March 17, 1931. H. G. BARTLING 1,797,040

RUBBING MACHINE

Original Filed March 27, 1925

Fig. 1

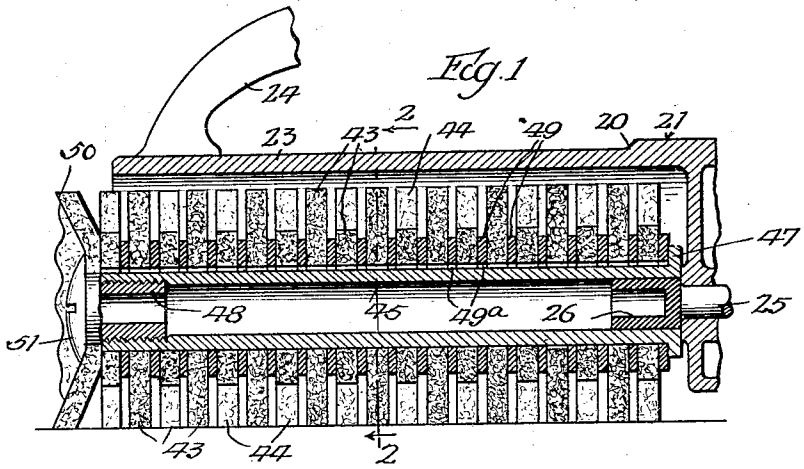


Fig. 2

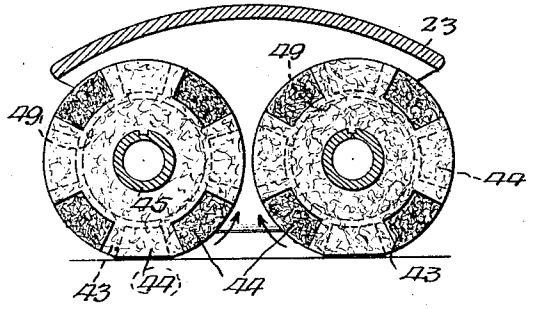


Fig. 3

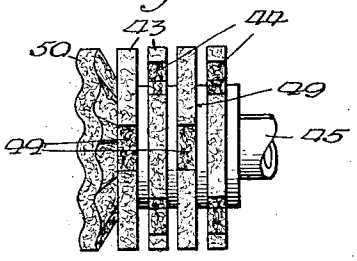


Fig. 4

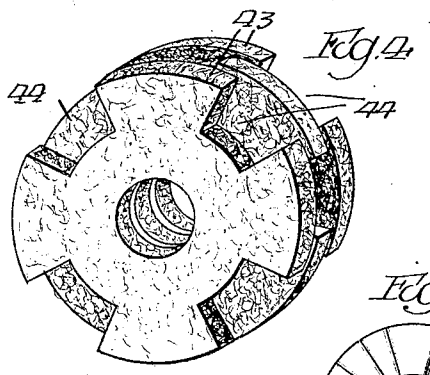


Fig. 5

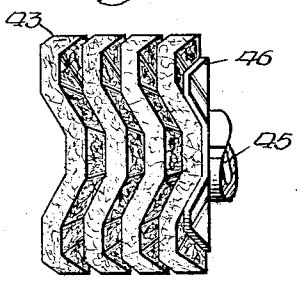


Fig. 7

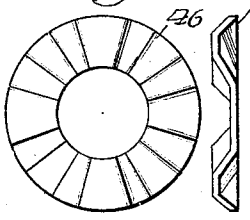
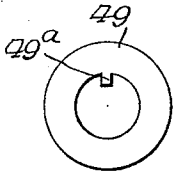


Fig. 8

Fig. 6



Inventor
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By. [signature]
Atty

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1,797,040

UNITED STATES PATENT OFFICE

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RUBBING MACHINE

Original application filed March 27, 1925, Serial No. 18,774. Divided and this application filed December 16, 1925. Serial No. 75,751.

This application is a division of my application Serial No. 18,774, filed March 27, 1925, and the present invention relates to improvements in rubbing machines particularly adapted though not necessarily limited in use for rubbing the surface of automobiles and also polished and varnished surfaces, and one of the objects of the invention is to provide an improved machine of this character in which is embodied a rubbing member adapted to effectively rub curved, irregular or uneven surfaces, the rubbing member being rotatable and embodying a plurality of separate flexible disc like rubbing elements, the outer edges of which are free to conform to the contour of the surface being operated upon.

