H. HURTER.

CANE MILL.

APPLICATION FILED MAY 16, 1919.

1,422,979. Patented July 18, 1922.

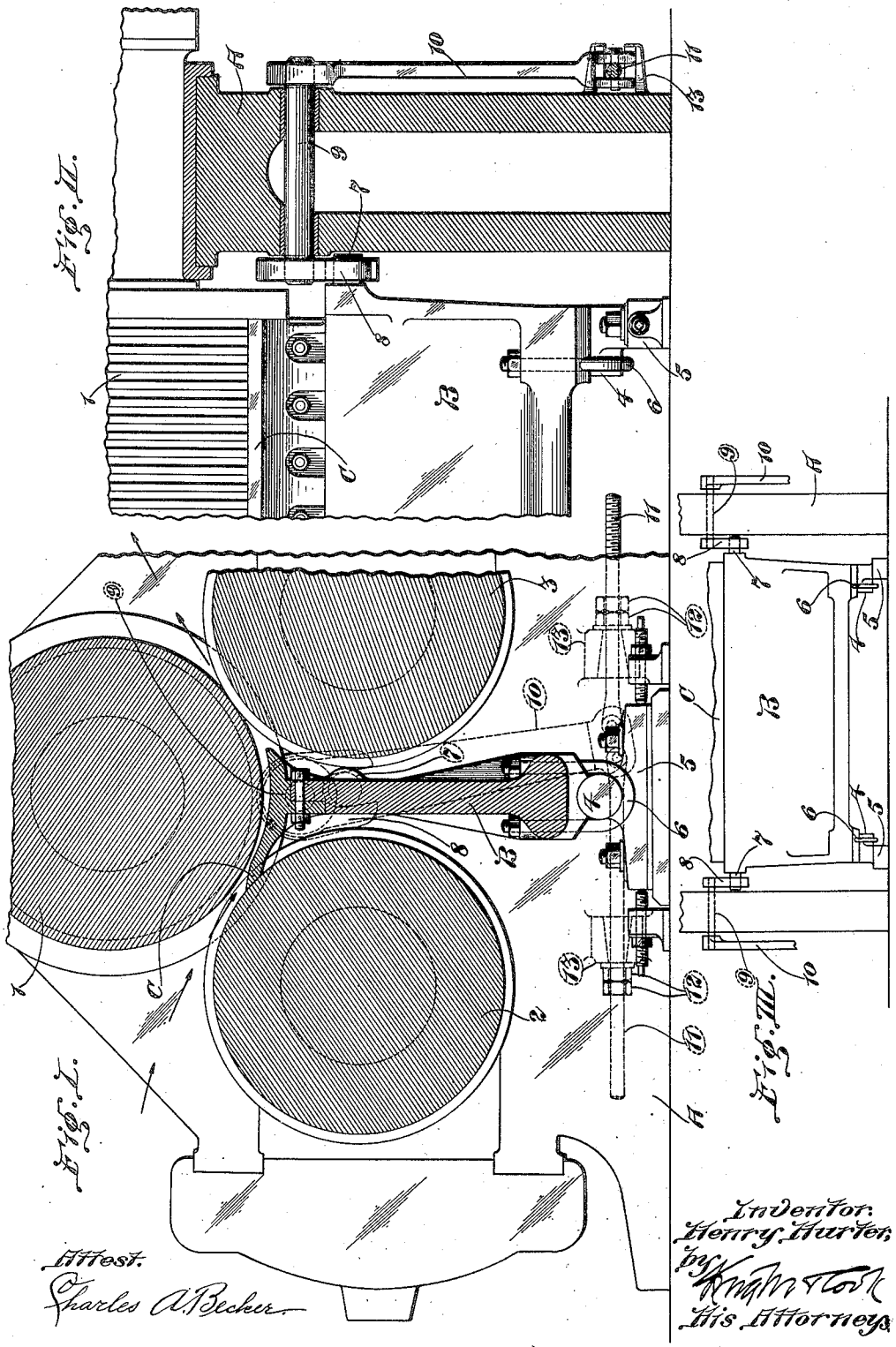


Fig. 1.

Fig. 2.

Fig. 3.

Witness:
Charles A. Becker

Inventor:
Henry Hurter,
by Knight Bros
His Attorneys

UNITED STATES PATENT OFFICE.

HENRY HURTER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO FULTON IRON WORKS COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

CANE MILL.

1,422,979. Specification of Letters Patent. Patented July 18, 1922.

Application filed May 16, 1919. Serial No. 297,651.

