

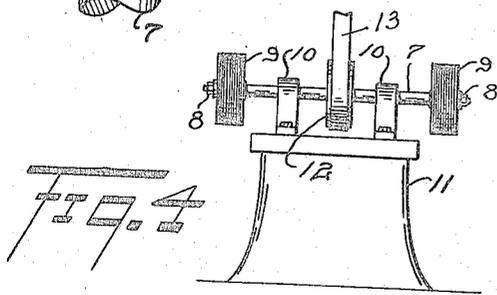
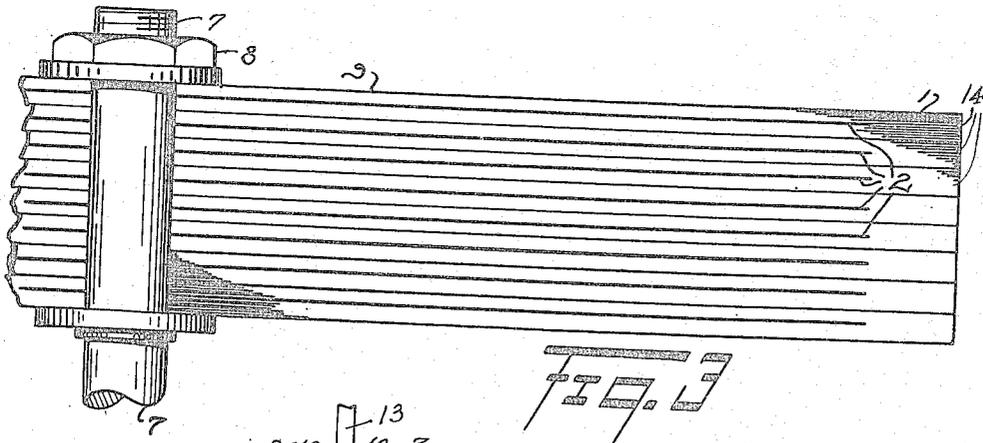
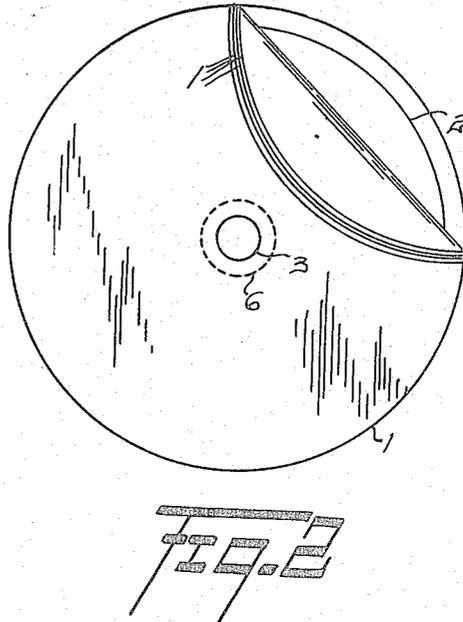
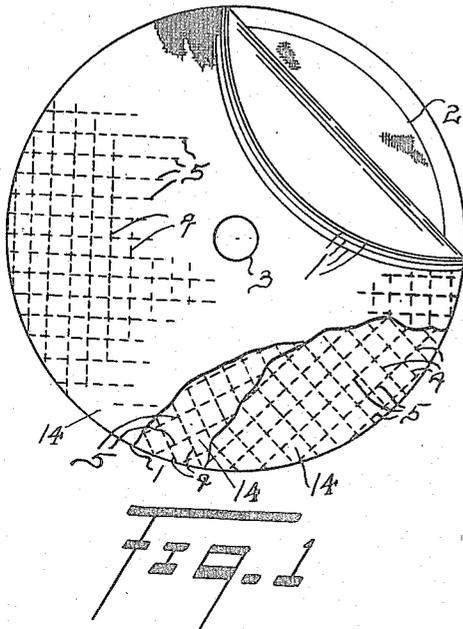
Nov. 18, 1924.

