

H. A. WEBSTER.
BUFFING ROLL.

No. 523,157.

Patented July 17, 1894.

FIG. 1.

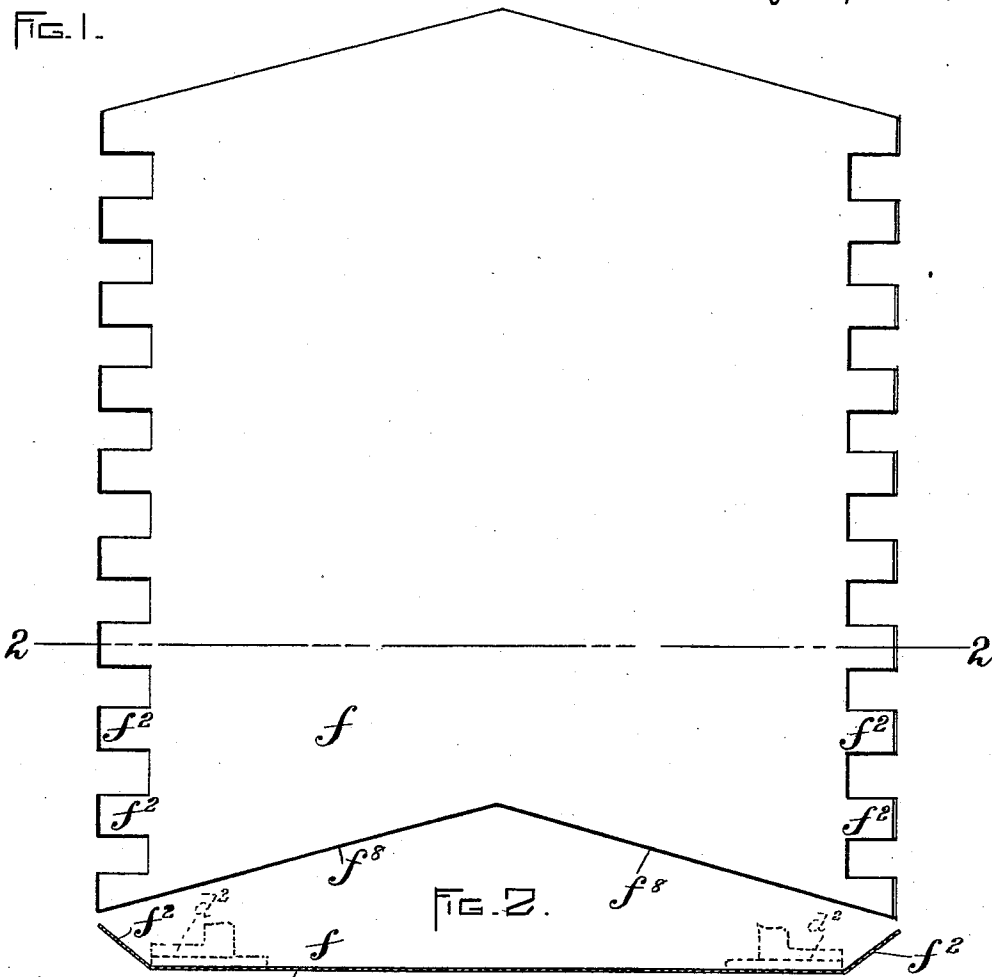


FIG. 2.



FIG. 3.

