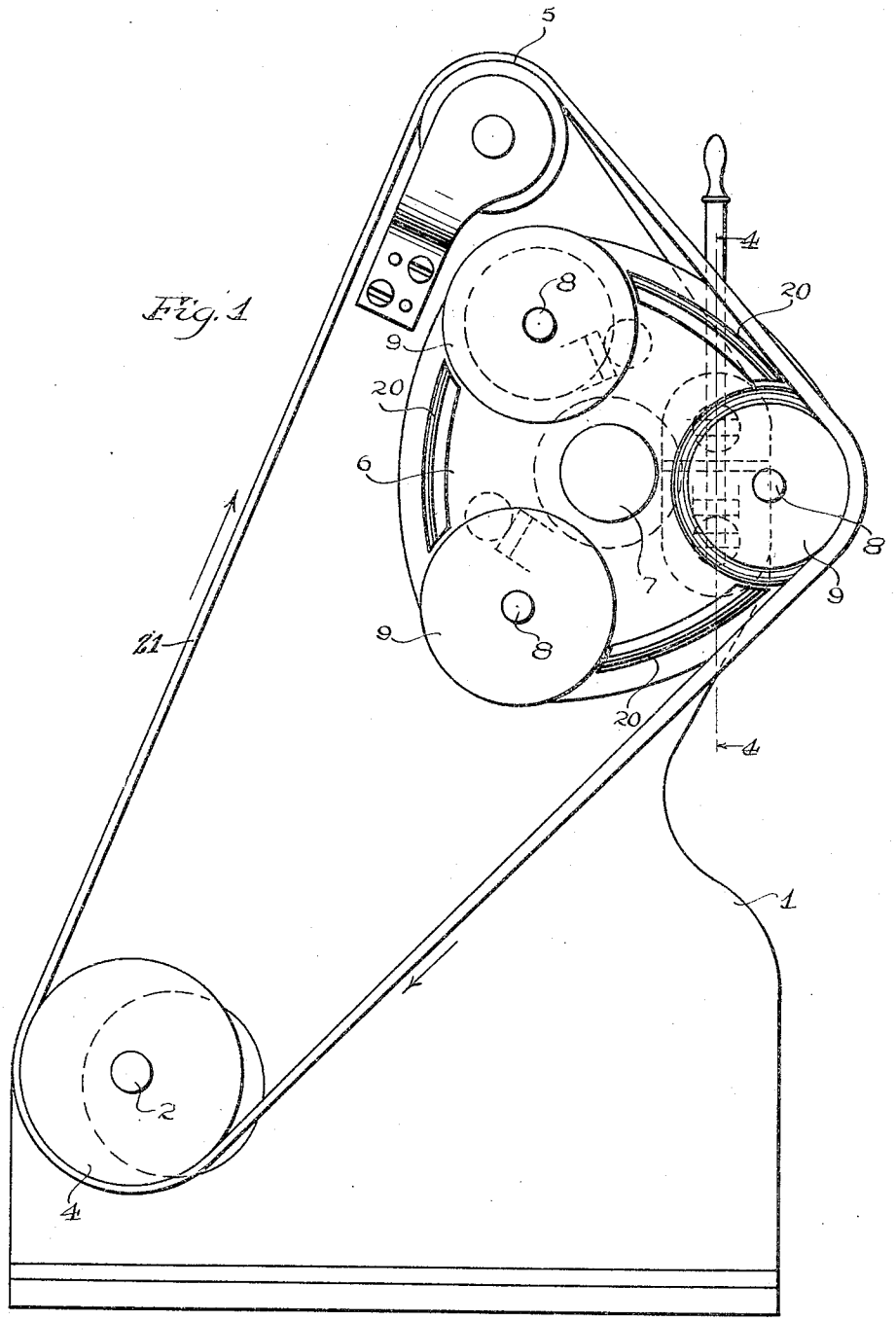
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ABRADING MACHINE

