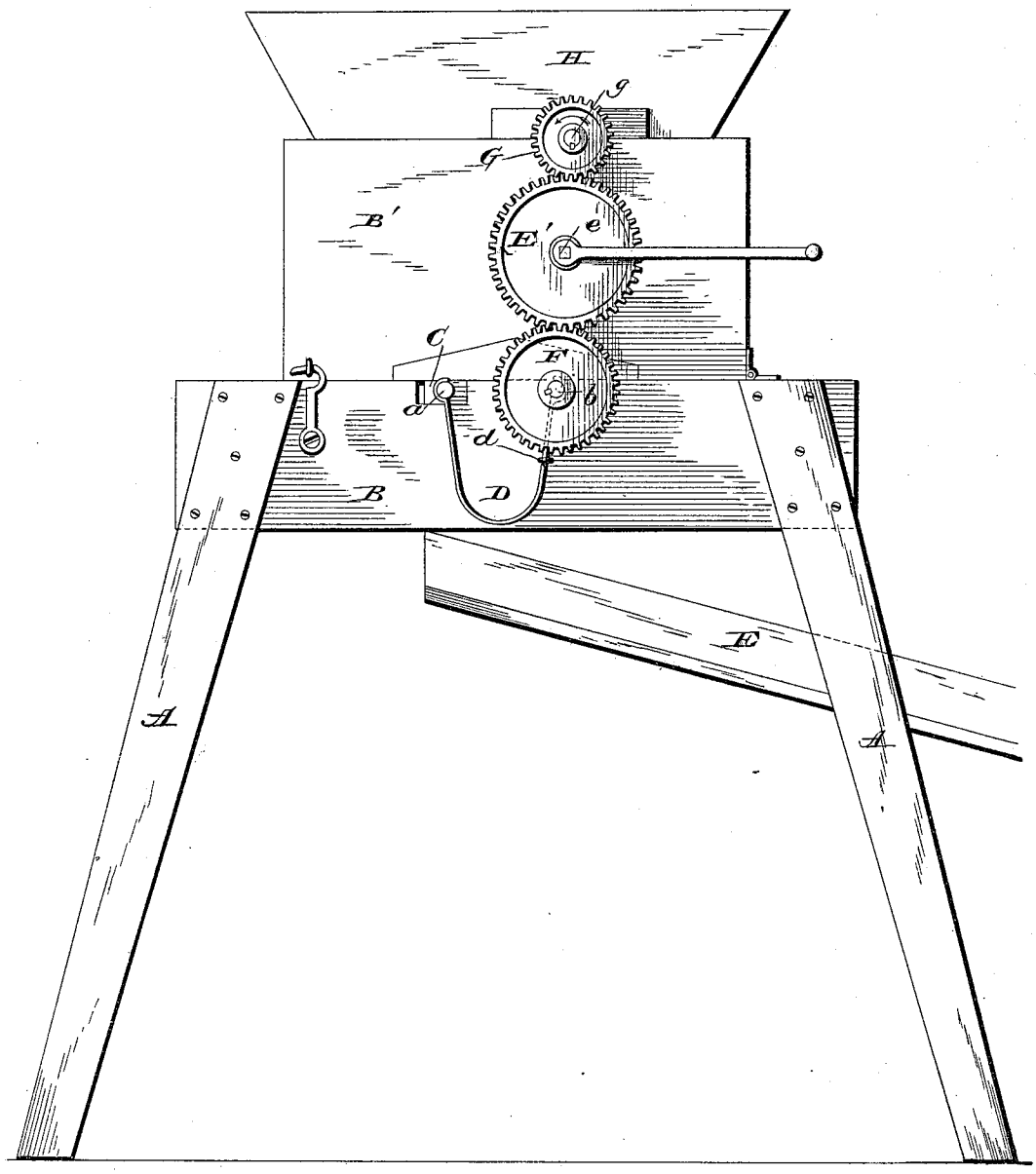
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J. H. STEWART.

CIDER MILL AND PRESS.

No. 438,960. Patented Oct. 21, 1890.

Fig. 1.



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Fig. 2.