A further object is to provide in an improved machine of this character a rotatable rubbing member embodying flexible disc like rubbing elements, the peripheries of the elements, when pressure is exerted upon the machine, being deflected and co-operating to present a substantially continuous surface of yieldable material to conform with the contour of the surface of the work, centrifugal action operating to cause the discs to be brought back to normal.

A further object is to provide in an improved machine of this character an improved rotatable yielding rubbing member having spaced cavities or recesses through the periphery thereof and throughout substantially the length of the member for causing the rubbing compound or material to be fed in directions lengthwise of the member as the latter is rotated.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and as shown in the accompanying drawing illustrating the invention, and in which

Figure 1, is a detail longitudinal sectional view of a rubbing machine of this character constructed in accordance with the principles of this invention.

Figure 2, is a sectional view on line 2—2 Figure 1.

Figure 3, is a detail side elevation of one end of one of the rubbing members.

Figure 4, is a detail perspective view of several of the disc like rubbing elements in their normal positions.

Figure 5, is a detail elevation of one of the spacing members.

Figure 6, is a side elevation of the rubbing members showing the shape they will assume when clamped together.

Figure 7, is a front elevation of one form of spacing member.

Figure 8 is a side elevation of Figure 7.

Referring more particularly to the drawing the numeral 20 designates generally a supporting structure which may be of any desired size and configuration and is provided with a supporting surface 21, upon which a motor or driving mechanism (not shown) may be mounted. A portion of the member 20 is shaped to form a shield 23 beneath which the rubbing members are located and a handle 24 may be provided by means of which the machine may be manipulated or transported.

Journaled to the supporting structure 20 is a shaft 25, two of which are shown in the present invention, and these shafts receive motion from suitable driving mechanism in any suitable manner and the shafts are arraged to preferably rotate in opposition to each other.

As each of the rubbing elements and the connection to the respective drive shafts is the same the description of one will apply equally as well to them both.

Connected with the shaft 25 is a bearing

26 which is adapted to be telescoped into one end of the tubular member 45 and the member and shaft are secured together in any suitable manner so that they will rotate together.

The member 45 is preferably provided with a shoulder 47 at one end thereof. This member 45 may be of any desired length and diameter and is adapted to support a plurality of disc like rubbing elements 43. These elements are constructed of any suitable flexible material and may be of any desired diameter and thickness. They are sleeved upon the member 45 and intermediate the elements 43 are spacing members 49.

These spacing members are preferably constructed of any suitable non-flexible material such as metal or the like and are held against rotation with respect to the element 45 in any suitable manner, such as by means of a key or feather 49*a*.

The spacing members 49 are of a diameter considerably less than the diameter of the elements 43. One of these spacing members is placed between each pair of rubbing elements 43, and one of the spacing members is also preferably placed upon the member 43 so as to abut the collar or shoulder 47.

The outer extremity of the member 45 is preferably provided with internal screw threads adapted to receive a screw or fastening device 48, and which screw or fastening device is preferably provided with a head 51 which co-operates with the shoulder 47 so as to clamp the rubbing elements 43 and the spacing members 49 together.

When the rubbing elements 43 are thus clamped together spaces will be formed intermediate adjacent rubbing elements 43 so as to permit the peripheries of the rubbing elements 43 to be deflected against the work surface when pressure is exerted upon the machine and thereby cause the peripheries of the flexible members 43 to form a substantially continuous surface against the work.

During the operation of the machine the rubbing compound or material which is placed upon the surface will be fed by the elements 43 in directions lengthwise of the rubbing member and the shield 23 which extends over the rubbing members will prevent the rubbing material or compound from being thrown out by the rubbing elements.

Furthermore, the peripheries of the flexible elements 43 will cause them to conform to the contour of any irregular or curved surface which is being operated upon.

The rubbing members rotating in directions opposed to each other will also cause the rubbing compound or material to be fed inwardly and maintained within the confines of the edges of the machine.

