

(No Model.)

2 Sheets—Sheet 1.

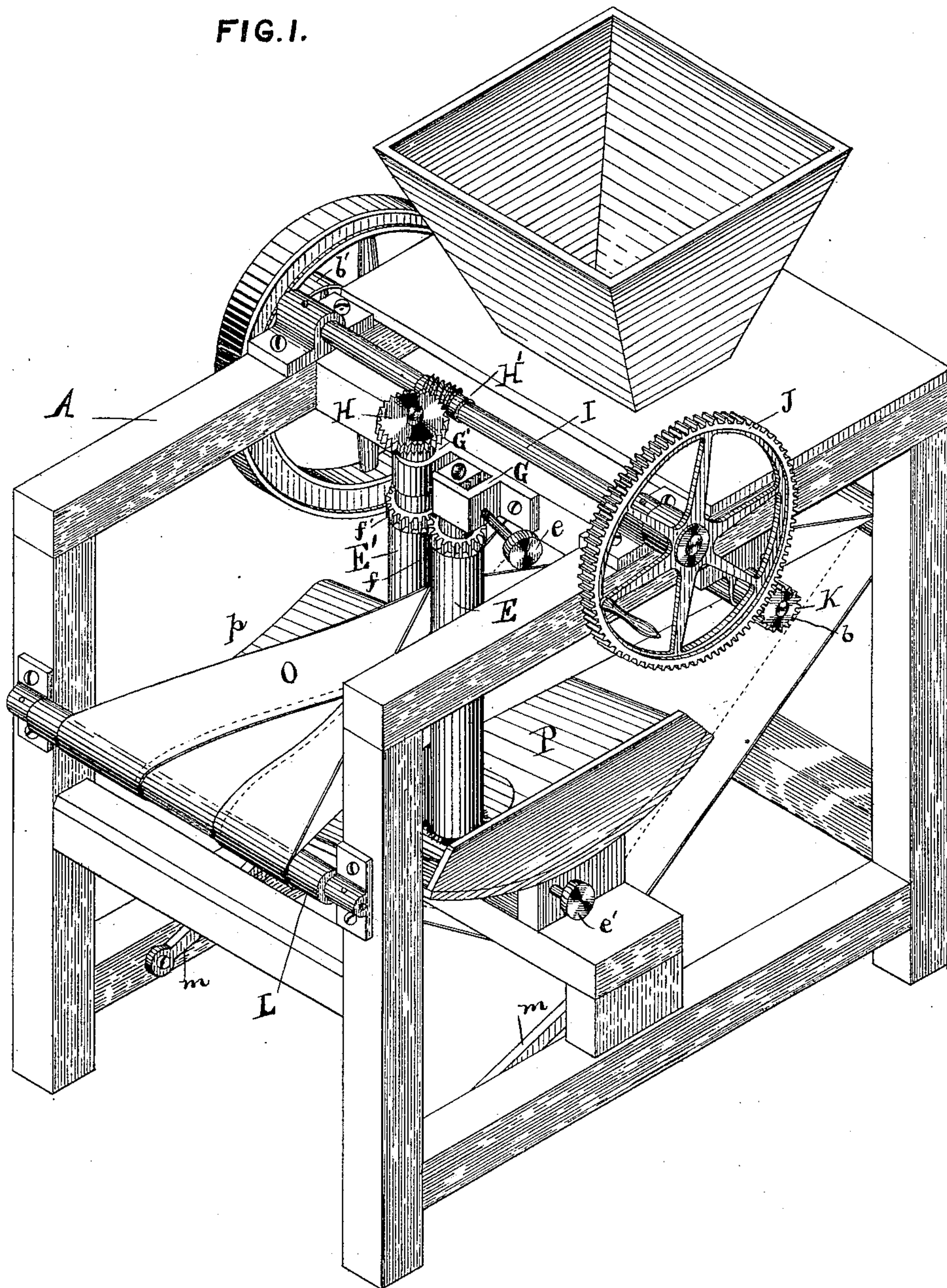
M. B. KAYLOR.

CIDER MILL.

No. 386,407.

Patented July 17, 1888.

FIG. 1.



WITNESSES.

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C. C. O'Bryan.

INVENTOR.

Mark B. Kaylor.  
By his Attorneys.  
Hughes & Cyre.