To all whom it may concern:

Be it known that I, HENRY HURTER, a citizen of the United States of America, a resident of the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Cane Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in cane mills, and more particularly to a cane mill provided with a scraping device, the main object being to produce a strong, simple and efficient device of this kind preferably comprising a turnbeam, a trash knife or scraper secured thereto, and means for adjusting the turnbeam to move the trash knife toward and away from one of the mill rolls. To provide the desired strength, the lower portion of the adjustable turnbeam is preferably mounted on a pivotal support, and to obtain the desired adjustments, I have devised a simple adjusting means adapted to cooperate with a turnbeam of this kind, said adjusting means having an operating member at the exterior of the mill housing where it will not be exposed to the chemical action of the juice passing from the cane. The strong and simple adjustable turnbeam is thus supported in such a manner that it can withstand the pressure of the cane to which it is subjected, and its adjusting means can be readily manipulated at the exterior of the mill housing.

Fig. I is a vertical section of a cane mill embodying the features of this invention, a portion of the mill being broken away.

Fig. II is a fragmentary vertical section taken approximately through the center of the structure shown in Fig. I.

Fig. III is a detail view, on a small scale, illustrating the turnbeam and its adjusting devices.

The cane mill herein shown is provided with a top roll 1 and two lower rolls designated 2 and 3, the roll 2 being usually termed a "cane roll" and the roll 3 being termed a "bagasse roll." These rolls are journalled in side frames A which are ordinarily known as the mill housing. The cane enters the mill by passing between the crushing rolls 1 and 2, as indicated by arrows in Fig. 1, and after passing under the top roll it is discharged from the rolls 1 and 3 as indicated by arrows.

B designates a large, heavy turnbeam extending across the mill housing at a point directly below the top roll 1. C designates a trash knife secured to the upper edge of the turnbeam and provided with a scraping edge adapted to engage the roll 2. This knife C prevents the trash, i. e., small particles of cane, from dropping with the juice which flows downwardly on the periphery of the roll 2. The mass of cane passing over the top of the trash knife is subjected to the pressure of the top roll 1, and this downward pressure is transmitted to the turnbeam B. The turnbeam is thus subjected to a very severe downward pressure, and it must be properly constructed and supported to withstand such pressure. For this reason, the turnbeam is preferably a large, heavy casting, and its ends preferably rest upon pivot members 4, each of said pivot members being extended from a base 5 supported on the foundation of the mill. The lower end portions of the turnbeam B are curved to form seats which rest upon and conform to the curvature of the pivots 4. 6 designates U-bolts securing the turnbeam to the pivots 4. The substantial turnbeam is thus supported on a strong pivotal mounting, and it can be turned on the pivots to move the trash knife C toward and away from the roll 2.

The means for adjusting the turnbeam comprises lugs or pins 7 projecting from the upper end portions of the turnbeam, adjusting arms 8 having slotted lower ends in which the projections 7 are mounted, said arms 8 being located entirely within the mill housing and secured to oscillatory operating shafts 9 which extend through said housing. Operating arms 10 are located at the exterior of the housing and secured to the shafts 9. It will be readily understood that the operating arms 10 at the exterior of the housing, are not exposed to the juice passing from the cane, and these arms can be easily adjusted for the purpose of oscillating the turnbeam B on its pivots 4, thereby adjusting the scraping edge of the trash knife toward and away from the roll 2. Since the adjusting arms 8 are slotted to re-

ceive the projections 7, it is not necessary to accurately assemble the trash knife and adjusting means.

After the operating arms have been adjusted they can be secured to prevent the turnbeam and trash knife from moving relative to the roll 2. Threaded rods 11, pivoted to the lower ends of arms 10, are provided with nuts 12 which may be adjusted toward lugs 13 for the purpose of securing the operating arms 10. The threaded rods 11 pass through the lugs 13 and the nuts 12 cooperate with said lugs to prevent longitudinal movement of the rods 11. The nuts 12 can also be adjusted for the purpose of transmitting movement to the operating arms 10, thereby enabling the trash knife to be accurately adjusted by merely turning said nuts 12.

I claim:

1. In a cane mill, a housing provided with crushing rolls, a pivotally mounted turnbeam extending across said housing and arranged between two of said rolls, a trash knife extending from the upper portion of said turnbeam and cooperating with one of said rolls, an oscillatory adjusting arm movable in said housing to adjust the pivoted turnbeam, an oscillatory operating shaft extending through said housing and secured at its inner end to said adjusting arm, an operating arm located at the exterior of said housing and secured to said operating shaft, and securing means cooperating with said operating arm to retain said turnbeam and trash knife in the positions to which they are adjusted.

2. In a cane mill, a housing, crushing rolls in said housing, a turnbeam extending across said housing, a pivoted support on which the lower portion of said turnbeam is mounted, a trash knife extending from the upper portion of said turnbeam so as to cooperate with one of said rolls, projections on the upper end portions of said turnbeam, adjusting arms having slots into which said projections are extended, said adjusting arms being within said housing, operating shafts extending through said housing and secured to the respective adjusting arms, operating arms located at the exterior of the housing and secured to said operating shafts, and means for securing said operating arms in the positions to which they are adjusted.

In testimony that I claim the foregoing I hereunto affix my signature.

HENRY HURTER.