

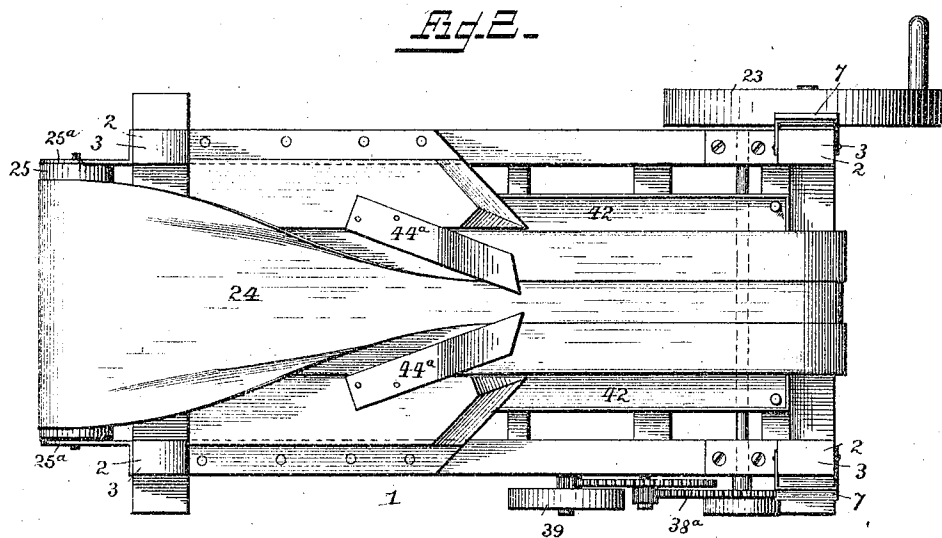
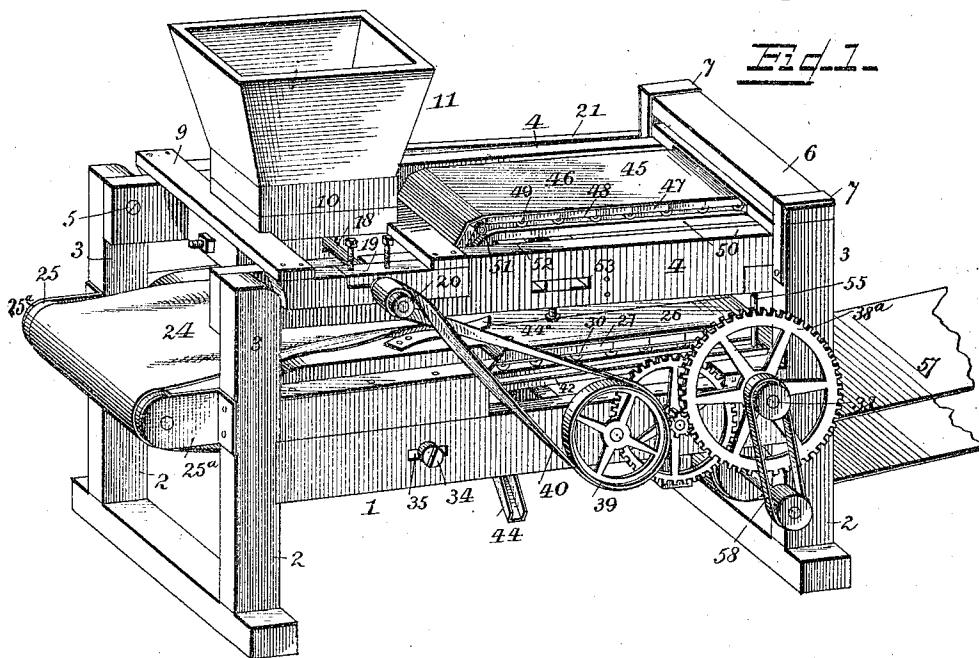
(No Model.)

2 Sheets—Sheet 1.

M. INGISON.
CIDER PRESS.

No. 544,670.

Patented Aug. 20, 1895.



Inventor

Marion Ingison

Witnesses

Chas. H. Ourand
S. P. Hauptst.

By his Attorneys.