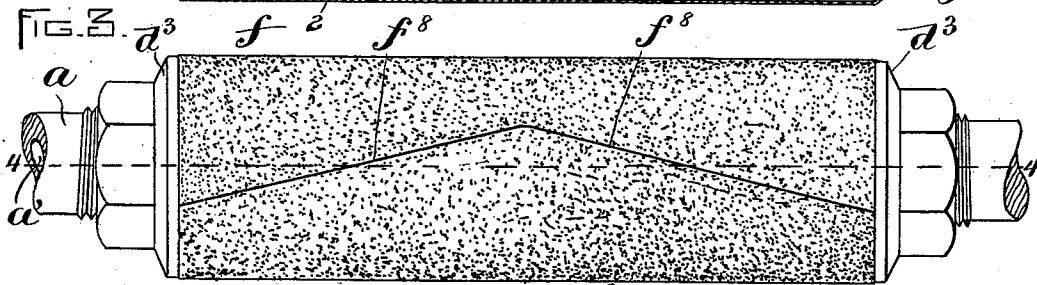
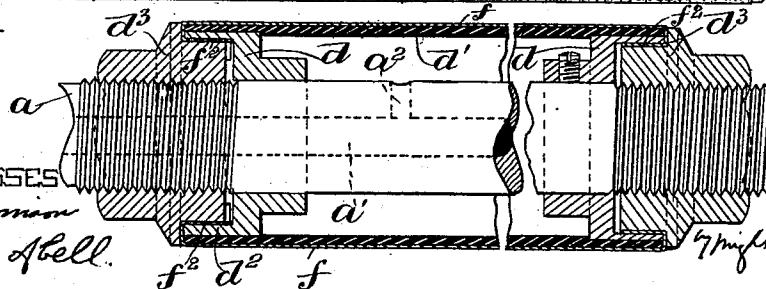


FIG. 4.



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FIG. 5.

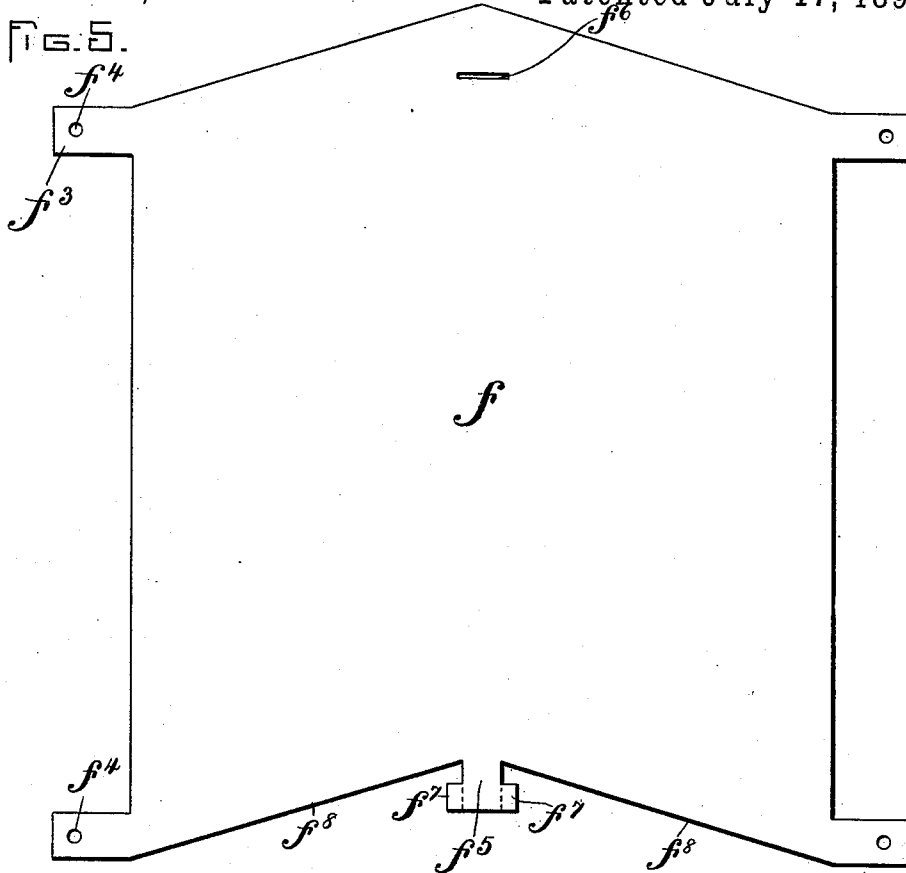


FIG. 6.

