Dec. 24, 1968 A. S. ROCK 3,417,420

BUFF OF FABRIC MATERIAL

Filed Feb. 23, 1967

FIG. 1

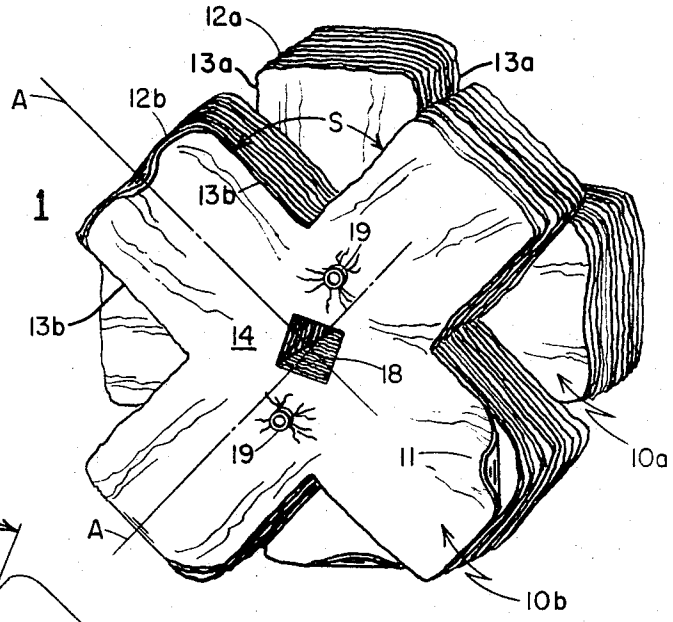
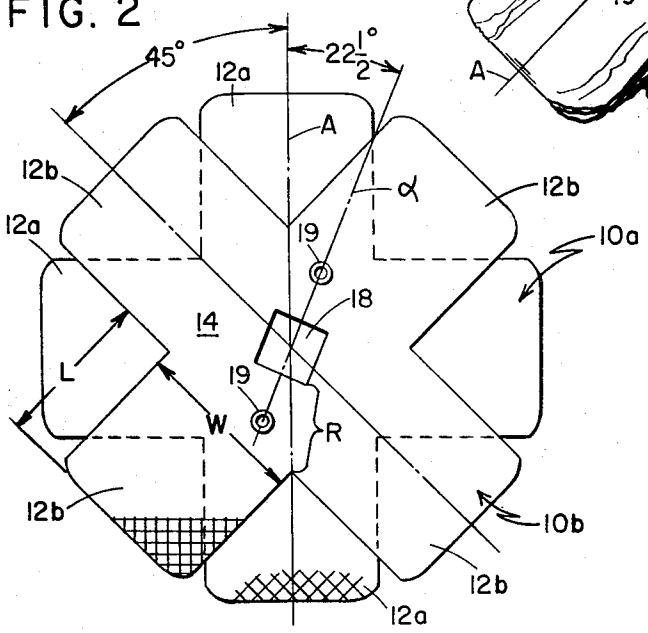


FIG. 2



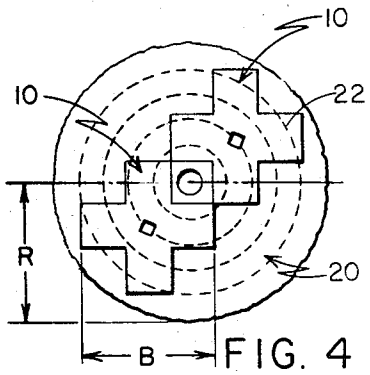
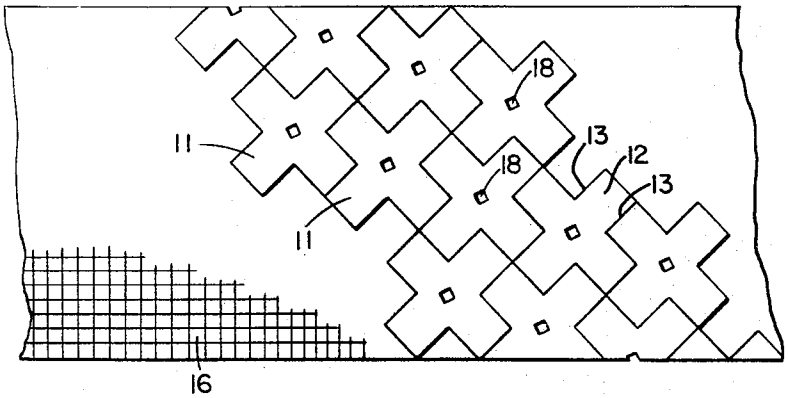


FIG. 4

FIG. 3



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BUFF OF FABRIC MATERIAL

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ABSTRACT OF THE DISCLOSURE

A buff comprising a plurality of stacked, flat, edge-aligned fabric elements. Each element has projections of substantial width extending outwardly from an integral portion. The axes and edges of adjacent projections are perpendicular and the edges form substantial angles with the threads of the fabric forming the element. In preferred embodiments, each element includes an arbor hole oriented at an angle of 22½° to an axis of the projections, the lengths and widths of the projections are substantially the same, and a plurality of buffs are secured together in successively reversed relationship with their arbor holes aligned so that the projections of adjacent buffs overlap and form 45° angles with each other

This invention relates to buffs.