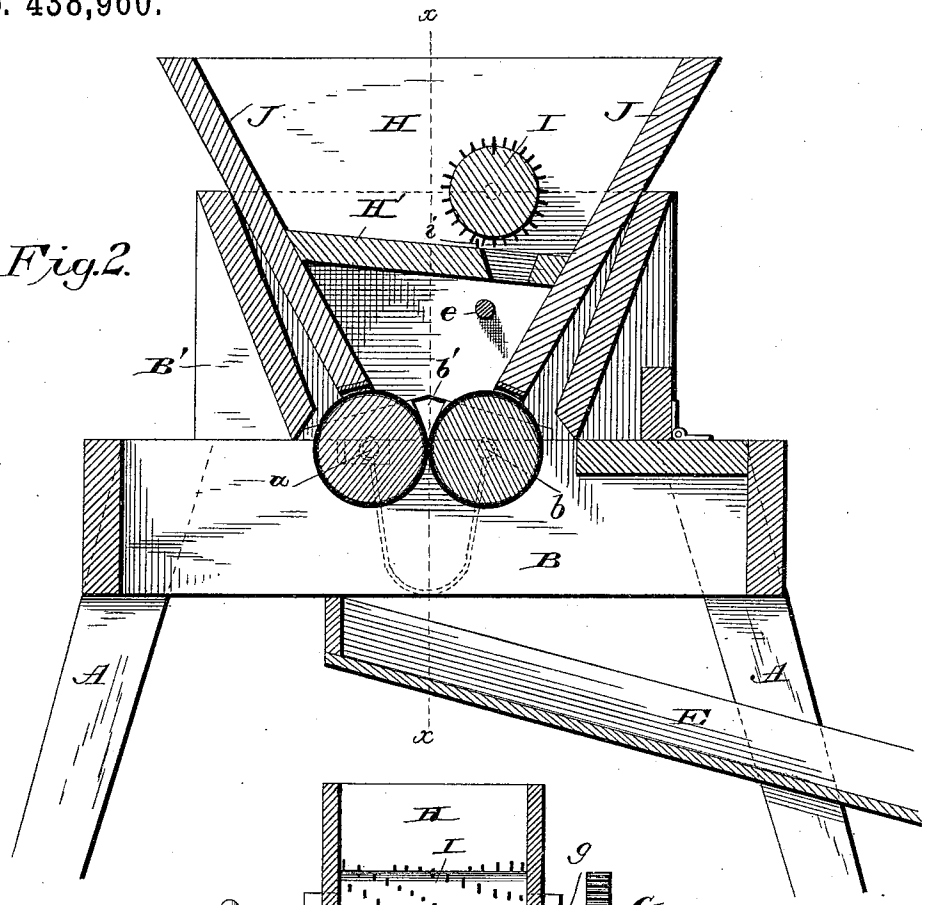
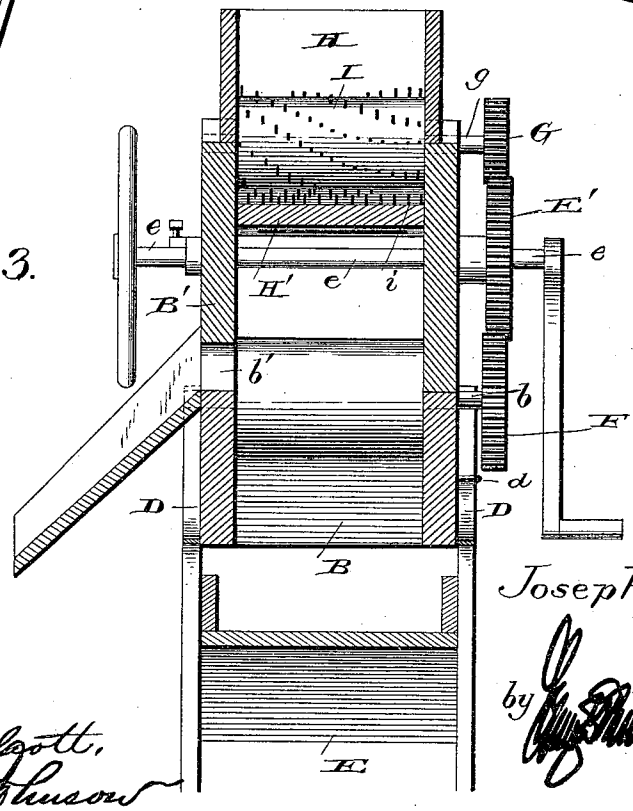


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH H. STEWART, OF BLUFF CITY, TENNESSEE, ASSIGNOR OF TWO-THIRDS TO JOHN M. HODGES AND CHARLES F. HODGES, BOTH OF SAME PLACE.

CIDER MILL AND PRESS.

SPECIFICATION forming part of Letters Patent No. 438,960, dated October 21, 1890.

