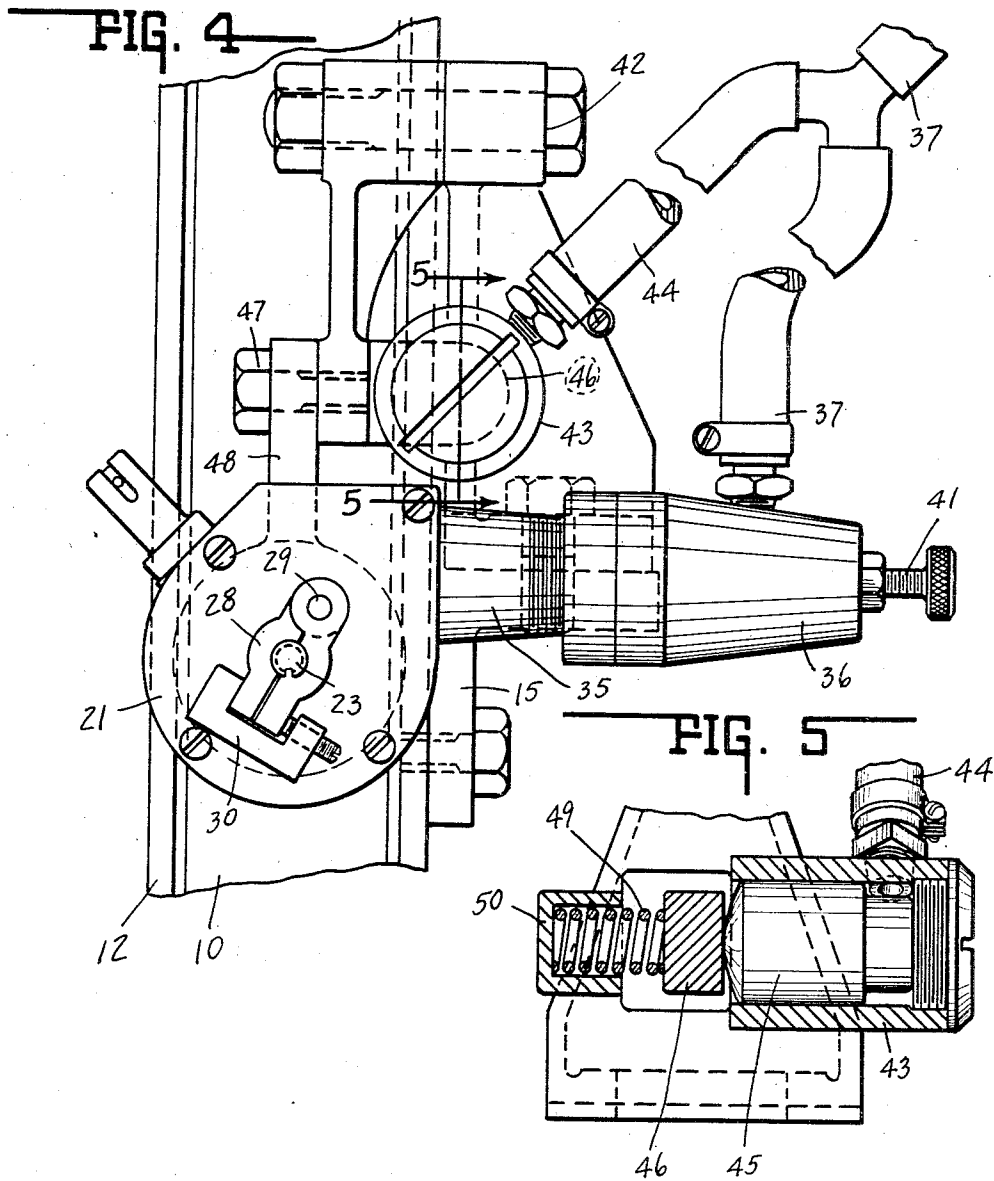
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ROUGING DEVICE FOR BUFFING WHEELS

Filed June 23, 1938

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,177,992

ROUGING DEVICE FOR BUFFING WHEELS

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Application June 23, 1938, Serial No. 215,390

2 Claims. (Cl. 51—263)

This invention relates to a device for applying an abrasive, such as rouge, to a buffing or polishing wheel, particularly wherein the rouge is in paste-like form.