It is a primary object of the present invention to provide a long-life buff which may be inexpensively formed from either new or used buffing material with a minimum amount of waste. Other objects include providing buffs which, when placed on an arbor, will automatically insure that the projections of adjacent buffs are properly staggered with respect to each other.

The invention accomplishes these and other objects by providing a buff comprising a plurality of stacked, flat, edge-aligned fabric elements. Each element has projections of substantial width extending outwardly from an integral center portion. The axes of adjacent projections are perpendicular to each other and the preferably parallel outwardly extending edges form a substantial angle with the weave of the material forming the element. In preferred embodiments, each element includes an arbor hole whose axis of orientation forms an angle of 22½° with the axis of the element's projections, and the lengths and widths of the projections are substantially equal.

Other objects, advantages and features will appear from the following detailed description of a preferred embodiment of the invention, taken together with the attached drawings, in which:

FIG. 1 is an isometric view of a two buff assembly constructed in accordance with the present invention;

FIG. 2 is a plan view of the buff assembly of FIG. 1;

FIG. 3 is a plan view showing the manner of cutting a plurality of buff elements from elongated rectangular material; and

FIG. 4 is a plan view illustrating the manner of cutting buffs from used circular buff material.

Referring more particularly to the drawings, there is illustrated a cross-shaped buff **10** constructed in accordance with the present invention. As shown, buff **10** comprises a plurality of fabric elements **11**, e.g. eight or more, stacked face-to-back with their edges aligned. Four buffing projections **12** of substantial width extend outwardly from an integral center portion **14** of each element. The axes A of adjacent projections are perpendicular. The two outwardly extending edges **13** of each projection are parallel. As shown, the edges of each projection **12** of each element form substantial bias angles, typically 45°, with the threads of the fabric.

The lengths (L) and width (W) of the projection **12** of each element are approximately the same, one-third the

overall width of the buff, so that it is possible to cut a large number of elements **11** from a piece of fabric **16** in an edge-to-edge pattern, thereby minimizing or eliminating entirely the amount of waste material. (See FIG. 3.) This construction also provides a substantial root R (FIG. 2) between the projections, thereby substantially contributing to the overall strength and life of the buff.

As shown in FIG. 3, all the edges of each buff element **11** will be at substantial, generally 45°, bias angles to the threads of the fabric forming the element, thereby significantly reducing the possibility of buff raveling and increasing buff life, even though the buff elements are cut from normal, non-bias, buffing material.

The integral center portion of each buff element **11** includes an arbor hole **18**, typically square or rectangular, whose axis of orientation or symmetry forms an angle of 22½° with the axis A of a projection **12**. When a pair of buffs **10***a* and **10***b* are secured together in a face-to-face relationship, e.g. one buff turned around, and the arbor holes aligned, the projections **12** of one buff **10***a* will be oriented at 45° angles to the projections **12** of the other buff **10***b* with substantial overlapping of the projections. (FIGS. 1 and 2). Rivets **19** or other securing means may be employed to hold the buffs together.

In practice, a plurality of buff assemblies are mounted on an arbor. An even number of buffs in each assembly ensures proper staggering of successive assemblies. No matter how they are placed upon the arbor, each successive buff will be reversed with respect to the buff preceding it. The fact (FIG. 1) that edge **13***a* of one projection diverges from edge **13***b* of the adjacent projection assures space between adjacent projections of adjacent buffs to provide free movement of the buff projections. The use of individual buffs, each with four projections, insures sufficient overlap and freedom of movement between the projections of adjacent buffs to provide a buff assembly that will present a substantially continuous buffing surface to the workpiece. The number of elements (fabric layers) in each buff and the dimensions of the element are cooperatively related to the thickness of the fabric forming the elements so that each set of corresponding, edge-aligned projections formed by the elements provides the desired resistance against the workpiece being buffed. The outwardly extending edges of the projections of the elements forming each set of projections are preferably free of each other, thereby permitting freedom of movement between the element projections and also providing space for buffing compound.

