H. AND R. BUCKLEY.

GRINDING PLATE.

APPLICATION FILED JULY 13, 1921.

1,424,615. Patented Aug. 1, 1922.

Fig. 1.

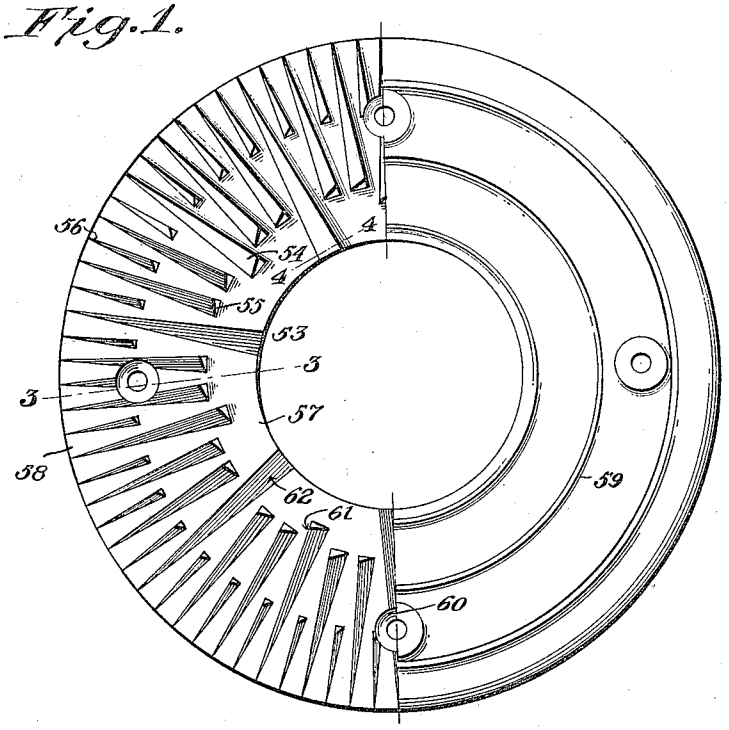


Fig. 2.



Fig. 3.

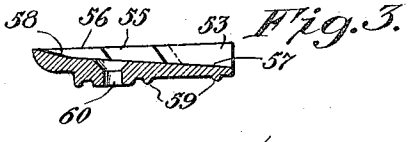
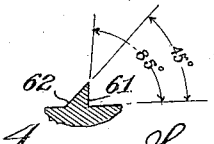


Fig. 4.



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UNITED STATES PATENT OFFICE.

HARRY BUCKLEY AND RAY BUCKLEY, OF LOUISVILLE, KENTUCKY.

GRINDING PLATE.

1,424,615. Specification of Letters Patent. Patented Aug. 1, 1922.

Original application filed April 8, 1921, Serial No. 459,566. Divided and this application filed July 13, 1921. Serial No. 484,376.

To all whom it may concern:

Be it known that we, HARRY BUCKLEY and RAY BUCKLEY, citizens of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Grinding Plates, of which the following is a specification.

This invention relates to grinding machines and has special reference to a grinding plate or disk for such machines, this application being a division of our prior application for patent on grinding machines filed April 8, 1921, Serial No. 459,566.

One important object of the invention is to improve the general form of cast grinding plates for use in connection with grinding machines or mills.

A second important object of the invention is to provide a grinding plate of improved construction wherein the plate will be formed to produce a retarding effect on the material being ground as such material arrives at the periphery of the plate and is about to flow from between the two plates as they are commonly employed.

A third important object of the invention is the provision of improved grinding plates wherein the edges of the grinding elements will all lie in the same plane thus effecting an equal fineness in the material whenever it is reduced sufficiently to pass between the grinding rib edges of the cooperating plates commonly used.

With the above and other objects in view, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—

Figure 1 is a view showing one of the improved plates, one-half of the view showing the face of such plate while the other half shows the back thereof.

Figure 2 is an edge view of the plate.

Figure 3 is a detail section on the line 3—3 of Figure 1.

Figure 4 is a detail section on the line 4—4 of Figure 1.

In carrying out the objects of the invention there is provided a grinding plate having on its working surfaces a multiplicity of tangential ribs of different lengths, these ribs being arranged in series as indicated respectively at 53, 54, 55, and 56. It will be seen that the lengths of each of the series vary but that all of the ribs of any given series are of the same length. These ribs are formed longitudinally on a plate having a short frusto-conical recess 57 on its working face, this recess terminating outwardly in a surface 58 of greater inclination than the rest of the recess. On the back of each plate is a series of annular supporting ribs 59 and each plate is provided with plurality of counter-sunk bolt receiving openings 60. All of the ribs have their upper or cutting edges terminating in the same plane as can be seen by referring to Figure 3. They thus increase in size from the outside inward. Moreover the short face of each rib is under cut to an extent of 5° making this face at an angle of 85° to the bottom of the frusto-conical recess of the surface 57, this being indicated at 61 in Figure 4. The rear face of each rib is inclined at 45° as shown at 62 in Figure 4. By means of this construction it has been found that the action of these ribs is a direct cutting action similar to that of a pair of shears and at the same time the cutting edges, being tangential to a small circle to the center of each plate, move across each other and effectively keep themselves sharp.

The plate here shown has practically seven sections. These sections being divided from each other by the long ribs 62 but it is obvious that as many sections may be used as may be needed or desired and also that the ribs may be caused to project above the frusto-conical surface 57 at the periphery of the plate for coarse grinding.

There has thus been provided a simple and highly efficient construction for single head grinding mill.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material principles thereof. It is not therefore desired to confine the invention to the exact form herein shown and described, but it is wished to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:—

1. A grinding plate consisting of a body portion having a dished face said dished face

being more abruptly dished at the periphery than toward the centre, a multiplicity of ribs triangular in cross section and having their cutting edges tangential to a circle at the center of the plate and all arranged in a common plane.

2. A grinding plate consisting of a body portion having a dished face said dished face being more abruptly dished at the periphery than toward the centre, a multiplicity of ribs triangular in cross section and having their cutting edges tangential to a circle at the center of the plate and all arranged in a common plane and having their outer ends terminating at the periphery of the plate, said ribs being arranged in sets, the ribs of of the several sets all being of equal length but of different length from the ribs of the remaining sets.

3. A grinding plate consisting of a body portion having a dished face, said dished face being more abruptly dished at the periphery than toward the center, a multiplicity of ribs triangular in cross section and having their cutting edges tangential to a circle at the center of the plate.

In testimony whereof we affix our signatures.

HARRY BUCKLEY.
RAY BUCKLEY.