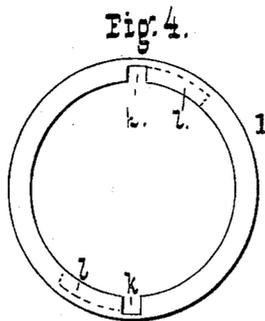
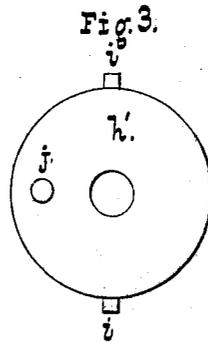
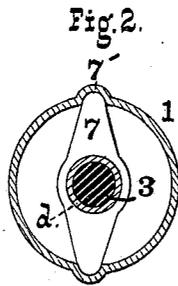
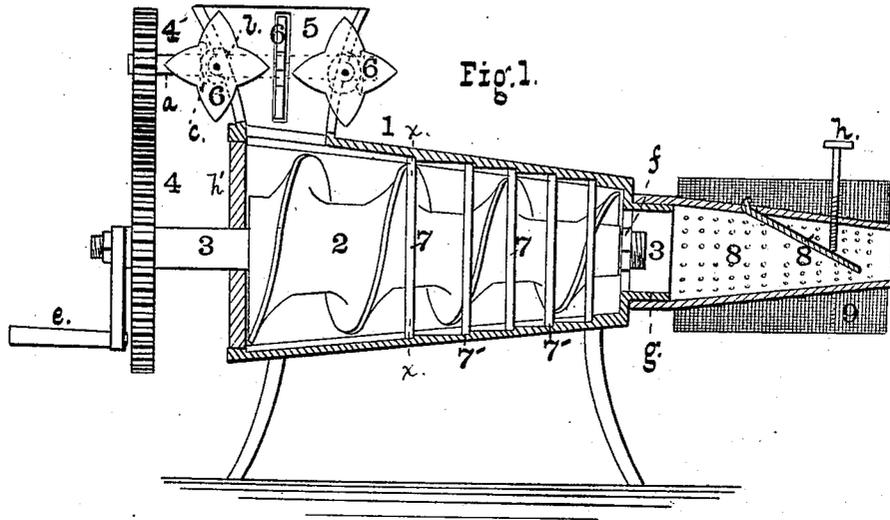


(No Model.)

C. KIESER.
Cider Mill and Press.

No. 241,024.

Patented May 3, 1881.



WITNESSES.

W. A. Bestman.
Dea. H. Barclay.

INVENTOR

Charles Kieser.

BY

R. D. Williams

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES KIESER, OF BALTIMORE, MARYLAND.

CIDER MILL AND PRESS.

SPECIFICATION forming part of Letters Patent No. 241,024, dated May 3, 1881.

Application filed March 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KIESER, of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Cider Mills and Presses; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal sectional view of the device; Fig. 2, a transverse sectional view on line *x x* of Fig. 1. Fig. 3 is an elevation of the end plate, and Fig. 4 a similar view of the end of the casing.

My invention has for its object to provide a mill for grinding apples and other fruits, in combination with a press, whereby the material is continuously fed through the device and the juice of the fruit is separated from the refuse material.

It is well known that in all processes in which a juice is to be expressed mechanically from material containing it the quantity of juice obtained is dependent in great measure upon the degree of comminution of the material and the approximation to each other of the compressing-surfaces. It will not answer, in practice, to exert a great pressure upon a large bulk of the material, as the latter while superficially compacted remains quite loose in the interior and the juice is not fully expressed. To obviate this I provide a press in which the material is forced through an opening of determined and adjustable area, so that the escaping material is subjected to a constant pressure, and the juice is more completely expressed than is possible with the ordinary forms of press.

In the drawings, 1 is a casing made tapering in shape, and axially within it revolves a tapering screw-conveyer, 2, keyed on a shaft, 3. The conveyer is made in a series of sections, each having a collar, *d*, that abuts against the next, the entire series being clamped on the shaft by means of a nut, *f*.

On the collars *d* are mounted knives 7, the ends of which rest in steps 7' on the interior of the casing and remain stationary with reference to the same.

