United States Patent [19]

Ali

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[54] **SANDING AND BUFFING WHEEL**

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[52] **U.S. Cl.** **51/334**
[51] **Int. Cl.** **B24b 9/02**
[58] **Field of Search** 51/334–337

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Primary Examiner—Othell M. Simpson
Attorney, Agent, or Firm—Jerome P. Bloom

[57] **ABSTRACT**

An improved sanding and buffing wheel characterized by a cup-shaped hub element the outer surface of which is formed with circumferentially spaced, longitudinally extending slots. The slots terminate adjacent the cup base and are adapted to receive end portions of abrasively surfaced strip material. The strips of material are so formed and mounted to extend in a sense generally radial to and/or to fan outwardly from the hub wall to present abrasive surfaces thereof in a circumferentially spaced following relation, with respect to the direction of the wheel travel in use. The base of the cup-shaped hub element is apertured to accommodate one end of a simple mounting shaft. In preferred embodiment each slot will have slip fit therein, through an open end thereof at the cup lip, a plurality of abrasively surfaced strips, the inserted portions of which are stacked one upon the other and frictionally retained by the slot sides. The open ends of the slots are covered, in preferred embodiments, by an external flange on a cup-shaped cap element, which is nested in and thereby secured to the cup shaped hub element. It is a feature of preferred embodiments that the connection and placement of the abrasively surfaced strips are such that they present themselves in groups having a fanned out form and with their outer ends cupped or curved away from the direction the wheel will travel in use.

