P. FITZGEROL.

Sugar Mill.

No. 50,570. Patented Oct. 24, 1865.

Fig. 1.

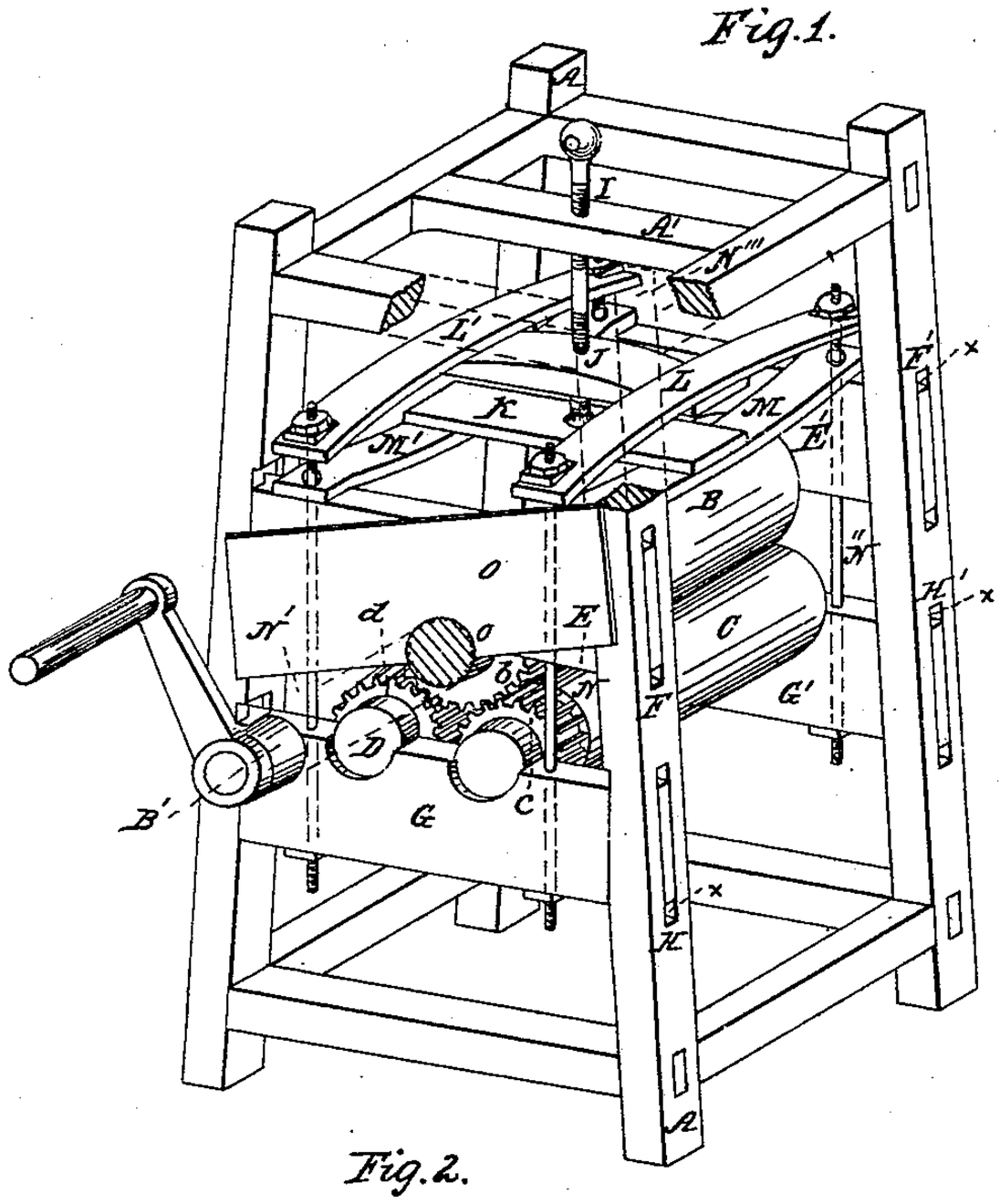
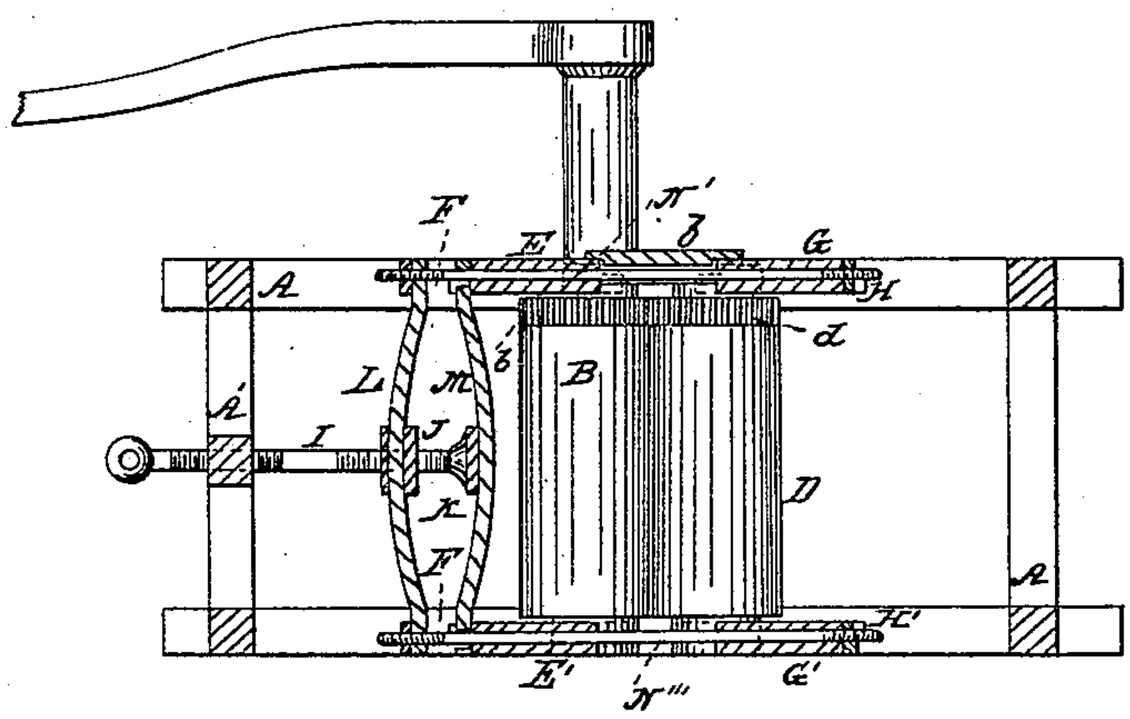


