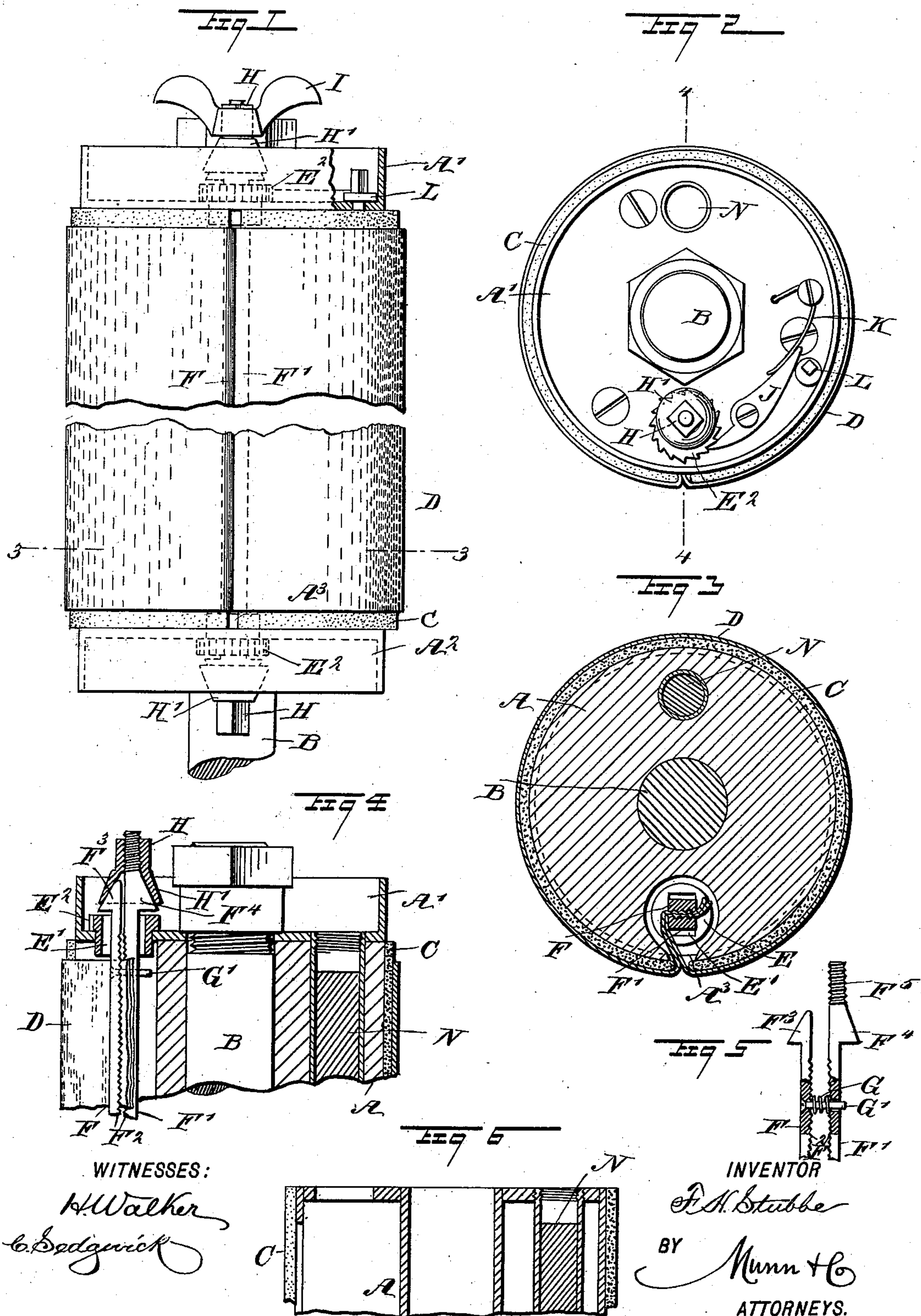


(No Model.)

F. H. STUBBE.
SANDPAPER WHEEL OR ROLLER.

No. 507,508.

Patented Oct. 24, 1893.



UNITED STATES PATENT OFFICE.

FREDERICK H. STUBBE, OF NEW YORK, N. Y.

SANDPAPER WHEEL OR ROLLER.

SPECIFICATION forming part of Letters Patent No. 507,508, dated October 24, 1893.

Application filed June 27, 1893. Serial No. 478,976. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. STUBBE, of the city, county, and State of New York, have invented a new and Improved Sandpaper Wheel or Roller, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved sand paper wheel or roller, which is simple and durable in construction, arranged to permit of conveniently spacing the sand-paper in position and drawing it tight on the periphery of the shell, and also arranged to permit of quickly removing the paper when it is worn out at its abrading surface.