Application filed May 8, 1890. Serial No. 351,028. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. STEWART, a citizen of the United States of America, residing at Bluff City, in the county of Sullivan and State of Tennessee, have invented certain new and useful Improvements in Cider Mills and Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in cider-presses.

The object of the invention is to combine in a single machine both a cider mill and press that will be cheap in construction, portable, and convenient for use; and it consists in the combination of a grinding wheel or disk with pressure-rollers, the grinding-roller and one of the pressure-rollers being geared to each other, so that by one operation the fruit will be ground and the juice extracted therefrom and delivered into a suitable receptacle, while the pomace falls upon an inclined table or board, so that it can be readily removed; and the invention further consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of a combined cider mill and press constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a transverse section on the line $x\,x$ of Fig. 2.

My improved combined mill and press is made up of a suitable frame-work supported upon legs A, which are rigidly attached to the rectangular base B of the machine.

To the upper edges of the side pieces of the base B are secured plates or bearings C for the shafts a and b, one of which fits snugly in its journal, while the other rests in bearings movable in an enlarged recess therefor, so that the pressure-rollers will be free to move toward or away from each other.

The shafts a and b are drawn toward each other by springs D, the upper or terminal ends of which are bent to partly embrace said shafts, and for the purpose of keeping the springs in place I provide staples d, which pass over said springs and enter the side pieces of the base B. The pressure-rollers are mounted on the shafts a and b and are covered with rubber or other suitable material, and beneath these rollers is placed an inclined board or trough E, upon which the pomace will be deposited. The frame B on one side thereof at the abutting point of the pressure-rollers is provided with an opening b', to which is attached a spout for carrying the cider or apple-juice to a suitable receptacle.

B′ refers to the superstructure, which is hinged to the frame B, and through the same passes a shaft e, one end of which carries a balance-wheel, while the other end is squared for the attachment of a crank-handle. A gear-wheel E′ is also keyed on this shaft e and meshes with a gear-wheel F beneath the same and a pinion G on a shaft g above. It will be observed that the gear-wheel E′ is of greater size than either the gear-wheel F or the pinion G, so that when the crank-handle is turned the pinion G will have a larger number of rotations than the gear-wheel F. The superstructure B′ is made up of side and transverse boards, within which is secured a hopper H, and to the vertical sides of said hopper is journaled a shaft g, upon which is mounted a drum I, which is provided on its periphery with a spiral series of teeth, which pass between teeth i, projecting from the inclined bottom of the hopper H. The bottom board H′ of the hopper has an opening through which the cut fruit passes to the pressure-rolls.

The inclined sides J J of the hopper rest upon the face of the compression-rollers, and are at this point faced with rubber, which will serve to provide a tight compartment, as well as provide means for cleaning the rollers.

The shaft e may be provided with a suitable collar for preventing the lateral movement thereof.

In operation the apples are placed in the hopper and are drawn by the toothed cylinder or drum I between the teeth i and pass

through the opening into the lower portion of the hopper upon the rollers, and as said rollers turn toward each other the juice is pressed out of the fruit and passes through the opening *b'* into a suitable trough or spout, while the pomace falls upon the longitudinally-inclined board E and can be readily removed. Thus it will be seen that the operation of grinding and pressing apples to make cider can be readily accomplished at one operation.

By making the frame in two parts and hinging them together access can readily be had to the rollers when desired, and all the parts being readily accessible can be readily cleaned.

I am aware that prior to my invention it has been proposed to provide a cider mill and press with inclined rollers, above which is located a toothed drum, the parts being geared to each other, as may be seen by reference to the patent to Curtiss, dated December 14, 1875, and I therefore do not claim what is shown in said patent as my invention; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a combined cider mill and press, the combination of a frame B, compression-rollers mounted in such frame, a hopper above the latter, having inclined converging sides J J extended to bear on the rollers, a hopper-bottom inclining from one side J to the other and provided adjacent to its lower side with an opening, a series of upwardly-projecting pins near the same, and a crushing-roller above said opening, having radial pins, together with gearing and operating means, substantially as set forth.

2. The combination, in a cider-press, of the supporting-casing and yielding-faced compression-rollers mounted therein and supported in bearings, the bearings of one roller being movable, as described, and U-shaped springs attached to the journals of both rollers to hold the latter in contact, together with a hopper above said rollers, the casing having a discharge-opening located in its side on a line with the pinch of the compression-rollers, together with roller-gearing and operating means, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH H. STEWART.

Witnesses:
E. W. JOHNSON,
H. L. BEALL.