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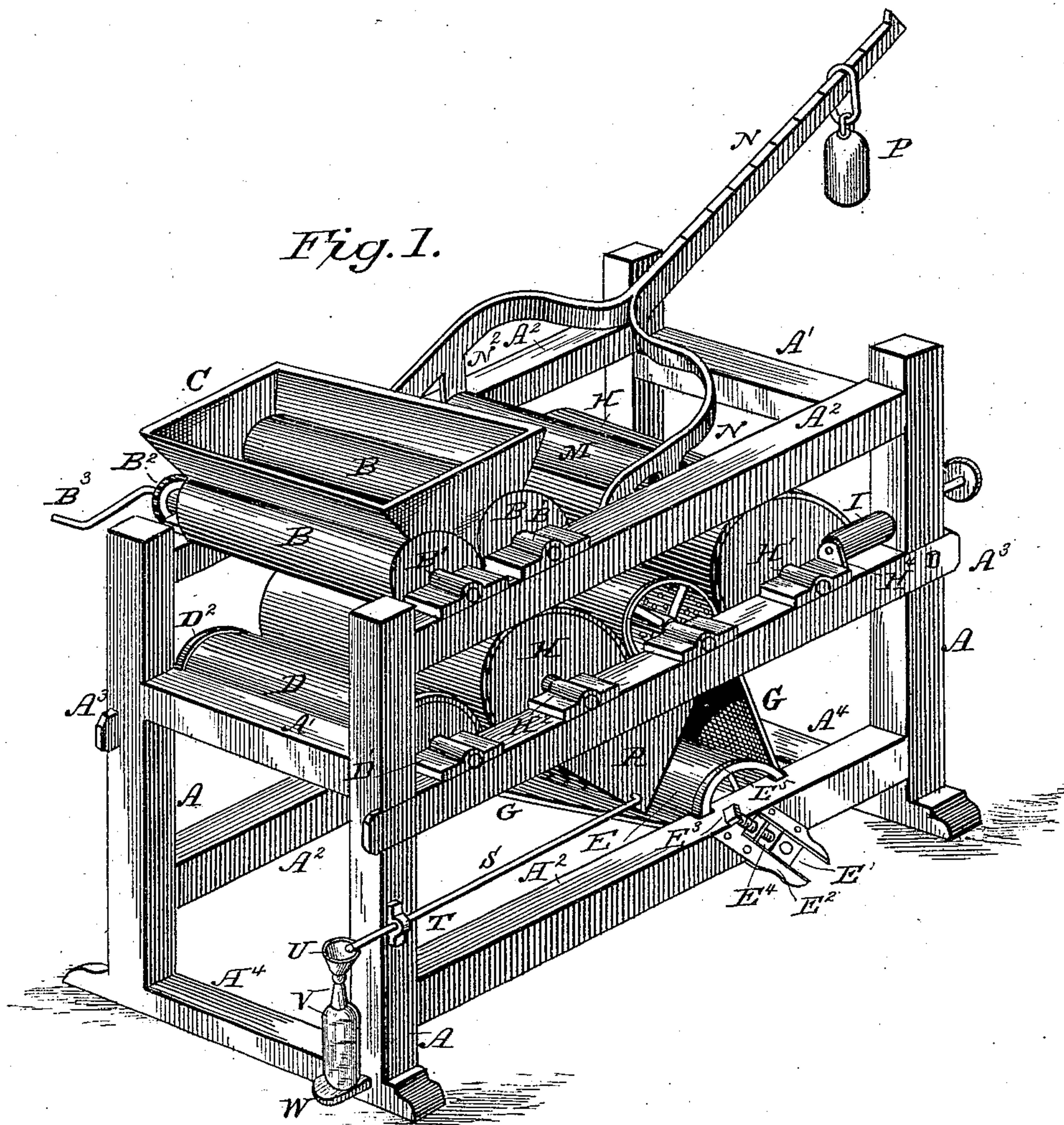
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J. GORGAS & G. E. MOHLER.

