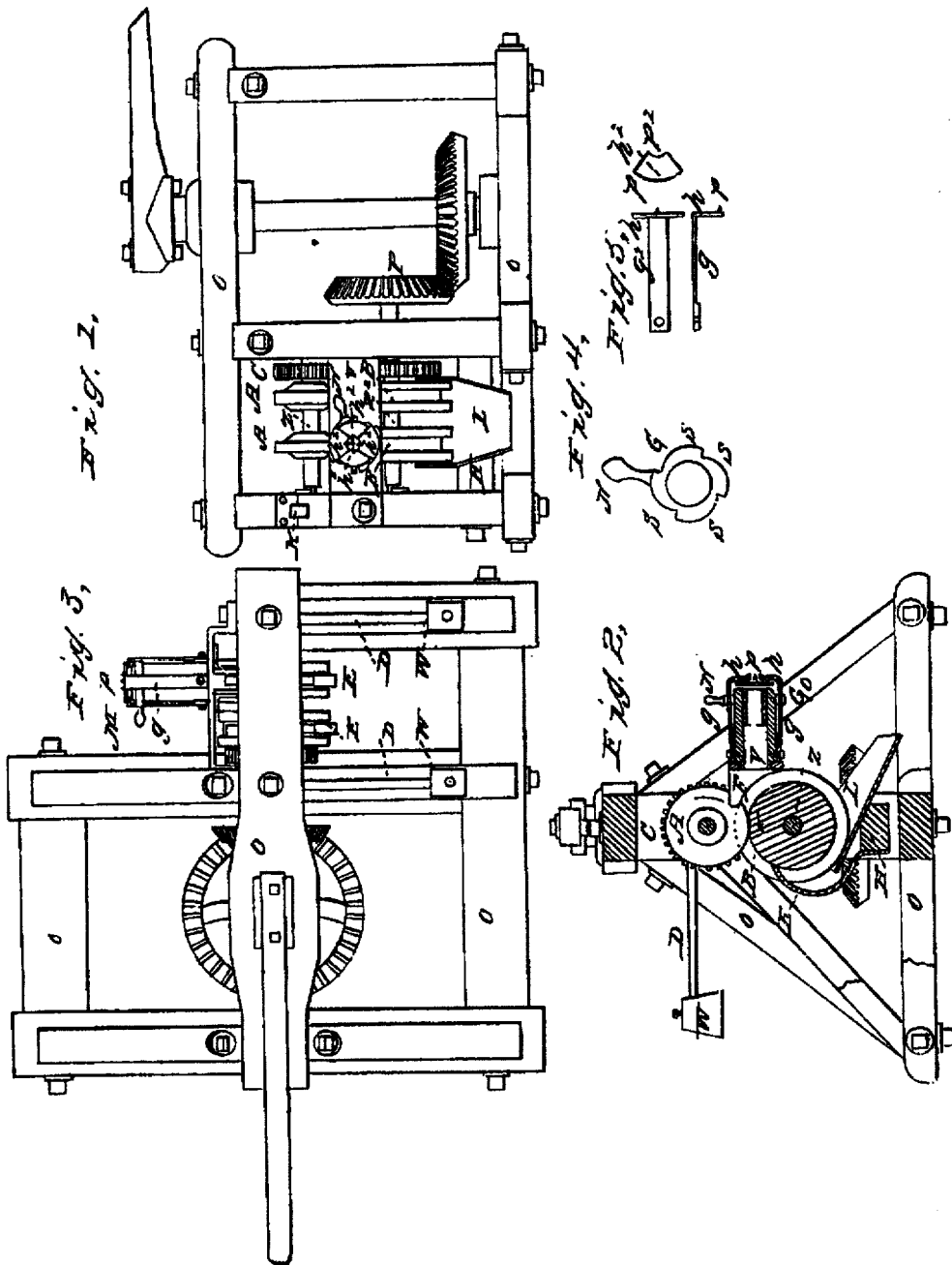


D. BASSETT.
Sugar Cane Crusher.

No. 24,922.

Patented Aug. 2, 1859.



UNITED STATES PATENT OFFICE.

DANIEL BASSETT, OF WHITEWATER, WISCONSIN.

IMPROVEMENT IN MILLS FOR CRUSHING SUGAR-CANE.

Specification forming part of Letters Patent No. 24,922, dated August 2, 1859.

To all whom it may concern:

Be it known that I, DANIEL BASSETT, of Whitewater, in the county of Walworth and State of Wisconsin, have invented a new and useful Machine for Crushing Sugar-Cane and Expressing the Juice therefrom; 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 drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view of my improvement. Fig. 2 is a vertical sectional elevation. Fig. 3 is a plan view. Figs. 4 and 5 are views of detached parts.

