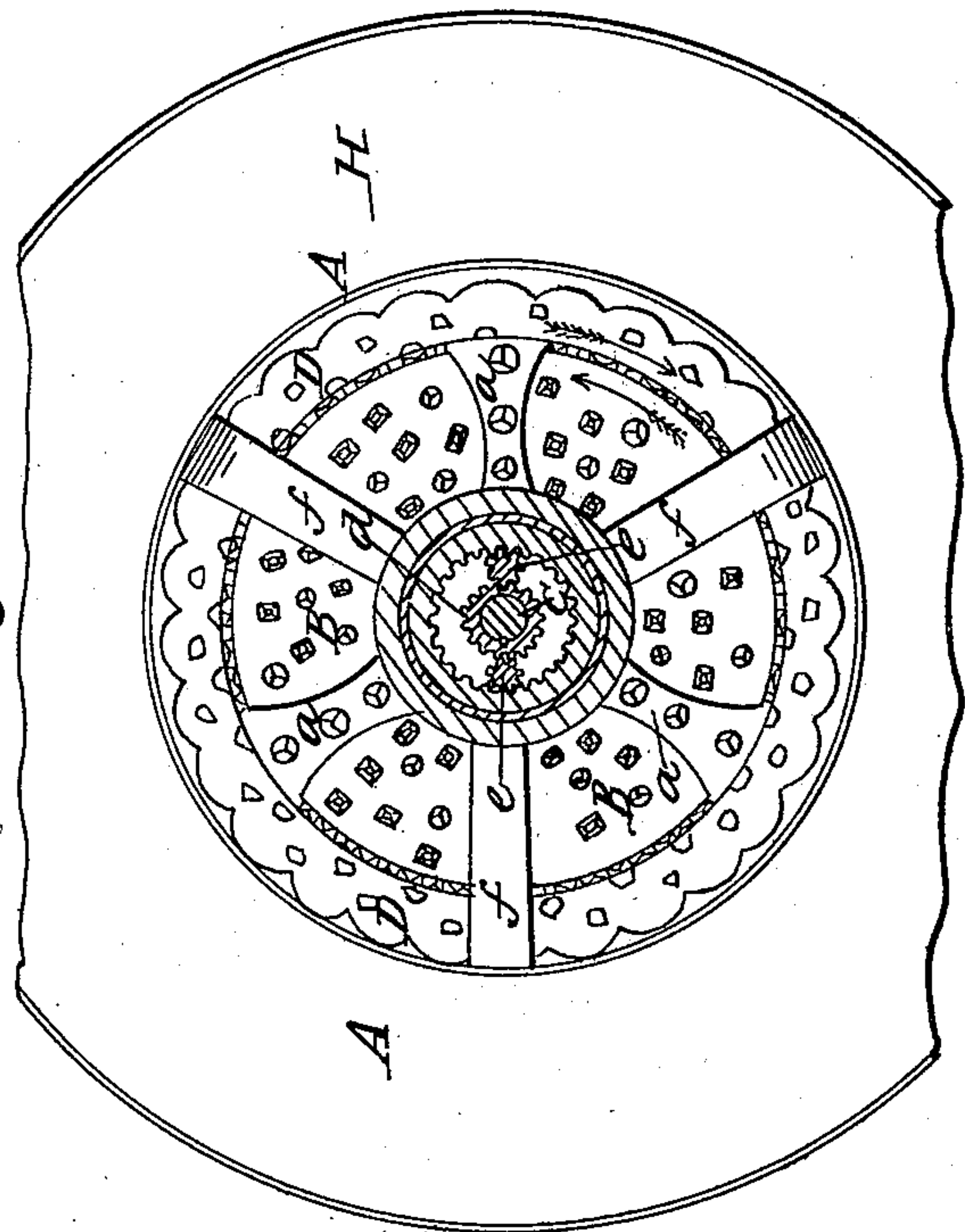
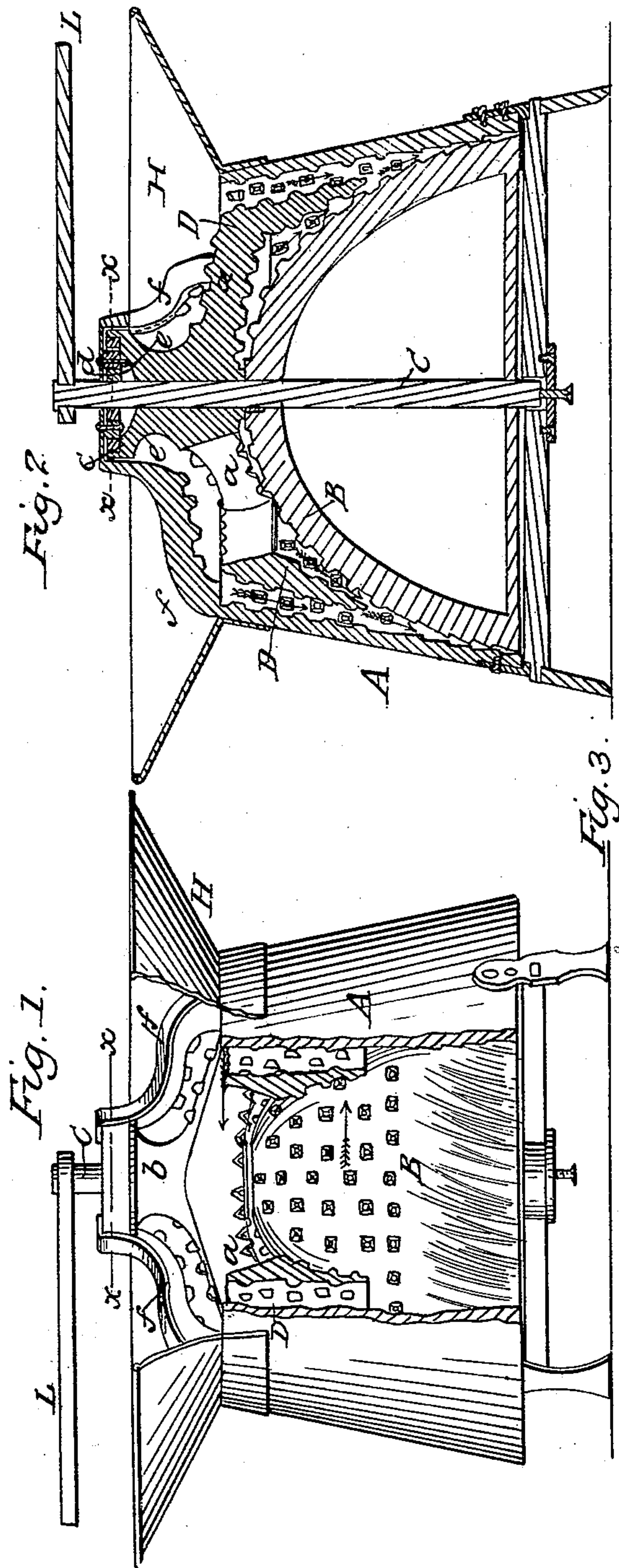