CIDER PRESS.

No. 313,322.

Patented Mar. 3, 1885.



WITNESSES:

S. Walter Fowler
H. B. Applewhite,

INVENTORS.

Jacob Gorgas and
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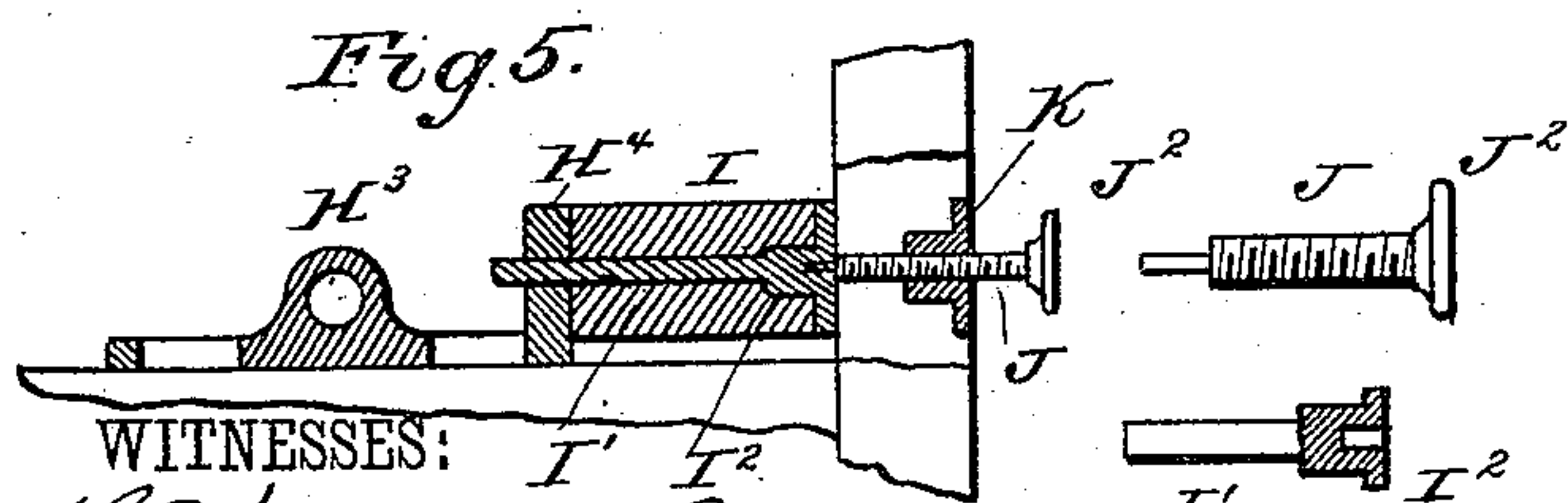
