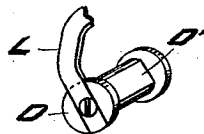
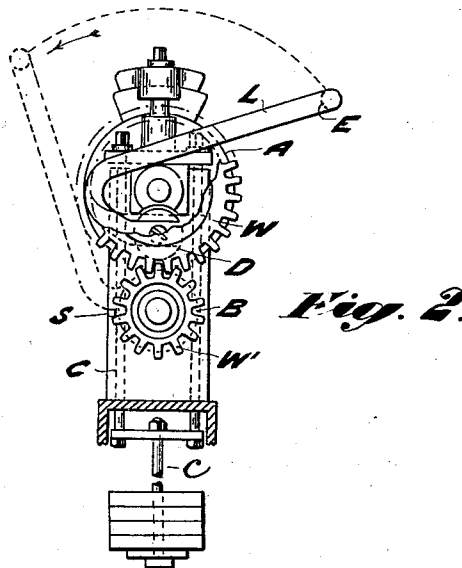
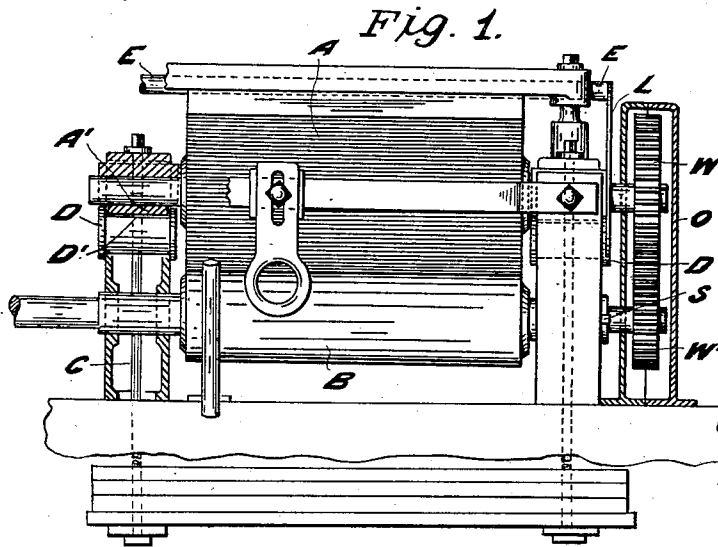


W. SHAW, J. BOWER & F. WILSON.
 BUR CRUSHING OR LIKE APPARATUS FOR USE IN CONNECTION WITH CARDING ENGINES.
 APPLICATION FILED JAN. 5, 1909.

1,017,179.

Patented Feb. 13, 1912.



WITNESSES

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Fig. 3. William Shaw

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Fred Wilson

(Signature)
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UNITED STATES PATENT OFFICE.

WILLIAM SHAW, JOSEPH BOWER, AND FRED WILSON, OF BRADFORD, ENGLAND.

BUR-CRUSHING OR LIKE APPARATUS FOR USE IN CONNECTION WITH CARDING-
ENGINES.

1,017,179.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed January 5, 1909. Serial No. 470,859.

To all whom it may concern:

Be it known that we, WILLIAM SHAW, of 71 Stoneleigh, Pollard Lane, Bradford, in the county of York, England, manager, 5 JOSEPH BOWER, of 146 Heath Terrace, Bradford aforesaid, engineer, and FRED WILSON, of 98 Harrogate street, Bradford aforesaid, engineer, subjects of the King of Great Britain and Ireland, have invented certain 10 new and useful Improvements in and Relating to Bur-Crushing or Like Apparatus Principally for Use in Connection with Carding-Engines, of which the following is a specification.

15 This invention relates to improvements in "bur" crushing or like apparatus principally for use in connection with carding engines or the like, and has for its object the arrangement and application of simple and 20 efficient mechanism whereby the rollers of "bur" crushing or like apparatus are brought into or out of operation, as regards crushing, as may be desired, the operations being carried out more expeditiously and 25 with less liability of "sliver" breakage than is the case with "bur" crushing or like apparatus, as now constructed. Further, by our invention, the wear on certain parts of the apparatus is considerably reduced, as 30 is also the liability of injury to the operator while performing certain operations in connection with the apparatus.

In describing our invention in detail, reference is made to the accompanying 35 sheet of drawings, similar letters indicating similar parts, in which,

Figure 1 represents a general elevation showing our improvement as applied to 40 "bur" crushing apparatus. Fig. 2 represents an end view, and, Fig. 3 a detail.

In carrying out our invention, the rollers A and B are of the usual type, as are also the weights K and the attachment bars C to the top roller A.

45 Mounted in a suitable position toward each end of the apparatus, is a suitable cam, wedge bar, or the like D, and connected

thereto is a lever L, by preference, shaped as shown. The levers L are in turn connected by a rod or bar E, in order that the cams 50 or the like D may be operated together. The cams or the like D are provided with a flat face D¹, normally in engagement with the vertically movable bearings A¹ of the top roller A. Thus, as the rod or bar E is 55 moved in direction of arrow in Fig. 2, the levers L will move and cause the cam or the like to lift some little distance, the top roller A. The distance the bar E will move, will regulate the lift or otherwise of the roller A. 60 The weights being attached to the bars C which are in turn attached to the bearings A¹, will be lifted with the roller. Thus, it is not necessary to remove the weights in order to operate the device, as is now the 65 usual practice. It will be understood that worm or other suitable gearing may be employed to operate the before mentioned cam or the like. In some cases the rollers A and B are driven by friction rollers or disks, 70 which are naturally subject to uneven wear and thus necessitate frequent repairs. In the present improvement, the said disks are discarded, and deep toothed wheels W and W¹ substituted, and thus a positive drive is 75 obtained. The lift of the roller A and wheel W being only a small distance, the teeth of the wheels W and W¹ are not moved out of mesh. The said wheels W and W¹ are, by preference, provided with an oil tight 80 case O in order to assist the smooth running of the gearing. Stops S are provided in any convenient manner, and positions, to keep the levers L in their required position, when the top and bottom rollers are not in contact. 85

What we claim as our invention is:—

A bur crushing apparatus comprising a pair of uprights, a lower roller journaled in said uprights, an upper roller, gear wheels having deep teeth on said rollers meshing 90 with each other, bearings for said upper roller vertically movable in the uprights, weight supporting rods connected with said bearings and passing downwardly through

the uprights, weights supported by said
rods, a cam rotatably mounted in each up-
right below the movable bearing, said cam
having a flat face on which the bearing rests
5 in the normal position of the upper roller,
a lever connected with each cam, and a bar
connecting the free ends of said levers to-
gether for simultaneously rotating the
cams.

In witness whereof we have hereunto set 10
our hands in the presence of two witnesses.

WILLIAM SHAW.
JOSEPH BOWER.
FRED WILSON.

Witnesses:

CLIVE WAUGH,
JOSEPH P. KIRBY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