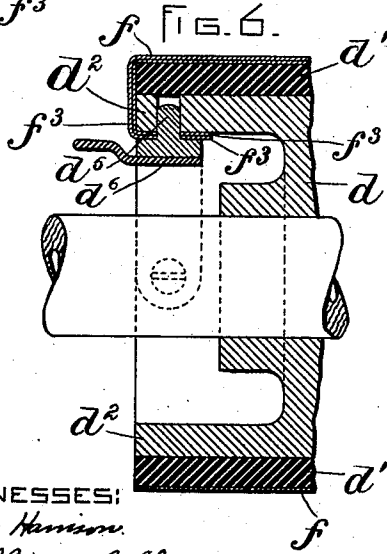
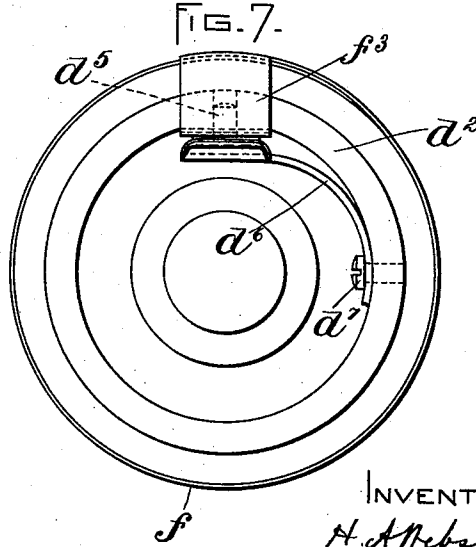


FIG. 7.



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UNITED STATES PATENT OFFICE.

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

BUFFING-ROLL.

SPECIFICATION forming part of Letters Patent No. 523,157, dated July 17, 1894.

Application filed May 1, 1894. Serial No. 509,648. (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-Rolls, of which the following is a specification.

This invention relates to a buffing roll comprising a cushioned cylinder and a cover of abrasive material such as sand-paper secured to the cylinder so as to form a cylindrical abrasive surface.

The invention has for its object to enable the abrasive cover to be readily applied and removed so that when worn out it may be conveniently replaced by a new one.

Of the accompanying drawings, Figure 1 represents a plan view of the abrasive cover before its application to the cylinder. Fig. 2 represents a section on line 2-2, Fig. 1. Fig. 3 represents a side view of the complete buffing roll and Fig. 4 represents a section on line 4-4, Fig. 3. Figs. 5, 6, and 7 represent improvements hereinafter referred to.

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

In the drawings—*a* represents a rotary shaft, which is or may be provided with a longitudinal air channel, *a'*, which may be connected in any suitable way with an air pump or forcing apparatus, as shown in Letters Patent of the United States No. 493,001. Said pump may be driven by the power that rotates the shaft, *a*, so that when the shaft and cylinder are in operation there will be a constant supply of air to keep the buffing surface of the cylinder properly supported.

d *d* represent collars or heads, preferably of rigid material, affixed to the shaft; and, *d'*, represents a flexible covering which may be of canvas or other suitable material and is permanently affixed to said heads and held by the latter in cylindrical form surrounding the shaft, the heads, *d*, and covering, *d'*, constituting a hollow cylinder which receives air from the passage, *a'*, through one or more outlets, *a''*.

f represents the abrasive cover which is made of sand-paper or other like material and is formed to cover the periphery of the cylinder. The abrasive cover, *f*, is provided at its ends with tongues, *f''*, separated by slots.

The heads or collars, *d*, which constitute the ends of the cylinder, are provided with outwardly projecting marginal flanges, *d''* (Fig. 4) over which the tongues, *f''*, are bent, the ends of the tongues projecting into the recesses surrounded by the flanges, *d''*.

d''' represents clamping nuts or collars engaged with screw threads on the shaft and formed to co-operate with the flanges, *d''*, in grasping the tongues, *f''*.

The overlapping edges of the abrasive sheet, *f*, are preferably given the angular shape shown in Figs. 5 and 8, this form enabling the cover to fit the periphery of the roll more smoothly and perfectly than would be possible if the overlapping edges were straight.