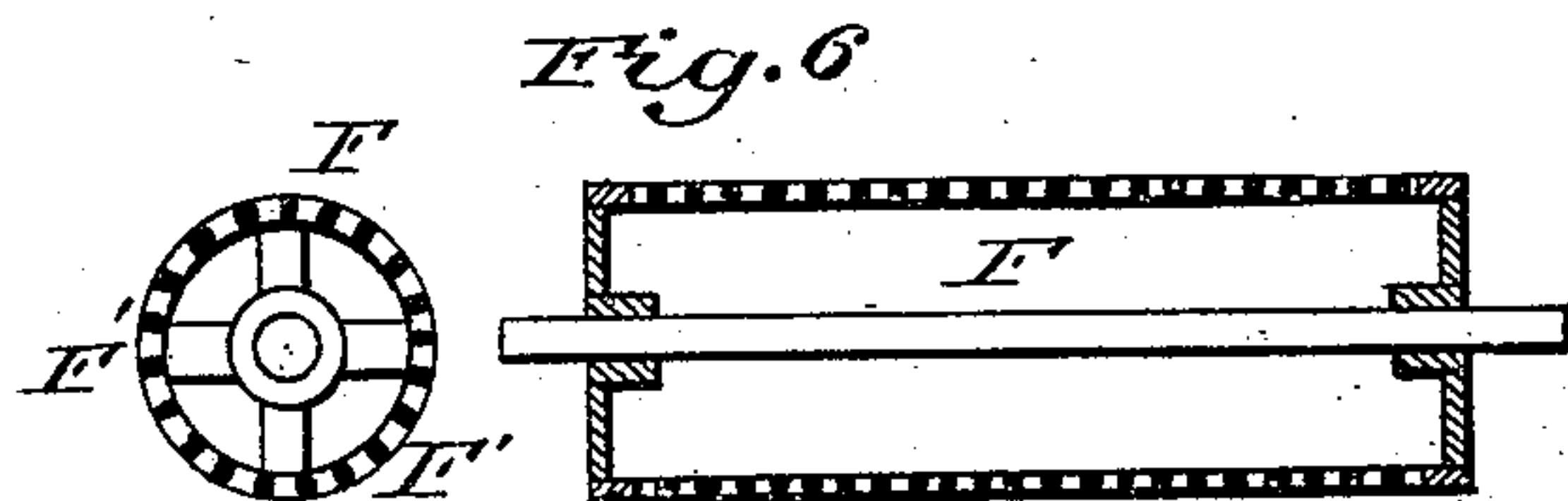
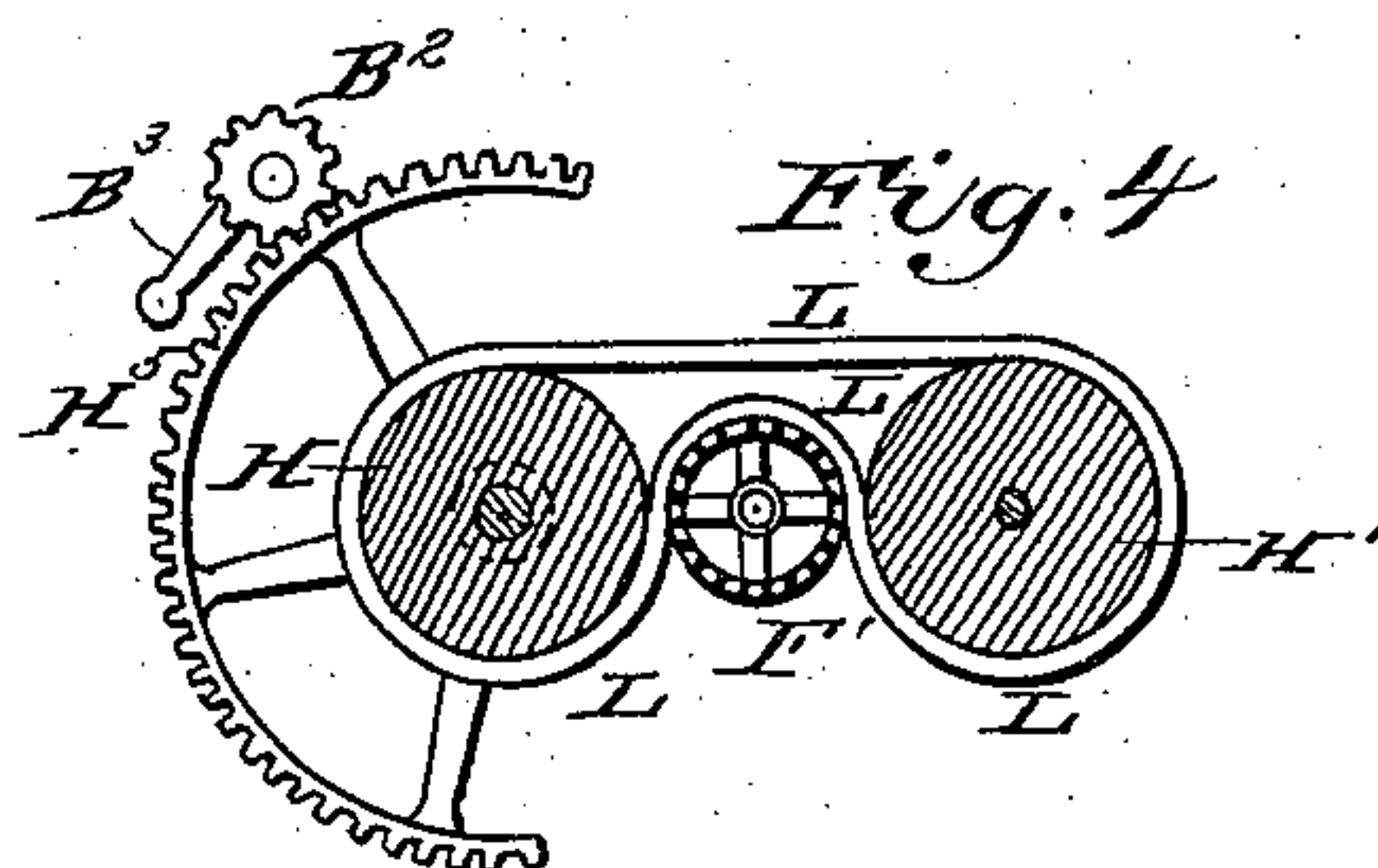
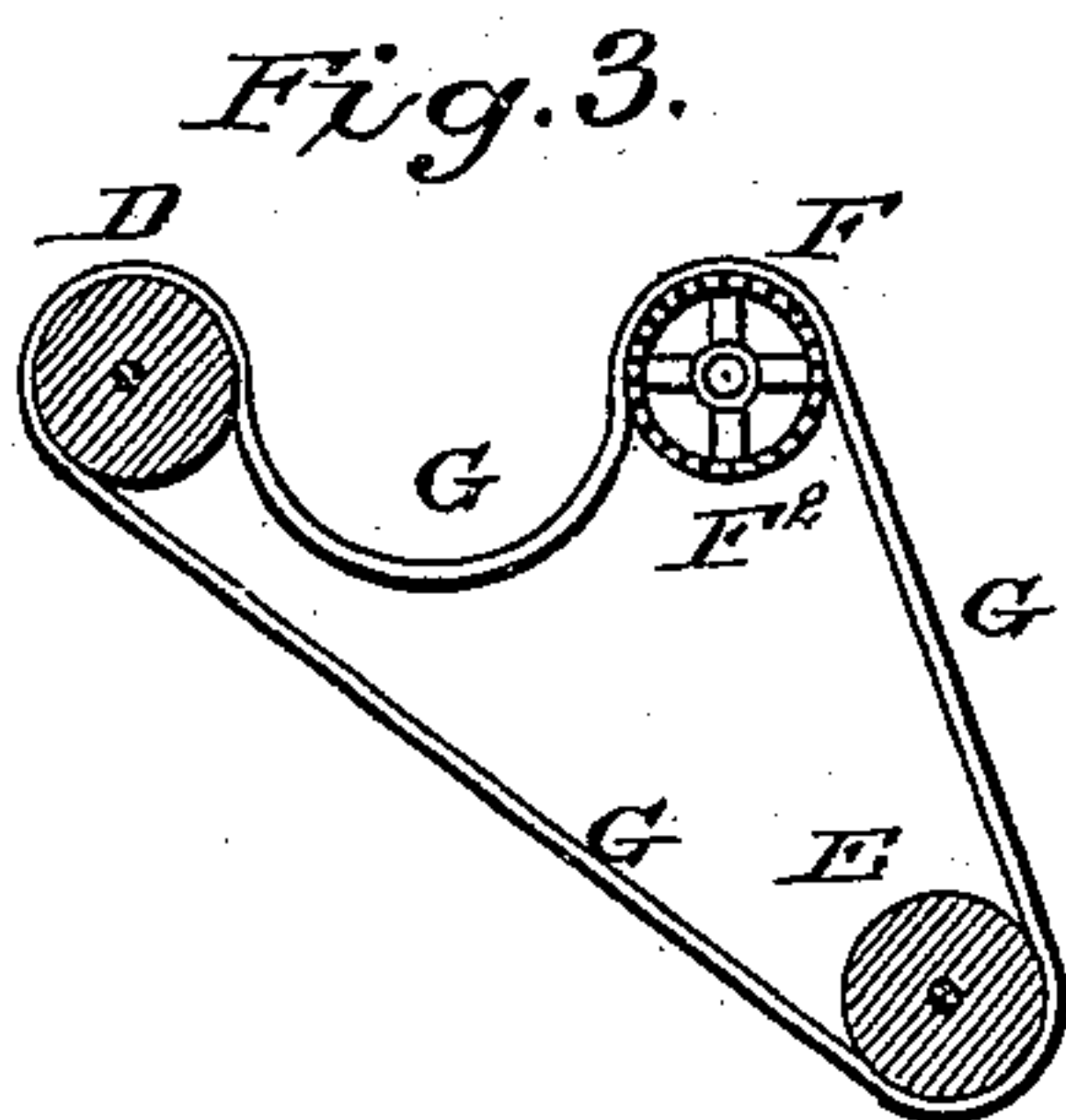