The flexible rubbing elements 43 are provided with recesses or cavities 44 arranged thereabout and extending through the peripheries of the respective elements to form clearly defined pockets for receiving and assisting in feeding the abrading material over the work.

These elements 43 in their normal condition are flat and are so arranged upon the supporting or rotatable member 45 that the recesses of adjacent elements 43 will be in staggered relation with respect to each other and the recesses in the elements on one of the members 45 will also be out of alinement with the recesses in the opposite element of the other of the members 45.

The spacing elements 46 are constructed of any suitable non-elastic material and are corrugated or undulated so that when the rotating elements 43 and the spacing members 46 are clamped together against a shoulder 47 on one end of the member 45 by means of the screw or fastening device 48 at the other end of the member 45, the rubbing elements 43 will be caused to be distorted or deflected so as to conform to the contour of the spacing members 46, as shown more clearly in Figure 5, and at the same time the spaces will be formed between adjacent rubbing elements 43.

In Figures 1 and 3 the spacing members 49 are flat so that when placed in position between the rubbing elements 43 and all of the parts clamped together by the screw or fastening device 48, the rubbing elements 43 will be maintained in their normal shape.

If desired an additional rubbing element 50 may be provided and constructed of a similar suitable flexible material.

This element 50 may be secured to the end of the member 45 by the screw or fastening device 48, through the medium of the head 51, and this element 50 is provided for the purpose of causing the flexible rubbing elements to extend beyond the member 45 so that the end of the machine may be employed for rubbing purposes and also to prevent injury to any surface with which the end of the element 45 might contact.

The spacing members are of a diameter considerably less than the diameter of the flexible rubbing elements so that the peripheries of the rubbing elements may be deflected when pressure is exerted upon the machine and the spaces between adjacent rubbing elements will permit the peripheries of the elements to be thus deflected.

The pockets or recesses 45 in the elements serve as a means for assisting in conveying the rubbing material in directions lengthwise of the rubbing member.

Obviously the pockets or recesses 44 may be arranged in any desired or suitable manner so as to cause the rubbing compound or material to be fed in any desired direction lengthwise of the machine, and of the rubbing members.

While the preferred forms of the invention

have been herein shown and described it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:

1. In a rubbing machine, a plurality of rotatable members, each of said members embodying a plurality of flexible discs of considerable thickness and having their peripheries free, said discs having recesses opening through the peripheries thereof to form clearly defined pockets, the recesses in adjacent discs being out of communication with each other, the sides of the recesses in one disc being disposed between body portions of adjacent discs.

2. In a rubbing machine, a plurality of rotatable members, each of said members embodying a plurality of flexible discs, the peripheries of which are free, said discs having independent recesses opening through the peripheries thereof, the recesses of adjacent discs being out of communication, said recesses throughout the length of the respective members being arranged in staggered relation.

3. For use in a rubbing machine, a rotatable rubbing member, said member embodying a plurality of discs, the peripheries of which are free, said discs being of considerable thickness and having recesses opening through their peripheries to form clearly defined open pockets, the recesses in adjacent discs being out of communication.

4. In a rubbing machine, a rotatable rubbing member, said member embodying a plurality of flexible discs the peripheries of which are free, said discs being of considerable thickness and having recesses opening through their peripheries to form clearly defined open pockets out of communication with each other, the recesses throughout the length of said member being arranged in staggered relation, and an operating shaft connected with the member.

5. In a rubbing machine, a rotatable member, said member embodying a flexible work engaging periphery and having separate cavities opening through the periphery to form clearly defined open pockets out of direct communication with each other, said cavities being disposed about the member and spaced from each other in directions lengthwise of the member.

6. In a rubbing machine, a pair of rotatable members arranged side by side, each of the members embodying flexible work engaging portions having cavities opening through their respective peripheries to form clearly defined open pockets out of direct communication with each other.

7. In a rubbing machine, a pair of extended substantially parallel rotatable members, each of the members embodying flexible work engaging portions having cavities opening through their peripheries to form clearly defined pockets out of communication with each other, said cavities being disposed about the respective members and spaced from each other in directions lengthwise of the members.

In testimony whereof I have signed my name to this specification, on this 14th day of December, A. D. 1925.

HOWARD G. BARTLING.