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

PLEASANT FITZGEROL, OF NEWPORT, KENTUCKY.

IMPROVEMENT IN SUGAR-MILLS.

Specification forming part of Letters Patent No. **50,570**, dated October 24, 1865.

To all whom it may concern:

Be it known that I, PLEASANT FITZGEROL, of Newport, Campbell county, Kentucky, have invented a new and useful Sugar-Mill; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to the class of machines for extracting the juice of sorghum and other sugar-cane by the crushing and expressing action of a series of rollers; and my invention consists, mainly, in a provision for insuring a uniformly effective and elastic pressure throughout the entire acting-surface of the several rollers.

My frame A is so constructed as to enable it to be set either in the position represented in Figure 1, in which the rollers are horizontal, or in the position represented in Fig. 2, in which the rollers are vertical.

B C D are three cylindrical rollers, of which one roller, B, is the driver, and gears by spur-wheel *b* to two corresponding wheels, *c* and *d*, on the other rollers, causing the rollers C and D to move in an opposite direction to the roller B. The driving-roller B is journaled in two sliding boards or steps, E E′, whose ends occupy slots F F′ in the frame. The two driven rollers C D are journaled in two sliding boards or steps, G G′, which occupy slots H H′ in the frame.

A rail, A′, of the frame is screw-threaded to receive a setting-screw, I, which, traversing a screw-threaded spring, J, impinges against another spring, K. The springs J and K respectively press upward and downward against springs L L′ M M′, of which the two latter bear directly against the back of the sliding steps E E′, while the springs L L′ support rods N N′ N″ N‴, which, traversing the steps E E′ and G G′, support the latter, and act to press the two rollers C and D toward the roller B at the same time that the latter is advanced toward the said rollers C and D, and with corresponding force. The rotation of a single screw thus acts to press both ends of the entire series equally together, or to equally release or slacken them, the compound spring-connection between the set-screw and the rollers affording a complete compensating medium between all parts of the operating-surface, so that should more or harder cane be crowded in at one end or between any two rollers that portion is immediately relieved and a corresponding stress instantaneously distributed to every other portion of said surfaces. By this simple expedient I secure a perfect expression of the juice, and no more, whether much or little cane is fed in, and whether the feed be equable or irregular and more in one place or places than another, and by the same means protect the mill from danger of strain or breakage from the effects of rank or unequal feeding or the entrance of foreign matters.

O is a cap, which, when the mill is at work, occupies the position indicated in Fig. 2, protects the gearing from the entrance of dirt or other obstacles, but which can be shifted to the position represented in Fig. 1 when it is desired to inspect, lubricate, or cleanse the gearing. A circular notch, *o*, somewhat over half a circle, enables the cap to grasp and be retained by the drive-shaft B′, around which it is readily turned.

The above illustration was selected as the preferred form or type of my invention; but various modifications are obviously possible. For example, the springs may be increased or diminished in number and a wedge or cam-headed lever may replace the screw I.

I claim herein as new and of my invention—

Adjusting the crushing-rollers by means of a single screw operating on springs in such a manner that through the medium of the rods and steps they will all be adjusted toward or from each other at the same time, substantially as described.

In testimony of which invention I hereunto set my hand.

P. FITZGEROL.

Witnesses:

GEO. H. KNIGHT,

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