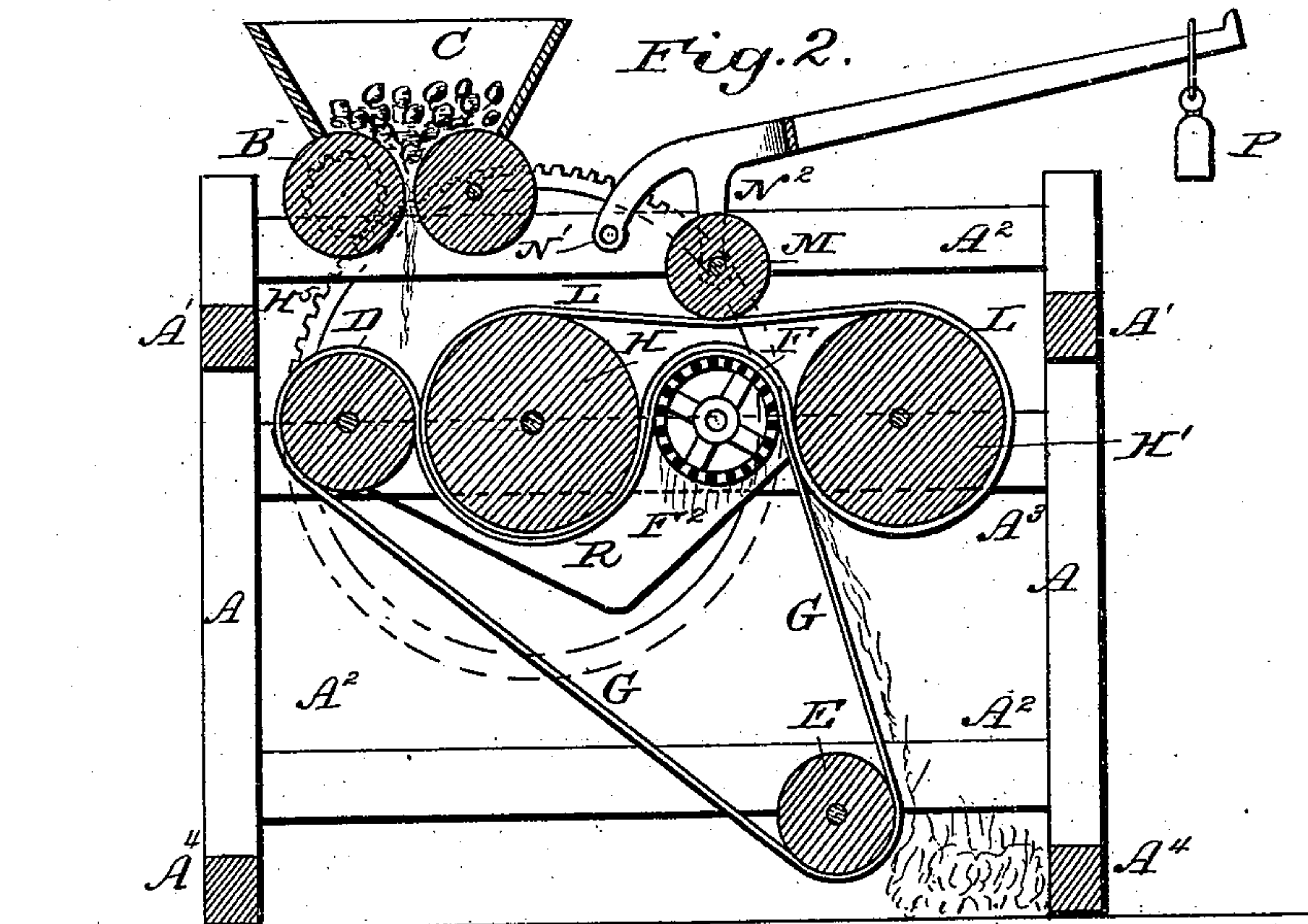
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UNITED STATES PATENT OFFICE.