C. A. Snow & Co.

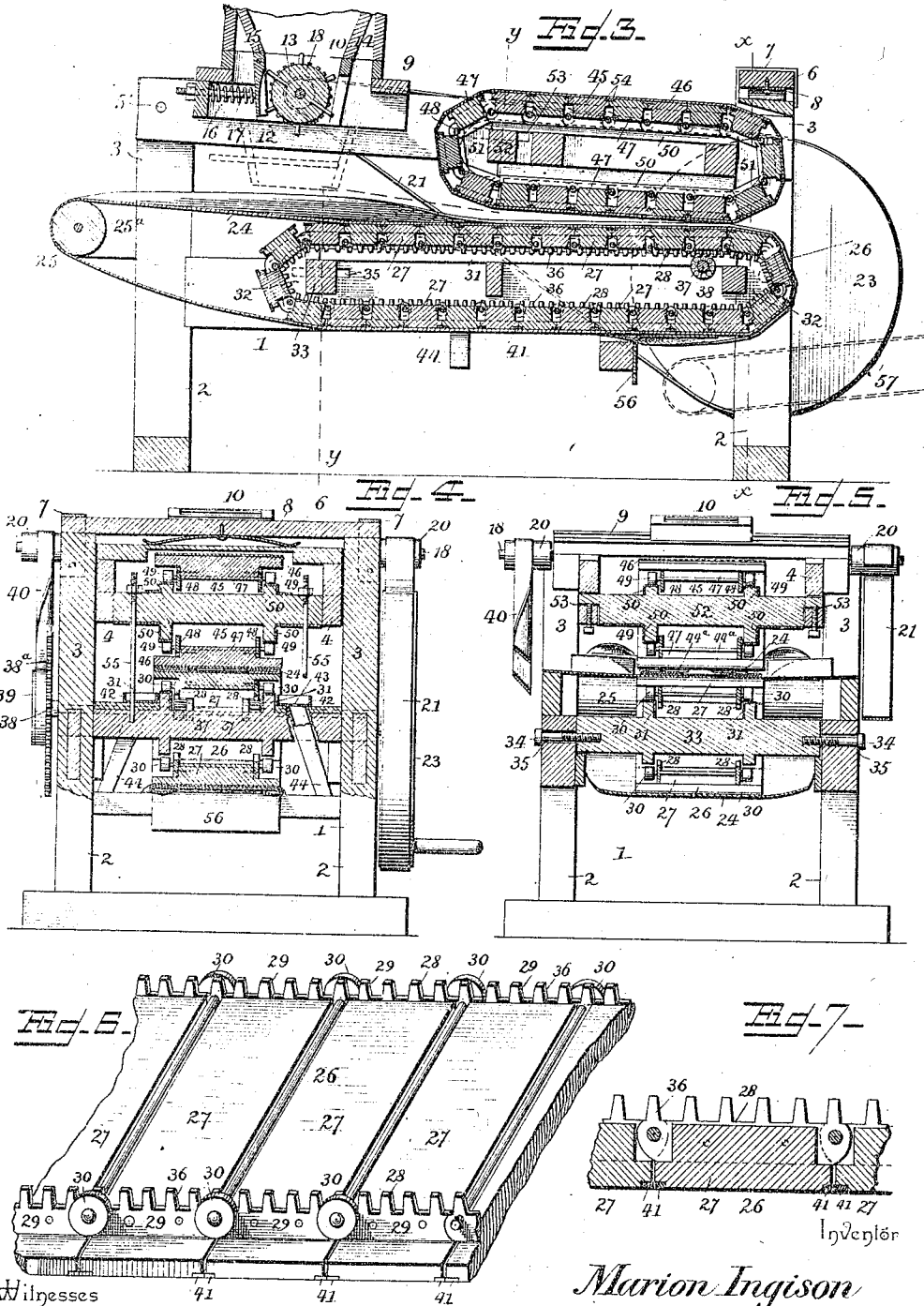
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UNITED STATES PATENT OFFICE.

MARION INGISON, OF MALLORY, NEW YORK.

CIDER-PRESS.

SPECIFICATION forming part of Letters Patent No. 544,670, dated August 20, 1895.

Application filed November 14, 1894. Serial No. 528,802. (No model.)

To all whom it may concern:

Be it known that I, MARION INGISON, a citizen of the United States, residing at Mallory, in the county of Oswego and State of New York, have invented a new and useful Cider-Press, of which the following is a specification.

This invention relates to cider-presses; and it has for its object to provide a new and useful machine of this character having simple and efficient means for quickly extracting large quantities of cider or wine from fruit with but a small expenditure of power.