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Fig. 1



INVENTOR
Frank Kabelac
BY
His ATTORNEY

Feb. 9, 1932. F. KABELAC 1,844,165

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Fig. 2

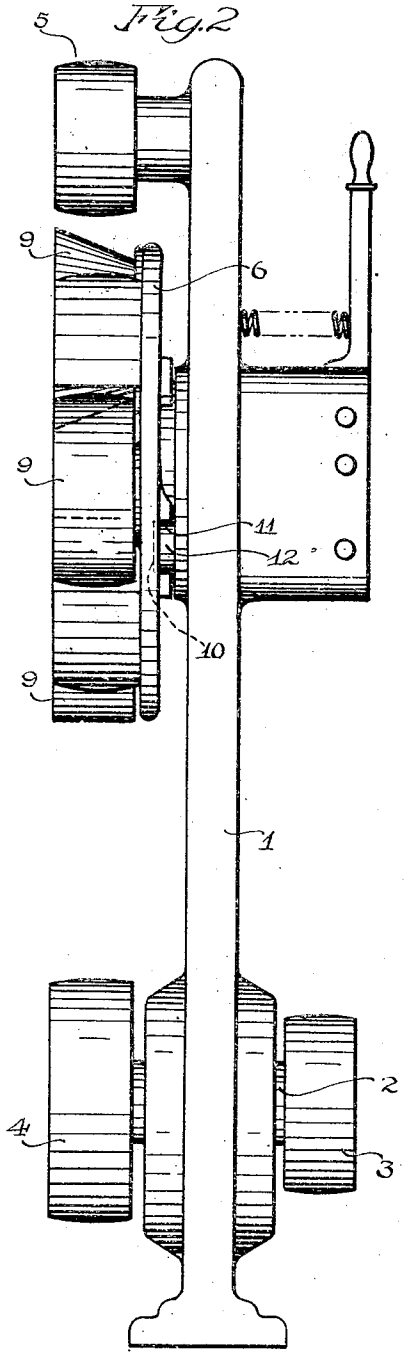
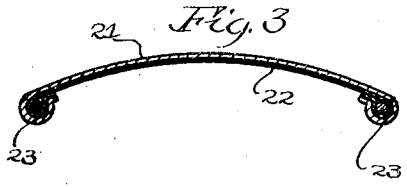


Fig. 3



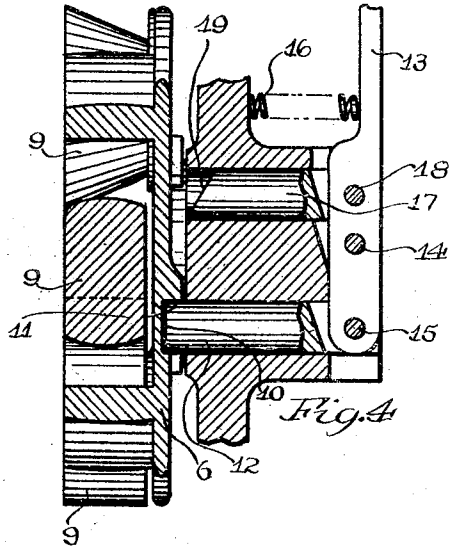


Fig. 4

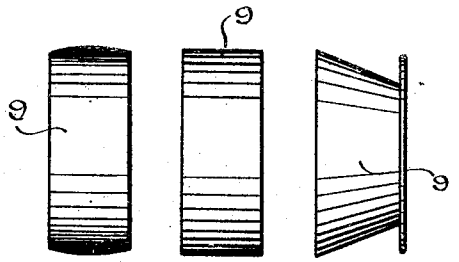


Fig. 5 Fig. 6 Fig. 7

INVENTOR
Frank Kabelac
BY
H. W. Simmons
His ATTORNEY

Patented Feb. 9, 1932 1,844,165

UNITED STATES PATENT OFFICE

FRANK KABELAC, OF ROCHESTER, NEW YORK

ABRADING MACHINE

Application filed June 7, 1929. Serial No. 369,089.

The present invention relates to abrading machines, and more particularly to the type employing an endless abrading belt. An object of this invention is to provide a novel means of changing the contour of the belt at the working point so that a single belt may be employed for work of different contours. Another object of the invention is to provide an abrading belt which employs sand paper strengthened in such a manner as to give longer life to the belt.

To these and other ends, the invention consists of certain parts and combinations of parts all of which will be hereinafter described: the novel features being pointed out in the appended claims.

In the drawings:

Fig. 1 is side view of a machine embodying the present invention;

Fig. 2 is a front view of the machine with the abrading belt removed;

Fig. 3 is a transverse section through the abrading belt;

Fig. 4 is a section on the line 4—4, Fig. 1; and

Figs. 5, 6, and 7 are face views of three different belt shaping rollers which may be employed.

In the illustrated embodiment of the invention 1 indicates the frame of the machine on which is journalled a drive shaft 2 which may carry a drive pulley 3 and a pulley 4 about which passes the abrading belt, the preferred form of which will be hereinafter more particularly described. Also arranged on the frame 1 is a pulley 5 about which the abrading belt also travels.