JACOB GORGAS AND GEORGE E. MOHLER, OF EPHRATA, PENNSYLVANIA.

CIDER-PRESS.

SPECIFICATION forming part of Letters Patent No. 313,322, dated March 3, 1885.

Application filed September 17, 1884. (No model.)

To all whom it may concern:

Be it known that we, JACOB GORGAS and GEORGE E. MOHLER, citizens of the United States, residing at Ephrata, county of Lancaster, State of Pennsylvania, have invented a new and useful Improvement in Cider-Presses, of which the following is a specification.

This improvement is more particularly related to the juice-extracting portion of a cider-press, and is intended to be continuous in its operation.

The object of the improvement is to furnish a combined cider mill and press adapted to be operated by hand or power, in which the juice of the fruit shall be extracted in a continuous stream and without exposing the same to the light, thus producing a clearer and better article of cider than can be manufactured in the ordinary class of cider-press mills. The above objects are attained by the use of the improvements shown in the accompanying drawings, in which corresponding letters indicate corresponding parts.

Figure 1, Sheet 1, is a perspective elevation of a cider-mill with our improvement attached. Fig. 2, Sheet 2, is a vertical longitudinal section through the center of the frame and machinery. Fig. 3, Sheet 2, is a detached section of the fabric or wire-screen endless apron with its special rolls. Fig. 4, Sheet 2, is a detached section of the rubber or equivalent non-absorbent endless apron and its special rolls, together with a portion of the gear for driving the same, shown therewith. Fig. 5, Sheet 2, is a sectional elevation of the movably-adjustable bearing-box, spring, and adjusting-screw. Fig. 6, Sheet 2, an end view and longitudinal section of the perforated juice-extracting roll.

A represents the posts of the frame; A', end cross-rails; A², top and bottom side rails; A³, central and movable rails; A⁴ feet of frame; B, crushing-rolls; B', bearings for same; B², gear-pinion; B³, crank; C, hopper; D, fixed roll for canvas or screen-wire endless apron; D', bearings; D², collars on roll; E, tension or adjustable roll; E', bearings; E², pedestal; E³, set-screw; E⁴, spring; E⁵, collars on roll; F, perforated juice-expressing roll; F', bearings; F², perforations; G, endless apron of canvas,

