

R. C. QUINN.  
CIDER-PRESS.

No. 187,312.

Patented Feb. 13, 1877.

Fig: 1.

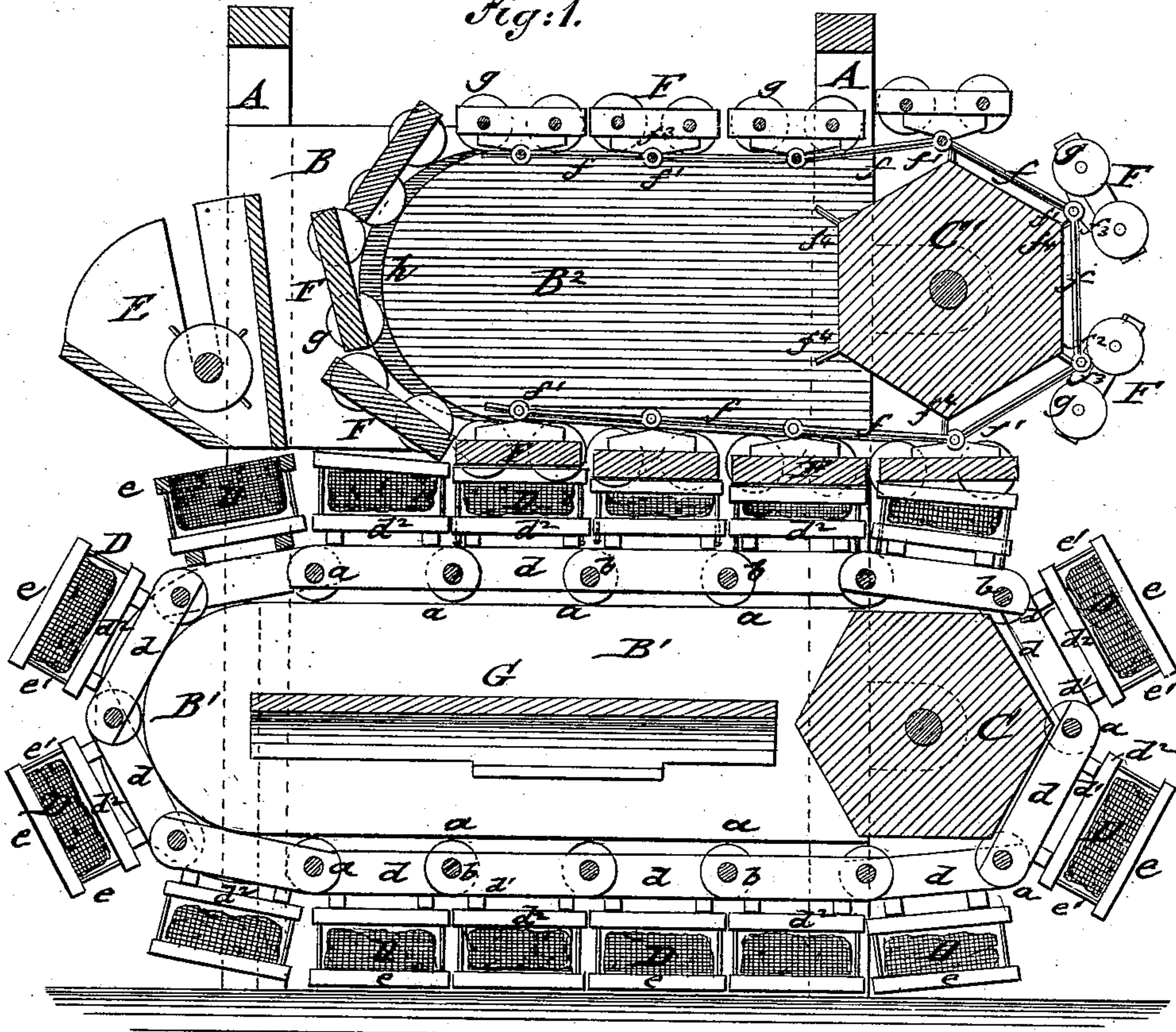
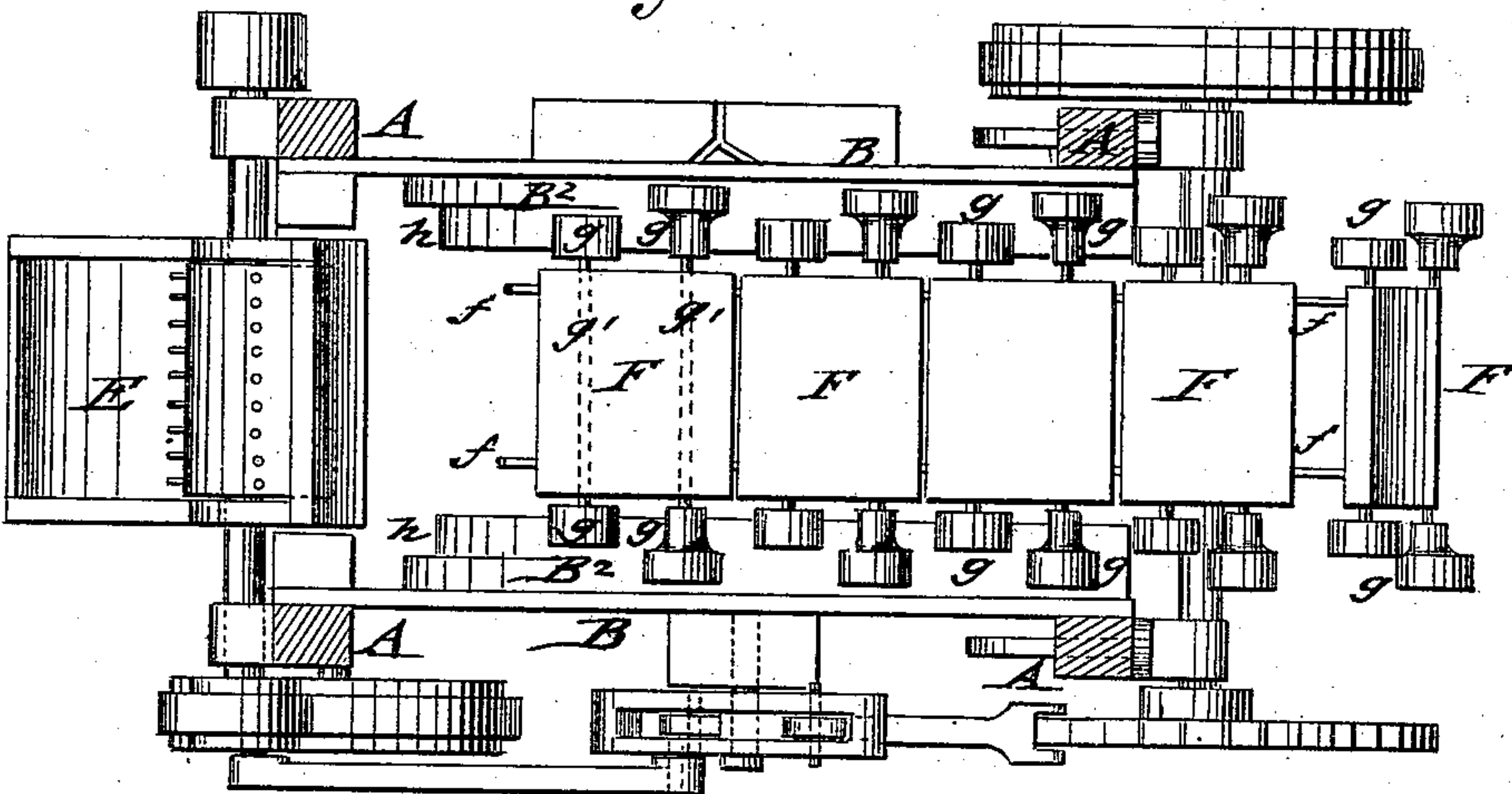


Fig: 2.



