(No Model.)

H. A. WEBSTER.

BUFFING OR POLISHING DEVICE.

No. 578,958. Patented Mar. 16, 1897.

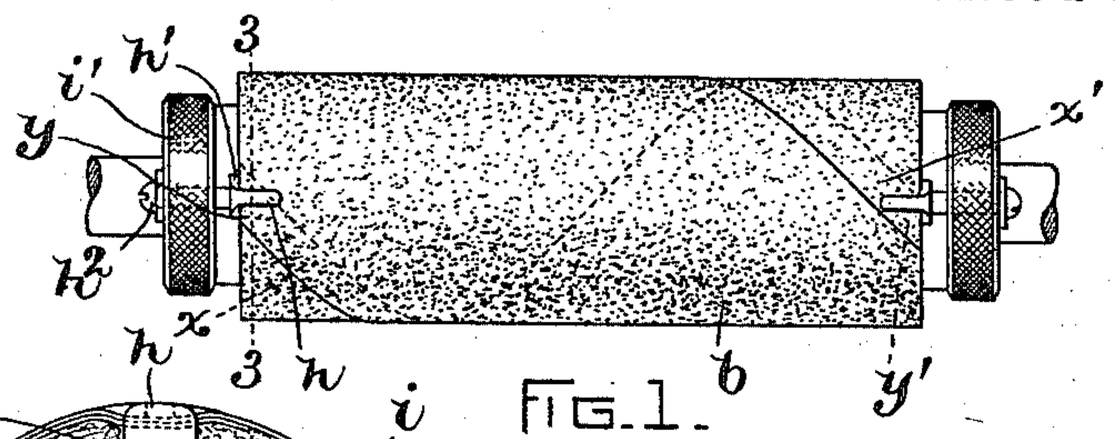

FIG. 1.

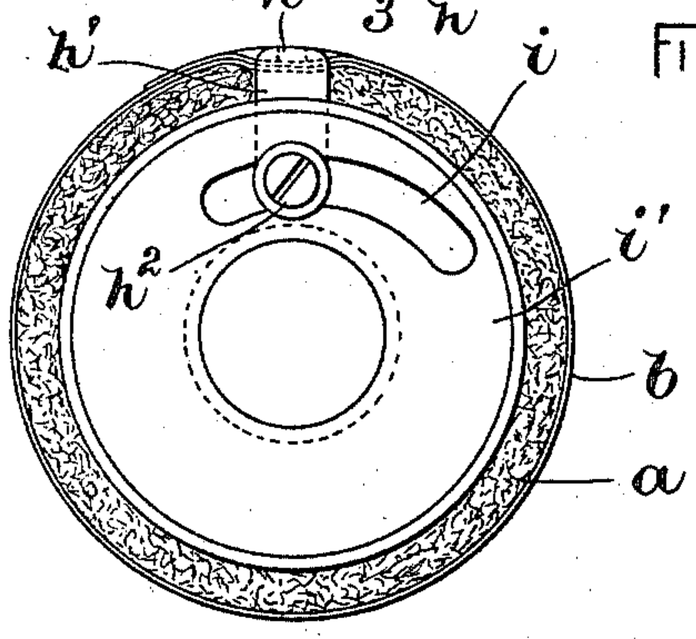

FIG. 2.

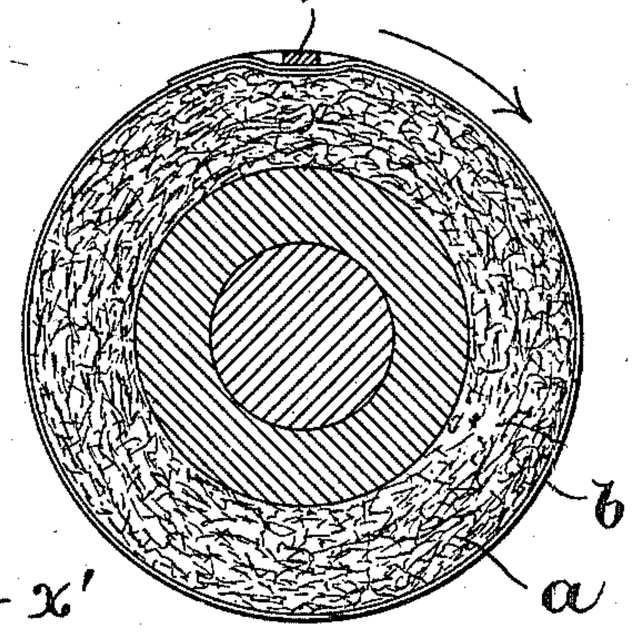

FIG. 3.