wire-cloth, or equivalent porous material; H, fixed or abutting roll carrying a gum or non-absorbent endless belt or apron; H', a similar roll at the rear of the machine; H², fixed bearings; H³, adjustable bearings; H⁴, ear or bearing for spring; H⁵, spur-gear in mesh with the pinion on the front crushing-roll; I, a gum or helical spring; I', spring-stem with-seat I² for spring and recess for tenon of adjusting-screw; J, adjusting-screw provided with a spring-stem tenon, J', and hand-wheel J², the screw being threaded to fit the nut K, recessed in the post; L, a rubber or equivalent non-absorbent endless apron; M, a tightener-roll; N, a bifurcated lever fulcrumed at N' and provided with arms N² for bearings for the tightener-roll; P, a weight suspended from the arm; R, gutter; S, discharge-pipe; T, clamp; U, tunnel; V, bottle, and W a shelf.

The construction of our improved press is as follows: The crushing or grinding rolls may be of any of the forms suitable therefor. We make no claim thereon. Immediately beneath the crushing-rolls, in suitable bearings upon a rail, A³, we arrange a series of rolls, D, H, F, and H', the bearings of D and H being permanently secured to the rails, and the bearings of the rolls F and H' adapted to slide upon the same. An adjustable roll, E, is held in angle brackets or pedestals, secured to the lower rails, A², of the frame.

Endless aprons are placed over the several rolls as follows: A canvas, wire, or porous belt or apron, G, the full width of the rolls between the collars, is passed around the front roller, D, beneath the roll H, over the roll F, down to and around the adjustable roller E, and returns to the roll D. A rubber or non-porous apron, L, is passed around the roll H until it meets the perforate roll F, over which it is passed above the apron G. It is then passed under and around the roll H', and is carried across the top of the roll until it meets again over the roll H.

To facilitate the introduction of the aprons in an endless form, we make the rails A³ removable, boxing or gaining them into the sides of the posts. The aprons provided in endless form, we lay the machine over upon its gearing side, and removing the securing-bolts we lift

the rail with the bearings away, (having previously withdrawn the screw-tenon J' from the stem-guide I² of the spring,) and slipping the roll E out of the inclined pedestals E² we first
 5 pass the apron over it, and reinserting the roll in its pedestal the apron is next passed over the rolls D and F and dropped beneath the roll H. The rubber or non-porous apron is passed simultaneously over the rolls H H' and
 10 roll F, the rail A³ is again let into place, the shafts entering their respective bearings, the rail is secured by its bolts, and the adjusting-screw tenon J' is brought in contact with the recess I² in the spring-stem, and the machine
 15 is ready for operation.

The rolls D E H H' are preferably made of wood, while the roll F is preferably made of brass or copper, or a suitable metal that will not discolor the juice expressed from the fruit.
 20 The roll is cast or formed of a suitable thickness to withstand the strain to be brought upon it, and is drilled with a series of holes of from one-eighth to three-eighths of an inch diameter, according to the texture or mesh of
 25 the porous apron G resting upon the same.

A tightener-roll, M, is suspended between the bifurcated arms N² of a lever, N, and rests upon the apron L. The lever N is fulcrumed at N' upon the inside of the top rails, A².

30 Upon the extended arm N a weight, P, is hung of sufficient power to keep the rubber or non-porous apron taut upon the rolls H F H'.

A gutter or trough, R, is suspended beneath the rolls D, H, and F, and is provided with a discharge-pipe, S, which is clamped to the post at T. This pipe may deliver into a closed receptacle, but we prefer to deliver direct into
 35 bottles V by tunnel U, a shelf, W, being provided to receive the same while being filled.
 40

The operation of the press is as follows: The fruit is placed within the hopper C and the rolls B revolved, either by hand or power, according to the size of press operated. The
 45 gear-wheel H⁵, secured to the shaft of the roll H, and in mesh with the pinion B², transmits a slow movement to the roll, and by the connection therewith to the aprons G L. The pomace falls upon the aprons below and is caught
 50 and held between the same. While it is thus held, it passes beneath the roll H, over the roll F, and between the rolls F and H', the aprons separating after passing the center line of rolls F and H', the pomace dropping to the floor inside of the frame.
 55

Any of the various forms of conveyer may be attached to the machine, and being suitably connected with the moving parts thereof would carry the waste pomace out of the way; but in
 60 small hand-machines they may occasionally be lifted to one side and the pomace shoveled away.