The invention consists of a cylindrical shell having a longitudinal slot in its periphery, and two clamping bars journaled in the heads of the said shell and adapted to clamp the sides of the paper, the said bars being formed at their ends with beveled heads adapted to be engaged by nuts screwing at the end of one of the bars to move the latter toward each other for clamping the paper in position.

The invention also consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement with parts in section. Fig. 2 is an end view of the same. Fig. 3 is a cross section of the same on the line 3—3 of Fig. 1. Fig. 4 is a longitudinal section of the same on the line 4—4 of Fig. 2. Fig. 5 is a detail plan view of one end of the clamping bars, parts being in section; and Fig. 6 is a sectional plan view of a shell made of metal.

The improved paper wheel or buffer is formed with a shell A, either made of wood as illustrated in Figs. 1, 2, 3 and 4, or of metal, as shown in Fig. 6. The shell A is provided on its ends with heads A' and A² and is secured on the usual spindle B forming part of the machine on which the sand-paper wheel is used. The periphery of the shell A is covered by a soft elastic material C such as felt, and on this covering is placed the sheet of

sand-paper D bent to conform to the cylindrical covering, and having its ends passed through a longitudinal slot A³ formed in the periphery of the shell between the heads A' and A².

By reference to Fig. 3, it will be seen that the elastic covering C terminates at or near the sides of the slot A³, so that the ends of the paper can be readily passed to the interior of the shell and a continuous unbroken cylindrical surface is presented on the outside of the roll by the said sand-paper.

In the heads A' and A² are journaled the short cylinders E both having elongated slots E' in which are held adjustably the clamping bars F and F' provided on their opposing faces with serrations F² adapted to engage and securely clamp the ends of the sand-paper D. The clamping bars F and F' are pressed normally apart by springs G introduced between the said bars and mounted on a rod G' secured in one of the bars and passing loosely through an aperture in the opposite bar, as will be readily understood by reference to Fig. 5. The ends of the clamping bars F and F' are formed with the beveled heads F³ and F⁴ respectively, and the bar F' is formed in addition with the threaded part F⁵ extending from the beveled head F⁴ at each end of the bar. On the threaded parts F⁵ screw the nuts H, each formed with a conical flange H' adapted to engage the beveled heads F³ and F⁴ of both bars F and F', so as to move the latter toward each other when the nuts H are screwed up on the threaded portions F⁵. The nuts H are adapted to be engaged by suitable wrenches preferably made in the form of wing nuts, I as illustrated in Fig. 1, so as to conveniently turn the said nuts whenever necessary, to move the said bars toward each other for clamping the sides of the paper in place between the serrations F², or to permit the bars, upon unscrewing the nuts, to spread to release the paper by the action of the springs G.

On the outer ends of the short cylinders E are formed ratchet wheels E² abutting against the front faces of the heads A' and A² respectively, each of the said ratchet wheels being in mesh with a pawl J fulcrumed on the corresponding head A' or A² and pressed on by a spring K fastened on the heads to hold

the said pawls in contact or mesh with their ratchet wheels E^2 .

In order to move and hold the pawls J out of contact with the ratchet wheels E^2 at the time it is desired to release the sides of the paper from the bars F and F' and when unscrewing the nuts H, I provide a cam L mounted to turn in each of the heads A' and A² and adapted to engage the spring pressed end of the pawl so that when the cam is turned a swinging motion is given to the pawl to lift the same out of mesh with the corresponding ratchet wheel; see Figs. 1 and 2.

The operation is as follows: When the nuts H are unscrewed from the threaded parts F⁵ of the bars F', then the two bars F and F' are pressed apart by the springs G. The ends of the sand-paper D passed through the slot A³ can now pass between the said bars F and F' and then the operator screws up the nuts H by the wing nut wrenches I or other tools, so that the flanges H' of the said nuts engage the beveled ends F³ and F⁴ of the bars F and F' to move the latter toward each other so that the ends of the paper extending between the bars are clamped by the same. When this has been done and a further turn is given to the wrenches I, then the said bars cause a turning of the short cylinders E in their bearings in the heads A' and A², whereby the paper is wound up on the said bars and consequently drawn very tight on the elastic covering C. As soon as the operator has drawn the paper sufficiently tight on the peripheral surface of the covering, then the wrenches I are removed, it being understood that the return movement of the bars and the paper cannot take place as the spring pressed pawls J engage the ratchet wheels E^2 held on the said cylinders E. When the abrading surface of the sand-paper D has worn out, then the paper can be conveniently and quickly removed from the shell and replaced by new paper. In order to remove the worn out paper, the operator with a key or other tool, first turns the cams L so as to move the pawls J out of contact with the ratchet wheels E^2 to unlock the short cylinders E, and at the same time the operator applies the wrenches I to turn the nuts H outward to unlock the clamping bars F and F', which latter open by the action of their springs G and consequently release the ends of the paper. The latter can then be readily taken off the shell and new paper put in place and fastened as above described.