With the end in view of providing a working area on the belt changeable in transverse contour to correspond to the contour of different work pieces, there may be provided a carrier or turret 6 in the form of a rotary disk turning on a shaft 7 which is mounted on the frame 1. This carrier is also provided with a plurality of shafts 8 arranged in equidistant relation about the axis of turning of the carrier and on one side of the latter. On the shafts 8 are arranged belt shaping pulleys 9 having their peripheries of different contours. Three of such pulleys are shown but it will be understood that any number may be employed and that the contours will vary with the work operated upon.

For holding the rotary carrier against turning with one of the pulleys 9 engaged by the abrading belt, a holding means of any suitable construction may be employed. In this instance, the carrier has on its inner face a plurality of pockets 10 one wall 11 of each of said pockets projecting beyond the face of the carrier and forms an abutment.

Detaining means is provided on the frame 1 preferably in the form of a sliding detent 12. This detent has a normal tendency to move to detaining position but is moved from detaining position manually. To this end, a hand lever 13 is pivoted at 14 to the frame 1 and at 15 to the detent, while a spring 16 acts on the lever to hold the detent in detaining position.

In order to insure the detent 12 being in position to engage with an abutment 11 and enter a pocket 10, a shifter is provided which will shift the detent to detaining position in the event that the user of the machine has not released the hand lever 13. This shifter, in this instance, is in the form of a slide 17 pivoted at 18 to the lever 13 and having a bevelled end 19 to cooperate with the projecting abutments 11.

With the end in view of imparting movement to the carrier 6 from the abrading belt, the carrier has portions 20 in the form of curved flanges extending between the shaping or contour forming pulleys 9. These flanges are so formed and arranged that when the abrading belt engages any one of the pulleys 9 the flanges are not engaged. As, when pulley 9 is engaged by the abrading belt its turning axis 8 is below the turning axis 7 of

the carrier, there is a tendency for the abrading belt which turns in the direction of the arrows Fig. 1, to shift the engaged pulley, but this shifting is prevented by the detent 12. With the release of the carrier 6 by the detent 12, the shifting takes place and the belt then engages the next flange 20 so that the carrier is through said flange rotated until the next stop or abutment 11 is engaged by the detent 12 when the belt will lie in engagement with the next shaping pulley 9.

The brading belt comprises, in this instance, a strip of sand paper 21 which is adhesively secured to a strip 22 of textile material, such as cotton sheeting. The edges of this textile strip are reinforced by two endless wire strands 23. The strip of sand paper is manufactured so that it has a concave-convex cross section, and this too maintains it on the pulleys 4 and 5, thus being assisted by the strands 23. The textile material prevents the wearing of the sand paper and adds considerably to the length of life of the abrading belt and the marginal wires strengthen the edges of the textile material. The pulleys 9 may be felt faced as is the custom in abrading machines.

In this invention, the shaping or contour forming rollers are shifted automatically to their position of use through means of the abrading belt. The abrading belt is of novel construction and has longer life than abrading belts now in use.

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

1. An abrading machine comprising an abrading belt, means for driving the same, a movable carrier, a plurality of contour forming pulleys on the carrier movable successively by the carrier to a position to shape the belt, detaining means for holding the carrier in position to cause any one of the pulleys to act on the belt, and means on the carrier engaged by the belt to shift the carrier to present another pulley to a shaping position on the release of the carrier by the detaining means.

2. An abrading machine comprising an endless abrading belt, means for driving the same, a rotary carrier, a plurality of belt shaping pulleys on the carrier, detaining means for holding any one of the shaping rollers in shaping relation to the carrier, and means on the carrier engaged by the abrading belt when the carrier is released to cause the carrier to shift on its axis to present another shaping pulley to be shifted to shaping position.

3. An abrading machine comprising an endless abrading belt, means for driving the same, a carrier, belt shaping pulleys on the carrier, and means arranged between the pulleys on the carrier for engagement by the belt to shift one pulley out of shaping relation with the belt and another pulley into such shaping relation.

4. An abrading machine comprising an endless abrading belt, means for driving the belt, a rotary disk, belt shaping pulleys arranged on said disk and movable by the carrier into and out of shaping relation with the belt, and flanges arranged between the pulleys on the disk and engaged by the belt to shift the carrier.

FRANK KABELAC.