July 27, 1937. J. A. BORCK 2,088,402

RESURFACING MACHINE FOR PAPER MAKING MACHINE SUCTION BOXES

Filed Aug. 16, 1935 2 Sheets-Sheet 1

Fig. 1.

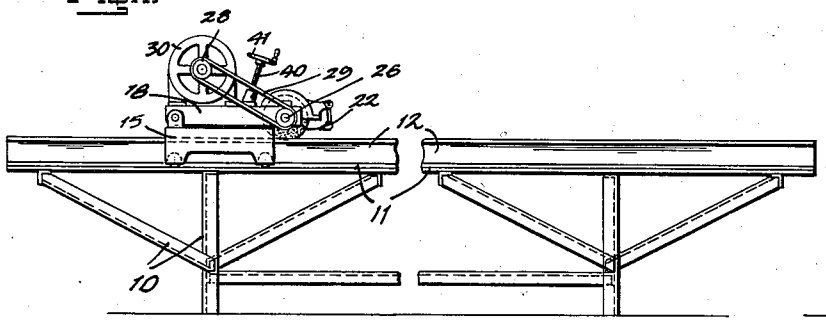


Fig. 2.

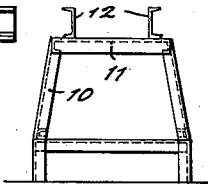
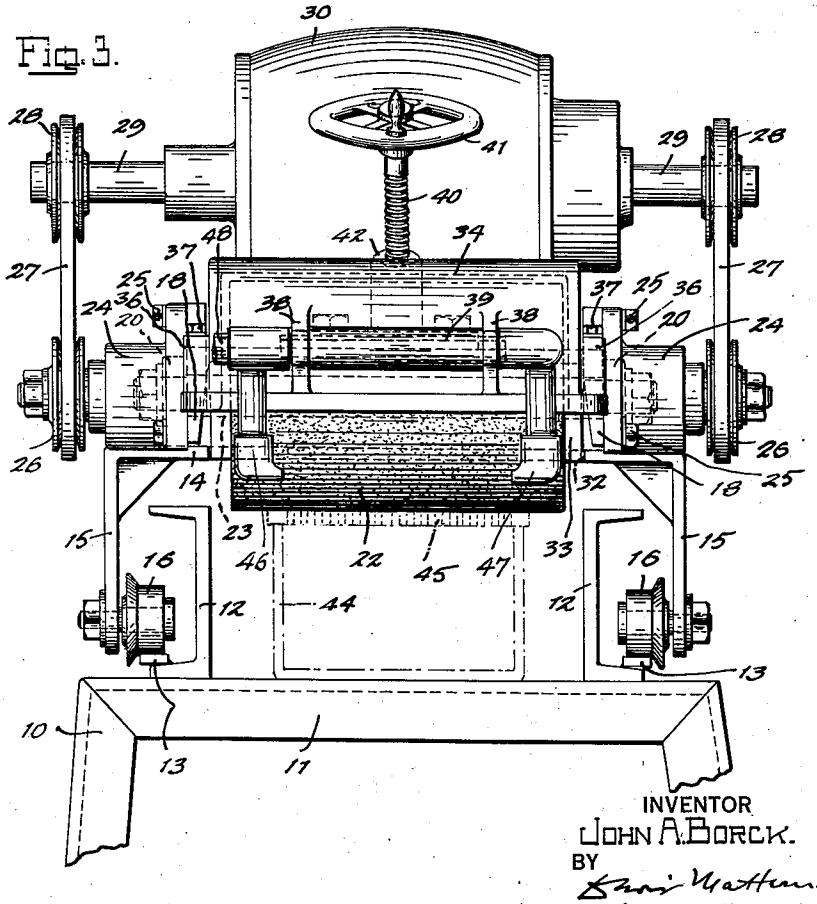


Fig. 3.



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Fig. 4.

