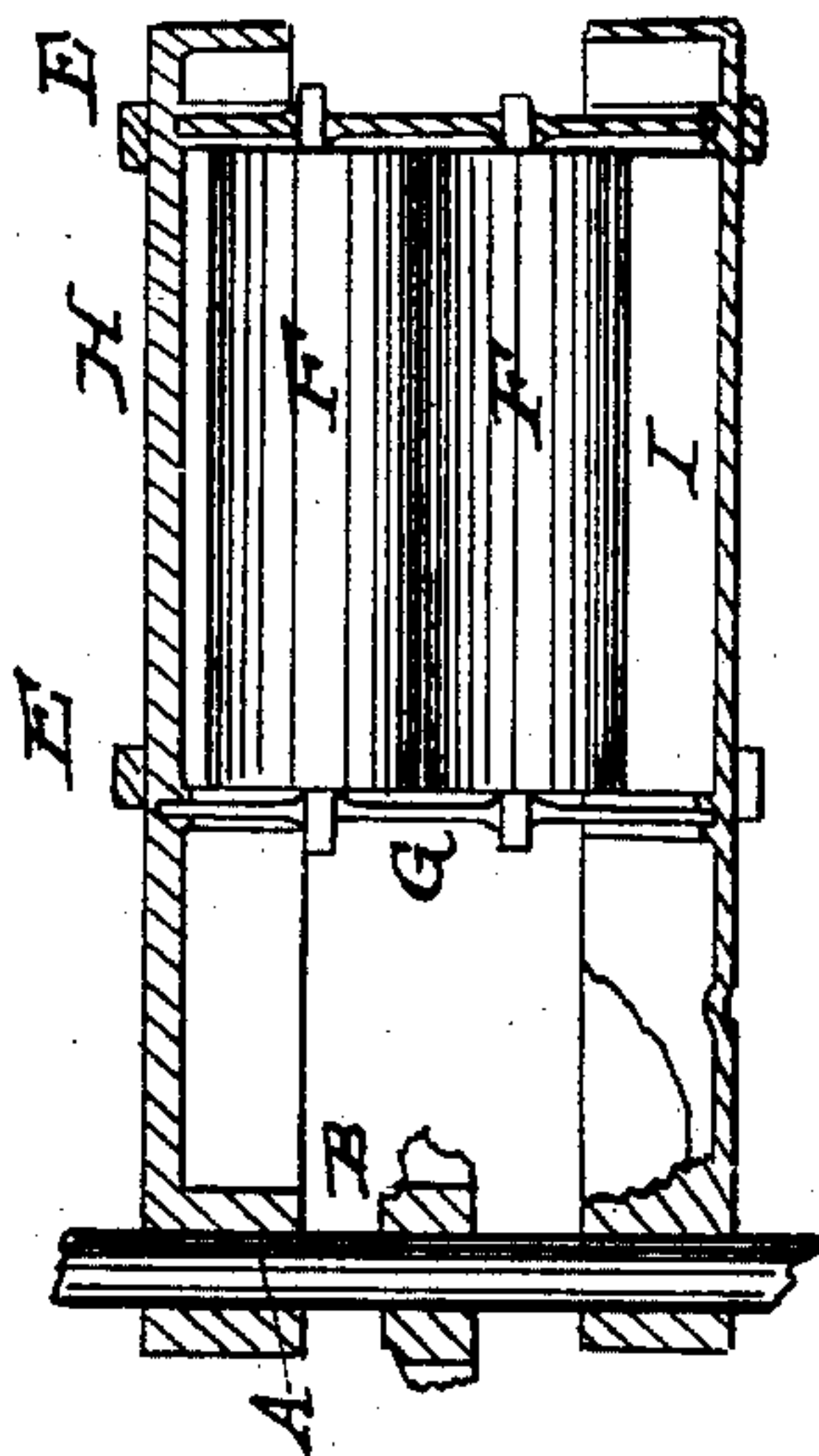
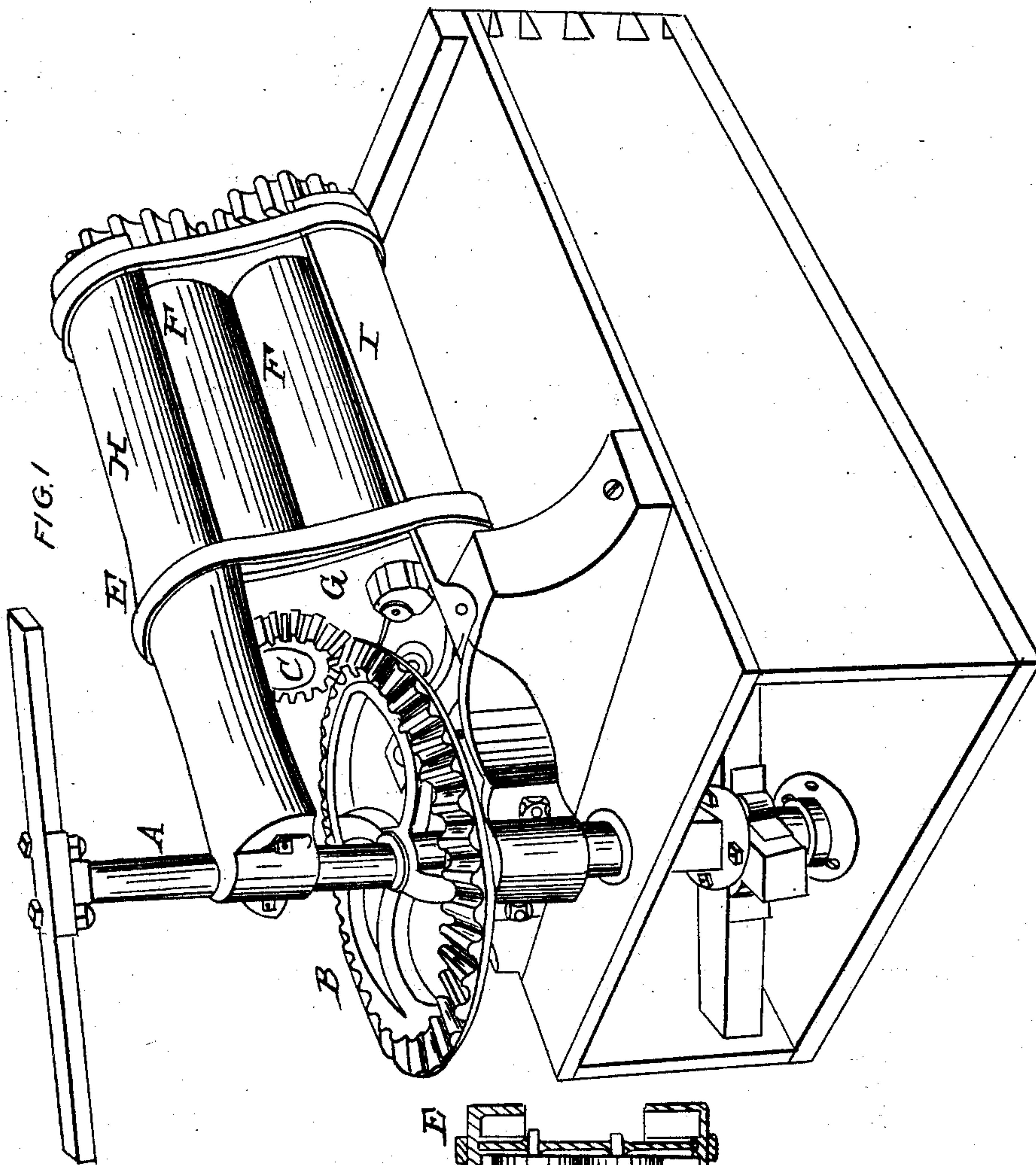