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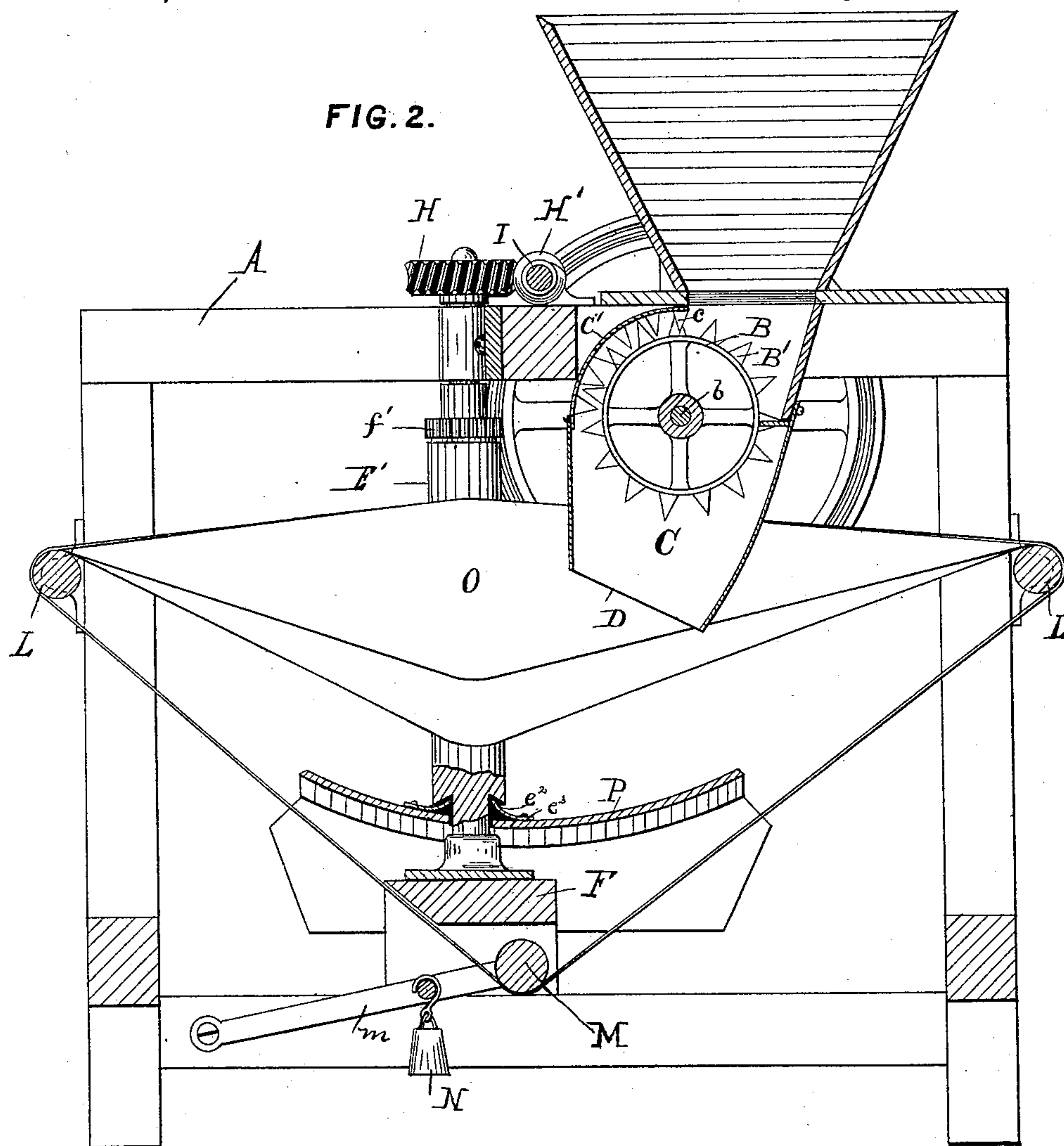


Figure 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

MARK B. KAYLOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO JOHN J. CLYDE, JR., OF SAME PLACE.

## CIDER-MILL.

SPECIFICATION forming part of Letters Patent No. 386,407, dated July 17, 1888.

Application filed June 6, 1887. Renewed May 14, 1888. Serial No. 273,868. (No model.)

*To all whom it may concern:*

Be it known that I, MARK B. KAYLOR, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cider-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to cider mills, and is in the nature of an improvement on the machine shown and described in United States Letters Patent No. 323,041, granted to me July 28, 1885; and it consists in the novel construction and arrangement of parts, as hereinafter fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a view in perspective of a cider-mill embodying my improvements. Fig. 2 is a longitudinal vertical section of the same; and Fig. 3 is a section through the apron, illustrating the means for folding the same.