11 Claims, 8 Drawing Figures

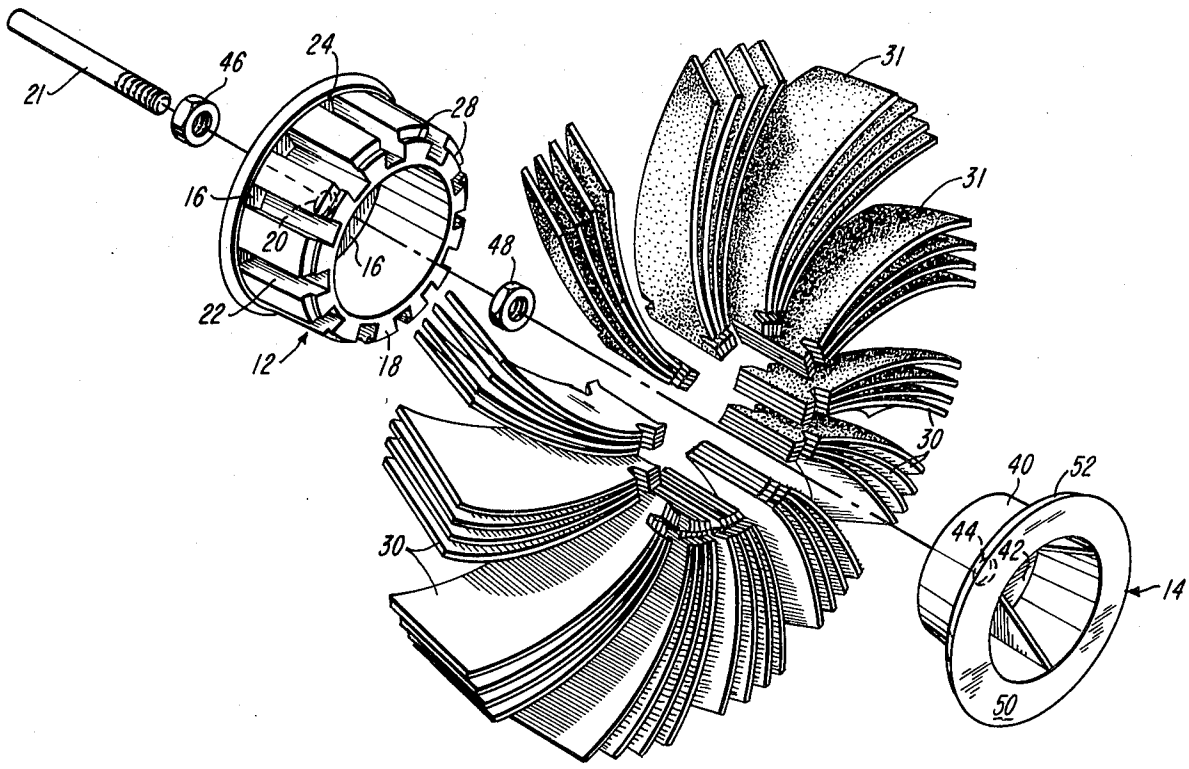


FIG-2

FIG-1

FIG-3

FIG-4

FIG-5

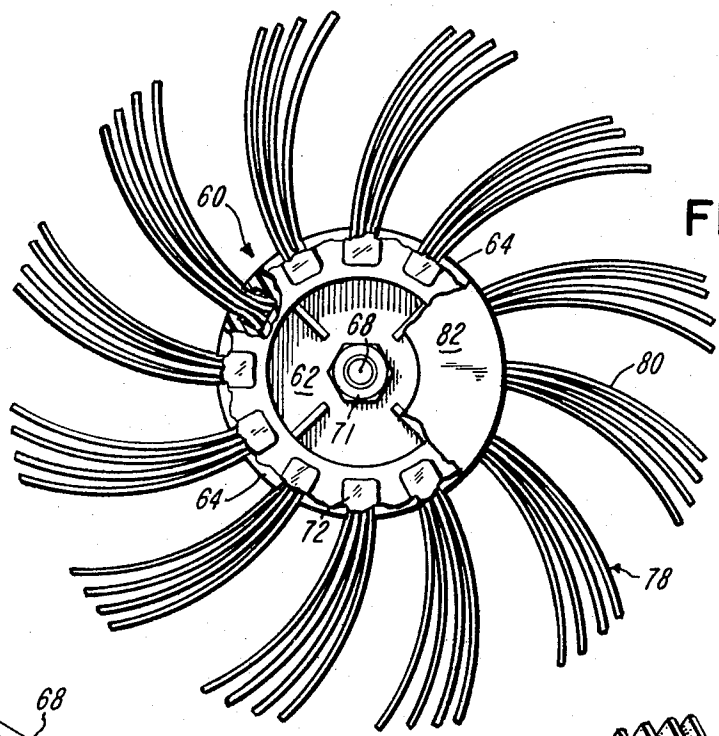


FIG-6

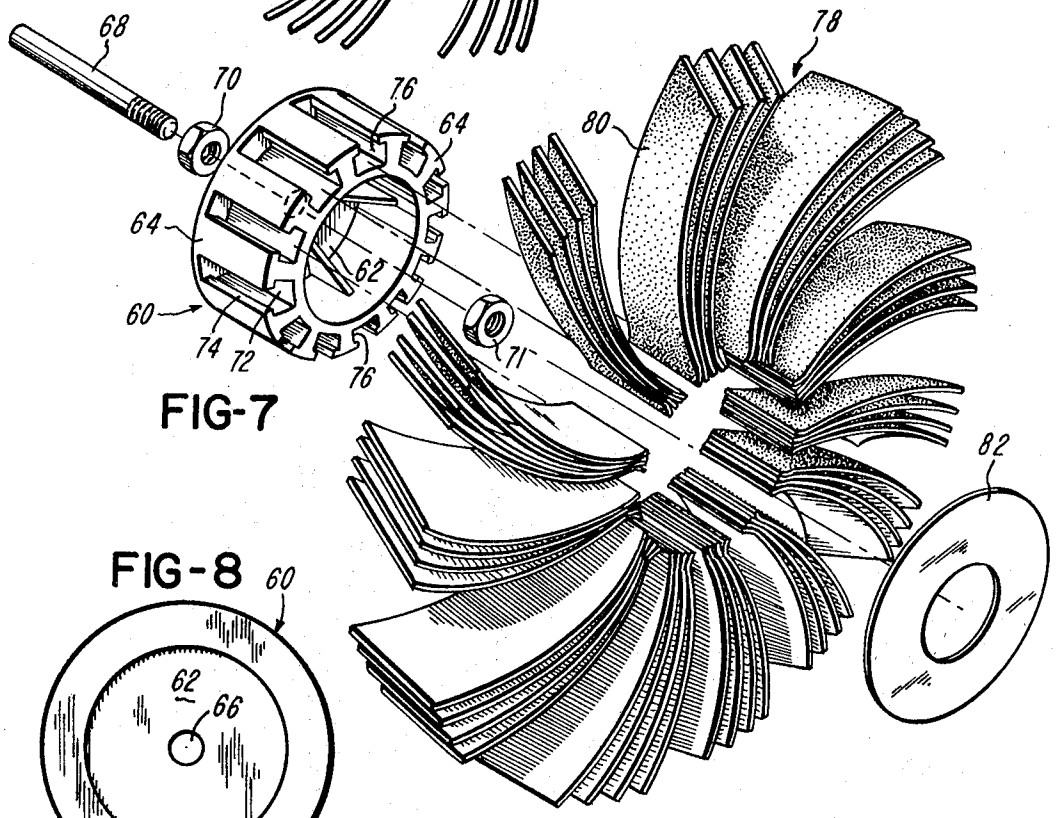


FIG-7

FIG-8

SANDING AND BUFFING WHEEL

BACKGROUND OF THE INVENTION

This invention relates to improvements in sanding and buffing wheels making them more economical to fabricate and more efficient and satisfactory in use.

Sanding and buffing wheels as heretofore known have presented problems in respect to the mount of the materials forming their abrasive operating portions. The application of such material has not only been time consuming but its operating life has been limited. The material as applied and employed has had tendencies to show uneven wear characteristics which are highly objectionable in that they reflect in the quality of the sanding and buffing operation achieved thereby. As a result, the time required for a sanding or buffing operation has been more than it should be and it has been very difficult for any other than a highly skilled operator to achieve a fully satisfactory sanding or buffing job with available abrasive wheel structures.

SUMMARY OF THE INVENTION

The present invention overcomes the above problems. It affords, moreover, a sanding and buffing wheel which can be simply assembled. In preferred embodiments, the wheel of the invention comprises a cup-shaped hub unit in the outer peripheral wall surface of which are slip fit a plurality of groups of elongated abrasively surfaced strips. The groups are circumferentially spaced and each group comprises a plurality of strips stacked one upon the other, which they extend from, and generally radial to, the cup wall tend to separate gradually, one from the other. The outer ends of the strips, as provided, assume a generally cupped configuration and arcuate form. The strips are of a material that as anchored to the hub they are self supporting and tend to retain their relative position in the course of a substantial period of usage, particularly under the influence of centrifugal force in the operation of the invention wheel.

The hub unit of the invention is made of a rigid plastic material and comprises a cup-shaped hub element and a cap element. The peripheral wall of the hub element is formed to include a plurality of circumferentially spaced, longitudinally extending, slots which open at one end from the cup lip and terminate at the other end adjacent but spaced from the outermost surface of the cup base. The slots so formed permit groups of the aforementioned abrasively surfaced strips to have their inner end portions thrust into the slots by way of the open ends thereof at the cup lip. The strips are frictionally fit to the hub element thereby. The cap element is applied to the hub element to cover the open ends of the slots and to contribute to the retention of the abrasively surfaced strips.

