

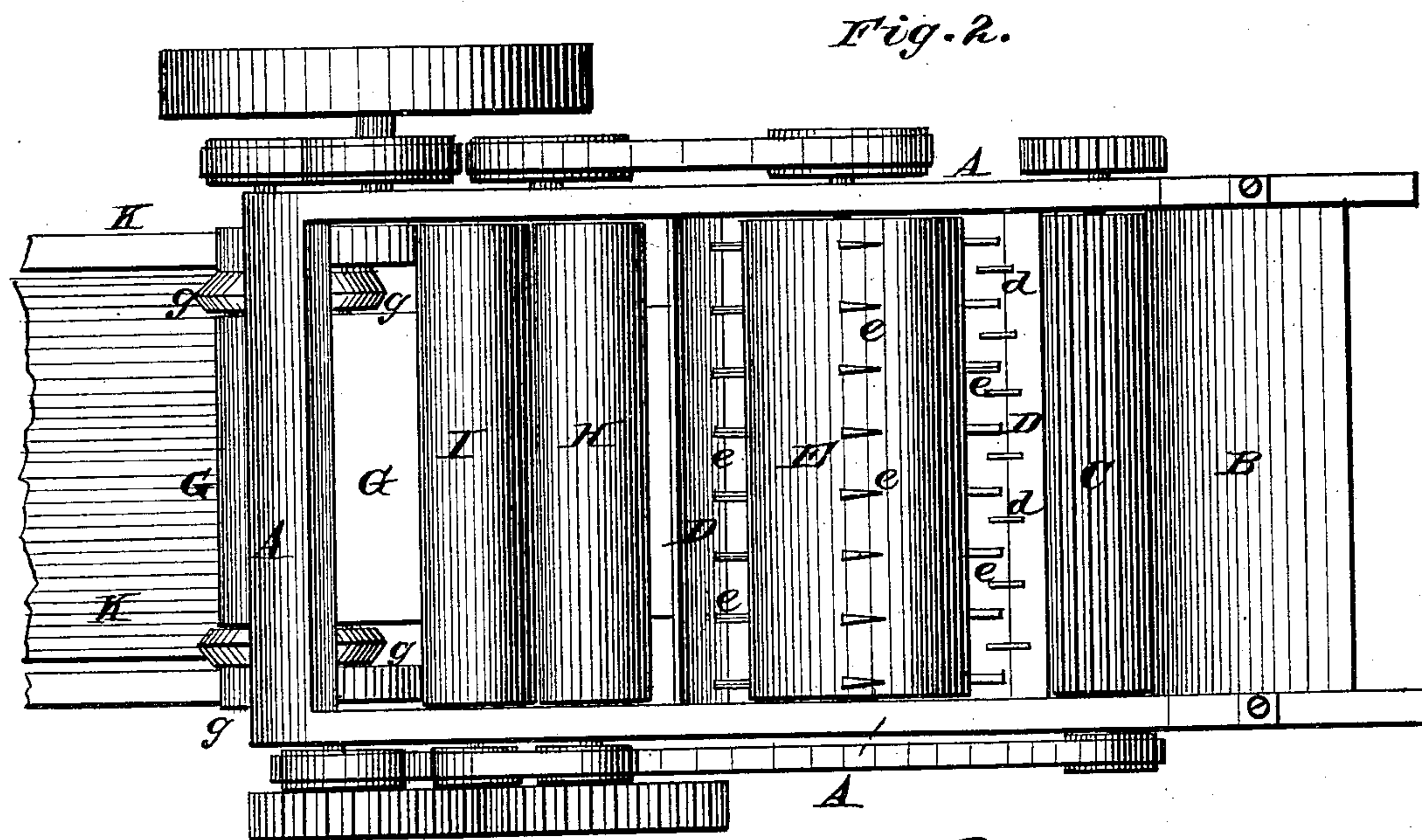
