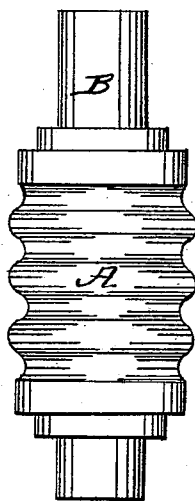
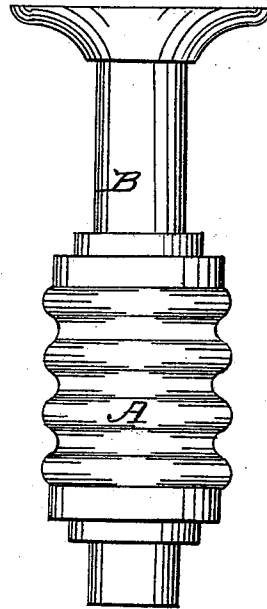
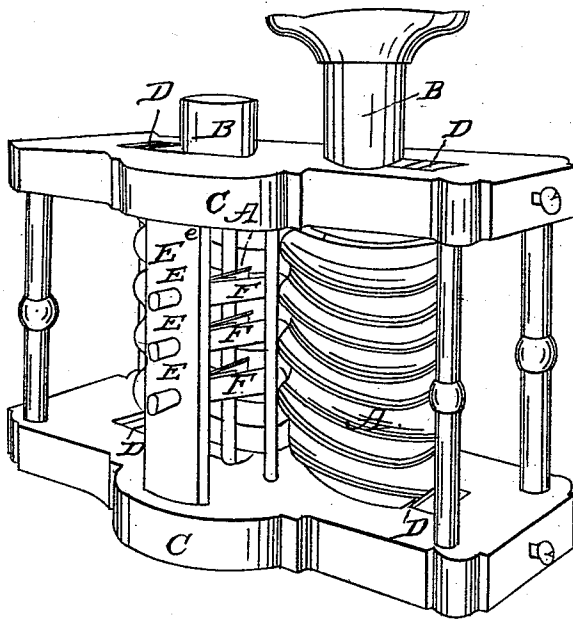


T. S. COX.

Sugar Mill.

No. 36,508.

Patented Sept. 23, 1862.



Witnesses  
H. H. Menduchall.  
R. V. Dornier.

Inventor  
Thomas Cox.

# UNITED STATES PATENT OFFICE.

THOMAS S. COX, OF LAFAYETTE, INDIANA.

## IMPROVEMENT IN SUGAR-MILLS.

Specification forming part of Letters Patent No. 36,508, dated September 23, 1862.

### *To all whom it may concern:*

Be it known that I, THOMAS S. COX, of Lafayette, Tippecanoe county, State of Indiana, have invented an Improvement in the Mode of Constructing a Sugar-Mill, for the purpose of expressing the saccharine juices of the sorghum or other canes, with the least amount of the bitter and acidulous juices of the bark; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists, as before mentioned, of an improvement in the mode of constructing a sugar-mill for expressing the saccharine juices of the sorghum or other canes with the least amount of the bitter and acidulous juices of the bark.

It consists of two corrugated rollers set into a frame of cast-iron or wood, with the convex of one roller working into the concave of the other. The gudgeons of the rollers project above the top of the frame, and the motive power is applied to one or both of them. They are kept in their places by means of adjustable boxes inserted into the top and bottom of the frame, and furnished with elastic springs which tend to adapt the rollers to the various thicknesses of the cane. Opposite the junction of the rollers there is an upright pillar braced into the frame, pierced with circular openings, and having a knife perpendicularly dividing the openings, for the purpose of splitting the cane. The cane is fed into these openings through tubes, which are provided with interior springs fitted in such a manner as to bring the center, or near the center, of the cane into contact with the edge of the knife. (The feeding may be regulated by feeding-rollers with adjustable boxes.) After the cane is divided by the knife, each half enters a semi-tube passing from the knife, and is confined there in its proper position by a spring attached to the back of the knife, and is kept in this position until it enters into the grasp of the rollers. By this means the cane is so divided and conducted that its inner surface is brought under the direct pressure of the convex of one roller, while the bark side

fits into the opposite concave of the other roller. This species of pressure is calculated to bear particularly on the pith or pulp of the cane, and thus express the juices which are purely saccharine, while the bark, being a harder substance, largely resists the same pressure, and hence to a great extent fails to yield its own bitter and acidulous juices, thereby facilitating the subsequent granulation of the sugar.

The undersigned refers to the accompanying drawings, representing the machine in perspective, and a sectional view of the corrugated rollers.

A represents the corrugated rollers; B, the gudgeons of said rollers; C, the frame of the machine; D, the elastic adjustable boxes; E, the tubes through which the cane is fed, meeting the dividing-knife in the upright pillar E', and each of said tubes being provided with interior springs conducting the cane upon the knife in such a manner as to effect a proper division; F, the semi-tubes furnished inside with springs attached to the back of the knife. The cane is thus conducted properly into the rollers.

The said machine has been thus described and shown as in a perpendicular position; but the same combination can be used in a horizontal position.

What I claim as my invention is—

1. The combination of the knife in the upright pillar E' with tubes E, and their interior springs, for conducting the cane upon the knife, so as to divide the same as near the center as possible, as and for the purpose herein described.

2. In combination with the above first claim, the semi-tubes F and the springs thereto attached back of the splitting-knife, as and for the purpose herein described.

3. The combination, in a sugar-mill, of corrugated rollers, with the devices specified in the above first and second claims, as and for the purpose herein described.

THOMAS S. COX.

Witnesses:

OWEN BALL,  
JOHN A. STEIN.