3 Sheets--Sheet 1.

D. C. STARKS.

Cider-Press.

No. 162,257. Patented April 20, 1875.

Fig. 1.

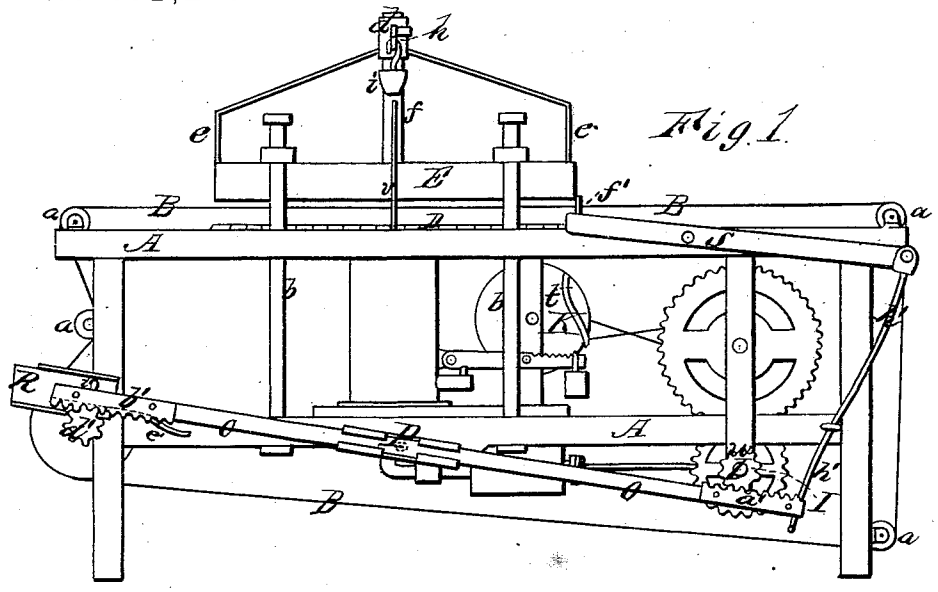

Fig. 2.

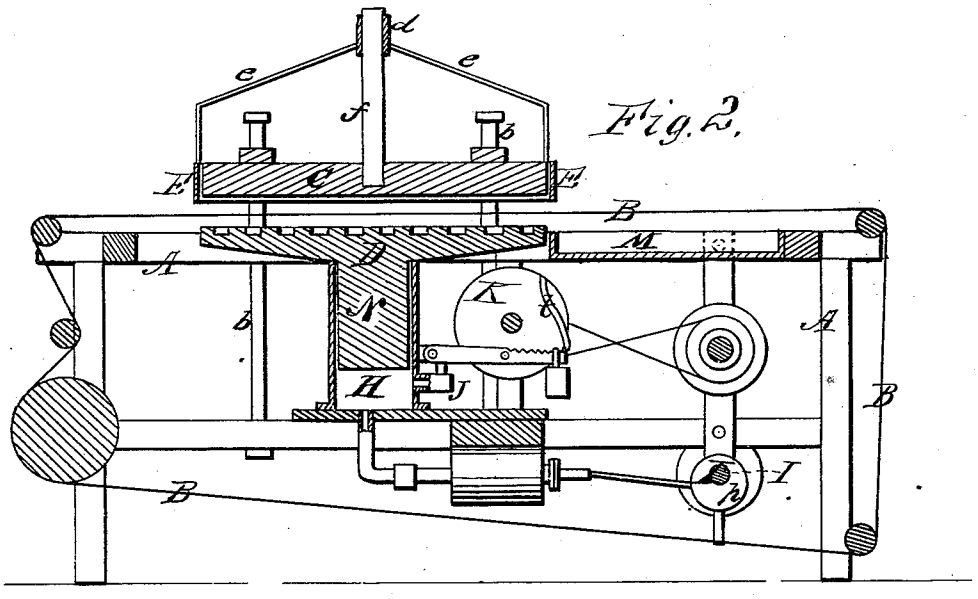

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Fig. 3.