5 The object of the invention is to utilize a stick of paste-like rouge adapted to have its end projected against the peripheral buffing or polishing surface of the wheel, and wherein the abrasive or stick of rouge is periodically fed forward and applied to the wheel automatically, preferably through air pressure.

10 More specifically the invention contemplates utilizing a cylindrical barrel mounted radially with respect to the buffing wheel in which the rouge stick is slidably mounted so that the end thereof may be brought in effective engagement therewith, and applying air pressure to the cylinder in such manner that the rouge will be alternately applied to the wheel and retracted therefrom, and in its applied position will be rotated and fed forward step by step. Thus, the amount of rouge to be applied may be governed by adjusting the extent of its forward movement in the barrel and the duration of its periodic application to the buffing wheel.

25 The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a side elevation of the rouge feeding device. Fig. 2 is a section taken on the line 2—2 of Fig. 1. Fig. 3 is a section taken on the line 3—3 of Fig. 2. Fig. 4 is an end elevation of the rouge feeding device. Fig. 5 is a section taken on the line 5—5 of Fig. 4.

30 In the drawings there is shown a portion of a buffing wheel 10 which is usually formed of a plurality of cloth discs or laminations rotatably mounted upon a shaft 11 and partially embraced by a housing 12 provided with an opening 14 through which an abrasive, such as rouge, may be applied to the peripheral buffing or polishing surface of the wheel. Supported upon the housing 12 by means of a bracket 15 there is a pivotally mounted cylindrical barrel 17 having its open end directed toward the opening 14 in close proximity to the wheel 10, and extending radially therefrom. The barrel is provided with an inner rotative sleeve 18 having longitudinal slots towards the forward end adapted to resiliently grip 40 and slidably support the abrasive or rouge stick 20, the end of which is adapted to frictionally engage the periphery of the wheel for applying the rouge thereto.

55 Mounted at the rear of the barrel 17 there is a housing 21 removably secured to the barrel by a

collar 22. Extending axially through the housing and into the barrel there is provided a threaded rod 23 having a disc plate 24 at the forward end thereof adapted to engage the rear end of the rouge stick for forcing it slidably from the open end of the barrel. Said rod is freely rotatable and slidable through a head 25 mounted in the rear end of the barrel into which the sleeve 18 is secured. The housing 21 encloses a ratchet wheel 26 having a boss 27 through which the rod 23 extends and with respect to which it is slidably keyed so that it will revolve with the ratchet wheel but slide axially relative thereto. Said rod is provided with screw threads so as to have threaded engagement with a split boss 28. Said boss is provided with two arms pivotally connected at 29 to the outer end of the housing 21. The ends of the arms of the boss are clamped together by a member 30 which locks them in their engaging position about the rod 23.

Upon rotation of the rod 23 by action of the ratchet wheel 26, the screw threads in the boss 28 moves the rod forwardly so that the plate 24 forces the rouge 20 from the open end of the barrel into effective engagement with the buffing wheel, said rod freely sliding through the boss 27 and head 25.

The ratchet wheel is rotated through the action of a pawl 31 and is engaged for preventing backlash by a spring pressed latch 32. The pawl 31 is pivotally mounted upon a piston 33 and is spring pressed into ratchet engaging position by a spring and plunger 34. The piston 33 operates in a cylinder 35 which is a continuation of the housing 21, as illustrated in Fig. 2.

To operate the piston 33, there is mounted ed between the fixed end of the casing 36 and an air chamber in communication with an air line 37. Air pressure created in said air chamber by air passage through the air line 37 forces the piston 33 forwardly to cause the pawl 31 to partially rotate the ratchet wheel 26. The pawl is retracted by means of a spring 38 mounted between the fixed end of the casing 36 and a threaded collar 39. The collar 39 is threaded upon a piston rod 40 which is secured to the piston and extends into the air chamber. Thus, upon air being injected into the chamber the piston moves forwardly and upon release of the air pressure the spring retracts the piston.

The stroke of the piston may be adjusted by an adjusting screw 41 extending through the end of the casing 36. The position of the adjusting screw determines the retracted position of the

piston. When the piston is permitted to be retracted to a greater extent, it will be subject to a longer stroke. Thus, within limits, the adjusting screw 41 may control the length of stroke of the piston and thereby the extent of rotation of the ratchet wheel and rod 23, resulting in a more extensive movement of the rouge stick 20.