In applying the abrasive sheet, *f*, to the cylinder, it is first wrapped around the cylinder, the tongues, *f''*, being bent inwardly, and then the clamping collars, *d'''*, are adjusted to the position shown in Fig. 4, thus forcing the tongues inwardly into the cavities surrounded by the flanges, *f''*, and securely clamping the tongues against said flanges. Before applying the sheet, *f*, to the cylinder I bend the tongues, *f''*, inwardly as shown in Fig. 2, so that when the sheet is bent around the cylinder the tongues will be inclined inwardly so that they will project between the collars, *d'''*, and the flanges, *f''*, and will therefore be readily engaged by the collars and forced into the cavities surrounded by the flanges. I prefer to bend or incline the tongues by means of suitable dies, which leave the tongues in such form that a large number of sheets, *f*, in a flat condition can be packed together or nested without flattening out the tongues.

The sheet thus prepared for convenient application to the cylinder constitutes an improved article of manufacture and may be sold as such.

I do not limit myself to the use of the described improvements in connection with an air cushioned cylinder as the sheet, *f*, with its tongues and the means for clamping said tongues may be used with a roll or cylinder having a cushion of felt formed to support the sheet in cylindrical form.

Any other suitable means may be employed to adjust and hold the clamping collars, *d'''*.

In Fig. 5 I show the cover f provided with only two tongues at each edge, f^3 representing the tongues, which are arranged so that when the cover is bent around the cylinder, one tongue will overlap the other, so that orifices f^4 formed in said tongues will coincide with each other and will receive pins d^5 secured to spring shanks d^6 attached by screws d^7 to the inner surfaces of the flanges d . The pins d^5 are sprung outwardly to permit the introduction of the tongues into the recesses surrounded by the flanges d , the tongues being adjusted so that their orifices coincide with corresponding orifices formed in the inner surfaces of said flanges. The pins are then released, and caused by their spring shanks to spring into the orifices in the tongues and in the flanges, thus positively securing the tongues to the flanges.

When the last-described construction is employed, the collars d^3 will not be required.

I prefer in all cases to recess the cover f at one end, namely, the end which is outside when the cover is wrapped around the cylinder, the object of this form being to give the overlapping ends of the cover a diagonal form or arrangement, so that said overlapping end will not be caused to bulge or stand out from the portion of the cover which it overlaps, by the inflation and enlargement of the cylinder caused by the air pressure. I have found that by cutting out the overlapping end of the cover, so that said end is composed of two oppositely inclined or diagonal edges f^8 , f^8 , the tendency of the overlapping edge to bulge or stand out, which would exist if said edge were straight, is avoided.

If desired, the overlapping edge of the cover may be engaged with the portion upon which it lies, by means of a tongue f^5 formed on the overlapping edge, and a slot f^6 formed in the opposite edge or end. The tongue may be

made T-shaped, by means of wings f^7 , f^7 , which may be folded under when the tongue is being passed through the slot f^6 , said wings afterward extending themselves, so that they prevent the withdrawal of the tongue from the slot.

I claim—

1. As an improved article of manufacture, an abrasive cover f having outwardly projecting tongues at two opposite edges, whereby said cover may be secured to a roll or cylinder, as set forth.

2. An abrasive cover adapted to be wrapped around a cylinder and having one of its ends recessed and formed to lie diagonally on the periphery of the cylinder, as set forth.

3. An abrasive cover adapted to be wrapped around a cylinder and having one of its ends provided with a tongue and the other end with a slot, as set forth.

4. The combination of a cylinder having outwardly projecting annular flanges at its ends, and fastening devices movable toward and from said flanges and adapted to engage tongues projecting from an abrasive cover, as set forth.

5. The combination of a cylinder having outwardly projecting annular flanges at its ends, fastening devices movable toward and from said flanges, and a flexible abrasive cover formed to cover the periphery of the cylinder and having tongues adapted to be bent over the said flanges and secured there- by said fastening devices, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 21st day of April, A. D. 1894.

HAROLD A. WEBSTER.

Witnesses:

A. D. HARRISON,
ROLLIN ABELL.