G. W. L. HAZEN.

Sugar Mill.

No. 27,903.

Patented April 17, 1860.



WITNESSES

*Samuel A. Colley*  
*John H. Weston*

INVENTOR

*G. W. L. Hazen*

# UNITED STATES PATENT OFFICE.

GEORGE W. L. HAZEN, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN SUGAR-MILLS.

Specification forming part of Letters Patent No. **27,903**, dated April 17, 1860.

*To all whom it may concern:*

Be it known that I, GEORGE W. L. HAZEN, of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Sugar-Mills, of which the following is a full and exact description, reference being had to the accompanying drawings and the letters marked thereon.

Figure 1 is a perspective view showing the general arrangement of the machine, and Fig. 2 is a section showing the manner of its construction.

A is an upright shaft, to which the beveled wheel B is attached for the purpose of giving motion to the pinion C. The gearing D connects and regulates the motion of the rollers F. E are bands or hoops which hold the frame of the machine together, and serve to tighten the same when necessary. The journals of the rollers F run on boxings which are placed in the heads G of the frame H I, which is constructed with a view to securing the greatest amount of strength with the least weight of metal, and the avoidance of the use of bolts and screws or rivets for holding the frame together, as are usual in other frames. The hoops or bands E hold the frame H and I, the heads G fitting firmly in the groove J. These hoops or bands E are driven upon the swell or enlarged part of the frame H and I, which causes the heads to be firmly held in the same manner that the staves hold the heads of a barrel by the tightening of the hoops. The top or plate frame, H, by its corrugated shape, affords a strong top, framed with a comparatively small amount of metal supporting the upright shaft A, while the bottom plate or frame, I, forms a juice-pan for the reception of the juice

as it flows from the rollers, and also a support for the upright shaft A, making a firm and sure connection of the gearing B and C, by which motion is given to the mill. The bottom I is constructed to receive the heads G in only one position. The objects accomplished by its circular form are, first, being brought with ledges to bear upon the sides of G G, it holds them firm in their right-angular position, thus giving greater strength to the metal. It also gives proper shape for the barrels E E, serves as a juice-pan, and when extended forms a strong arm for shaft A. The top H, by its circle with ledges, bears upon the sides as well as the top of G G, binding them firmly in place, and adding to the strength of the arm for the shaft A. The bands E E are strong, for the double purpose of holding the frame together and securing a sufficient pressure of the rollers upon the cane, the cast metal of G G being of insufficient strength to resist the cane-pressure upon the rollers.

The shaft A is designed to operate the mill from above or below, as circumstances may require.

The operation of the mill is similar to that of other three-roller mills.

What I claim, and desire to secure by Letters Patent, is—

The frame H, I, and G, when constructed and held in place by the hoops or bands E E, or their equivalents, substantially in the manner and for the purpose set forth.

GEO. W. L. HAZEN.

Witnesses:

JOHN H. REDSTONE,  
SIMS A. COLLEY.