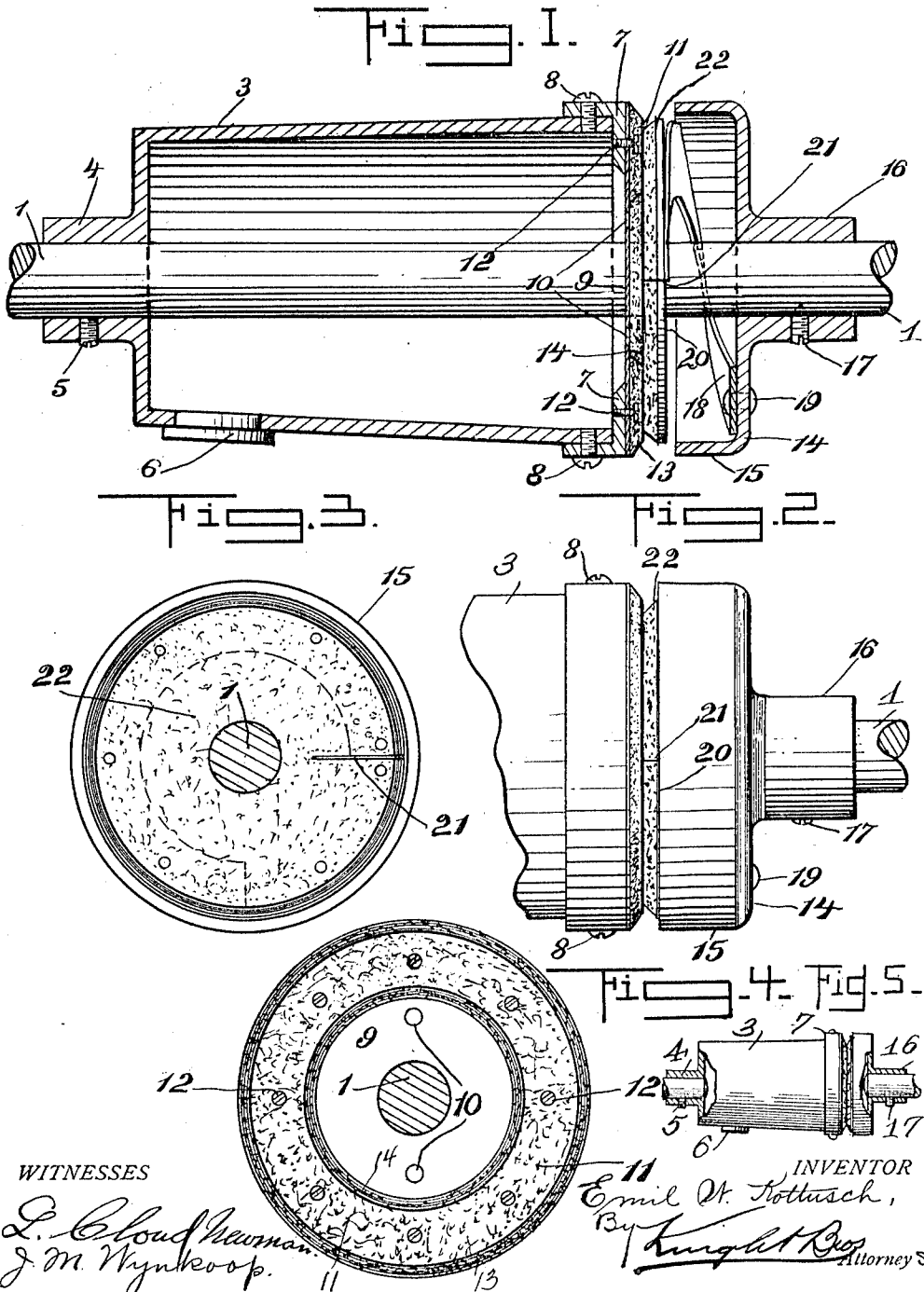


E. W. KOTTUSCH.
CLEANING AND POLISHING MACHINE.
APPLICATION FILED AUG. 7, 1911.

1,061,482.

Patented May 13, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

EMIL W. KOTTUSCH, OF CINCINNATI, OHIO, ASSIGNOR TO THE MILLER, DU BRUL & PETERS MFG. CO., OF CINCINNATI, OHIO, A CORPORATION.

CLEANING AND POLISHING MACHINE.

1,061,482.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed August 7, 1911. Serial No. 642,741.

To all whom it may concern:

Be it known that I, EMIL W. KOTTUSCH, a subject of the Emperor of Germany, and residing in the city of Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Cleaning and Polishing Machines, of which the following is a specification.

My invention relates more particularly to the cleaning and polishing heads of this class of machinery generally, and while it is especially adapted for use on that type of cleaning and polishing machines shown in my application filed August 12, 1910, Serial No. 576,790, it of course will be understood that it may be used upon any type of cleaning and polishing machine adapted to receive rotary heads.

The object of my invention is to provide resiliency between cleaning and polishing heads, and to provide means whereby the polishing powder is trapped between the cleaning and polishing faces after the removal of an article from between them, and to retain the polishing powder between said faces thus preventing waste; and with these and minor objects in view, my invention consists of the parts and combination of parts as will be hereinafter more fully set forth.

In the drawing, Figure 1 is a vertical longitudinal section through cleaning and polishing heads embodying my invention, some of the parts being shown in an abnormal position; Fig. 2 is an elevation of the same in normal position, parts being broken away; Fig. 3 is an end elevation of one of the heads; Fig. 4 is an end elevation of the other head, and Fig. 5 is a side elevation of another embodiment of my invention, partly in section.