WITNESSES:

Chas. Nida.  
Alex. F. Roberts.

INVENTOR:

R. C. Quinn  
BY *[Signature]*

ATTORNEYS.



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Fig: 3.

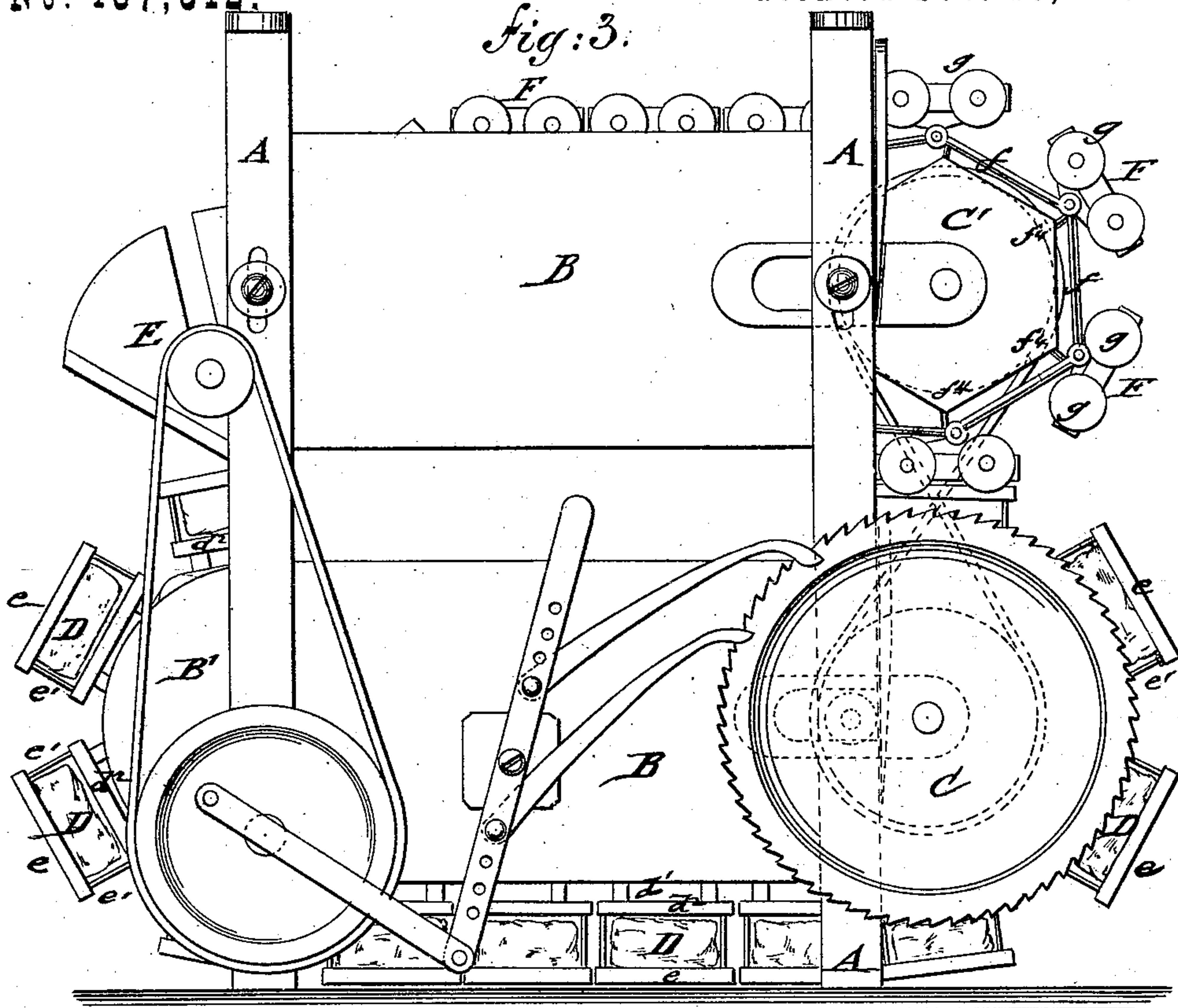
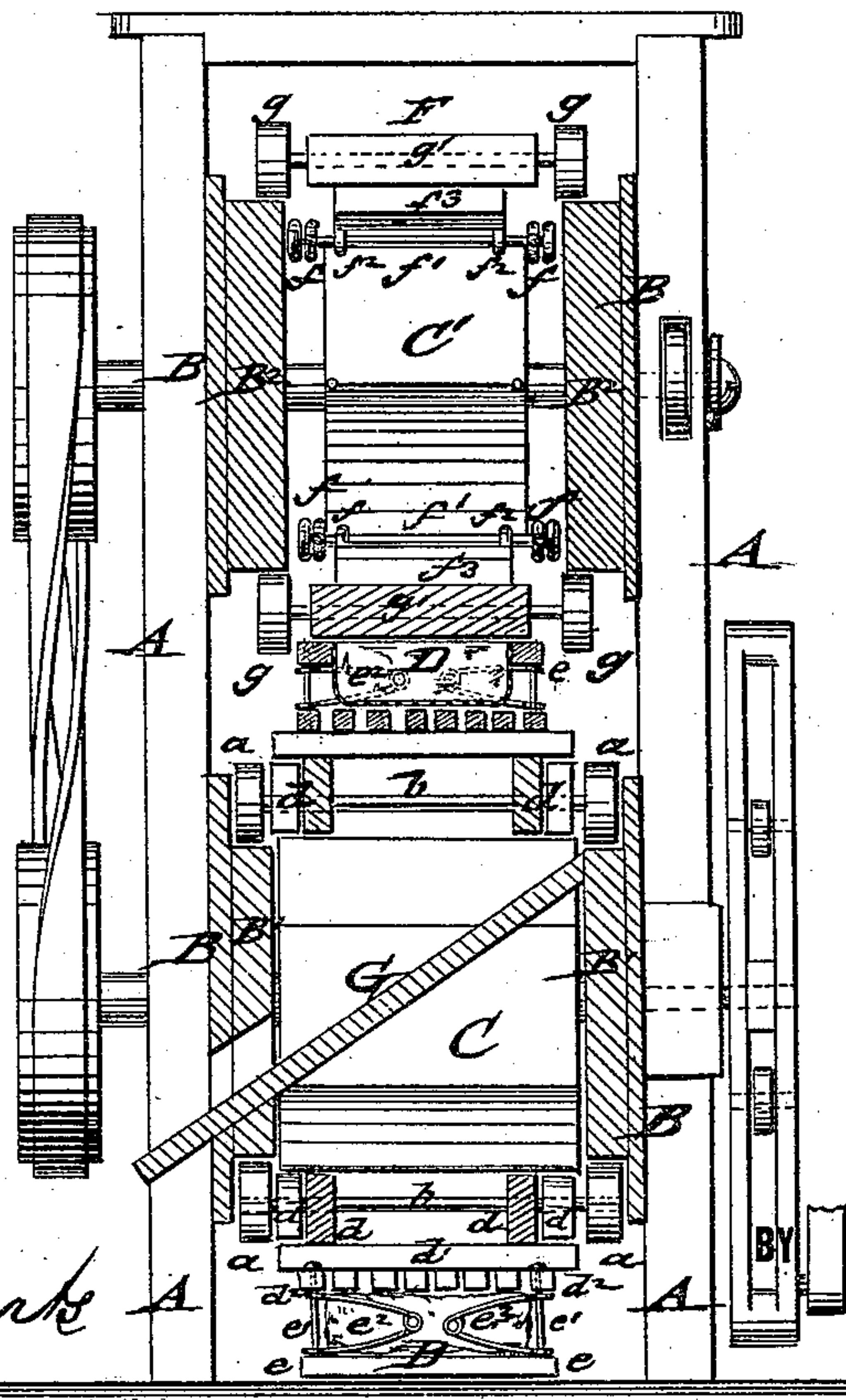


Fig: 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE

RUSSELL C. QUINN, OF TEXAS VALLEY, NEW YORK.