To this end the main and primary object is to provide a cider-press in which neither the fruit nor pomace is handled during the entire operation of the press and which provides for carrying the fruit that is milled to pressing devices and subsequently discharging the pomace from which the juice has been extracted.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a cider-press constructed in accordance with this invention. Fig. 2 is a top plan view of the press with the upper pivoted press-frame removed. Fig. 3 is a central vertical longitudinal sectional view of the entire machine. Fig. 4 is a vertical transverse sectional view on the line *xx* of Fig. 3. Fig. 5 is a similar view on the line *yy* of Fig. 3. Fig. 6 is a detail in perspective of a short section of the lower endless press-platform. Fig. 7 is an enlarged sectional view of the construction shown in Fig. 6.

Referring to the accompanying drawings, 1 designates the main press-frame, that is substantially rectangular in shape and is supported at opposite ends on the end supporting-standards 2, and arising from the opposite end corners of the main press-frame 1 are the corner or frame uprights 3, between which is arranged the upper pivoted press-frame 4. The upper press-frame 4 essentially comprises parallel connected side bars and is pivoted at one end on the pivot screws or bolts 5 between the corner uprights 3 at one end of the machine, and the opposite end

of said pivoted press-frame is adapted to work between the opposite corner uprights of the main press-frame. The unpivoted end of the upper press-frame 4 is yieldingly retained in position between the uprights 3 at one end of the frame 1 by means of the transverse retaining-bar 6, arranged above the said unpivoted end of the frame 4 and detachably engaged at its opposite ends by the U-shaped latches 7, pivoted to the corner uprights 3 at one end of the frame 1 and working over the top of such uprights to clamp the ends of the retaining-bar 6 thereon. A bowed spring 8 is secured to the under side of the bar 6 and has its opposite ends bear on the unpivoted end of the frame 4 to retain the same in position, while at the same time allowing the said unpivoted end of the upper press-frame to yield under pressure, as will be more fully understood. By removing the retaining-bar 6 from one pair of the corner uprights the unpivoted end of the upper press-frame may be lifted from between the corner uprights 3 and the entire upper press-frame thrown back out of the way to gain access to the parts of the press arranged on and within the main frame 1 thereof.

Near the pivoted end of the upper press-frame 4 and secured thereon is a transverse supporting-frame 9, on which is arranged the mill-casing 10, that is provided at the top with the hopper 11 to receive the fruit to be milled and at the bottom with a valved delivering-spout 12 that discharges the milled fruit onto the conveyer below the casing. The mill-casing 10 has mounted transversely therein a peripherally-toothed grinder 13, that serves to grind up or mill the fruit to a suitable degree of fineness, and the teeth of said grinder work through the slots of the fixed and pivoted slotted gratings 14 and 15, respectively, that are arranged vertically within the mill-casing at both sides of the said grinder. The slotted gratings allow the grinder to freely rotate without coming in contact therewith and assist in the action of the grinder by additional resistance which they oppose to the passage of the fruit, and they also clean the teeth of the grinder. The slotted grating 15 is pivoted at its upper edge within the mill-casing, and has connected to its lower unpivoted edge the spring 16, to which is connected one end

of an adjusting-bolt 17 for adjusting the tension thereof, and the said spring will allow the grating 15 to yield to prevent clogging within the mill-casing, while at the same time serving to normally hold the same in a proper relative position to the grinder. The toothed grinder 13 is mounted on a transverse grinder-shaft 18, journaled in suitable bearings 19 at opposite sides of the frame 4 and carrying upon both ends the belt-pulleys 20, over one of which passes the drive-belt 21, that also passes over the power-wheel 23, mounted at one side of the main frame of the press and operated by hand or mechanical power.

The milled fruit from the casing 2 is delivered by the spout 12 onto the endless pervious cider-belt 24 near one end thereof. The endless pervious belt 24 is arranged to travel within the frame 1 from end to end thereof, and at one end of the said frame the belt 24 passes over the end belt-roller 25, that is journaled at one end of the frame 1 in the off-standing bearing-brackets 25^a, and at the opposite end of the frame 1 the belt 24 passes over the outer portion of the lower endless press-platform 26, that is arranged to travel within the frame 1 from one end thereof up to a point substantially under the milling devices in order that the milled fruit will drop onto the belt or apron 24 at the inner portion of the said lower press-platform 26. The lower endless press-platform 26 is narrower than the width of the frame 1, and essentially comprises a series of transverse closely-arranged flat platform-slats 27 and a pair of parallel endless chains 28, consisting of jointed links 29, to which the slats 27 are secured. The jointed links 29 of the parallel endless chains 28 are also arranged in pairs directly opposite each other, so that the platform-slats can be secured to each pair of links and will be carried thereby when the chains are set in motion, and the said links carry upon the outer sides of the joints thereof the chain rollers or travelers 30, that freely ride on the parallel guide-rails 31, secured on the frame 1, between the opposite sides thereof. Said guide-rails 31 are extended at their opposite ends into the curved end rail portions 32, around which pass the outer and inner portions of the endless lower platform, so that the endless travel thereof will be perfectly free and easy.