It is desirable to normally withdraw the rouge stick from engagement with the buffing wheel, and to that end the barrel 17 and its associated structure above described is pivotally mounted to the supporting bracket at 42 so as to swing toward and away from the buffing wheel. For causing said swinging movement there is fixedly mounted upon the bracket 15 a cylinder 43 having communication with a branch 44 of the air line 37. A plunger-like piston 45 is mounted within the cylinder 43 having its outer end in engagement with a boss 46 secured by a bolt 47 to an extension 48 of the barrel 17. On the other side of the boss 46 there is a compression spring 49 held against movement by a cup 50, as shown in Fig. 5.

Upon an impulse of air being discharged from the branch 44 into the cylinder 43, the piston 45 forces the boss 46 laterally, compressing the spring 49. Such lateral movement of the boss swings the rouge towards the buffing wheel so that the effective end of the rouge stick is in the position illustrated in full lines in Fig. 1. Upon the air impulse being discontinued and the pressure relieved in the cylinder 43, the tension of the spring 49 forces the boss in the opposite direction, which forces the end of the rouge stick away from the buffing wheel, as shown by dotted lines in Fig. 1. Thus, the rouge stick is held in contact with the buffing wheel upon air pressure being exerted against the piston 45, but is retracted therefrom under tension of the spring 49.

In operation, it will be noted that the rouge stick 20 is sustained by air pressure against the buffing wheel 10 for applying the rouge thereto. Periodically air impulses are discharged through the air line 37 simultaneously into the chamber 36 and cylinder 43 for actuating the pistons 33 and 45. The piston 45 will move the rouge stick into engagement with the wheel and it will be simultaneously moved forward to a new position and rotated in the barrel 17 by the ratchet wheel 26. Immediately thereafter the air pressure is released so that in its newly fed position it is again retracted under spring tension from engagement with the buffing wheel.

It will, therefore, be understood that through a suitable air valve, intermittent air impulses will be discharged through the air line which will result

in intermittent back and forth movement of the rouge stick into engaging and non-engaging position, coupled with a simultaneous feeding of the stick forwardly while the same is in engagement with the wheel.

The extent of feeding of the rouge stick may be adjusted by the adjusting screw 41, as above described. When it is desired to replace the rouge stick, the clamping member 30 is removed and the split boss 28 opened, whereupon the rod 23 may be freely slid to its rearmost position and a new stick of rouge inserted into the sleeve 18 to extend the full length of the barrel 17.

The rotation or twisting of the rouge stick as it is applied to the wheel is advantageous in that it effects an even wearing of the applied surface of the stick. Such rotation or twisting is obviously effected by reason of the fact that the stick is frictionally secured in the sleeve 18 which in turn is secured to the head 25, the head being rotated by reason of its screw connection with the boss 27 on the ratchet wheel 26. Thus, as the ratchet wheel is rotated, the sleeve 18 and the stick 20 are rotated therewith.

The invention claimed is:

1. A device for automatically applying an abrasive stick to a buffing or a polishing wheel, comprising a barrel for slidably supporting said stick mounted in position for the end of said stick to engage said wheel, a ratchet actuated screw for slidably forcing said stick from said barrel, a pawl for rotating said ratchet step by step, a pneumatically actuated piston for operating said pawl, and means for adjusting the stroke of said piston for varying the extent of movement of said ratchet and stick upon each periodic movement of said piston.

2. A device for automatically applying an abrasive stick to a buffing or a polishing wheel, comprising a barrel containing said stick, means for pivotally supporting said barrel end, a spring for normally maintaining said barrel and stick out of engagement with said wheel, a feed screw in said barrel for engaging and feeding said stick forwardly therefrom, a ratchet wheel for actuating said screw and rotating said stick, a pawl for driving said ratchet wheel, a piston for actuating said pawl, means for adjusting the stroke of said piston and pawl for varying the feeding action of said stick on each operation of said pawl, a piston for moving said stick and barrel about said pivotal mounting into engagement with said wheel, and pneumatic means for simultaneously actuating both pistons.

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