## IMPROVEMENT IN CIDER-PRESSES.

Specification forming part of Letters Patent No. 187,312, dated February 13, 1877; application filed January 19, 1877.

*To all whom it may concern:*

Be it known that I, RUSSELL C. QUINN, of Texas Valley, in the county of Cortland and State of New York, have invented a new and Improved Cider-Press, of which the following is a specification:

In the accompanying drawing Figure 1 represents a vertical longitudinal section of my improved cider-press; Fig. 2 is a top view; Fig. 3 a side elevation; and Fig. 4 a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved cider-press, the working of which is based on the principle of the endless chain, or belt, receiving continuous charges of pomace from the grinder for pressing and discharging the same without interruption.

The press may be made larger or smaller according to the requirements of the work, being readily operated by hand or horse-power and capable by the continuity of the pressing devices of making a larger quantity of cider in a given time than by the present hand and other presses in use.

The invention consists of an endless chain carrying a number of spring-acted sacks resting on slat-bottoms and revolving in connection with a charging-grinder, and with a simultaneously revolving follower-belt, that is guided in proper manner to register with the pomace-sacks and press the juice on to an inclined spout below, while the end sacks are discharging their contents. Referring to the drawing, A represents the supporting posts or standards of my improved cider-press, which are placed either stationary into the ground or on a truck-frame of suitable strength, so as to be readily transported from place to place. The upright posts A are laterally and longitudinally braced in suitable manner to resist the strain exerted thereon by the pressing operation. The longitudinally connecting side pieces B, of posts A, carry guide-rails B<sup>1</sup> at the lower part, which are rounded off at one end for the passage of a number of carrying-rollers or wheels, *a*, that form with lateral pivot-pins *b* and connecting links *d* an endless chain at the lower part of the supporting frame. This endless chain is propelled or

moved by a hexagonal or other drum or roller, C, that takes hold of the pivoted links *d*, while the wheels continue to travel along the guide-rails whose rounded-off ends serve to keep the endless chain in tightly-stretched condition. The bearings of the roller-shaft are adjustable on the posts A, for the purpose of providing for regulating the tension of the endless chain when the same has been lengthened by use. To each set of parallel links *d* are attached lateral strips *d*<sup>1</sup>, which carry again a series of longitudinal slats, *d*<sup>2</sup>, on which a pomace-sack, D, of suitable material, is placed. The pomace-sack D is attached to a frame, *e*, of equal size with the slat-bottom *d*<sup>2</sup>, which frame is supported on sliding corner-rods *e*<sup>1</sup>, having enlarged heads at the lower ends and sliding in end guide-holes of the outer slats *d*<sup>2</sup>. Springs *e*<sup>2</sup>, of any suitable shape, are arranged at the ends or sides of the sack between the slat-bottom and frame *e*, so as to throw the sack-frame in upward direction and retain the same therein until compressed. In this position the series of sacks are ready to take up the pomace from the grinder E, as they pass successively below the same. The grinder is arranged at one end of the machine and operated jointly with the endless belt of the sacks. The grinder E is proportioned in size to the sacks so as to grind up the quantity required for charging each sack. As the sacks pass quickly below the grinder, which is equal in width with the same, they are filled with pomace as fast as the same is ground. If desired the mouth of the grinder may be valved so as to discharge intermittently as each sack arrives below the same, which would avoid any loss by dripping. As the pomace-sacks D traverse the upper side of the guide, they are brought in contact with a series of followers or plungers, F, that are arranged in analogous manner above the lower belt and revolved simultaneously therewith in such a manner that each follower registers with a pomace-sack below and produces thereby, for the time of contact, a kind of miniature press that exerts a considerable power on the comparatively small quantity of pomace therein, so as to force out all the cider contained in the same. The upper follower-belt is carried by a driving-roller, C<sup>1</sup>, with ad-