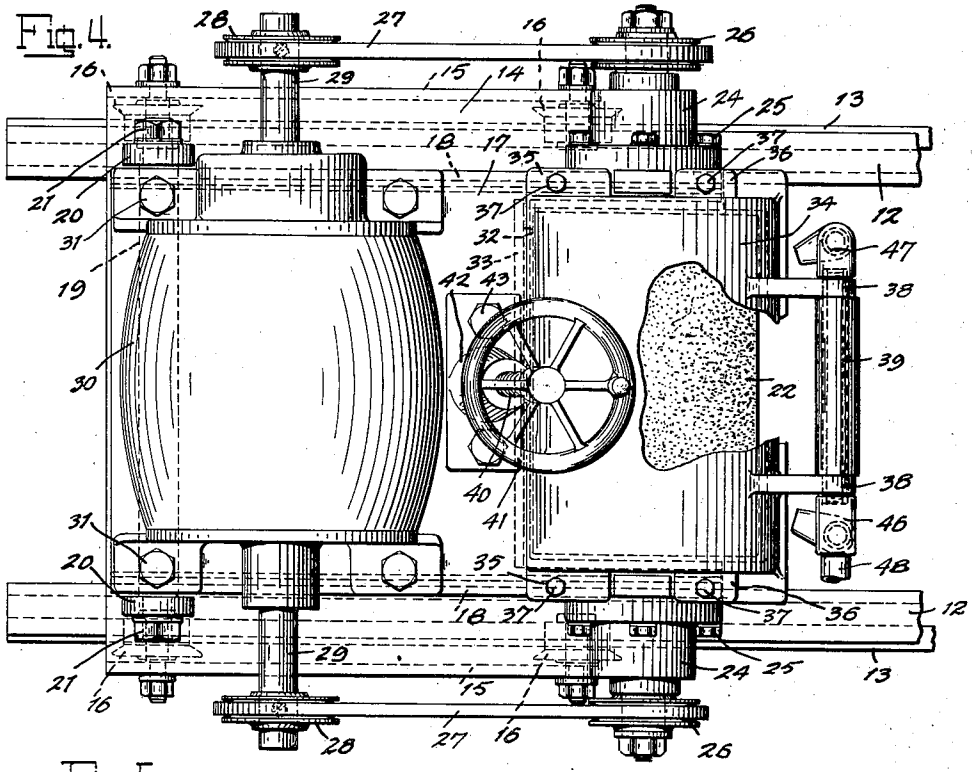
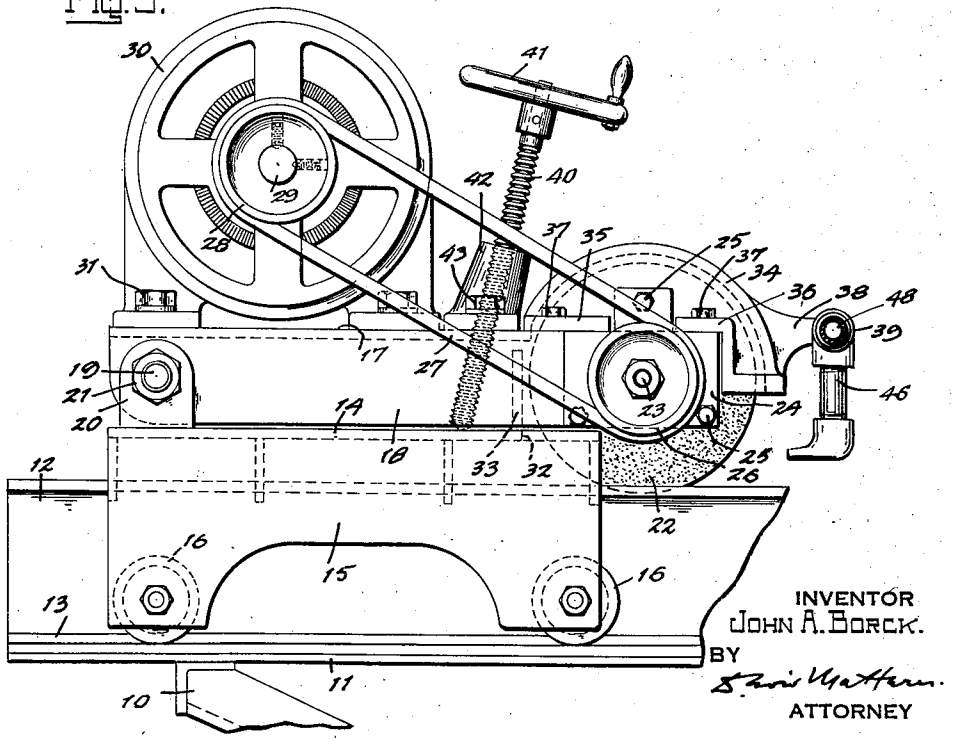


Fig. 5.



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RESURFACING MACHINE FOR PAPER MAKING MACHINE SUCTION BOXES

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Application August 16, 1935, Serial No. 36,461

1 Claim. (Cl. 51—34)

The present invention relates to a re-surfacing machine for paper making machine suction-boxes, or the like. The suction boxes of paper making machines are usually provided with a wooden top having perforations therein, and due to the running of the Fourdrinier paper making wire over these boxes the perforated top becomes rapidly worn and grooved, and as this worn grooved surface is highly injurious to the paper making wire it is necessary to frequently replace the top or re-surface it. The re-surfacing has usually been done by planing, and this not only required expertness in order to provide an absolutely flat smooth top, but it has been the practice to return the tops to the makers for the purpose of re-surfacing as the paper mill was not equipped to properly re-surface the tops. This was not only inconvenient but expensive and time consuming. It is proposed in the present invention to provide a machine which may be located at the same plant with the paper making machine, and in which the suction boxes may be conveniently placed, the machine being designed to rapidly re-surface the tops and to produce an even, flat, and smooth surface. An object of the invention is to provide a machine of this character which will be motor driven, which may be adjusted to produce any desired depth of re-surfacing, and which may be operated without skill on the part of the operator.

