

TO ALL WHOM IT MAY CONCERN:

Be it known that I, Jesse F. Carson, of the city of Cleveland, in the County of Cuyahoga, and State of Ohio, U.S.A., Manufacturer, having invented certain new and useful improvements in Coffee Mill ^{Burs}, do hereby declare that the following is a full, clear and exact description of the same.

This invention relates to mill construction and more particularly to grinding burs which are especially adapted for use in coffee mills.

Generally speaking the invention relates to the elements and combinations thereof, set forth in the accompanying claims.

Reference should be had to the accompanying drawings forming a part of this specification in which Fig. 1 is a top plan view of one of the burs; Fig. 2 is a top plan view of the companion bur; Fig. 3 is a section upon line 3-3 of Fig. 1; Fig. 4 is a section upon line 4-4 of Fig. 1; Fig. 5 is a section upon line 5-5 of Fig. 1; Fig. 6 is a section upon line 6-6 of Fig. 1; Fig. 7 is a section upon line 7-7 of Fig. 2; Fig. 8 is a section upon line 8-8 of Fig. 2; Fig. 9 is a section upon the line 9-9 of Fig. 2; Fig. 10 is a section upon line 10-10 of Fig. 2; Fig. 11 is an elevation in the direction of the arrows within the limits of line 11-11; Fig. 12 is a sectional elevation of assembled burs.

The two burs forming the pair of burs of my invention are represented in plan in figures 1 and 2 and designated generally at A and B.

Both burs have a generally concave face upon which are arranged cutting teeth which are generally pyramidal in form.

The tops of substantially all the teeth lie in a flat plane, the few teeth which do not lie in this plane are truncated for the purpose of more easily permitting

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the passage of the coffee beans in more or less broken condition outward between the burs.

The arrangement of the cutting teeth upon the faces of the burs is substantially the same. However, I will consider the burs separately.

Bur A: The teeth are arranged in rows both radially and circumferentially, but for purposes of description I shall refer more particularly to their radial arrangement.

The radial rows of teeth are arranged in repeating groups, and each group consists of the radial rows of teeth C, D, E and F. Between the radial rows of teeth are grooves as for instance adjacent row F is groove G, adjacent row E is groove H, adjacent row D is groove I and adjacent row C is a compound groove the parts of which are indicated at J and K.

In cutting the radial grooves, a circular cutter first cuts the groove J, next the groove K, then groove H, I and D in succession. It will be noted that each groove has an arc shaped bottom portion, and that the depth of the groove decreases from the portion of the groove toward the inner part of the bur toward the outer part of the bur.

In the matter of depth, the grooves adjacent the rows of each group vary, for instance, with reference to the plane in which the tops of the untruncated teeth lie, the groove J is deepest, the groove H is of slightly less depth and in succession follow grooves K, I and G, each being slightly less in depth than its predecessor.