The same letters are used to designate corresponding parts in the several views.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

O O O O in Figs. 1, 2, and 3 is the framework. A A are tongued rollers mounted on a horizontal shaft, Z. These tongued rollers run into corresponding circular channels in the peripheries of the rollers B B, which are similarly mounted below on the shaft Z', thus constituting pairs, of which one or more may be placed on shafts in the manner represented. Upon each of the shafts are placed equal-sized cog-wheels C C, meshing into each other, which insure simultaneous motion of the rollers in opposite directions, as represented by the arrows, power being applied to the lower shaft at P, as shown in Fig. 1, or by any other mode of application. The shaft of the upper or tongued rollers is so placed in boxes at either end as to permit of a vertical movement; and is held down by levers D D in Fig. 2 at each end, upon which are placed weights W, by means of which the pressure upon the rollers is determined at will. The fulcrum of each lever consists of a socket, k, attached to the framework, into which the end of the lever is fitted. The bar V is bolted to the framework across the front and immediately opposite the points of contact of the pairs of rollers, and serves as a support for the "stripper" and "packing" or "wiper" F. The stripper, Fig. 2, consists of a tube three or four inches in diameter, attached to and passing through the bar V immediately opposite the points of contact of the pairs of rollers, respectively, (there being a

stripper for each pair of rollers,) and is provided with spring-caps and combined cam, as hereinafter shown.

Fig. 5 is a detached view of the spring-caps: *g*, an edge view; *g'*, a flat view, *h* being the cap part of the spring; *h'*, a view of the form of the cap from the front.

Fig. 4 is a detached view of the combined cam G; N, the handle, and *s s s s* the inclined planes. The combined cam is constructed with a short tube, as represented in Fig. 2, which enters the stripping-tube, and the springs *g g*, (of which there may be two or more,) being in position, rest on the inclined planes of the combined cam G immediately behind their caps, the other end of the springs being fixed to the stripper-tube near its junction with the bar V. The caps of the springs cover the outer end of the stripper and combined cam tube, overlapping each other. The aperture of the stripper is formed by the cut-out portion of the caps, as shown at *p'*, Fig. 5, and its size determined by the position of the combined cam G, which, when rotated laterally, produces by the action of the inclined planes under and against the springs a separation of the caps and a consequent enlargement of the aperture. The exterior edges of the caps around the aperture are made sharp, and provided with points *p*. The effect of the springs is to cause close contact of the sharp edges and points of the caps with the cane when passed through the stripper.

The packing or wiper F consists of two separate portions of leather, india rubber, or any similar elastic substance attached by metal plates to the inside of the bar V at each side of the interior aperture of the stripper, and is placed closely in contact with that portion of the sides of the tongued roller which runs in the channel of its opposite roller, and also closely in contact with the edges or periphery of the lower channeled roller, its form being such as to adapt it to this position and to prevent the lateral discharge of the expressed juice. The "clearer" is a curved flat spring, E, attached to the girt H, as shown in Figs. 2 and 3. By the tension of the spring the upper portion is kept in close, firm contact with the bottom and sides of the channel of the lower roller at the point represented in the sketch. The object of the clearer is to prevent the adhesion of the exhausted cane to the roller and to keep the

channel clear. A similar device may be applied to the tongue-roller, if deemed necessary.

The operation of my improved cane-mill is as follows: Power being applied to the lower shaft, motion is given to the rollers in the direction of the arrows. Each cane is passed through the stripper until engaged between the rollers, when it is drawn through, and by the action of the sharp edges and points of the caps at the external aperture it is stripped of its leaves, and the juice expressed at the same time is received in the trough L.

The aperture of the stripper is adapted to the size of the cane by the lateral rotary movement of the handle N. The pressure upon the rollers is determined by the amount of weight on the levers.

By the employment of channeled and tongued rollers I am enabled to prevent the lateral spread of the cane, and thus confining it within the limits of the channel, subject it to a greater effective pressure, and by the arrangement of the packing, which acts as a wiper, I prevent the lateral distribution of the expressed juice over large surfaces and conduct it into proper vessels without the possibility of contact with the exhausted cane, which would quickly reabsorb it.

By the introduction of a single cane to each pair of rollers I avoid imperfect crushing, the danger of clogging, and the breakage incident to overfeeding, and am thus enabled to run the mill at much greater velocity than has hitherto been attained in machines for similar purposes.

Having described my improvement in cane-mills, pointed out the mode of operation, and the advantages to be derived therefrom, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement and combination of the tongue-and-groove rollers A B, wiper F, and stripper, as and for the purpose herein shown and described.

2. The stripper when composed of spring-caps and a movable cam, G, and when arranged and combined with rollers A B, substantially as and for the purpose herein shown and described.

DANIEL BASSETT.

Witnesses:

B. G. NOBLE,
E. H. NORTON.