To all whom it may concern:

Be it known that I, OSCAR WAUTHIER, a subject of the King of the Belgians, residing at Brussels, Belgium, have invented new and useful Improvements in Centrifugal Crushing or Grinding Machines, for which I have filed an application in Belgium, No. 267,322, bearing date April 24, 1914, and of which the following is a specification.

The present invention relates to improvements in centrifugal crushing or grinding machines, and has especially for its object to improve the hammers or beaters of such machines. In the crushing or grinding machines, of the type as constructed up to the present, and especially in the machine described and claimed in the application of the same inventor for United States Letters Patent filed on 13th April, 1920, Serial No. 831,557, two discs or flanges were mounted on the rotary shaft within a casing, so as to form a drum, and bearing pins extending between the two said discs or flanges were supported by the latter at intervals around their circumference, the said bearing pins having hammers or beaters rotatably mounted thereon. On rotation of the drum within the casing, the hammers or beaters, under the action of the centrifugal force strike the material to be crushed or ground and pulverize same. The aforesaid hammers or beaters have previously been composed of a tubular sleeve which was rotably mounted on the bearing pins, and at each end of which was rigidly fixed a lateral arm or member, and a central hammer head or block was made integral with or secured to the ends of the lateral arms or members opposed to the sleeve. When the said hammer head or block was worn out, the hammer as a whole had to be removed and replaced.

In order that the present specification may be better and more completely understood, an embodiment of the invention is, by way of example, illustrated in the accompanying drawings, in which:

Fig. 1 shows a longitudinal elevation of the hammers or beaters according to the present invention,

Fig. 2 shows a transverse section of same, and

Fig. 3 shows a transverse section through a modified form of hammers or beaters according to the present invention.

As stated above, the object of the present invention is mainly to provide an improved form of hammers or beaters, whereby the said hammers become reversible, so that two hammer heads or blocks can be used alternatively one after the other, and an important economy may be realized.

With the above mentioned object in view, the hammers or beaters according to the present invention consist of two hammer heads or blocks a and b connected at each of their ends by means of lateral arms or members c, longitudinal holes d being bored through each of the suitable shaped hammer heads or blocks a, b, in order to receive the bearing pins. Pins or washers e are inserted between each side of the hammer heads or beaters and the inner face of each of the flanges of the rotary drum.

The dotted line f on Fig. 2 of the drawing indicates the way in which the hammer heads or blocks wear out, and with the present arrangement, when one hammer head or block, for instance a, is worn out, the hammer or beater can be reversed and the other hammer head or block b may be employed.

As shown on Fig. 3 of the drawings, it may be advantageous to bore the holes d through the hammer heads or blocks a and b respectively somewhat eccentrically in transverse section, in order to provide a greater mass of metal g on that face of the hammer heads or blocks most exposed to wear.

The dotted line f′ of Fig. 3 indicates the way in which the hammer heads or blocks wear out.

It will be seen that an important economy may be effected by the use of reversible hammers or beaters according to the present invention, and it will be understood that the invention is not limited to the shape of the hammer heads or blocks shown on the drawings, and that many modifications in the details may be brought to the hammer heads or beaters according to the present invention without departing from the principle of the latter.

I claim:

1. In a crushing or grinding machine of the type having pivoted hammers subjected to the action of centrifugal force, reversible hammers each having on its opposite ends prismatrace metal hammer-blocks of substantially triangular cross-section with widely
rounded edges, and a pair of lateral arms integral therewith and forming a rigid connection between said blocks, each of said blocks having a hole of suitable diameter bored longitudinally therethrough for the introduction of a bearing pin, substantially as described.

2. In a crushing or grinding machine of the type having pivoted hammers subjected to the action of centrifugal force, reversible hammers each having on its opposite ends round-edged prismatic metal hammer-blocks of substantially triangular cross-section out of alignment with one another and a pair of lateral arms integral therewith and forming a rigid connection between said blocks, there being a substantial thickening on the opposed working faces of the two said hammer-blocks; and each of said blocks having a longitudinally extending hole through the eccentric facing ridge-portions of the blocks, substantially as described.

In testimony thereof I signed hereunto my name in the presence of two subscribing witnesses.

OSCAR WAUTHIER.

Witnesses:
G. O. Boerand,
M. C. Houck.