In the most desirable form of embodiment, the cap element is also cup shaped and has an external flange at its lip. As the cap element, in this form, is applied to nest within the hub element, it achieves a friction fit therewith which resists their relative displacement under normal operating conditions of the invention wheel. At the same time the external flange on the outer lip of the cap element will engage with the inner end portions of the abrasively surfaced strips in their respective slots and lock them in place against portions of the base of the hub element which define the inner ends of the slots.

In other but less preferred embodiment of the invention, the cup-shaped hub is made rigid plastic and the outer wall thereof includes circumferentially spaced T-shaped slots which mount the respective groups of strips in a manner that each group may be simply slip fit in a slot and encased at their inner ends in an epoxy resin which assists in a stable connection of the various groups of abrasive surfaced strips to the cup wall.

It is in any case a primary object of the invention to provide an improved sanding and buffing wheel which is economical to fabricate, more efficient and satisfactory in use, adaptable to a wide variety of applications and unlikely to malfunction.

Another object of the invention is to provide an improved sanding and buffing wheel characterized by a slotted hub in which there are slip fit a plurality of groups of generally elongate rectangular abrasively surfaced strips, the groups being circumferentially spaced and the strips in each of these groups extending outwardly in a generally radial sense and in a generally arcuate configuration.

Another object of the invention is to provide a new and improved sanding wheel including a light weight plastic molded hub and abrasive surfaced strips spaced circumferentially of the hub and bent as they project, to curve in a sense away from direction of movement of the strips as they approach a surface to be sanded or buffed.

Another object of the invention is to provide an improved sanding and buffing wheel the components of which are simply mated and mount of which is achieved by a simple shaft like object.