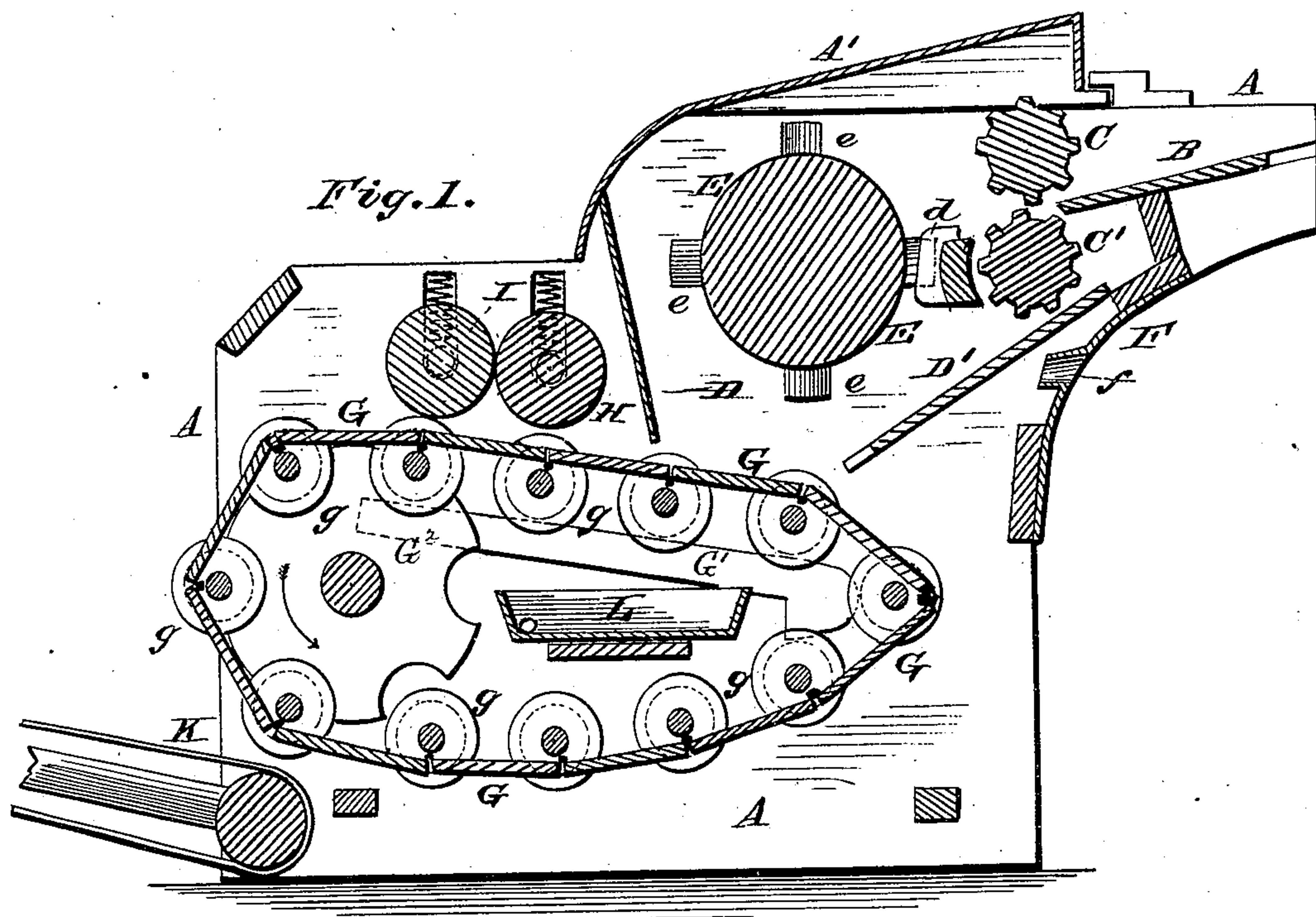
(No Model.)