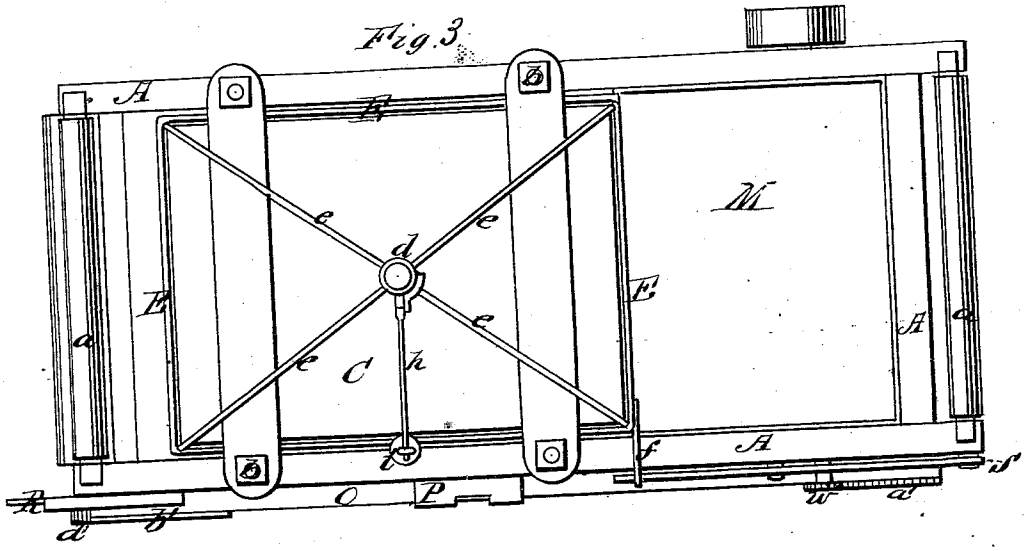

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Fig. 4.

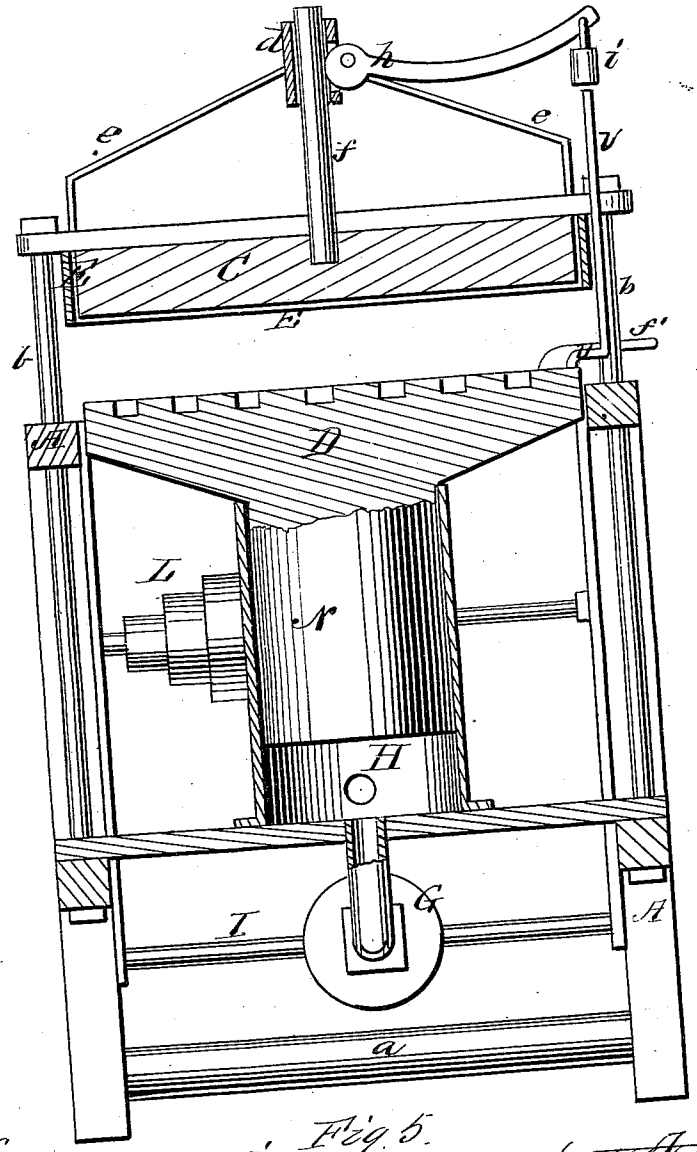


Fig 6

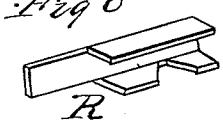


Fig. 5.

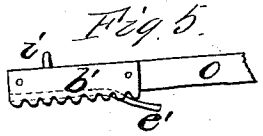
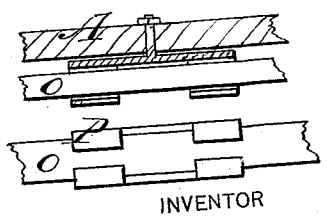


Fig. 7.



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UNITED STATES PATENT OFFICE.

DANIEL C. STARKS, OF HERMITAGE, NEW YORK.

IMPROVEMENT IN CIDER-PRESSES.

Specification forming part of Letters Patent No. **162,257**, dated April 20, 1875; application filed January 28, 1875.