G. PATTEN.  
Corn Crusher.

No. 13,730.

Patented Oct. 30, 1855.





# UNITED STATES PATENT OFFICE.

GEO. PATTEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

CORN AND COB MILL.

Specification of Letters Patent No. 13,730, dated October 30, 1855.

*To all whom it may concern:*

Be it known that I, GEORGE PATTEN, of the city of Washington and District of Columbia, have invented a new and useful Improvement in Corn and Cob Crushers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is an elevation of the mill with shell broken and portion of breaker removed, to show interior. Fig. 2 is a vertical section of mill through axis of main shaft. Fig. 3 is a plan of mill and section on  $x x$ .

Similar letters denote the same part.

The object of my invention is to remedy a defect existing in mills of this character, owing to the disparity between the supply of broken ear which passes to the fine grinding portion of the machine, and the grinding capacity of said portion; whereby a loss of effect obtains in the working of the machine. This I design to remedy by constructing the machine with a double surfaced crusher, partaking of the nature of both shell and bur, and rotating between the shell and bur while one of said parts is in motion in the opposite direction; so that its convex portion shall act in conjunction with the shell and its concavity operate with the bur; the said breaker being dressed in a suitable manner for breaking the ear and preparing it for the action of the fine grinding parts of shell and bur. By this construction there is a double amount of breaking constantly going on, the products of which unite below the breaker and constitute a sufficient supply to employ the entire working capacity of the fine grinding portion of the machine.

The details of construction and operation are as follows: The shell A and bur B are constructed in a manner similar to other mills of this character, having a dress capable of breaking the ear and effecting fine grinding; the precise dress need not be here particularized, as it may be varied to conform to circumstances; the only essential point to be considered being that the lower parts of shell and bur effect the fine grinding and the upper parts act in conjunction with the double surfaced crusher. The bur rests upon an ordinary bridge tree connect-

ed in any suitable manner with the shell, and is thus rendered capable of vertical movement for adjustment of the fine grinding parts, as usual in mills of this character.

Movable around the main shaft C, and resting upon the head of bur B, is the double surfaced breaker or crusher D, which consists of a deep wedge shaped ring roughly dressed on both convex and concave surfaces, connected by arms  $a$  with a central hollow shaft  $b$  fitting closely on the main shaft C. This breaker or crusher extends downward between the main shell and bur, and is rotated in a direction the reverse of the bur motion, by reason of the connection between shafts C and  $b$  by rim  $c$  and pinions  $d$  and  $e$ . The arms  $a$  are roughly dressed on both upper and lower edges so as to act against the bur and the shaft supports  $f$ .

The action of the mill is as follows: Motion is communicated to shaft C by power applied to lever L, rotating bur B, and breaker D, as denoted by arrows. The hopper H is supplied with the corn, which passes on both sides of the crusher D, the opposite sides of which acting against the roughened portions of both shell and bur reduce the material to a condition for the fine grinding portions of the main shell and bur. The products of the aforesaid action of the crusher, passing to the fine grinding parts as shown by the arrows.

By this construction there is no lack of a supply of the broken ear for the fine grinding part; a continuous supply being thus kept up during the operation of the mill; insuring a harmonious action of the parts performing the several functions of breaking, crushing and grinding and thereby increasing the efficiency of the machine.

What I claim and desire to secure by Letters Patent is—

The double surfaced breaker and crusher D, between the upper portions of shell and bur, in combination with a shell A, and bur B, constructed arranged and operating substantially as, and for the purposes specified.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

GEORGE PATTEN.

Witnesses:

JOHN S. HOLLINGSHEAD,  
JAS. D. CLARY.