As shown in FIG. 4, the perpendicular projection construction of buffs **10** makes it possible to cut at least two buffs **10** from a single used circular buff **20**. Unlike certain other buff constructions, the radial extent of reclaimable material does not establish the maximum dimension of the new buff, each buff **10** has an overall width (B) greater than the radius (R) of used buff **20**. The edges of each buff **10** are also at substantial bias angles to the thread of the fabric forming used buff **20**. The stitching of the original old buff **20** holds the layers of the new buffs **10** together. Even if the thread of the fabric layers forming the old buff **20** are staggered with respect to each other, a majority of the edges of each new buff **10** will still be biased with respect to the threads of the fabric layers forming the buff.

Other embodiments within the scope of the following claims will occur to those skilled in the art.

What is claimed is:

1. A buff comprising a plurality of substantially identical buff elements, each buff element comprising a single layer of fabric of predetermined thickness having a center portion and four outwardly projecting portions integral therewith, each of said projecting portions having a

length and width substantially equal to one-third the overall width of said element, adjacent projecting portions having axes substantially perpendicular to each other, the outwardly extending edges of each of said projections being parallel, outwardly extending edges of adjacent projecting portions diverging from each other to provide a substantial space between said projecting portions, and each of the edges of said projecting portions of said buff elements being at a substantial bias angle to the threads of the fabric, said buff elements joined together in a stacked relationship with their center portions superposed and the edges of respective projecting portions aligned, the number of said buff elements and the dimensions thereof cooperatively related to said predetermined thickness of the fabric from which they are formed to enable each set of corresponding projecting portions to provide resistance to a workpiece to enable the workpiece to be buffed, the center portions of the plurality of buff elements cooperating to provide means by which to mount the buff upon an arbor, and the space between adjacent sets of corresponding projecting portions ensuring free movement of each said set relative to the others and permitting economy in the amount of material employed in said buff.

2. A buff comprising a plurality of substantially identical buff elements, each buff element comprising a single layer of fabric of predetermined thickness having a center portion and four outwardly projecting portions integral therewith, adjacent projecting portions having axes substantially perpendicular to each other, outwardly extending edges of adjacent projecting portions diverging from each other to provide a substantial space between said projecting portions, the edges of said projecting portions of said buff elements being at substantial bias angles to the threads of the fabric, the center portion of each element including an arbor hole of symmetrical, non-circular shape whose axis of symmetry forms an angle of 22½° with an axis of the projecting portions, said buff elements joined together in a stacked relationship with their arbor holes and the edges of respective projecting portions aligned, the number of said buff elements and the dimensions thereof cooperatively related to said predetermined thickness of the fabric from which they are formed to enable each set of corresponding projecting portions to provide resistance to a workpiece to enable the workpiece to be buffed, the arbor holes of the plurality of buff elements cooperating to provides means by which to mount the buff upon an arbor, the space between adjacent sets of corresponding projecting portions ensuring free movement of each said set relative to the others and permitting economy in the amount of material employed in said buff, and the outwardly extending edges of the projections of each element being free from the edges of the projections of other elements, permitting a degree of freedom of movement and providing space therebetween for buffing compound.

3. A buff assembly comprising at least two substantially identical buffs secured together in successively reversed relationship, each of said buffs having a plurality of adjacently perpendicular projections of substantial width with parallel edges extending outwardly from an integral center portion including an arbor hole of symmetrical, non-circular shape, whose axis of symmetry forms an angle of 22½° with an axis of the projections of that buff, the arbor holes being aligned so that the projections of one buff substantially overlap and form 45° angles with the projections of the other buff.

4. The buff assembly of claim 3 in which each buff comprises a plurality of stacked, edge-aligned fabric elements, each element having a plurality of outwardly extending projections of substantial width with substantially parallel outwardly extending edges at substantial bias angles to the thread of the fabric forming the element.

5. A buff comprising a plurality of substantially identical buff elements, each buff element comprising a single layer of fabric of predetermined thickness having a center portion and a plurality of outwardly projecting portions integral therewith, adjacent projecting portions having axes substantially perpendicular to each other, outwardly extending edges of adjacent projecting portions diverging from each other to provide a substantial space between said projecting portions, and the edges of said projecting portions of said buff elements being at bias angles to the threads of the fabric, said center portion of each element including an arbor hole of symmetrical, non-circular shape whose axis of symmetry forms an angle with an axis of the projections of the element, said buff elements joined together in a stacked relationship with their center portions superposed and the edges of respective projecting portions aligned, the number of said buff elements and the dimensions thereof cooperatively related to said predetermined thickness of the fabric from which they are formed to enable each set of corresponding projecting portions to provide resistance to a workpiece to enable the workpiece to be buffed, the center portions of the plurality of buff elements cooperating to provide means by which to mount the buff upon an arbor, and the space between adjacent sets of corresponding projecting portions ensuring free movement of each said set relative to the others and permitting economy in the amount of material employed in said buff.

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