D. L. DAVIS.

CANE MILL.

No. 246,731.

Patented Sept. 6. 1881.



WITNESSES

Fred. G. Dieterich.
 P. C. Dieterich.

By *his* Attorneys,

INVENTOR,

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UNITED STATES PATENT OFFICE.

DANIEL L. DAVIS, OF HARVEYSBURG, ASSIGNOR OF ONE-HALF TO HARRISON GORDON, OF WAYNESVILLE, OHIO.

CANE-MILL.

SPECIFICATION forming part of Letters Patent No. 246,731, dated September 6, 1881.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, DANIEL L. DAVIS, of Harveysburg, in the county of Warren and State of Ohio, have invented certain new and useful
5 Improvements in Cane-Mills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings,
10 which form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section, and Fig. 2 is a plan or top view, of the machine, the cap or top piece having been removed.

Similar letters of reference indicate corresponding parts in both the figures.

My invention has relation to sugar or cane
20 mills for expressing the juice of sugar-cane; and it consists in certain improvements in the cane-mill for which Letters Patent of the United States No. 54,960 were granted on the 22d day of May, 1866, to Richardson, Howell, and the
25 undersigned, which said improvements will be hereinafter fully described, and particularly pointed out in the claims.

In the annexed drawings, the letter A represents the frame of the machine, which is provided with a removable cap or top piece, A'.

B is the feed-table, which inclines in the direction of the fluted or corrugated feed-roller C, between which and the table the cane is fed, the roller C operating in conjunction with a
35 lower feed-roller, C', of similar construction, placed under the roller C. The rollers C and C' feed the cane into the hopper D, which is provided with a set of steel knives or cutters, *d d*, so set into the hopper as to alternate with
40 knives or cutters *e e*, which are arranged in parallel rows upon the circumference of a cylinder, E, which is journaled within the hopper D. This hopper has an open bottom, and its surface D' nearest the feed-table and rollers C
45 and C' is inclined downward toward the rotary platform, as plainly shown in Fig. 1 of the drawings, so as to form a deflector for a jet of steam projected through an aperture, *f*, in the apron F in the fore part of the mill, underneath the
50 feed-table. As the cane is fed to the hopper

it is cut and split by the stationary knives *d* and the revolving knives of the cylinder E into fine strips, which drop down through the open-bottomed hopper upon a rotary platform, G, where they are met by the jet of steam injected through the aperture *f*, and deflected or
5 fed upon platform G by the inclined forward part or shield, D', of the hopper D. This platform is composed of a series of flat boards, which are hinged to one another, and arranged
6 so as to form an endless apron, with interstices between the sections, which is supported upon and carried by a series of suitably-arranged
rollers, *g*, the upper ones of which are adapted to move upon the inclined ways G', and thus
7 permit of their engagement with and the carrying around of the apron by the sprocket-wheels G². This platform or apron is given
8 motion by a sprocket-wheel, G², and extends in an upwardly-slanting direction to the rear
9 part of the machine; but its bearings or rollers *g* are so placed or arranged that they will carry the uppermost part of the apron against
10 the under side of a pair of pressure-rollers, H and I, which are journaled in spring-bearings
11 in the upper part of the machine, the springs exercising a downward pressure upon the rollers, forcing them against the platform or apron
12 G as it passes beneath them. The rollers *g g*, which carry this part of the apron, should be
13 placed so near together that they will effectually bear the apron up against the pressure-rollers H and I without sagging, as it is at this
14 point that the cut and split cane is compressed and its juice extracted, which operation is fa-
15 cilitated by the jet of steam injected through the orifice *f* and deflected down upon the cut and split cane on the traveling apron or platform G by the deflector D', inasmuch as the
16 steam heats and softens the cut cane, and thus enables a more complete extraction of the sac-
17 charine juices.

At the rear end of the machine, underneath the pressure-apron G, is the bagasse or pomace carrier K, which is adapted to carry the bagasse or pomace to any desired elevation outside of the mill or machine. The juice, as it is expressed between the platform G and rollers H and I, drops down through the interstices between the hinged boards or planks of the

platform, and is collected in a pan or receptacle, L, placed below, from which it has a suitably-arranged outlet.

The arrangement and combination of the pressure-rolls H I and pressure platform or apron G insure a more perfect compression of the cut and split cane than where this is effected by passing it simply between a pair of rollers, and at the same time the traveling platform G serves as a strainer for the cane-juice and effectually prevents any part of the bagasse from finding its way into the juice-receptacle L. The steam, which is injected into the machine through the aperture or orifice *f*, travels the entire length of the platform or apron G, passing underneath both of the pressure-rollers, thus keeping the rollers clean and free from bagasse, besides facilitating the extraction of the sugar or saccharine principle of the cane.

The several rollers, cylinders, &c., herein described, and which form parts of my machine, are provided with pulleys and cog-wheels on the outside of the frame, as shown in Fig. 2, which are suitably geared; but as this gear-

ing may be effected in various ways, and as it forms no part of my invention, no necessity exists for describing it.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the feeding-table B, feed-rollers C C', and cutting and splitting knives *d e* with the carrying-apron G, formed of hinged inflexible boards, sprocket-wheel G², guides G', roller-bearings *g*, and the pressure-rolls H I, as and for the purpose set forth. 35

2. In a cane-mill, the pressure-rolls H I, the endless apron or platform G, constructed and arranged as described, the fixed apron F, provided with a steam-inlet, *f*, and the deflector D', constructed and combined as and for the purposes set forth. 40

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses. 45

DANIEL L. DAVIS.

Witnesses:

C. S. DAKIN,

ROBERT COLLETT.