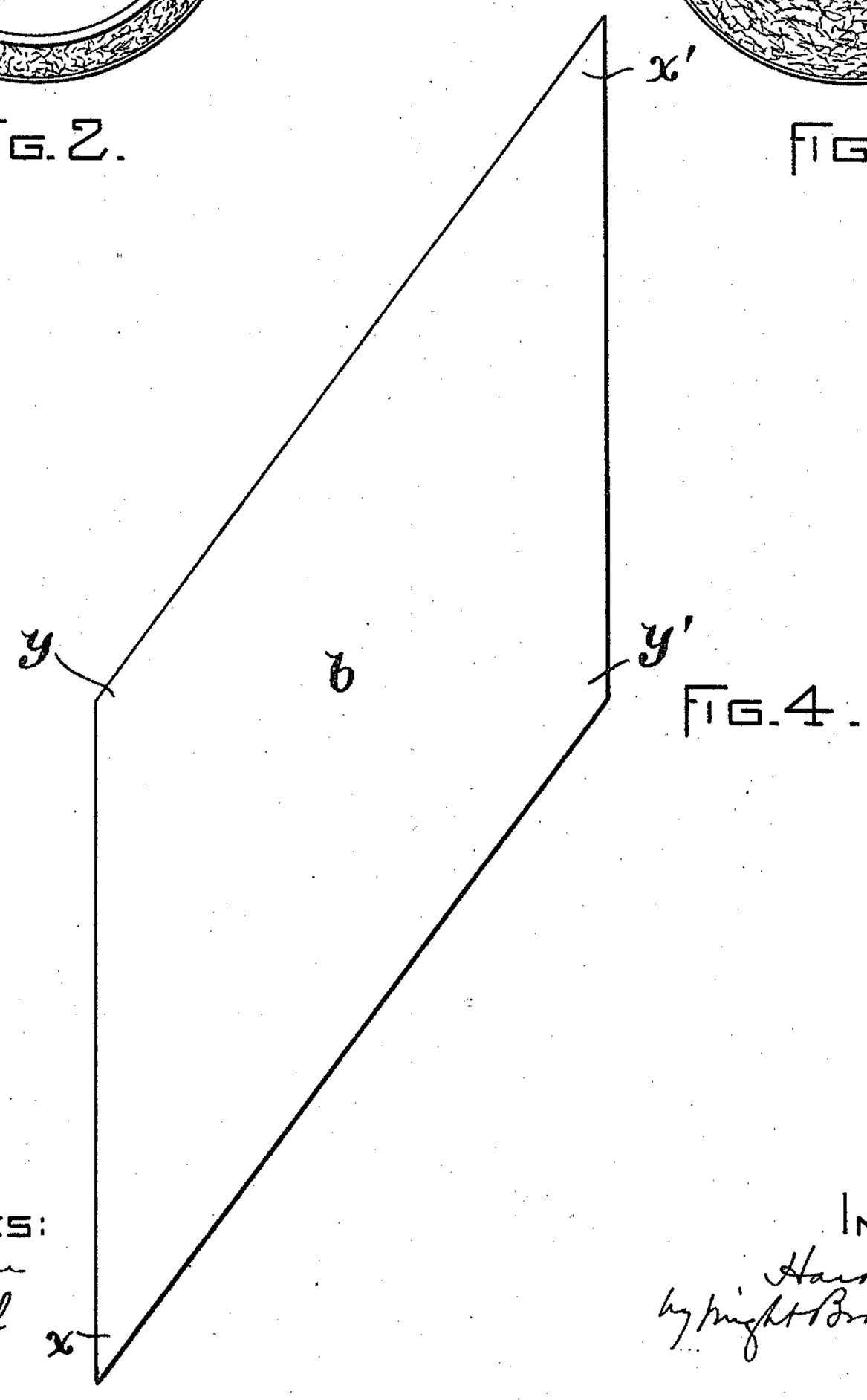

FIG. 4.

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UNITED STATES PATENT OFFICE.

HAROLD A. WEBSTER, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR TO THE GLOBE BUFFER COMPANY, OF BOSTON, MASSACHUSETTS.

BUFFING OR POLISHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 578,958, dated March 16, 1897.

Application filed August 2, 1895. Serial No. 558,030. (No model.)

To all whom it may concern:

Be it known that I, HAROLD A. WEBSTER, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Buffing or Polishing Devices, of which the following is a specification.

This invention relates to a rotary cylinder used for buffing or for polishing articles pressed against its periphery. An appliance of this class comprises a cylindrical yielding roll or cushion affixed to a rotary hub or shaft and a flexible cover detachably secured to said roll. When the appliance is used for buffing or abrading, the cover is of sandpaper or emery-cloth, and when the appliance is used for polishing the cover is of some soft material, such as silesia. Owing to the nature of the service demanded of these covers, they are rapidly worn out and have to be frequently renewed. It has been found very convenient to cut out the covers in the form of flat sheets of suitable size and area to be wrapped as a scroll around the roll and clamped thereto without cementing or otherwise securing the edges of the sheet together before the sheet is applied to the roll. It is desirable, however, to give the sheet or blank such form that when it is wrapped in the form of a scroll upon the roll its overlapping or outer edge will not extend in a straight line lengthwise of the roll, but will occupy an oblique position, so that it will not be subjected to abrupt shocks or strains by contact with the work presented to the abrasive surface.

