March 25, 1941. C. J. PETERSON ET AL 2,236,444

SELF-COOLING BUFFING WHEEL

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Fig.1.

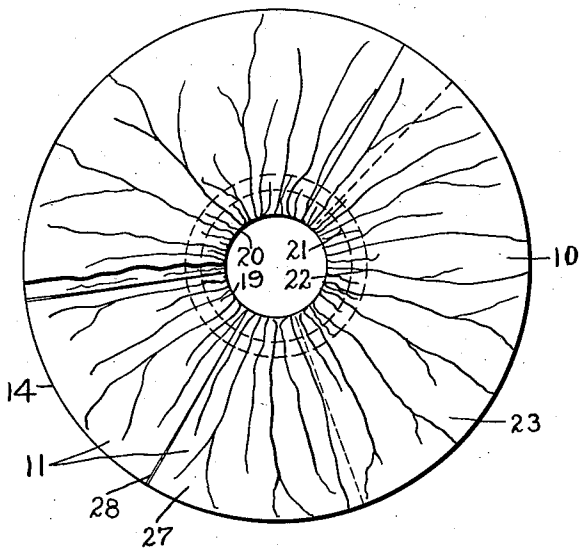


Fig.2.

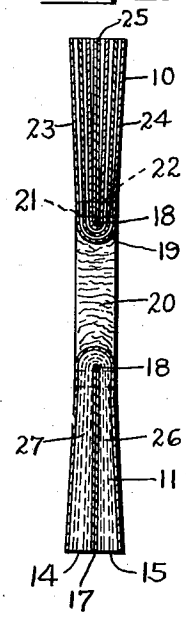


Fig.3.

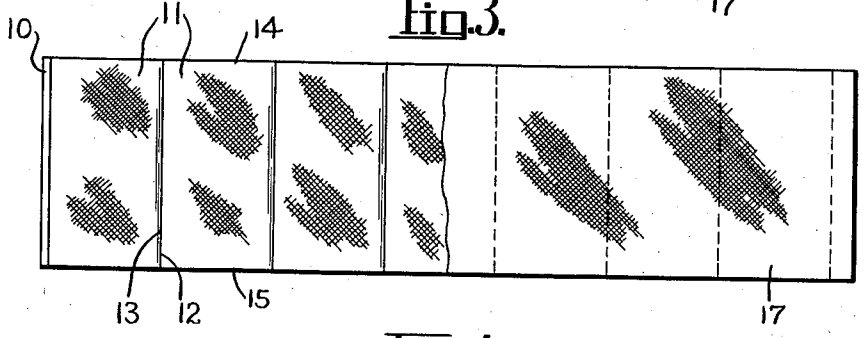


Fig.4.

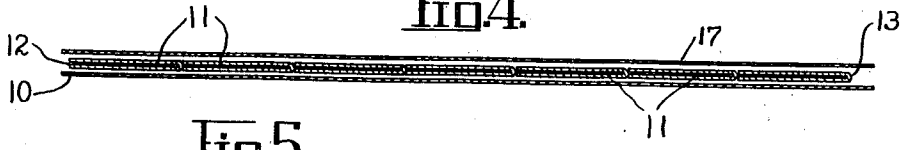
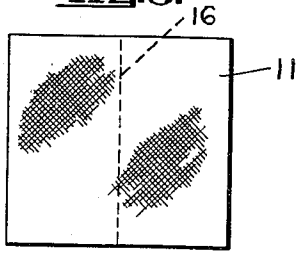


Fig.5.



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Fig. 6.

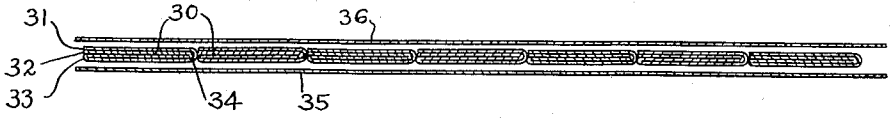


Fig. 7.

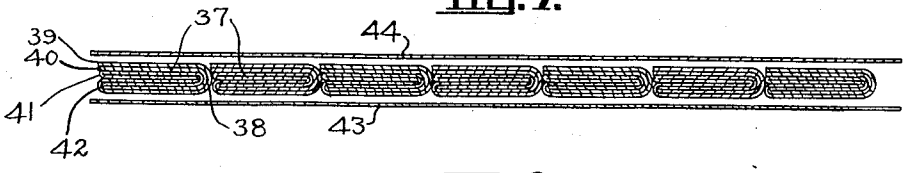


Fig. 8.