An additional object of the invention is to provide an improved sanding and buffing wheel characterized by a hub element having a series of circumferentially spaced longitudinally extending slots, from each of which slots projects one or more abrasively surfaced strips, the strips projecting generally radial to the hub element and presenting abrasive surface portions in spaced following relation with respect to the direction of wheel movement in use, the hub element, in preferred embodiment, having a cup shape and said slots being formed therein to open at one end from the cup lip which is covered by a cap element, portions of said hub base and said cap element being so related to portions of said strips which are inserted in said slots as to lock them in place.

A further object of the invention is to provide a sanding and buffing wheel possessing the advantageous structural features, the inherent meritorious characteristics and the means and mode of use herein descrived.

With the above and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawing wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

FIG. 1 is an exploded perspective view of a preferred embodiment of the invention;

FIG. 2 is a sectional view of the device of FIG. 1 in its assembled form;

FIG. 3 is a fragmentary exploded view illustrating the means whereby the abrasive surfaced strips applied to

the hub unit of the device of FIG. 1 are positively locked in place by a simple slip fit assembly procedure;

FIG. 4 is a view taken on line 4—4 of FIG. 2;

FIG. 5 is a head on view of the device of FIG. 1 in assembled form;

FIG. 6 is a head on view of the wheel of the invention in another form of its embodiment;

FIG. 7 is an exploded view of the structure of the wheel shown in FIG. 6; and

FIG. 8 is an end view of the hub structure of the device of FIG. 6.

BRIEF DESCRIPTION OF A PREFERRED AND OTHER EMBODIMENT OF THE INVENTION

As seen in the drawings, in the preferred embodiment of the invention, shown in FIGS. 1–5, the hub unit 10 is comprised of a cup shaped hub element 12 and a nesting cup shaped cap element 14. Both elements are shown to be molded of a plastic material but they may be made of any material which will enable their reproduction in similar form and physical character.

The hub element 12 is so molded as to provide it with a relatively thin base 16 from which perpendicularly projects a relatively thick cylindrical wall structure 18. The base 16 has a single aperture 20 which accommodates the projection therethrough of the externally threaded end of a mounting shaft 21.

The outer peripheral surface of the cup wall 18 has formed therein a plurality of circumferentially and equidistantly spaced, longitudinally extending, slots 22. The slots 22 extend substantially the length of the cup wall, opening at one end from the lip of the cup and terminating at their other end within the thickness of the cup base. The outer peripheral edge of the cup base is extended relative the outer peripheral surface of the cup wall and so formed as to provide thereon a circumferential rim including a portion defining a lip 24 which has a generally triangularly shaped cross section. The lip 24 projects forwardly of the base 16, in the sense of the cup wall 18, to overlie and define at the inner end of each slot 22 a socket-like recess 26. At the cup lip, the segments of the wall structure 18 which define the side walls of the slots 22 are reduced in thickness to provide thereon a recessed shoulder 28 the purpose of which will soon become obvious.

Anchored at one end in the slots 22 is a series of strips of material having an abrasive surface. These strips 30 which are so arranged each have a narrow, elongate, generally rectangular form. Immediately adjacent the inner ends thereof which seat in the slots 22, each of the strips 30 has a single notch 32 in each of its side edges. The notches 32 arranged to be directly and laterally aligned. Moreover, the notches are of generally triangular configuration and of a shape and size to be complementary to that of the lip 24.

For assembly to the hub element 12, as may be seen with reference to the accompanying drawings, the strips 30 are arranged in groups. In each group the strips are stacked one upon the other, whereupon they are pinched together at their inner notched ends, which are aligned, and preferably slip fit into a slot from its open end at the lip of the hub element 12. As each group is thrust inwardly of a slot, its innermost side edge portions are caused to seat against a portion of the base 16 which defines the innermost end of the slot and the aligned notches 32 in the innermost side edge portions of the strips will receive therein a portion of the lip 24. As this occurs, as will be obvious, end portions of grouped strips which are innermost with respect to the notches 32 will nest under the lip 24, in the socket-like recess 26 formed thereby.