With the above and other objects in view, an embodiment of the invention is shown in the accompanying drawings, and this embodiment will be hereinafter more fully described with reference thereto and the invention will be finally pointed out in the claim.

In the drawings:—

Fig. 1 is a side elevation of a machine, according to the exemplary illustrated embodiment of the invention, the stand for receiving the boxes and upon which the machine operates being partially broken away.

Fig. 2 is an end view of the stand.

Fig. 3 is an enlarged end view of the re-surfacing machine mounted upon a stand, and showing in dot-and-dash lines the suction box to be re-surfaced.

Fig. 4 is a plan view of the machine, partially broken away.

Fig. 5 is a side elevation.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, the re-surfacing machine, according to the exemplary illustrated embodiment of the invention shown therein, comprises an elongated stand consisting of suitable supports or standards 10 supporting a horizontal bed 11 upon which the suction box is adapted to rest, and provided with a pair of parallel channel bars 12—12 upon the lower flanges of which there are secured tracks 13—13 upon which the re-surfacing machine is adapted to have longitudinal rolling movement, as will hereinafter more fully appear.

A carrier consisting of an upper horizontal portion 14 and downwardly extending side portions 15—15 is provided at the lower corners of said side portions with flanged rollers 16 which engage the tracks 13—13, so that the carrier may be rolled longitudinally on the tracks, the flanges of the rollers maintaining the carrier in longitudinal alignment.

Upon the upper side of the carrier there is hingedly mounted a grinding wheel support consisting of a transverse portion 17 having downwardly extending flanges at its longitudinal edges, these flanges being hingedly connected to the carrier by means of a transverse shaft 19 engaged at its ends with bearing brackets 20—20 provided upon the rearward end of the carrier, the shaft being secured by nuts 21—21 engaged upon its ends.

The side portions 18—18 extend forwardly beyond the forward edge of the top portion 17 and upon these forwardly projecting portions there is rotatably mounted the cylindrical grinding or re-surfacing stone 22, the shaft 23 of this stone being journaled at its ends in bearing members 24—24 secured to the flanges 18—18 by means of bolts 25. Upon the ends of the shaft 23 there are secured pulleys 26—26 which are engaged by drive belts 27—27 extending over pulleys 28—28 secured upon the ends of the motor shaft 29, the electric motor 30 being secured upon the transverse portion 17 by means of bolts 31.

At the forward end of the top portion 14 of the carrier there is provided a recess 32 within which the grinding wheel engages, this recess being formed by bending up a wall portion 33 from the top 14. The diameter of the grinding wheel is such that its grinding surface extends below the horizontal portion 14 of the carrier, while at its upper side it projects above the hinged support. A guard 34 of arcuate form having side walls is engaged about the upper portion of the grinding wheel and is provided at its ends with flanges 35 and 36, which engage upon the upper surface of the forwardly projecting portions of the side flanges 18—18, and which are secured

thereto by means of bolts 37. Upon the forward side of the guard there are provided brackets 38—38 which support a handle 39, by means of which the machine may be longitudinally moved by the operator.

The handle 39 consists of a brass pipe, the ends of which are threaded and upon which are engaged water jet members 46 and 47, the member 46 having a hose connection 48. The jets are directed toward the grinding wheel. The water jets cool the wood suction-box tops as they are re-surfaced to prevent burning, and also wash the chips and dust of the ground material out of the grinding wheel to keep it cutting freely without dragging.

In order to adjust the height of the grinding wheel an adjusting screw 40 having a hand wheel 41 at its upper end is engaged in a threaded bearing member 42 secured by bolts 43 to the upper transverse portion 17, the lower end of this screw bearing upon the upper side of the carrier. It will be seen that by rotating the screw the grinding wheel may be moved upwardly or downwardly about the shaft 18, and thereby the depth of the grinding operation to be performed may be gauged. The weight of the motor as well as the grinding wheel is forwardly of the hinge 19 so that the combined weight of the two is applied to the work during the surfacing operation.

In operation the suction box 44 is placed upon the horizontal portion 11 of the stand, its perforated top 45 being then in position to be engaged by the grinding wheel. The grinding wheel is rotated by means of the motor and by moving the carrier back and forth the top is re-surfaced, the depth of the re-surfacting cut being determined by the adjustment of the height of the grinding wheel.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof as defined in the appended claim.

Having thus described my invention what I desire to secure by Letters Patent is:—

In a re-surfacing machine for paper making machine suction boxes, a longitudinal bed comprising a pair of spaced parallel tracks and having a base adapted to support a suction box between said tracks, a carrier mounted upon said tracks for longitudinal movement above said box, a hinged supporting member carried by said carrier having bearing portions at each side, a motor carried by said supporting member at one end, a grinding wheel carried by said supporting member at the other end between said bearing portions and adapted to engage the upper surface of said box between said tracks, and drive means between said motor and said grinding wheel, the weight of said motor and grinding wheel being forwardly of the hinge axis whereby their combined weight is applied to the work during the surfacing operation, said motor and grinding wheel being symmetrically arranged at each side of the longitudinal central plane of said bed and carrier.

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