5 is a hopper having a number of feed-wheels, 6, that revolve in slots cut in the sides of the hopper. On the shaft 3 is keyed a gear-wheel,

4, and crank *e*, and on the shaft *a*, which carries the farther feed-wheel 6, is keyed a gear-wheel, 4', which meshes with the wheel 4. Bevel-gears *b* and *c* on the shaft 4' and the shafts of the opposite feed-wheels serve to drive the latter.

On the end *g* of the casing 1 is removably secured the nozzle 8, which consists of a tapering laterally-perforated tube, having a transverse partition-plate, 8', pivoted in an inclined position therein. A set-screw, *h*, which bears on the upper side of the plate determines the approximation of its lower edge to the walls of the nozzle 8. Exterior to the nozzle is a sieve or strainer, 9. A series of nozzles is provided having holes of different sizes, according to the nature of the material to be pressed, and the sieves or strainers 9 correspond in mesh. The nozzles are secured on the end *g* by bayonet-joint or equivalent attachments.

The end plate, *h'*, (see Fig. 3,) is provided with two or more lugs, *i*, and a pin, *j*, and the end of the casing 1 into which the part *h'* fits has slots *k l*, as shown in Fig. 4. To secure the plate in place the same is made to enter the end of the casing, the lugs *i* passing into the slots *k*, when the plate is partially rotated by means of a lever inserted under the pin *j* and over the shaft 3. To remove it it is reversely rotated by the same means, the position of the lever being reversed. By these means the shaft 3, carrying the screw-conveyer, knives, and end plate, may be readily removed to gain access to the interior to clean it, and the nut *f* being removed, the sections of the conveyer and the knives may be slipped off the shaft. No bearing for the end of the shaft is required, the knives furnishing abundant support throughout its length.

In practice, the apples or other material being fed into the hopper, the shaft is turned by means of the crank and the conveyer forces the material toward the end of the casing. In transit it is sheared and cut by the edges of the conveyer and the knives, and arrives at the end of the casing finely comminuted. Here it passes into the nozzle 8, and is driven between the walls and the plate 8', being subjected thereby to a pressure which is regulated as hereinbefore set forth. The juice escapes through the perforations, and is strained as it

runs through the sieve 9, falling into a suitable receptacle.

What I claim is—

- 5 1. In a combined cider mill and press, a casing having a sectional screw-conveyer and a series of knives between the sections of the conveyer, and adapted, in connection with the conveyer, to grind and cut the material, as set forth.
- 10 2. In a cider mill and press, a tapering casing having a sectional screw-conveyer of shape conforming to that of the casing, in combination with a series of stationary knives between the conveyer-sections, as set forth.
- 15 3. In combination with the casing having steps 7', the sectional screw-conveyer and stationary knives 7, as set forth.
- 20 4. In a cider mill and press, a casing having a screw-conveyer and knives, as described, and a perforated nozzle or spout, through which the ground material is forced by the action of the conveyer, as set forth.
- 25 5. In a cider mill and press, a casing having a screw-conveyer and stationary knives, as described, and a nozzle provided with a partition-plate adjustably mounted therein, as set forth.
- 30 6. In combination with the casing 1, having steps 7', the conveyer 2, and knives 7, the nozzle 8 and adjustably-pivoted plate 8', as set forth.
7. In combination with the casing 1, having removable end plate, *h'*, the shaft 3, sectional conveyer 2, and stationary knives 7, as set forth.
- 35 8. In combination with the tapering casing 1, having steps 7', the knives 7, mounted upon the collars *d* of the conveyer-sections, and constituting the bearings for the conveyer, as set forth.
- 40 9. In combination with the casing, sectional conveyer, and stationary knives, the nozzle 8, plate 8', and sieve 9, as set forth.
- 45 10. In combination with the casing, sectional conveyer, and knives, the hopper 5, feed-wheels 6, and gearing intermediate the same, and the shaft 3, as set forth.
- 50 11. In combination with the casing, having slots *k l*, the conveyer mounted upon the shaft 3, which latter has its bearing in the plate *h'*, provided with lugs *i*, as set forth.
- 55 12. In combination with the casing 1, having slots *k l*, the conveyer-shaft, provided with knives which constitute its forward bearing, and a rear plate, *h'*, having lugs *i*, as set forth.
13. In combination with the casing 1, having slots *k l*, the conveyer 2, shaft 3, and plate *h'*, having lugs *i* and pin *j*, as set forth.

CHARLES KIESER.

Witnesses:

J. C. GITTINGER,
JNO. T. MADDOX.