The inner pair of curved end rail portions 32 are secured to the transverse adjusting-bar 33, that is arranged transversely within the frame 1 and has connected to the opposite ends thereof adjusting-screws 34, that work in the slots 35, formed in opposite sides of the frame 1, and by adjusting the said bar 33 the inner pair of curved rail portions 32 may be adjusted to and away from the inner ends of the guide-rails 31 in order to provide for maintaining the lower endless press-platform at the proper stretch or tension. The parallel endless chains 28 of the platform 26, that are supported to travel on the rails 31, are provided with rack-teeth 36, with which

mesh the operating-pinions 37, that are mounted on a transverse operating-shaft 38, journaled in suitable bearings near one end of the frame 1, between the upper and lower portions of the platform 26, and on one end of said shaft, outside of the frame 1, is mounted the gear-wheel 38^a, that is geared with the belt-wheel 39, also mounted at one side of the frame 1, and over which passes the crossed belt 40, that also passes over one of the pulleys 20 at one end of the grinder-shaft 18, so that motion will be communicated from said grinder-shaft to the lower endless press-platform through the medium of the connections described.

The transverse closely-arranged slats 27 of the platform 26 of course separate from each other or break joints as the platform passes around the outer and inner curved rail portions 32; but by reason of the horizontal rails 31 the slats forming the top portion of the press-platform closely meet each other, and at such meeting edges said slats are provided with rubber or other suitable packing-strips 41, which serve to make liquid-tight joints between the slats, so that liquid cannot pass between the same, but must escape over the ends of the slats at the side edges of the platform, and the ends of the slats project beyond the endless chains, on which they are mounted, in order to direct the juice from the fruit into the opposite juice-pans 42, secured longitudinally on the frame 1 at opposite sides of the upper portion of the platform 26 and directly under the upper side edges of said platform, and at one end the said pans 42 are provided with the discharge-openings 43, through which the juice runs into the inclined troughs 44, that direct the same into a suitable tank or receptacle that may be placed beneath the press, as will be easily understood.

At a point directly at one side of the point where the milled fruit is delivered onto the belt 24 is arranged a pair of folding strips or arms 44^a. The folding strips or arms 44^a are secured to opposite sides of the frame 1 and project inwardly at an angle over the opposite side edges of the said belt 24, so that as the said belt passes over the lower platform 26 the opposite side edges of the belt 24 will be folded in and over the top of the said belt, so as to confine the milled fruit and pomace, and the fold of the side edges of the said belt makes the same sufficiently narrow to lie entirely within the compass of the platform 26. The folded portion of the belt 24 that passes over the platform 26 also passes under the upper endless press-platform 45.

The upper endless press-platform 45 is constructed in substantially the same manner as the lower platform 26, and a cloth belt 46 passes around the platform 45 to insure the effective pressing of the fruit and preventing the same from being carried around by said upper press-platform. The press-platforms 26 and 45 may also be properly termed "press-

aprons," and, like the lower platform, the upper platform 45 essentially comprises a series of transverse closely-arranged platform-slats 47 and a pair of parallel endless link chains 48, that carry upon the outer sides at their joints the chain rollers or travelers 49, that ride on the parallel elliptical guide-rails 50, that are supported on the upper pivoted press-frame 4, between the opposite sides thereof.

The inner rounded end portions of the elliptical rails 50, which may be additionally designated as 51, are mounted on the transverse adjusting-bar 52, the ends of which are adjustably secured in the slot 53, formed in opposite sides of the said frame 4, to provide means for maintaining the upper press platform or apron 45 at the proper stretch or tension. The slats 47 of the upper platform or apron 45 are also provided at their meeting edges with rubber or other suitable packing-strips 54 to provide liquid-tight joints between the slats when the same closely meet each other.

The upper endless press platform or apron 45, that is mounted within the pivoted press-frame 4, is shorter than the lower platform or apron 26, and by reason of the manner of securing the unpivoted end of the said upper press-frame 4 the outer portion of the upper platform 45 is held in tight pressing contact with the upper outer portion of the lower platform 26, while the inner portion of said upper platform or apron is arranged slightly above and out of contact with the upper portion of said lower platform or apron, so that the milled fruit will be subjected to a gradual pressure between the two platforms and the juice will be squeezed out through the folded edges of the belt 24 into the side pans 42. The pressure of the upper platform or apron 45 on the lower platform 26 may be regulated by means of the adjusting bolts or rods 55, secured to one end of the main frame 1 and adjustably connected to the unpivoted end of the frame 4, which unpivoted end is also yieldingly held in position by the spring 8.