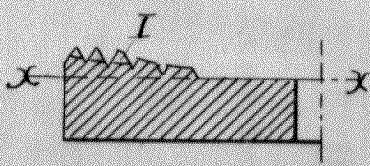
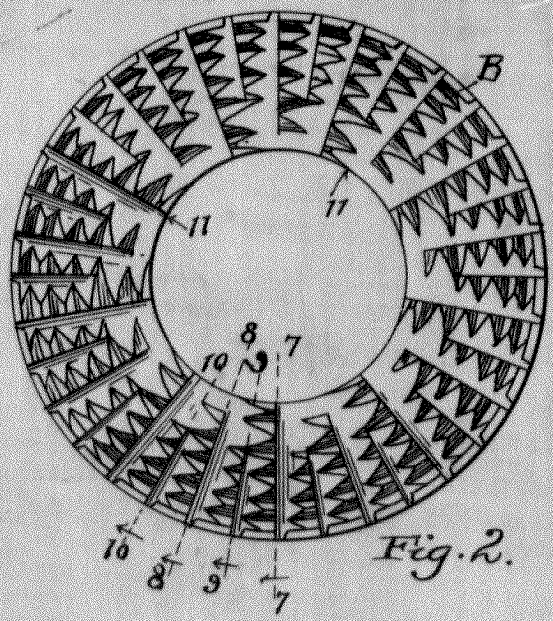
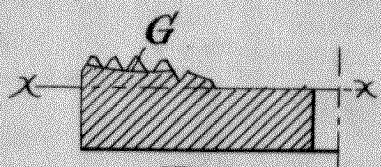
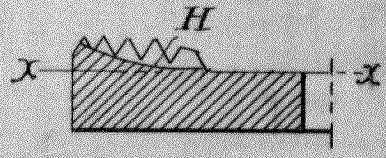
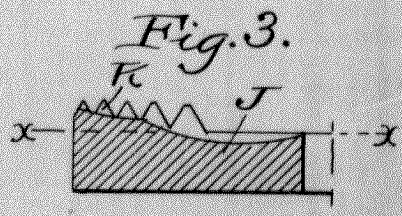
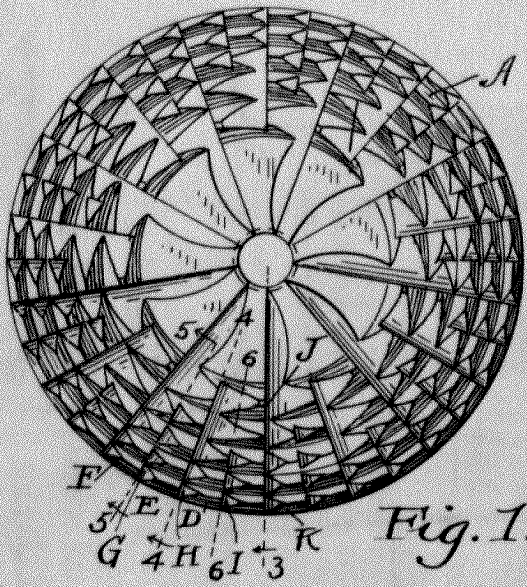
Bur B: This bur has its teeth and intermediate grooves arranged in exactly the same manner as that just described, but bur B is provided with a central opening

through which material is fed to the burs when in use. Further, the inner two concentric rows of teeth upon bur B are slightly different than those upon Bur A for purposes of permitting the coffee to feed into the burs, but the essential characteristics are the same.

When the burs are brought together, the circumferential rows of teeth on one bur lie between the rows of teeth upon the other bur except the inner concentric row upon each bur and these rows are substantially oppositely disposed. The teeth in these rows are truncated and effect the first cracking of the coffee beans as they are fed between the burs.

The operation of the burs will be apparent. One bur will be held while one is turned. The coffee beans will be fed to the cutting faces of the burs through the central opening in bur B. The beans will be cut by the teeth upon the burs and pass outwardly between the burs being cut finer as it progresses. In use there will be some means provided for relative adjustment of the burs to accomplish different degrees of milling of the coffee beans.

Modifications of the precise structure herein disclosed may be made without departing from the spirit of this invention.



Witnesses
 E. B. Gilchrist
 J. Johnson

Attested to both drawings
 referred to in the specification
 hereunto annexed.
 Cleveland Ohio U.S.A.
 Sept. 24. 1874

Inventor
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 by Thurston & King atty

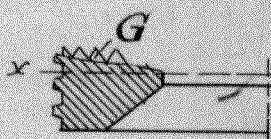
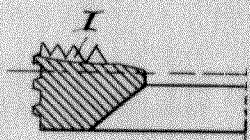
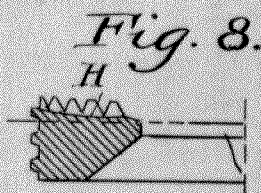
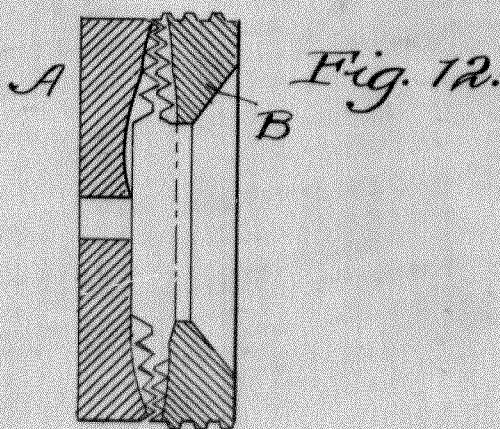
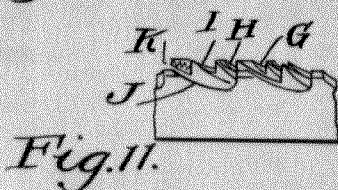


Fig. 9.

Fig. 10.



Witnesses
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 J. Hudson

Accepted to be the drawings
 referred to in the specification
 hereunto annexed
 Cleveland Ohio H. S. A.
 Sept. 24 1914

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