This invention relates to abrading wheels and particularly to such wheels which are used in finishing shoes as, for instance, used in abrading and polishing the heels and soles of shoes.

One of the objects of this invention is to provide a sanding wheel so constructed that the sanding cloth or paper may be readily applied or removed when worn and in which the cloth or paper is supported on a rim of soft rubber attached to the periphery of the wheel.

Another object of this invention is to provide the rubber rim with recesses at spaced distances into which the sand paper is forced, thus preventing any circumferential movement of the paper on the rim and permitting the abraded particles to gather in the recesses of the rim, thereby preventing these particles from getting between the paper and the article being abraded.

A further object is to provide for the purpose of holding the sand paper in place a chain formed of pivotally connected links on each side of the wheel, which links carry cross bars which, when the chains are in place, enter said recesses and force the sand paper into the recesses, thus locking the sand paper against circumferential movement.

Still further object is to provide means for locking the connected chains upon the wheel against accidental detachment, the means being such, however, as to permit the ready unlocking of the chain to thus permit the removal of the chain and the detachment and replacement of the sand paper or sand cloth.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of a sanding wheel constructed in accordance with my invention, the chain being partly broken away;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a side elevation of one of the side plates;

Figure 4 is a fragmentary section on the line 4—4 of Figure 3;

Figure 5 is a section on the line 5—5 of Figure 3;

Figure 6 is a perspective view of one of the end links of the chain;

Figure 7 is a fragmentary end elevation of one end of the links, the inner margin being in section.

Referring to these figures, 10 designates the body of the wheel, which body is annular and may be made of any suitable material. The body of the wheel is made in two half sections, the sections being split along the radial line 11. One face of the wheel is formed with an annular recess 12, the inner face of which is beveled downwardly and centrally. Disposed within the annular body 10 is a hub 13 having at one end the plate 14 which bears against one face of the wheel, the hub being screw threaded at 15 for engagement by a collar 16, this collar having its inner end flared outward at 17, this outwardly flared portion being insertible within the recess 12. Disposed to surround the body of the wheel is a rubber rim designated generally 18. This rubber rim is molded upon a canvas backing 19 and the rubber rim is formed at spaced intervals with the transversely extending depressions 20. Disposed on each side of the body 10 is an annular plate. One of said plates is designated generally 21 and the other plate 22. Each of these plates is split into two sections. These semi-circular sections are held to the body of the wheel by screws 23. Each plate has its inside edge formed with a circumferentially extending bead 24 to thereby reinforce the plate and strengthen it. The outer margin of each of the plates 21 and 22 is bent slightly inwardly at 25. The exterior face of each plate is formed with a plurality of evenly spaced dents designated 26.

Disposed against the exterior faces of the plates 21 and 22 and bearing against the inner flange 27 of each plate is a chain composed of a series of opposed links 28. Each link is pivoted to the next adjacent link by pivots 29. The last link 29 of the series is detachably connected to the first link of the series designated 29 by a pin 30. As shown in Figures 2, 3, and 4, there is attached to the inner face of each plate 21 and 22, an outwardly biased leaf spring 30 riveted at 31 to the plate and carrying at its free end the laterally projecting pin 32. Link 29 has an aperture to receive the pin (see Fig. 1) and link 28 has at its free end an aperture 33 also adapted to receive said pin 32. A tapering recess 34 extends from the inner edge of the link 28 to this aperture so this recess guides the link against the pin 32 as the link 29 is pressed inward, until the pin snaps into the hole 33. Thus as link 29 is forced radially inward, spring 30 is compressed until the pin enters the hole 33 and then the spring sparks outward, locking the link 29 to the spring and the link 28, and thus locking the chain in place around the wheel. The body of the wheel 10 is recessed at 35 to permit the spring to be forced inward and thus permit the detachment of the link 29 from the
2,038,154

spring 36, and for the purpose of manually forcing the spring inward, I provide on each spring 36, a new piece of the two series of links has a radially projecting portion 37 connected
by a cross bar 38 and when the chain, formed of those two sets of links is placed around the wheel and the links 29* are locked to the spring links 30, the cross bars will enter the recesses 20 formed in the rubber rim, thus forcing the
strip of sand paper 39 into these recesses 20 and locking the sand paper firmly in place upon the rubber rim and preventing this sand paper from any circumferential movement. Of course, when the links of the chain are closed and latched, the
cross bars 38 will be below the peripheral surface of the rubber cushion. The cross bar on the links 29* fastens down both ends of the sand paper strip.

It will be understood that while I refer to a sand paper strip, I may use emery cloth, sand cloth, said paper or any other strip of abrading material though I have referred to sand paper more particularly in the specification.