The cap element 14 is a thin walled structure which is also cup shaped. It has a peripheral wall 40 which has a slight longitudiinal taper on its outer surface, which is so tapered and sized to be slip fit into a nesting relation to the inner wall surface of the cup-shaped hub element 12. The relative configuration of the wall 40 and the surface of the hub element 12 in which it fits provides that as the cap element 14 is fully seated within the hub element, the mating surfaces will frictionally lock together. The cap element 14 has a base 42 which includes a central aperture 44. The latter aligns with the aperture 20 in the base of the hub element 12 on assembly. Accordingly, when the cap element 14 is fully nested in the hub element 12, the threaded end of shaft 21 may be trust through both the apertures 20 and 44 to project internally of the cup formed cap element. As may be seen from the drawings, nuts 46 and 48 are positioned in a spaced relation on the threaded end of shaft 21, the first being positioned outwardly of the base 16 of the hub element 12 and the other inwardly of the cap element 14. Of course, the nut 48 is removed from the shaft 21 as its threaded end is inserted first through aperture 20 and then aperture 44 in an obvious manner. The nut 48 is then applied to cause the base 16 and the base 42 to be positioned between the nuts. Depending on the application, the nuts 46 and 48 may be appropriately adjusted along the shaft 21 and may be moved one relative the other until the bases 16 and 42 are clamped therebetween. In this manner the elements 12 and 14 may be locked together in a desired position on and relative to the mounting shaft 21. By employing the shaft 21 in connection with the hub elements 12 and 14, the entire unit may be simply chucked to any conventional drive unit.

The lip of the cap element 18 has an annular, radially projected, plate-like flange 50 formed integral therewith. Molded integral and coextensive with the other peripheral edge of the flange 50 is a rim-like projection 52 having a generally triangular cross section. The projection 52 has a form which is identical with that of the lip 24 on the base 16 of the hub element 12. As the cap element 14 is inserted in and assembled with the hub element 12, the projection 52 will have the apex thereof projected in the direction of and in general alignment with the apex of the lip 24. Thus, as the cap element is fully seated, the projection 52 will seat in the notches 32 in the edges of the strips 30 presenting themselves at the open ends of the slots 22. In arriving at its seated position, the projection 52 will ride over the recessed shoulder 28 at the lip of the hub element 12 to form thereby a socket-like retention recess for portions of the strip elements 30 which are thereby covered and caused to underlie the projection 52.

In the described embodiment of the invention the strips 30 are of a material having a fibrous content and a body form enabling them to project generally radially of the wall of the hub element 12 and to flex but to self-stabilize in the position in which they are caused to assume, in absence of load. As shown, the strips 30 of each group are caused to fan out as they project from the hub wall and to separate slightly but gradually to an increasing degree from their inner anchored portions to their outer ends. The outermost ends of the strips are

curved commonly in the same direction and in a sense that in use they will cup away from the surface to which they apply a sanding or buffing operation. The one face 31 of each strip which applies to the surface to be sanded or buffed has an abrasive content or covering.

From the foregoing, it may be clearly seen that the formation of the sanding and/or buffing wheel in accordance with the invention is easy and economical to achieve. Both the hub element 12 and the cap element 14 may be simply and inexpensively molded and their configurations are such that the strip elements 30 may be easily assembled and locked in position. As has been indicated, the actual locking is finally achieved by a simple insertion of the cap element 14, in reference to the hub element 12. By virtue of the pinching of each group of strips as they are assembled to the hub element 12, upon insertion and release there will be a frictional lock thereof. To insure a full and long lasting retentin of the strips where the application so demands, the notches are provided in the strips as assembled to cooperate with the lip 24 and projection 52 on the responsive mating portions of the hub.

It will be further self-evident that while the elements 12 and 14 are made of extremely inexpensive material, once assembled they provide a very strong hub unit and the locking function thereof in reference to the strips insures against and tearing, pulling or mispositioning of the strips. This means that the stroke of the strips in a sanding or buffing operation will be uniform and smooth. Attention is directed to the fact that by virtue of the simple shaft mount of the elements of the hub unit, there is double security for the assembly achieved thereby and the whole unit may be very easily mounted to any conventional drive mechanism having a chucking facility.

It has been found in commercial usage that the arrangement of the strips is such that not only will they produce a smooth and uniform buffing or sanding operation but the strips work in complementary fashion so they wear in a relatively uniform manner. This contributes to a long lasting life and a most efficient one, in use of the invention wheel.

Attention is now directed to FIGS. 6 through 8 of the drawings which illustrate a further embodiment of the invention which may be suitable for certain applications. This is not the preferred embodiment, but in utilizing therein certain basic concepts of the invention, similar results and advantages may be achieved.