1 is a shaft suitably mounted and connected to a suitable source of power, such for instance as shown in my aforesaid application. 3 is a hollow head having a collar 4 adapted to receive the shaft 1 to which it is secured by any suitable means, such for instance as the set screw 5. The body of this head is flaring and open at one end, the flare being toward the open end, as clearly shown in Fig. 1.

6 is a cap adapted to close an opening in the head 1, said head being filled with cleaning and polishing powder through said opening.

7 is an annular angular piece secured by screws or other suitable means 8 to the open end of the head 3.

9 is a flat plate secured to the angular piece 7 and closing the open end of the head 3, said plate being provided with perforations 10, through which the powder escapes from the head 3 as the head is revolved.

11 is a cleaning and polishing ring of any suitable material. The polishing ring 11, the plate 9 and the angular piece 7 are secured together by means of a suitable bolt, screw or rivet 12. It will be noted that the polishing surface 11 is in the form of a flat ring, the edge of which is beveled as at 13 for the purpose hereinafter set forth. The inner edge of the ring or polishing face 11 is also beveled as at 14, whereby powder sifting through the perforations 10 into the intermediate space of the ring will roll off of the inner edge of said ring.

The other polishing head comprises a base 14 having a collar 15 and a sleeve 16, the sleeve 16 being adapted to receive the shaft 1 to which it is secured by the set screw 17. Within the collar 15, I secure a spring 18 which for purposes of illustration I have shown as a flat spiral spring. This spring is anchored on the base 14 by means of the screw 19. On the free end of the spring 18, I secure, in any suitable manner, a flat ring or frame 20 preferably split as at 21, as clearly shown in Fig. 1, one of the split ends of the ring being deflected as shown. 22 is a polishing face of any suitable material, preferably in disk form, covering the split ring 20 and its intermediate space, the face being split radially from its perimeter toward its center in line with the split of the ring 20, as clearly shown in Figs. 1 and 3. The deflection of the polishing face due to the split provides means for polishing and cleaning the edges and uneven places on knife blades.

As the machine is operated, powder will be sifted from the holder 3 through the openings 10 in the space between the inner edges of the polishing ring 11, from which it slides down the beveled edges 14 to the joint between the polishing faces 11 and 22. The polishing face 22 is supported only at and near its perimeter by the flat ring 20, thus the central portion of the polishing face 22 covering the intermediate space of the ring 20 is free to bulge into said space

and form a pocket adapted to receive powder, from which the powder escapes between the polishing faces, thus insuring a constant flow of powder between the polishing faces.

The outer edge of the polishing faces 11 and 22 is beveled, as more clearly shown in Fig. 2, to form a guide for the introduction of a knife blade between the polishing faces. The special construction of the independent springing action of the polishing surface 22 with its intermediate space allows the powder to drop into that space and supply that side of the polishing surface, as well as the polishing surface of the other head, and to close the two polishing surfaces tightly together (see Fig. 2) the moment the article, a knife for instance, is withdrawn from between them, which avoids loss or waste of the polishing powder when that part of the machine is kept revolving.

It will be noted that the closing of the polishing faces together is accomplished by the spring 18, thus obviating the necessity of employing outside springs for this purpose.

My invention simplifies the construction of polishing heads and also renders the polishing heads very effective and durable as the action of the spring 18 presents a varied flexibility to the surface of the polishing faces, which cleans the edges and uneven places on knife blades.

It will be seen that the spring 18, the ring 20 and the polishing face 22 are of a diameter less than the diameter of the collar 15, and are confined within the collar 15 at all times, thus reducing the liability of their getting out of order. Of course, the polishing face 22 projects beyond the collar, as shown.

As will be seen from the drawings (Figs. 1 and 2), both heads are mounted on a common shaft; and the shaft between the heads will form a rest for the knife to be cleaned or polished, thus enabling the operator to hold the knife steady insuring uniform cleaning and polishing; however, if desired,

the heads may be mounted on the ends of opposed shafts, as shown in Fig. 5.

I claim:—

1. A cleaning head for a cleaning and polishing machine comprising a cup-shaped base, a spring secured in said base, a flat ring secured to the outer end of said spring and a polishing and cleaning face secured to said ring at its perimeter, the portion of the face covering the open space of said ring forming a powder pocket.

2. A revolving cleaning head for a cleaning and polishing machine comprising a base, an annular upstanding flange extending from said base, a spring secured to said base, a flat ring of less diameter than the collar secured to said spring, and a circular polishing and cleaning face secured to said ring near its periphery and of less diameter than the collar, whereby the ring and polishing face may enter said collar.

3. In a cleaner for a cleaning and polishing machine, an open split frame in combination with a polishing face covering one side of said frame and its intermediate space.

4. In a cleaner for a cleaning and polishing machine, the combination with an open split frame, of a polishing face covering one side of said frame and its intermediate space, said face being split radially from its perimeter toward its center, the splits in the frame and face registering, whereby one edge of the split may spring out of the plane of said face.

5. In a cleaning and polishing machine, the combination with a cleaning and polishing cup-shaped revolving head, of a single flat inclined spring confined in said head, and a circular cleaning and polishing face secured to said spring.

The foregoing specification signed at Cincinnati, this fourth day of August, 1911.

EMIL W. KOTTUSCH.

In presence of two witnesses—

H. WHYRICH,
W. J. HUNTER.