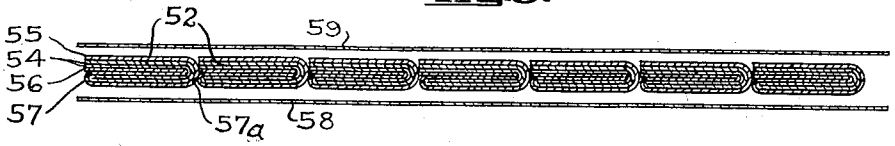


Fig. 10.

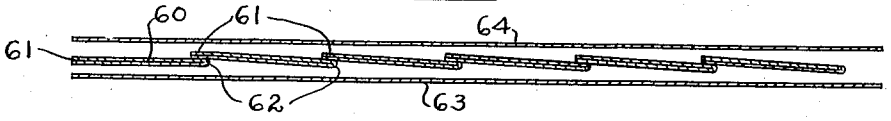
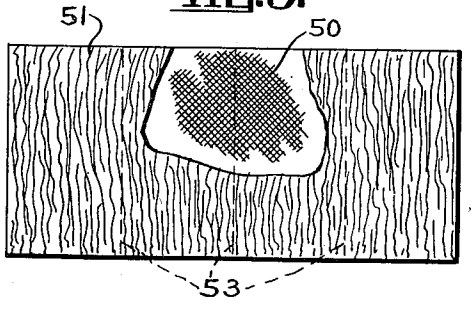


Fig. 9.



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Patented Mar. 25, 1941 2,236,444

UNITED STATES PATENT OFFICE

2,236,444

SELF-COOLING BUFFING WHEEL

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Application October 18, 1940, Serial No. 361,734

7 Claims. (Cl. 51—193)

This invention relates to buffing, polishing, and abrasive wheels, and more particularly to an improved form of laminated buffing wheel having interior ventilating pockets.

One object of this invention is to provide an improved buffing wheel of the above nature having a base strip, a top strip and a plurality of folded flat rolls or pads, disposed intermediate these strips and arranged to provide efficient ventilation for the wheel, whereby the heat generated during its use will be rapidly dissipated.

Another object is to provide a buffing wheel of the above nature in which each of the flat folded rolls is constructed of alternate layers of crinkled paper or cloth.

Still another object is to provide a buffing wheel of the above nature which will be relatively simple in construction, inexpensive to manufacture, easy to manipulate, compact, and very efficient and durable in use.

With these and other objects in view, which will appear as the description proceeds, there have been illustrated in the accompanying drawings, several forms in which the invention may be conveniently embodied in practice.

In the drawings:

Fig. 1 is a face view of a buffing wheel embodying the features and principles of this invention, the outer layer being broken away to disclose the interior construction.

Fig. 2 is a cross-sectional view of the same.

Fig. 3 is a development view of the first form of the invention, showing the relative arrangement of the single folded pads of fabric which are located between the surrounding base and top strips.

Fig. 4 is an edge view of the same.

Fig. 5 is a face view of one of the cloth pads used in the arrangement shown in Figs. 3 and 4, as it appears before folding.

Fig. 6 is an edge development view of a modified form of the invention in which each pad has a double fold.

Fig. 7 is an edge development view of another form in which each pad is folded three times.

Fig. 8 is an edge development view of another modified form wherein each pad consists of a pair of layers of alternately disposed crinkled paper and cloth.

Fig. 9 is a face view of one of the pads used in the form shown in Fig. 8, a portion of the crinkled paper being broken away to show the bias cut fabric therebeneath.

Fig. 10 is an edge development view of still another modified form of the invention wherein the pads are arranged in overlapped relation between the top and base strips.

First form

Referring now to the drawings wherein reference numerals designate like parts throughout the several views, in the first form of the invention as illustrated in Figs. 1–5, the numeral **10** denotes an elongated base strip of sheet material, preferably of cloth cut on the bias, and being of proper dimensions to correspond with the size of the buffing wheel to be formed therefrom. A plurality of flat pads, **11**, folded crosswise to the base strip **10** from sheet material, preferably cloth cut on the bias, are laid side by side upon the base strip **10** with the edge **12** of each one abutting the edge **13** of the next adjacent one, said pads being coextensive in width with the base strip **10**, whereby their ends **14** and **15** will be substantially in alignment with the respective side edges of the strip **10**. Each of the pads **11** of the form shown in Figs. 1–5 is formed by folding a short piece of cloth crosswise along the dotted line **16**. This provides two loose free ends at the pad edge **12**, and a single folded end at the edge **13**.

After arranging the pads **11** upon the base strip **10** in the manner indicated in the development view of Fig. 3, a top strip of sheet material **17**, also preferably of cloth, cut on the bias, is placed thereover, and the entire assembly will be rolled into cylindrical shape about a slotted drum, not shown, the center being thereafter drawn inwardly by a cord **18** to produce a disc-shaped wheel, as fully described and shown in our previous Patent No. 2,209,089, issued July 23, 1940. The buffing wheel, thus formed, comprises a flat laminated disc composed of a plurality of layers of cloth which are puckered together about a hub portion **19** surrounding a central shaft receiving opening **20**. The layers of cloth are then stitched along circular parallel lines **21** and **22** about the shaft opening **20**. It will be understood that spiral stitching may be employed, if desired, within the spirit and scope of the invention.