F. L. YERGES

1,515,818

BUFFER

Filed June 4, 1923



Frank L. Yerges  
INVENTOR  
BY *[Signature]*  
ATTORNEY

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# UNITED STATES PATENT OFFICE.

FRANK L. YERGES, OF FREMONT, OHIO, ASSIGNOR OF ONE-TENTH TO HARRY ZIMMERMAN, OF FREMONT, OHIO.

BUFFER.

Application filed June 4, 1923. Serial No. 643,233.

To all whom it may concern:

Be it known that I, FRANK L. YERGES, a citizen of the United States of America, residing at Fremont, Sandusky County, Ohio, have invented new and useful Buffers, of which the following is a specification.

This invention relates to buffing or working materials, more particularly for the final shaping or finishing of metallic bodies.

This invention has utility when incorporated in a buffing disc or wheel structure.

Referring to the drawings:—

Fig. 1 is a side elevation of an embodiment of the invention in a buffer structure for a more firm or hard usage, parts being broken away;

Fig. 2 is an embodiment of the invention in a buffer section for a loose head;

Fig. 3 is a partial section of the buffer sections as grouped in a complete buffer disc or wheel; and

Fig. 4 is an embodiment on a reduced scale, of a pair of buffer or grinding wheels as assembled for use.

Disc 1 is of fabric, say woven stock, as white cotton duck, and may be concentrically assembled in slightly angularly shifted positions as to the weave direction thereof and interposed, say intermediately of such group of plies; there may be a somewhat shorter radius fabric disc or ply 2 of impregnated material as a lubricant for the disc plies. These plies as laid together with a common central opening 3 for mounting upon a shaft, are shown as having chord stitches 4, 5, assembling such plies into a section 14 as a sort of quilt to form pockets between said plies. Said stitches are herein shown as in parallel relation in two series and the structure thus produced is of the hard head type of buffer section 14. These pockets embody parallel series both as formed between adjacent plies, and as to pockets on opposite sides of an intermediate ply of the section. Inner pockets of a radial series are closed or buried to be opened by wear of the buffer periphery thereinto.

For the loose type of buffer section, there is centrally of the disc fabric 1, 2, a single stitching 6 once about the central opening 3.

In practice, the several buffer sections 14 to a depth or thickness as desired, may be mounted on a shaft 7 and clamped in firm relation by nut 8. Such groups of buffer sections 14 as forming disc wheel 9 as-

sembled on shaft 7, may be rotated at high speed. To this end the shaft 7 is mounted in bearings 10 carried by the standard 11 and driven at high speed by pulley 12 as actuated by the belt 13.

Assuming the section 14 to be built up of say nine plies of fabric, there may be four plies 1 on each side of the intermediate ply 2, assembling such in a single section 14. This ply 2 of fabric herein being of similar material to that comprising the plies 1 is preferably impregnated with a lubricant, as wax. For reducing the drag in the operation, it has been found paraffin is a very desirable ingredient for this impregnating material. However, paraffin of itself has not the adhering qualities in assembly with the structure which it is desired to have and which is obtained by melting with this paraffin a small quantity of beeswax. The beeswax, having a melting point of approximately 196° Fahrenheit and the melting point of the paraffin being much lower, say 102° Fahrenheit, a compound found acceptable has a melting point of 123½°. The paraffin in operation in this composition is accordingly more readily fused or melted as a lubricant for the stock long before material heating of the buffer disc occurs, and accordingly there is a great reduction of fire hazard from the operation of the buffer hereunder. At the high speed of operation of the loose head section of Fig. 2, this lubrication feature is of utility and in the practice as developed hereunder, the frequency of occurrence of the impregnated disc ply 2 may just compensate the proper lubrication of the units in the wheel for buffing or other operation as well as to act on the stock that "drag" is avoided, even with aluminum.

Where the more arduous work of buffing, say when tripoli, rouge, lime, or even emery, is used therewith, the harder head disc wheel of Fig. 1 is the preferred form. As herein disclosed, this disc wheel of Fig. 1 is one which may be started for its operation, immediately it is put into use, the wheel of itself having the proper finish for at once taking up the work and the lubricant plies 2 being far enough in the head so that in applying the work, the warmth of the generated heat may dissolve or melt the lubricant and be gradually fed out to the working region in a way that will not

only lower the temperature from friction but also permit a better adherence of the applied material to effect the polish, grinding, or other finishing operations.

5 Furthermore, the grouping arrangement of this disc wheel structure is one again assisting in this holding, not only of the lubricant, but also of the applied material, for the intersecting chords 4, 5, of the stitching as  
 10 assembling the plies into the respective sections provide pockets which to all intents and purposes herein are uniform into the peripheral extent of the several disc sections 14. As the threads run out on the periphery of  
 15 the sections there is not disturbance of this uniformity by these threads. They do not approximate the periphery to give a hard region. Furthermore, the several disc sections 14 are, in themselves alternated, one as  
 20 to the other as shown in the broken away portion in Fig. 1 showing parts of three sections. It is accordingly seen that not only the warp and woof directions of the successive plies 1 of fabric are angularly shifted  
 25 as to each other but with successive assembled sections 14 going into the wheel 9, they are also angularly shifted so that the stitch lines, 4, 5, are also angularly shifted as to each other. These are material factors in  
 30 creating a uniform head or working face for the buffer discs and as operating herein the lubricant, and these pockets for holding not only the lubricant but the abrasive, there is a most material economy in operation not  
 35 only as to power required for running the buffer with a given pressure applied on it with the given work thereto, but also in the life of the disc wheel in accomplishing a greater work in a better manner in a less  
 40 period of time. The abrasive may be applied to the wheel by dusting thereinto; by holding a block of the abrasive against the wheel; by rolling the wheel in the abrasive; by incorporating the abrasive in the wheel or  
 45 section assembly.

Each disk or ply is a sheet of material in one or more pieces to form a layer. The stitching assembles a plurality of these plies together as a section, and also assembles such  
 50 plies as may not be in one piece of material to form from such pieces a plain disk element in said section so that the section as

assembled comprises plain disks independently of folds or lapping of the material back upon itself. The stitching as running  
 55 out on the working face, while variously spaced, is in a given working periphery of the section approximately uniformly distributed for such particular working periphery of the disk. This grouping of not  
 60 folded or flat layers of material with stitching running out in periphery stabilizing proximity produces a section of this buffer wheel as comprising plain disks with substantially uniformly distributed stitching. 65

What is claimed and it is desired to secure by Letters Patent is:

1. A buffer wheel comprising a plurality of plies of plain fabric disks secured to each other by lines of stitching substantially uniformly distributed over the working area thereof to form circular series of pockets successively opening to the periphery as the wheel wears away.

2. A buffer wheel comprising a plurality of 75 plies of plain fabric disks secured to each other by intersecting lines of stitching substantially uniformly distributed over the working area thereof to form closed pockets successively opening to the periphery as the 80 wheel wears away.

3. A buffer wheel comprising a plurality of plies of plain fabric disks secured to each other by intersecting series of parallel lines of stitching uniformly distributed over the 85 working area thereof to form pockets successively opening to the periphery as the wheel wears away.

4. A buffer wheel comprising a plurality of plies of plain fabric disks secured to each other by intersecting series of uniformly spaced lines of stitching forming pockets successively opening to the periphery as the 90 wheel wears away.

5. A buffer wheel comprising a plurality of 95 plies of plain fabric disks secured to each other by intersecting series of uniformly spaced parallel lines of stitching forming pockets distributed over the working area thereof and successively opening to the periphery as the wheel wears away. 100

In witness whereof I affix my signature.

FRANK L. YERGES.