As seen in FIGS. 6 to 8 of the drawings, another embodiment of the invention there illustrated includes a cup-shaped hub 60, preferably molded of a plastic material to provide it with a relatively thin base 62 from which projects a relatively thick cylindrical wall 64. The base 62 has a single aperture 66 accommodating the projection therethrough of the externally threaded end of a mounting shaft 68.

Nuts 70 andd 71 are positioned on the threaded end of the shaft 68 to either side of the base 62. As will be self evident, the nut 70 is first threaded on the shaft and, when the shaft is thrust through the aperture 66 to have the nut 70 about the outer face of the base 62, the nut 71 is then applied to the projected threaded extremity of the shaft 68 within the cup per se. Upon tightening down of the nut 71 the shaft 68 is simply and quickly integrated to the cup 60. As will be obvious, the shaft 68 may be mounted in the chucking device of a conventional drive unit and the nuts 70 and 71 may be relatively adjusted to position the wheel in reference to the drive unit, as required.

Referring to the drawings, it may be there seen that the outer peripheral surface of the cup wall 64 has formed therein a plurality of circumferentially and equidistantly and substantially spaced T-shaped slots 72. The stem portion 74 of each T-shaped slot 72 is very short in length and quite narrow in width and provides an opening directed radially outward of the cup wall. In contrast, the cross-bar portion 76 of each T-shaped slot which positions inwardly of the cup wall is relatively thick in a sense radially of the cup wall and relatively broad in lateral expanse. The T-shaped slots 72 extend substantially the length of the cup wall to have one end thereof open from the lip of the cup while the other end terminates adjacent to and is closed by the base 62.

Anchored at one end in each of the slots 72 in the wall of the hub 60 is a stacked group of abrasive surfaced strips 78. The strips 78 of each group, here illustrated as four in number, have a narrow, elongate, rectangular form. They are stacked one upon the other and, for assembly, are pinched together adjacent their innermost ends to enable the group to be slid into and longitudinally of a slow 72, from the open end thereof at the cup lip. Immediately prior to each group of strips 78 being slid into a slot 72, the innermost ends of the strips, which are slightly spread due to the pinching, are dipped in a liquid epoxy resin. Accordingly, as a group of strips 78 is slip fit in a slot 72, their pinched together portions are disposed in the stem portion 74 of the related T-shaped slot while their relatively spread innermost end portions, encased in the epoxy resin, seat and expand within the cross-bar portion 76 of the slot. There is not only achieved a natural friction anchor of each group of strips 78 by having inner end portions pinched and frictionally retained in the stem portion of the related slot byt the epoxy resin on innermost ends of the strips, which fan out in a condition which would naturally interfere with a radial displacement of the pinched together strips, forms a bond with the plastic of the hub 60. In this manner each group of strips is locked to the hub 60.

As in the first embodiment descrided, the strips 78 are preferably of a material having a fibrous content and a body form enabling them to project generally radially of the hub wall and flex but to self stabilize in the position which they are caused to assume.

As shown in FIG. 6 of the drawings, the strips 78 of each group fan out as they project from the hub wall, separating slightly but gradually to an increasing degree from their inner anchored portions to their outer ends. As indicated in FIG. 6, the outermost ends of the strips are curved commonly in a clockwise direction and in a sense that in use they cup away from the surface to which they apply in a sanding or buffing operation. The one face 80 of each strip which applies to the surface of be sanded or buffed has an abrasive content.

An annular plate-like element 82, which may be of cardboard or other suitable material, is adhesively and releasably secured over the lip of the cup wall 64, in closing relation to the end openings of the slots 72. The plate 82 is not necessarily required but it does serve a supplementing function of retention, particularly in cases where the epoxy resin may not be employed.

Thus the embodiment of the invention shown in FIGS. 6 through 8 basically provides an inexpensive

disposable molded cup-like structure including in its outer wall surface a series of circumferenntially and equidistantly and substantially spaced slots **72,** each of which slots accommodates the inner end portions of a stacked group of elongate abrasive strips **78.** The groups of strips project in spaced relation, each group having a fanned out form, curving away from the direction that the wheel will be caused to rotate as it is driven through the medium of the shaft **68** when the latter is inserted in a power driven chucking device. It is noted that the spacing of the slots **72** is so arranged to permit each group of strips **78** to fan out without interference. Moreover the form of the slots and the groupings of the strips is such to facilitate a quick assembly and a connection of parts that is highly secure.