To all whom it may concern:

Be it known that I, DANIEL C. STARKS, of Hermitage, in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Automatic Cider-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in cider-press; and consists in the construction and arrangement of parts, as will be hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a side view of my invention. Fig. 2 represents a vertical section. Fig. 3 represents a plan or top view. Fig. 4 represents a cross-section. Figs. 5, 6, and 7 are detail views of the same.

A represents the frame of my cider-press, constructed in any suitable manner. B represents an endless intermittently-revolving apron, passing over rollers *a a*, arranged at the ends of the frame, so that the apron or belt will pass the entire length of the frame at the top, down at the rear end, then underneath and up at the front end. The apron at the top of the frame passes between the press-plates C and D. The upper press-plate C is smooth on its under surface and secured to cross-bars, which are fastened to upright rods *b b*, permanently secured on both sides of the frame. Surrounding the upper plate C is a metal hoop, E, which is connected, by rods *e e*, with a sleeve, *d*, placed over a shaft, *f*, which rises from the center of the upper press-plate C. In a slot on the sleeve *d* is pivoted an eccentric lever, *h*, provided at its outer end with a weight, *i*, which holds the eccentric end of the lever against the shaft *f*, to support the hoop E. The lower movable press-plate D is channeled, in any desired manner, on its upper surface, to carry off the cider.

I do not lay any claim in this application to the construction of the hydraulic pump, as I shall make a separate application for the same, and I do not confine myself in the use of my cider-press to this pump, as any hydraulic pump properly arranged and connected might answer the same purpose.

The operation of the machine is as follows: The pomace being placed upon the endless apron B at the front end of the machine, the lower plate D being down and the hoop E held to surround the edges of the upper plate C, the apron is now moved forward, by means hereinafter described, a certain distance, until the lower plate becomes loaded with pomace. This plate then commences to rise, and presses the pomace slightly against the upper plate. A rod, *v*, attached to the plate D then lifts the weight *i*, releasing the eccentric lever *h* from its hold on the shaft *f*, so that the hoop E will suddenly drop down and cut off the pomace. The plungers now give their thrust, raising the lower plate D with great force up against the upper plate C, pressing the pomace perfectly free from all juice, which goes through the apron into the channels on the plate D, from which it flows freely into any vessel placed for its reception. The last upward movement of the plate D carries the hoop E with it, and the weight *i* easily slips to one side of the trip-rod *v*, so that the hoop will be held in its elevated position when the plate D descends again. As soon as the plate descends the apron is moved forward again, carrying off the cheese and bringing more pomace over the plate D.

The endless apron is operated intermittently by the following means: On one end of the main shaft I is a pinion, *w*, gearing with a rack-bar, *a'*, secured on one end of a sliding bar, O, held in a pivoted box, P, to the side of the frame A. At the other end of the bar O is another rack-bar, *b'*, gearing with a pinion, *d'*, and the journal of one of the apron-rollers *a*. This end of the bar has a spring, *e'*, as shown in Fig. 5, attached to it, and moves in a box, R, attached to the frame. As the plate D descends an arm, *f'*, attached thereto, strikes one end of a pivoted lever, S, the other end of which is, by a rod, *h'*, connected with the end of the bar O, so that thereby said end of the bar is lifted and the rack-bars *a' b'* thrown in gear with their respective pinions. The pinion *w*, revolving constantly, at once imparts motion to the sliding bar O, thereby imparting motion to the pinion *d'*, the roller

to which it is connected, and to the apron. This movement continues until a hook, *i'*, at the upper end of the bar O gets opposite a slot in the box R, when the spring *e'* (see Fig. 5) at once throws said end upward, throwing both rack-bars out of gear with their pinions, and stopping the motion of the apron just as the plate D commences to ascend again. The hook *i'* rides now on top of the box R, and the bar O, on account of its inclined position, slides down until the hook *i'* is opposite another slot in the box, and the bar is ready to be thrown in gear again at the next descent of the plate D. A platform, M, is also attached to the frame for the purpose of conveying the cider which may drip through the endless belt or apron, and is carried to any vessel or receptacle.

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

1. In combination with the stationary press-plate C and movable press-plate D, the automatically-operating hoop E, for the purposes herein set forth.

2. The combination of the hoop E, rods *e*, sleeve *d*, shaft *f*, and eccentric lever *h* with weight *i* and trip-rod *v*, all substantially as and for the purposes herein set forth.

3. The combination of the sliding rack-bar O, pivoted box P, slotted box R, spring *e'*, hook *i'*, pinions *w d'*, lever S, and arm *f'*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I herewith affix my signature in presence of two witnesses.

D. C. STARKS.

Witnesses:
JAMES POWELL,
ISAAC THOMPSON.