It will be noted from Figure 5 that each plate 25 or 22 is provided with an outwardly pressed tongue 26 and that the links 29* when engaged with the pins 32 extend in behind these tongues. In order to detach the endless connected chains from the wheel, it is only necessary to press inward on the buttons 36, thus forcing the spring links 35 inward; then the links 29* may be pulled outward thus disconnecting the double chain and permitting its removal from the wheel. This permits the removal of the sand paper and the re-insertion of an unworn piece of sand paper. The forward end of each link of the chain is sprung slightly inward thus securing a firm grip.

The sand paper or sand cloth is a fine cloth grade used in all shoe shops. The rubber cushion is of a soft and springy type molded over canvas, which canvas forms a fixed foundation for the cushion. It is to be understood that the exterior rubber cushion may be transversely curved or transversely flat or have any desired shape depending upon the work to be done and upon the style of shoe to be operated on. The connected chains may be removed and the sand paper replaced by a new piece of sand paper placed on the wheel and the connected chains replaced within less than a minute. The construction which I have described provides for a very long and lasting service of the sand paper. The spaces cut out of the rubber rim provides that all abraded particles will pass from the space between the shoe and the sand paper into these spaces between the teeth of the rubber rim, therefore, no abraded particles are held between the sand paper and the shoe to thus prevent proper abrasion.

It is to be understood that the cushion of rubber which surrounds the rim of the wheel gives to the shape of the heel as the wheel is applied to a heel. This sanding wheel may also be used on soles or any part to be sanded but is particularly designed for use as a heel finisher. Where this sander is to be used on men's shoes, the rubber rim is given a laterally rounded contour whereas where the sander is to be used on women's shoes, the contour of the rubber rim is substantially transversely flat.

What is claimed is—

1. A sandpaper supporting wheel including a body having a hub, a rim of rubber surrounding the body and formed with spaced indentations in its face, chains one on each side of the body and formed of pivotally connected links, one of the links of each of the two series of links being detachable from the next adjacent link, each link having a cross bar formed to extend into a corresponding indentation in the rim whereby to hold a strip of sand paper in place on the rim and force the sand paper into the indentations.

2. A sandpaper supporting wheel including a body having a hub, a rim of rubber surrounding the body and formed with spaced indentations in its face, chains one on each side of the body and formed of pivotally connected links, one of the links of each chain being detachable from the next adjacent link, opposed links having a cross bar formed to extend into a corresponding indentation in the rim whereby to hold a strip of sand paper in place on the rim and force the sand paper into the indentations, the links of each chain being provided with inwardly extending dents operatively engaging with the wheel to thereby prevent circumferential movement of the chains upon the wheel.

3. A sandpaper supporting wheel including a body having a hub, a rim of rubber surrounding the periphery of the body and formed with spaced indentations in its face, metal plates and formed to opposite faces of the body, each plate being annular in form and provided with spaced indentations, means connecting said plates to the body, each plate having a flange on its inner edge, chains on each side of the body and bearing against said plates, each chain being composed of links, one of the links of each chain being detachable from the next adjacent link, opposed links having a cross bar formed to extend into the corresponding indentation in the rubber rim whereby to hold a strip of sand paper in place on the rim and force it into said indentations of the rim, each link having dents engageable into the corresponding indentations in the side faces of the body.

4. A sandpaper supporting wheel including a body having a hub, a rim of rubber surrounding the periphery of the body and formed with spaced transversely extending indentations in its periphery, and inner plates disposed on each side face of the body and attached thereto, a chain on each side of the body bearing against said plates, each chain being composed of links bearing flat against the corresponding plate, a leaf spring carried by each plate and having an outwardly projecting pin, one link of the chain having an aperture for said pin, the next adjacent link also having an aperture for engagement with said pin whereby when said links are brought into alinement they will be connected to each other by said pin, the opposed springs being adapted to be forced inward to detach the pin from engagement with the adjacent links, each spring having a button whereby it may be pressed inward, the corresponding links on opposite chains being connected by cross bars, these cross bars being equally spaced with the indentations in the rim whereby when the chain is in place the cross bars will fit within said indentations and force a sand paper strip into said indentations.

5. A sandpaper supporting wheel including a body having a hub, a rim of rubber secured around the periphery of the body and formed with spaced indentations in its face, chains disposed on each side face of the body and formed each with a series of links, means detachably connecting the ends of each chain, means connecting...
the chains and adapted when the ends of the chains are latched to force a strip of sand paper into said indentations.

6. A sand paper supporting wheel including a body having a hub, a rim of rubber surrounding the body and formed with spaced transversely extending indentations in its peripheral face, chains one on each side of the body and formed of pivotally connected links, one of the links of each chain being detachably connected with the next adjacent link and opposed links having a cross bar formed to extend into a corresponding indentation in the rim whereby to hold a strip of sand paper in place on the rim and force the sand paper into the indentations, and coacting means on the links and body to prevent circumferential movement of the chains upon the wheel.

TAHVAN E. AHO.