As the pomace passes between the rolls D H, it receives a preliminary squeeze, the tension of the aprons gradually intensifying the pressure until it arrives at and passes between the rolls H F at one side of the perfo-

rated roll F, and between F and H' at the opposite side of the same. As the rolls H' and F are movable horizontally by the action of
 70 the screw J upon the spring-stem I', any required amount of compression may be produced, and the pomace will leave the aprons as a dry pulverulent mass. The spring I prevents breakage by permitting the rolls F H' to
 75 recede in case obstructive articles should be carried through the crushing-rolls upon the aprons.

We are aware that we are not the first to produce a continuous press, or to make use of
 80 endless aprons in connection therewith; but we believe our improvement to be a novel and useful advance in arrangement and in the result produced over the presses which have
 85 preceded ours.

In manufacturing cider by the ordinary press the pomace becomes discolored from exposure to the light and air, and before it can be brought beneath the press, where the action of the same is intermittent, the cells close
 90 up from the thickening of the pomace, and the juice is not as readily expressed as when the operation is a continuous one, as with our improvement. Cider made by our process needs
 95 no clarifying, but, as described, may be run into the bottles direct, and be immediately corked and set away to age for the export trade.

Having described our improvement, shown its construction and advantages, we desire to
 100 secure by Letters Patent the following claims thereon:

1. As an improvement in continuous juice-extracting presses, as described, the fixed imperforate roll D, adjustable imperforate
 105 tension-roll E, and movably-adjustable perforate roll F, with the porous-fabric endless apron G, in combination with the fixed imperforate roll H, and movable adjustable imperforate roller H', the non-porous apron L, gear H⁵,
 110 pinion B², and crank B³, substantially as shown, and for the purpose set forth.

2. In a continuous juice-extracting press, as described, the fixed imperforate roll H, and adjustably-movable imperforate roll H', with
 115 the non-porous endless apron L, in combination with the perforate roll F, apron G, imperforate rolls D E, gear-wheel H⁵, pinion B², crank B³, rolls B, springs I, adjusting-screw J, and tightener M N, substantially as and for
 120 the purpose specified.

3. In combination with the rolls D, E, F, H, and H', aprons G L, the roll M, with its lever N, arms N², fulcrum N', and weight P, whereby a variable tension is produced upon the
 125 apron L, and the pomace held between the aprons G L is correspondingly compressed, as and for the purpose specified.

4. In combination with a juice-extracting press-frame, as described, and the series of
 130 imperforate and perforate rolls mounted therein, the movable rails A³, whereby the aprons G and L may be introduced and applied to their respective rolls without dismantling the

machine, in the manner and for the purpose set forth.

5 In a continuous juice - extracting press, as described, the perforate roll F, with perforations F², in combination with a porous-fabric endless apron, G, and a non-porous endless apron, L, so arranged relative to said roll that the aprons G L shall cover the upper half-circumference of said roll, the lower half being free, whereby the juice expressed from the pomace held between said aprons will pass through the porous apron G and the perforations F² within the roll, and by the perforations F² from the interior of the roll upon the gutter R, and be discharged by pipe S, substantially as and for the purpose specified.

6. In a press, as described, provided with the rolls H' F and bearings F' H², the spring-stem I', having a spring-seat, and recess I², in combination with the adjusting-screw J, its tenon J', hand-wheel J², nut K, helical or gum spring I, and post A, whereby the pressure upon the rolls is adjustable and unusual strains provided for, substantially as shown, and for the purpose hereinbefore set forth.

JACOB GORGAS.
GEORGE E. MOHLER.

Witnesses:

F. W. HULL,
WM. M. OVERLEY.