In Letters Patent of the United States No. 523,157 I have shown a yielding roll and an abrasive cover thereon having one of its ends, which constitutes the overlapping end of the scroll, recessed and formed to lie diagonally upon the periphery of the roll, said recessed end having a reëntrant angle at the center of the length of the sheet. I have found, however, that a sheet thus formed is objectionable because the portion of the edge which presents the said reëntrant angle is subjected to greater strain by contact with the work than the other portions of said edge, so that the scroll is liable to be opened or expanded at this point by the pressure of the work against the roll, so that the cover is liable to be more or less wrinkled and its inner or under edge exposed and caught by the work.

My present invention has for its object to obviate this difficulty; and it consists in an appliance of the character specified comprising a yielding roll or cushion having cover securing or clamping devices at its ends and a flexible cover wrapped or wound helically on the roll, so that its overlapping edge presents a continuous helix, the ends of the cover being secured by said fastening devices.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a plan view of a buffing or polishing appliance embodying my invention. Fig. 2 represents an end view of the same. Fig. 3 represents a section on line 3 3 of Fig. 1. Fig. 4 represents a plan view of the preferred form of cover.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a cylindrical roll, cushion, or pad, which is of a yielding nature and is mounted upon a rigid hub or shaft adapted to be rotated by any suitable means. The cushion may be composed of felt or any other suitable yielding material adapted to afford the desired yielding support for the cover *b*.

The roll is provided at its ends with suitable means for clamping the end portions of the cover upon the cushion. Said means comprise clamping-fingers *h*, which are radially adjustable and arranged to bear upon the periphery of the cushion, said fingers being therefore adapted to sink into the cushion when moved inwardly. The ends of the cover *b* are placed between the fingers *h* and the periphery of the roll, and the fingers are then adjusted inwardly and caused to clamp the ends of the cover by indenting overlapping portions of the cover and the cushion under those portions, as shown in Figs. 2 and 3. The fingers *h* are formed upon radial shanks h', which are provided with studs h^2, entering cam-shaped slots *i* in collars i', which are mounted to rotate upon the hub or shaft of the roll. When the collars i' are rotated in one direction, the fingers *h* are moved outwardly, and when the collars are rotated in the opposite direction the fingers are moved

inwardly. I have here shown one finger *h* at each end of the roll, but it is obvious that a plurality of fingers may be employed at each end of the roll, and that any other suitable means may be employed for causing the fingers to indent the overlapping portions of the cover and force these portions into the cushion.

The cover, which for buffing or abrading purposes, such as cleaning or buffing the bottoms of boot and shoe soles, is made of sandpaper or emery-cloth, and for polishing purposes is made of silesia or other like material, is cut in a flat sheet of the form shown in Fig. 4. The tapering end *x* of said sheet is applied to the left-hand end of the roll, and the sheet is wrapped about the roll until a portion of it overlaps the tapering end, and that end of the sheet is then secured by one of the clamping-fingers *h*. The remainder of the sheet is then wound upon the roll, its overlapping edge forming a helical line about the cushion, as shown in Fig. 1 by the full line, the dotted line showing the edge which is overlapped; that is, the acute-angled end *x* at the bottom of Fig. 4 is overlapped by the obtuse-angled portion *y* on the left of Fig. 4, and the acute-angled end *x'* at the top of Fig. 4 overlaps the obtuse-angled portion *y'* on the right of Fig. 4, the overlapping portions being depressed into the cushion by the fingers *h*, as will be clear from Figs. 1, 2, and 3.

I have found that the cover thus formed can be very quickly and smoothly applied to the roll, and that when the appliance is in operation the pressure of the work against it tends to tighten the cover upon the roll rather than to loosen the same. Hence there is no wrinkling of the cover and no tendency of its edges to separate.

Another advantage of the spiral overlap is that when the cover is deflected inwardly by the pressure of the work against it the deflection has no tendency to pull the end portions of the cover from under the clamps, there being always one or more slip-joints in the cover between any two points at opposite ends of the roll, so that an inward deflection of the cover at any point takes place by a slight slip between the overlapping edges.

I claim—

An appliance of the character specified, comprising a yielding-surfaced rotary roll, a flexible cover of substantially rhomboidal form wrapped about said roll, one of the edges of said cover overlapping the other and said edges extending helically from one end of the roll to the other, clamping-fingers projecting over the ends of the overlapping portions of the cover and movable toward and from the axis of the roll, so that they may sink with the corresponding portions of the cover into the yielding surface of the roll, and means for adjusting and holding said clamping-fingers.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of July, A. D. 1895.

HAROLD A. WEBSTER.

Witnesses:
C. F. BROWN,
A. D. HARRISON.