The simplicity of the invention assembly in respect to embodiments as here described is believed self-evident. In any case, no special skill is required in putting together the sanding wheel of the invention and the abrasive surfaced strips are uniquely grouped in a substantially spaced relation from group to group and curved so that in rotation of the wheel they will supplement each other in a progressive and complementary fashion. The distinctive spacing of the groups of the strips lends to the wheel an ability to obtain the maximum service from the surface areas of the strip material which are exposed to the work to which the same is applied.

By providing the unique hub structure, moreover, one enables an optimum retention capability of the hub in reference to the strips which it supports. Attention is directed to the fact that it has been pointed out that the strips per se are generally self supporting and this is a characteristic which lends the entire unit to achieving the maximum effect in a sanding or buffing application of the wheel.

A unique feature of the wheel is that as the abrasive surfaced strips load up at their outer ends in use, they will wear away automatically and the strips and correspondingly the wheel will keep reducing in size without diminishing their function. Moreover, the same enables that the total of the abrasive material available is optimally utilized. The fact that the strips, as secured, are flexible and in effect self stabilizing, enables a fast rate of cut in sanding or buffing and a smooter and cooler running operation than may be achieved by wheels heretofore known for performing the same operation.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect and the invention is therefore claimed in any of its form or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. A sanding or buffing device comprising a cup-shaped hub, strip-like elements anchored at one end to and projected generally radially from said hub, said strip-like elements being arranged in groups spaced circumferentially of said hub and being abrasively surfaced in the portions to be applied to the surfaces to be sanded or buffed, the strip-like elements of each group having their inner end portions clustered and slip fit to said hub and their outer end portions projected in a relatively spaced relation and curved in a direction away from that direction in which the hub is turned to advance said strips to engagement with a surface to be sanded or buffed, the projected portions of said strip-like elements having the characteristic of flexing yet being substantially self-sustaining in the spaced position they are caused to assume, means formed in the base of said cup-shaped hub for mounting said device to a driving medium, each of said strip-like elements having a similar generally rectangular elongate shape and the groups thereof being substantially spaced, with the strip-like elements of each group being arranged to fan outwardly of said hub, and said strip-like elements being contained against movement in a sense longitudinally of said cup-shaped hub by a cup-shaped cap frictionally attached by a telescoping mount thereof to one end of said hub.

2. A sanding or buffing device comprising a hub, strip-like elements anchored at one end to and projected generally radially from said hub, said strip-like elements including an abrasive material and being arranged in groups spaced circumferentially of said hub, said hub including therein a plurality of slots, the strip-like elements of each group having their inner end portions clustered and friction fit in said slots in the assembly thereof to said hub by means of a slip fit, the outer end portions of the strip elements of each group being projected from said hub in a relatively spaced relation and curved in a direction away from that direction in which the hub is turned to advance said strips to engagement with a surface to be sanded or buffed, the projected portions of said strip-like elements having the characteristics of flexing yet being substantially self-sustaining in the spaced position they are caused to assume, said hub being characterized by a cup-like form, a cup-like cap device inserted in said hub and formed to achieve a friction lock thereto in mount thereof to said hub, said cap device and a portion of said cup-like hub providing means to secure said strip-like elements against movement in a sense endwide of said hub.

3. A sanding or buffing device as in claim **2** characterized by said slots being closed to one end by a peripheral projection from the base of said cup-like hub and portions of the outer wall surface of said hub being stepped inwardly of said hub to accommodate a peripheral flange portion of said cup-like cap device to facilitate the retention of said strip-like elements in said hub.

4. A sanding or buffing device comprising a hub, strip-like elements anchored at one end to and projected generally radially from said hub, said strip-like elements including an abrasive material and being arranged in groups spaced circumferentially of said hub, the strip elements of each group having their inner end portions clustered and slip fit to said hub and their outer end portions projected in a relatively spaced relation and curved in a direction away from that direction in which the hub is turned to advance said strips to engagement with a surface to be sanded or buffed, the projected portions of said strip-like elements having the characteristic of flexing yet being substantially self-

sustaining in the spaced position they are caused to assume, said hub including a molded cup-shaped hub portion including a thin walled base and a relatively thick peripheral wall structure, said wall struture having slots in its outer peripheral surface arranged to open at one end from the lip of the cup and being closed to its opposite end by a portion of the cup base, said slots being formed to provide for friction fit of the clustered inner end portions of a group of said strip-like elements on application thereof to said slots through the open end thereof and slip fit means applied to retain said groups of strip-like elements in said slots.