After the juice has been pressed from the milled fruit between the press platforms or aprons the pomace is carried by the folded belt 24 around the outer portion of the said lower platform or apron 26 to the combined spreader and scraper plate 56. The plate 56 is secured within the frame 1, under the belt 24, at one end of the said frame, and the side edges of said plate engage in the folded side portions of the belt 24 and serve to spread the same open, while at the same time relieving the said belt from the pomace and at the same time discharging the same on the inner portion of the pomace-carrier 57. The pomace-carrier 57 is arranged to extend beyond one end of the main press-frame 1 and is driven by means of a suitable belt connection 58 with the shaft 38.

From the above it is thought that the construction, operation, and many advantages of the herein-described machine will be apparent

without further description, and it will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a cider press, the main press frame, a lower endless press platform traveling within the main frame, an upper press frame pivotally supported at one end above the main press frame and carrying milling devices, an upper endless press platform or apron traveling within the pivoted frame between the unpivoted end of the latter and said milling devices, said upper endless press platform or apron being shorter in length than the lower endless press platform and arranged at an angle with its outer portion in tight pressing contact with the upper outer portion of the lower platform and its inner portion slightly elevated above and out of contact with the said lower platform, an endless pervious belt arranged to pass between the two moving platforms or aprons, and means for yieldingly and detachably fastening the unpivoted ends of the upper press frame above the main press frame, substantially as set forth.

2. In a cider press, the main press frame, a lower endless press platform traveling within the main frame, a pervious belt traveling over said lower platform, an upper press frame pivotally supported at one end above the main press frame, milling devices mounted on the pivoted frame adjacent to the pivoted end thereof, an upper endless press platform or apron traveling within the pivoted frame between the unpivoted end of the latter and said milling devices, means for yieldingly and detachably fastening the unpivoted end of the upper press frame above the main press frame, and a separate adjusting device for the unpivoted end of the upper press frame, substantially as set forth.

3. In a cider press, the combination of the main press frame provided at its opposite ends with corner uprights, a lower endless press platform traveling within the main frame, a pervious belt traveling over said lower platform, an upper press frame pivotally mounted at one end between one pair of said corner uprights and working at its other free end between the opposite pair of corner uprights, a transverse retaining bar adapted to be arranged above the unpivoted end of said upper press frame and provided on its under side with a bowed spring resting on said end of the upper press frame, U-shaped latches pivoted to the corner uprights at one end of the frame and adapted to engage the ends of said retaining bar, a separate adjusting device for the unpivoted end of the upper press frame, the milling devices, and the upper endless press platform mounted within said upper press frame, substantially as set forth.

4. In a cider press, the main frame, fixed parallel guide rails secured horizontally on the frame and provided at opposite ends with curved end rail portions one pair of which is
5 movable, means for adjusting the movable end rail portions, a lower endless press platform or apron consisting of a pair of parallel endless toothed chains of jointed links, and
10 transverse closely arranged imperforate slats secured to the links and provided at their meeting edges with flexible packing strips, the ends of said slats projecting beyond said chains, chain rollers or travelers mounted on
15 said rails, opposite juice pans supported under the upper projecting side edges of the lower platform or apron, a shorter duplicate upper press platform or apron adjustably supported above and in contact with the
20 lower press platform or apron, an endless pervious cider belt passing between the two platforms or aprons, means for folding the edges of said belt beyond the inner portion of the upper platform or apron, a combined spreader
25 and scraper plate arranged under the outer portion of the lower platform or apron, a

pomace carrier extended at its inner end under said combined spreader and scraper plate, and gearing connected with said toothed chains and said carrier.

5. In a cider press, the main frame, a lower endless press platform or apron traveling within said frame, a pervious belt passing over said lower platform or apron, an upper press frame adjustably supported on the main
35 frame, a pair of fixed parallel elliptical guide rails supported within the upper adjustable press frame and provided with inner movable end portions, means for adjusting the movable end rail portions and an upper endless
40 press platform or apron comprising parallel endless chains having rollers or travelers riding on said rails, and closely arranged imperforate slats attached to the links of the chains, substantially as set forth.

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

MARION INGISON.

Witnesses:

ELSWORTH HOYT,

GEO. FIGUET.