In the completed buffing wheel, as shown in Figs. 1 and 2, it will be noted that the pads **11** and base and top strips **10** and **17**, respectively, have been folded along a circular line to bring their side edges into parallelism. The base strip **10** will form outer covers **23** and **24**, a double thickness central partition **25** will be formed by the top strip **17**, and a series of circumferentially abutting pad portions **26** and **27** between the

central partition **25** and the outer covers **23** and **24**. Radially disposed wheel ventilating pockets **28** are thus formed by the above construction which will assist in the rapid dissipation of heat from the self-cooling buffing wheel when it is in use.

Modified forms

To provide a wheel of greater thickness than that of the first form, a modified form is shown in Fig. 6 in which a plurality of double-fold intermediate cloth pads **30** may be formed from a longer strip of material than in the first form, and which pads are folded twice, as indicated in Fig. 6. Each pad **30** will thus present a pair of loose ends **31** and **32**, a single-ply folded edge **33**, and a two-ply folded edge **34** at the adjacent abutting pad **30** when the pads are arranged on a base strip **35** and finally covered by a top strip **36**.

In Fig. 7 a wheel of still greater thickness is disclosed, each pad **37** being folded upon itself three times, whereby said pad **37** will present a four-ply folded edge **38**, a pair of loose ends **39** and **40**, a single-ply folded edge **41**, and a two-ply folded edge **42**, when they are assembled between a base strip **43** and a top strip **44**.

In the form of composite buffing wheel, shown in Figs. 8 and 9, a piece of cloth **50** and a piece of crinkled paper **51**, are used to form each of the composite pads **52**. The piece of crinkled paper **51** is laid upon the piece of cloth **50**, and the two layers are folded together crosswise on the dotted line **53** (see Fig. 9), with the crinkled paper on the inside. Two successive folds are then made in the paper and cloth assembly whereby each flat pad **52** will present a pair of free juxtaposed interior paper ends **54** between a pair of free cloth ends **55** and **56**, a two-ply paper and folded edge **57**, and a four-ply fold **57***a* consisting of two plies of paper and two plies of cloth, said pads being assembled between a cloth base strip **58** and a cloth top strip **59**.

The modified form in Fig. 10 comprises a plurality of single fold cloth pads **60** identical with the pads **11** of the first form (see Figs 4 and 5), both with their loose free ends **61** slightly overlapping the adjacent two-ply folded ends **62** of the next adjacent pads **60**. Such a structure will provide somewhat larger air pockets between the cloth base strip **63**, the cloth top strip **64**, and the pads **60**, due to the space required for the overlapping ends.

An important advantage of all forms of the present invention is that the unconnected pads provide air pockets which rapidly and efficiently dissipate the heat developed during the buffing operation.

While there have been disclosed in this specification several forms in which the invention may be embodied, it is to be understood that these forms are shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosures, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention what is claimed as new and for which it is desired to secure Letters Patent, is:

1. In a buffing wheel, a relatively long base strip, a plurality of flat folded pads laid side by side upon said base strip, and a top strip covering said pads, said base strip, pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside.

2. In a buffing wheel, a relatively long bias-cut fabric base strip, a plurality of flat folded bias-cut fabric pads laid side by side upon and coextensive in width with said base strip, and a bias-cut fabric top strip covering said pads; said base strip, pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside.

3. In a buffing wheel, a relatively long base strip, a plurality of folded pads laid side by side upon said base strip; each of said folded pads comprising a layer of crinkled paper superimposed on a layer of cloth, and a top strip covering said pads; said base strip, pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside.

4. In a buffing wheel, a relatively long and narrow base strip, a plurality of multi-folded pads laid side by side upon and coextensive in width with said base strip, and a top strip covering said pads; said base strip, pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside.

5. In a buffing wheel, a relatively long base strip, a plurality of flat folded pads laid side by side upon said base strip, and a top strip covering said pads; said base strip, pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside, the fold line of said pads running crosswise to the length of said base and top strips.

6. In a buffing wheel, a relatively long base strip, a plurality of flat single-folded pads laid side by side upon said base strip, and a top strip covering said pads; said base strip pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside.

7. In a buffing wheel, a relatively long base strip, a plurality of flat double-folded pads laid side by side upon said base strip, and a top strip covering said pads; said base strip, pads, and top strip being rolled as a unit into cylindrical form and drawn together along the longitudinal center line thereof to form a flat apertured disc with the base strip on the outside thereof and the pads on the inside.

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