5. A sanding or buffing device as in claim **4** wherein said strip-like elements are arranged in groups with each group being anchored in one of said slots to be pinched in frictional engagement with each other and with said hub portion by wall portions of the slot to which they are applied.

6. A sanding or buffing device as in claim **5** characterized by said strip-like elements in said groups being stacked one upon the other and presenting abrasive surfaces which are commonly directed, inner end portions of said strips being retained against displacement in a sense outwardly of said hub by means including a base portion of said cup-shaped hub portion and means capping the open ends of said slots.

7. A sanding or buffing device comprising a hub, strip-like elements anchored at one end to said hub and projecting generally radially thereof in a circumferentially spaced relation, said strip-like elements including an abrasive material to at least one surface thereof and their projected portions having the characteristic of flexing yet being substantially self-sustaining in the position in which they are caused to assume, said hub being characterized by a cup-shaped hub portion including a base and a relatively thick wall structure, said wall structure having slots in its outer peripheral surface arranged to open at one end from the lip of the cup and being closed to its opposite end by a portion of the base of said cup, said slots being formed to provide for a slip fit of portions of said strip-like elements therein through the open end thereof, means being applied to retain strip-like elements in said slots, said strip-like elements being arranged in groups with each group being anchored in one of said slots to be pinched in frictional engagement with each other and with the hub portion by wall portions of the slot to which they are applied, the said strip-like elements in said groups being stacked one upon the other and presenting abrasive surfaces which are commonly directed, inner end portions being retained against displacement in a sense outwardly of said hub by means including a base portion of said cup-shaped hub portion, said retaining means for said strip-like elements including means capping the open ends of said slots, portions of said strips which are inserted in said slots having notches in opposite edges thereof and said cap means and said hub base portion including means which in the assembly thereof will engage in said notches to lock said strip-like elements in place.

8. A sanding or buffing device comprising a hub, strip-like elements anchored at one end of said hub and projecting generally radially thereof in a circumferentially spaced relation, said strip-like elements including an abrasive material to at least one surface thereof an projected portions having the characteristic of flexing yet being substantially self-sustaining in the position they are caused to assume, said hub being comprised of a first cup-shaped hub portion having slots in its periphery in which are anchored inner end portions of said strip-like elements and a second cup-shaped element constituting a cap portion for said first cup-shaped element, there being means included in said cap portion and in said first cup-shaped portion, at the base thereof, for inhibiting displacement of said strip-like elements from said hub.

9. A sanding of buffing device comprising a hub, strip-like elements anchored at one end to said hub and projecting generally radially thereof in a circumferentially spaced relation, said strip-like elements including an abrasive material to at least one surface thereof and their projected portions having the characteristic of flexing yet being substantially self-sustaining in the position they are caused to assume, said hub being comprised of two cup-shaped elements, one of which is disposed within the other, the outer of said cup-shaped elements having slots spaced circumferentially about its periphery and extending longitudinally thereof, said slots opening at one end from the lip of said outer cup-shaped element and being closed to the other end by portions of the base of said cup-shaped element and said strip-like elements having inner end portions fit within said slots and said cup-shaped elements and said strip-like elements having portions interengaging in a slip fit assembly thereof to lock said strip-like elements against displacement from said hub.

10. A device as in claim **9** characterized by said cup-shaped elements having a slip fit relation and formed to lock one relative the other in a slip fit assembly thereof.

11. A device as in claim **10** characterized by means for further interconnecting said cup-shaped elements as they are disposed one within the other providing means for mounting of said device to a driving medium for rotating said device in application of said strip-like elements to a surface to be sanded or buffed.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 3,872,630

DATED : March 25, 1975

INVENTOR(S) : Frank F. Ali

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 7, line 2, "circumferenntially" is amended to read -- circumferentially --.

Col. 7, line 45, "smooter" is amended to read -- smoother --.

Col. 8, line 47, "endwide" is amended to read -- endwise --.

Col. 9, line 4, "struture" (second occurrence) is amended to read -- structure --.

Col. 10, line 11, "an" (second occurrence) is amended to read -- and --.

Signed and Sealed this

twenty-second Day of *July 1975*

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks