(No Model.)

S. T. WRAY.

POLISHING OR BUFFING WHEEL.

No. 275,561. Patented Apr. 10, 1883.

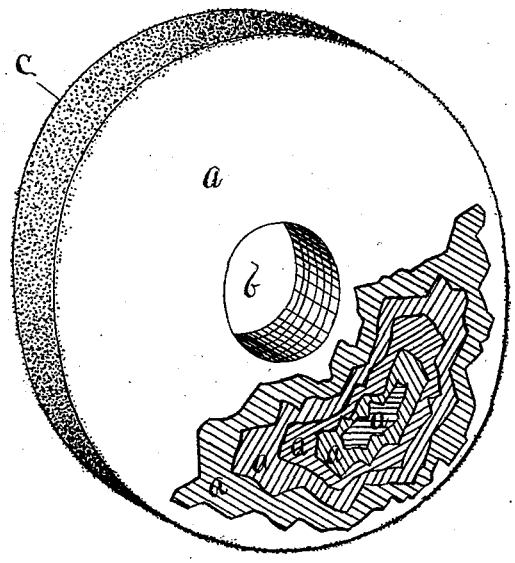

Fig 1

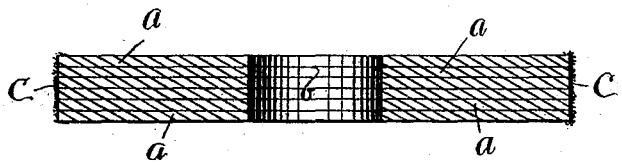

Fig 2

Witnesses:
Otto Hoddick.
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Inventor
Simon T Wray
By
W T Miller
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UNITED STATES PATENT OFFICE.

SIMON T. WRAY, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO WILLIAM F. SUPPLE, OF SAME PLACE.

POLISHING OR BUFFING WHEEL.

SPECIFICATION forming part of Letters Patent No. 275,561, dated April 10, 1883.

Application filed September 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, SIMON T. WRAY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Polishing or Buffing Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates more particularly to rigid polishing or buffing wheels employed especially in finishing the surfaces of metallic articles, whether cast or wrought. Heretofore these wheels have been constructed of wood and wood and metal combined, to which the emery or polishing material has been applied in various ways, or the wheels have been made entirely of emery or equivalent material. The chief difficulty with wheels of this description is that they are liable to check or break while being rapidly revolved, often causing serious injury to the operative in attendance.

The chief object, among others, of my invention is to overcome this difficulty; and to that end it consists in constructing a buffing-wheel of disks of stiff card-board or other equivalent material, A number of these stiff disks are laid together with suitable adhesive material upon their contacting surfaces, and are then subjected to powerful pressure until they become practically a solid, compact paper wheel of sufficient rigidity and durability for the purpose required. The outer periphery of this rigid wheel is then shaped upon a lathe to the configuration corresponding with the surface to be polished and the emery or other polishing material applied to such periphery.

I will now proceed to more particularly describe the manner in which I have carried out my invention.

In the drawings, Figure 1 is a perspective view of a finished wheel with portions broken away to show the internal construction; and Fig. 2 is a central section thereof, taken in a plane at right angles to a diameter of the wheel.

Referring to the drawings, *a a* are the disks of thick stiff card-board or other equivalent material. These disks *a* are perforated at their centers to form, when incorporated into a wheel, the central circular opening, *b*, into which the spindle upon which the wheel revolves is secured. The outer peripheries of the disks *a a* form the surface upon which the polishing material is secured.

c represents in the drawings this polishing material, which consists of emery or other equivalent material, comminuted to the required degree.

The operation of constructing my improved wheel is as follows: I take common stiff card-board of considerable thickness, and stamp therefrom the disks *a a* of the required size. The contacting-surfaces of these disks are then coated with glue or other adhesive material, and placed together in a press in which a powerful pressure is applied until the adhesive material is sufficiently dry. It is obvious that the disks of card-board could be further secured against displacement by means of nails, staples, or bolts without departing from the spirit of my invention; but I have found in practice that any additional securing medium other than the glue or cement is practically unnecessary. The attached disks, after being removed from the press, are placed upon the spindle of a lathe, and with the proper cutting-tool the outer surface of the wheel is quickly and easily made true and of the desired shape. This surface can be made either flat, shouldered, concave, or convex to correspond with the surface to be finished or polished. A thick coating of glue is then applied to the finished surface of the wheel and allowed to become partially dry, and the wheel is then rolled in the powdered emery until a sufficient quantity thereof adheres to the surface. This coating can be increased as desired by simply repeating the operation just described. The wheel is then ready for use. When it becomes necessary to renew the coating of emery the periphery of the wheel can be quickly prepared for a new coat or layer of the emery by removing what remains upon the wheel with a buff-stick or equivalent tool pressed tightly against the wheel while it is being rapidly revolved.

It will readily be seen that my improved wheel will last a long time, or until it has been cut away nearly to its spindle in renewing its coats of emery. Different grades of emery can be applied for different classes of work, and the periphery of the wheel can be quickly and easily changed in configuration as often as desired. If either of the outer disks of card-board should become uneven or ragged upon its edges, the defect can be quickly and cheaply remedied by the application of a fresh disk.

I have found in practice that there is no danger whatever of the wheel checking or bursting, and that its stiffness or rigidity is equal to any strain which it may be called upon to bear. It is cheaply, quickly, and easily constructed, as easily renewed upon its polishing-surface, can be readily changed to adapt it to polish different-shaped surfaces, and can be utilized as long as there is any of the wheel left upon the spindle. The periphery of the wheel forms an excellent surface for the reception of the glue in applying the coating of emery, owing to its fibrous nature, being superior in this respect to the cloth and leather heretofore used.

I am aware that grinding and polishing tools have been made of paper-pulp combined with alumina, sand, emery, &c., and worked and pressed into the desired shape; also, that flexible buffing and polishing wheels have been constructed of alternate layers of cloth and paper, and I therefore do not lay claim to such construction; but

What I do claim is—

A buffing or polishing wheel composed of a number of disks of stiff card-board or equivalent material joined together under pressure by glue or cement and having a coating of polishing material applied directly upon its periphery by means of glue or other equivalent attaching medium, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SIMON T. WRAY.

Witnesses:
ALFRED H. ROWELL,
W. T. MILLER.