justable shaft-bearings, along a stretching guide-board or rail,  $B^2$ , secured to top-braces  $B$ , the connecting chain or belt being formed of strong wire links  $f$ , that are pivoted to cross-pins  $f^1$ , to which the followers  $F$  are hung by eyes  $f^2$ , attached to the center of their raised top-pieces  $f^3$ . The followers  $F$  run on front and hind wheels or rollers  $g$ , affixed to the ends of lateral axles or shafts  $g^1$ , that turn in perforations of the followers. The hind wheels  $g$  of the followers are placed at greater distance from the center of the same than the front wheels, so as to run along the semicircular end of the guide-frame  $B$ , while the front wheels run along a second semicircular rail, or shoulder,  $h$ , that begins and terminates flush with the guide-frame, but recedes at the intermediate part from the former, as shown in Fig. 1, for the purpose of facilitating the registering of the followers with the pomace-sacks when turning down on the same, by placing them in a somewhat inclined position thereto. The driving-roller  $C^1$  is provided with corner spurs  $f^4$ , that engage the cross-pins  $f^1$  and propel thereby the endless follower-belt in continuous manner, the follower-carriers swinging clear of the roller  $C^1$  when turning the same, as shown in Fig. 1.

The pressing of the pomace is accomplished during the passage of the sacks and followers between the parallel upper and lower portions of the guide-frames  $B^1$   $B^2$ , and the pressure interrupted by the gradual separation of sacks and followers, as they turn respectively downward and upward around their driving-rollers.

The juice, pressed from the sacks, passes between the bottom-slats of the sack-carriers on to a downward inclined conductor  $C$ , that extends from one guide-frame,  $B^1$ , laterally across to the other, and through a recess of the latter to the outside, where, by converging grooves or channels, a spout is formed that discharges the collected juice into a suitable vessel below. The sacks assume, when relieved from the pressure of the followers, instantly their former position, and loosen thereby the spent pomace, so as to discharge the same when turning down around their driving-roller, being then ready again for receiving the next charge on passing below the grinder.

Power is applied to the shaft of the grinder and transmitted from the same by belt and crank-pulley, fulcrumed lever-rod, and pawls,

to a ratchet drive-wheel of the drum or roller of the lower belt, and form the shaft of the same by belt and pulley connection, to the driving-roller of the follower-belt, as shown in Fig. 3, by which the reliable and accurate motion of the corresponding parts is produced.

I do not confine myself to the actuating mechanism shown, as the same effect may be produced by gear-wheels, or equivalent mechanism, provided the essential features of my continuous press, the prompt and effective registering of the pomace-sacks and followers, and the pressing and discharging of the pomace are obtained.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. A continuous cider-press, composed of an endless belt with spring-acted pomace-sacks, and of a simultaneously revolving and registering follower-belt, the whole arranged and operated substantially as shown, and for the purpose set forth.

2. The combination of a grinding mechanism with an endless revolving belt, carrying spring-acted pomace-sacks, for charging the sacks as they pass below the grinder, substantially as specified.

3. In a cider-press an elastic sack-carrier, composed of wheeled slat-bottom with a spring-acted and guided pomace-sack, substantially as shown and for the purpose described.

4. The combination of the spring-acted frame of the pomace-sack by sliding and headed end-bolts, with the perforated end-slats, substantially as described.

5. The endless follower-belt, composed of link-connected and wheeled followers, having wheels at different width from the center, in combination with the spurred driving-roller and a guide-frame with semicircular ends and receding guide-shoulder for turning the followers into inclined position to facilitate contact with pressing-sacks, substantially as and for the purpose described.

6. The combination of the continuously revolving pressing follower and sack belts with an inclined conducting-board and exit-spout, arranged below the contact sacks and followers, substantially as specified.

RUSSELL COWLES QUINN.

Witnesses:

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