Referring to the drawings, the letter A indicates the frame of the machine, and B the grinding-cylinder mounted on a shaft, *b*. The cylinder B is preferably provided with grinding-teeth B', and is incased within a shell, C, slightly tapered from the top downward, and having a discharge-opening, D. Secured within the casing in any suitable manner is a concave plate, C', provided with teeth *c*, which mesh with the teeth on the grinding-cylinder in the usual manner. Above the shell is placed a hopper of ordinary construction.

E E' indicate the vertical press-rolls. These rolls are constructed of any suitable material, and have their lower bearings in a bench, F, secured to the lower part of the frame A, and their upper ends are journaled in boxes G G', secured to the upper portion of the frame. The roll E can be adjusted toward or from the roll E' by means of the set-screws *e e'*. The roll E' is longer than the roll E, and is provided at its top with a worm-wheel, H, which meshes with a worm, H', mounted on a shaft, I. At one end of the shaft I is a cog-wheel, J, which gears with a pinion, K, mounted on the

shaft *b* of the grinding-cylinder B. The roll E' is also provided with a gear-wheel, *f'*, which meshes with a similar wheel, *f*, mounted on the roll E.

L L indicate carrying rolls mounted in bearings at each end of the frame A, and M indicates a roll having its bearings in two levers, *m m*, pivoted at the bottom and to each side of the frame A.

N indicates a weight hung to the pivoted levers *m m*, bearing the roll M.

O indicates an endless apron passing between the vertical press-rolls E E' and over the carrying-rolls L L and underneath the roll M. This apron is folded, as shown more clearly in Fig. 3, so that at the sides it is twice as thick as it is at the center, whereby the apron more readily doubles in passing between the vertical press-rolls, the cider is forced through the center of the apron, and the apron lasts much longer.

Resting upon the bench F is a receptacle, P, of a trough-like shape in cross-section and slightly inclined from one end to the other. The journals at the lower ends of the press-rolls E E' pass through the receptacle P; and in order that no cider may leak out around the journals I form the lower ends of said rolls with a concave depression, *c''*, and a guard-plate, *c'''*, substantially of the shape of a frustum of a cone, is passed around the lower ends of the said rolls and fits the concave depression in the bottom thereof, and is rigidly secured to the receptacle P.

Having thus described my invention, I will now proceed to describe its operation.

Motion is imparted to the machine either by hand by means of the handle on the cog-wheel J, or by power by means of the belt-pulley *b'*, mounted on the shaft *b*, carrying the grinding-cylinder B. The apples are fed by the hopper to the grinding-cylinder and the concave plate C', where they are ground or pulped, and the pulp is delivered upon the apron O, and is carried thereby between the vertical press-rolls E E', which act as wringer-rolls and express the cider from the pomace. The cider falls into the receptacle P, and is received by a vessel placed at the discharge end *p* of the receptacle P, and the pomace, with the juice expressed therefrom, is carried by the apron

over one of the carrier-rolls L and dropped to the floor. During this operation the apron O is kept at the proper tension by the weighted roll M, and any desirable tension can be had by varying the weights placed on the pivoted levers *m m*, carrying the roll M.

What I claim is—

1. In combination with the grinding-cylinder B, the apron O, the carrying-rolls L L, the vertical press-rolls E E', having concave depressions  $e^2$  at the lower ends, the guard-plate  $e^3$ , and the receptacle P, substantially as described.

2. In combination with the grinding-cylinder B, the apron O, the carrying-rolls L L, the vertical press-rolls E E', adjustable with reference to each other at their upper ends and having concave depressions  $e^2$  at their lower ends, the guard-plate  $e^3$ , and the receptacle P, substantially as described and shown.

3. The combination of the horizontal grinding-cylinder B, carrying the pinion K on its shaft *b*, the shaft I, carrying at one end the cog-wheel J, meshing with the pinion K and a worm, H', the vertical press-roll E', carrying at the upper end the worm-wheel H, gearing with the worm H', the adjustable press-roll E, mounted in movable bearings, the gear-wheels *f f'*, carried by the press-rolls and meshing together, the endless apron O, and the carrying-rolls L L, all constructed and arranged substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

MARK B. KAYLOR.

Witnesses:

LINCOLN L. EYRE,

RICHD. H. REILLY.