The tube N opposite the clamping bars is weighted with lead or other suitable material so as to completely counterbalance the wheel and to permit of running it at a high rate of speed without jar.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A device of the class described, comprising a cylindrical shell having a longitudinal slot in its periphery for the introduction of

the ends of the sand-paper, cylinders journaled in the heads of the said shell and formed with elongated slots, and clamping bars held adjustably in the said cylinders and adapted to turn therewith, the said clamping bars being in alignment with the slot in the shell to receive the ends of the sand-paper, and a weighted tube in the said shell opposite the said clamping bars to counterbalance the wheel, substantially as shown and described.

2. A device of the class described comprising a cylindrical shell having a longitudinal slot in its periphery clamp bars arranged in said slot and adapted to secure the ends of the said paper short sleeves encircling said clamp bars near their ends the clamp bars being movable toward and from each other independent of the sleeves but keyed to turn with said sleeves, and means for moving the clamp bars toward each other and turning the sleeves substantially as set forth.

3. A device of the class described consisting of the shell having a longitudinal slot or recess in its periphery the paper clamping devices arranged in said slot or recess, sleeves upon the ends of and keyed to turn with said clamp devices and detent mechanism whereby the said clamp and sleeves may be held in any desired rotary adjustment, substantially as set forth.

4. A device of the class described, comprising a cylindrical shell provided with heads and having a longitudinal slot in its periphery extending from one head to the other, an elastic covering for the said shell, the covering terminating at the said slots, clamping bars journaled in the said heads and adapted to clamp the ends of the sand-paper passed into the interior of the shell through the said slot, and nuts screwing on the end of one of the said bars and provided with a conical flange, engaging beveled heads of the said bars to move the latter toward each other, substantially as shown and described.

5. A device of the class described, comprising a cylindrical shell provided with heads and having a longitudinal slot in its periphery extending from one head to the other, an elastic covering for the said shell, the covering terminating at the said slot, clamping bars journaled in the said heads and adapted to clamp the ends of the sand-paper passed into the interior of the shell through the said slot, nuts screwing on the end of one of the said bars and provided with a conical flange, engaging beveled heads of the said bars to move the latter toward each other, and springs interposed between the said bars to move the latter apart upon unscrewing the said nuts, substantially as shown and described.

6. A device of the class described, comprising a cylindrical shell having a longitudinal slot in its periphery for the introduction of the ends of the sand-paper, cylinders journaled in the heads of the said shell and formed with elongated slots, and clamping bars held adjustably in the said cylinders and adapted to

turn therewith, the said clamping bars being in alignment with the slot in the shell to receive the ends of the sand-paper, substantially as shown and described.

- 5 7. A device of the class described, comprising a cylindrical shell having a longitudinal slot in its periphery for the introduction of the ends of the sand-paper, cylinders journaled in the heads of the said shell and
10 formed with elongated slots, clamping bars held adjustably in the said cylinders and adapted to turn therewith, the said clamping bars being in alignment with the slot in the shell to receive the ends of the sand-paper,
15 and means, substantially as described, for moving the said bars toward each other to clamp the ends of the sand-paper and to turn the said bars with their short cylinders, as set forth.
- 20 8. A device of the class described, comprising a cylindrical shell having a longitudinal slot in its periphery for the introduction of the ends of the sand-paper, cylinders journaled in the heads of the said shell and
25 formed with elongated slots, clamping bars held adjustably in the said cylinders and adapted to turn therewith, the said clamping bars being in alignment with the said slot in the shell to receive the ends of the sand-
30 paper, means, substantially as described, for moving the said bars toward each other to clamp the ends of the sand-paper and to turn the said bars with their short cylinders, and means, substantially as described, for locking
35 the said short cylinders in place, as set forth.

9. A device of the class described, comprising a cylindrical shell having a longitudinal slot in its periphery for the introduction of the ends of the sand-paper, cylinders journaled in the heads of the said shell and
40 formed with elongated slots, clamping bars held adjustably in the said cylinders and adapted to turn therewith, the said clamping bars being in alignment with the said slot in the shell to receive the ends of the sand-
45 paper, means, substantially as described, for moving the said bars toward each other to clamp the ends of the sand-paper and to turn the said bars with their short cylinders,
50 ratchet wheels secured on the said short cylinders, spring-pressed pawls engaging the said ratchet wheels, and cams for imparting a swinging motion to the said pawls to disengage the same from their ratchet wheels,
55 substantially as shown and described.

10. In a device of the class described the combination of the cylinder or shell, the short sleeves journaled thereto and the clamp bars fitted in and keyed to said sleeves whereby
60 to turn therewith, said clamp bars being movable toward and from each other within said sleeves and a detent whereby to secure the sleeves in any position to which they may be adjusted substantially as and for the purposes set forth.

FREDERICK H. STUBBE.

Witnesses:

THEO. G. HOSTER,
C. SEDGWICK.