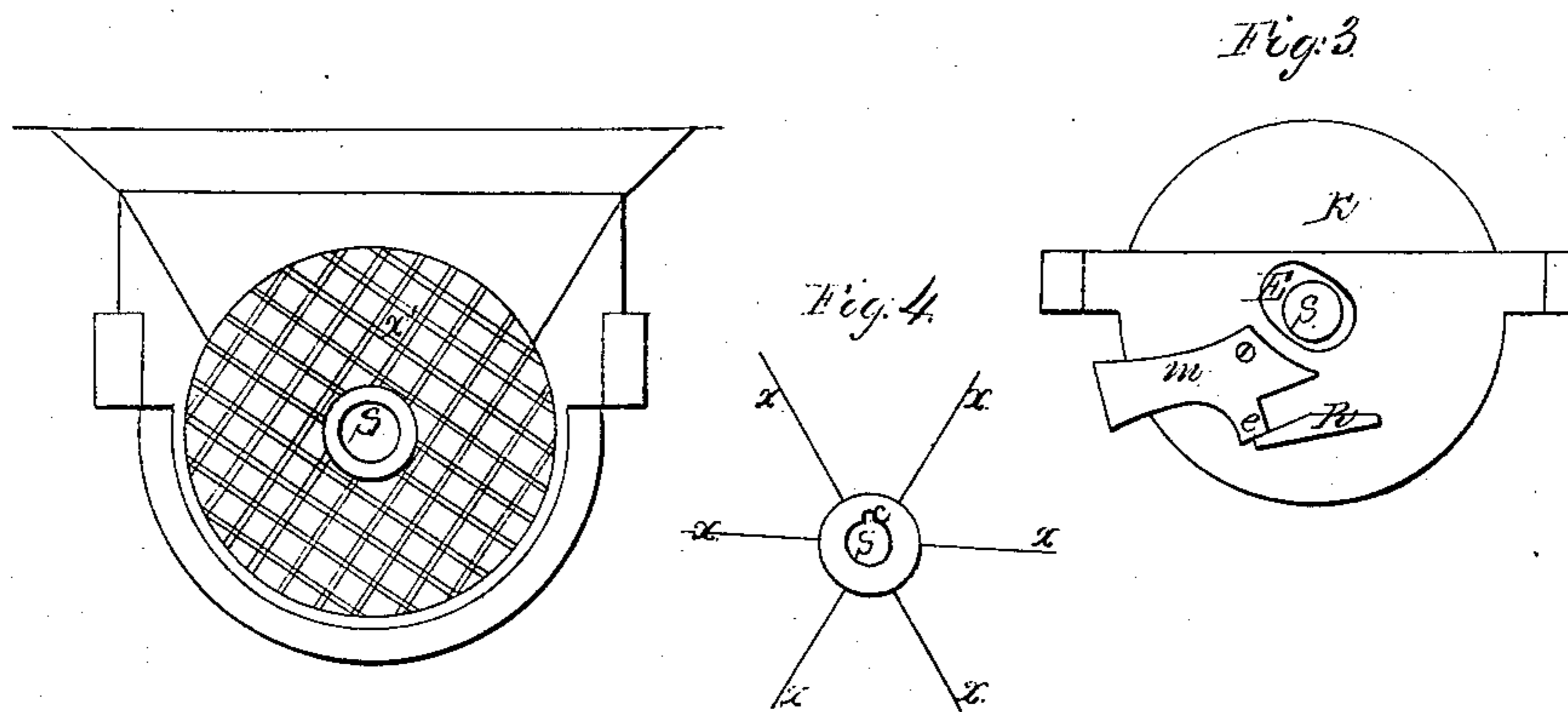
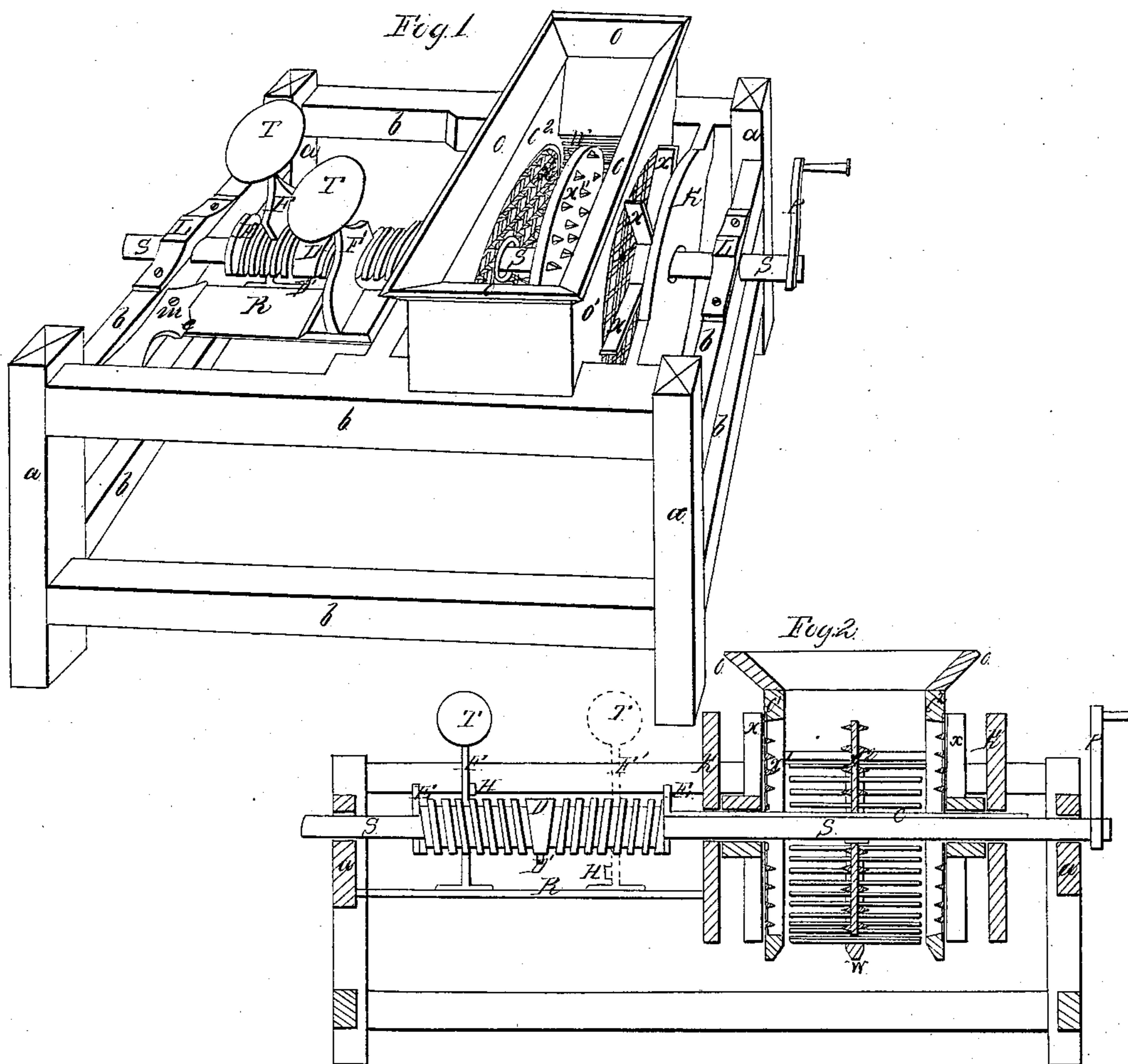


S. Krauser,

Cider and Wine Press.

N^o 13,741.

Patented Oct. 30, 1855.



UNITED STATES PATENT OFFICE.

SAMUEL KRAUSER, OF READING, PENNSYLVANIA.

CIDER OR WINE MILL.

Specification of Letters Patent No. 13,741, dated October 30, 1855.

To all whom it may concern:

Be it known that I, SAMUEL KRAUSER, of the city of Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Cider and Wine Mills, whereof the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine, Fig. 2 is a longitudinal vertical section of the same, Fig. 3 and M and E in Fig. 1 represent the end view wherein certain operative parts are more clearly exhibited, and Fig. 4 is a side view of one of the scraping wheels having a section of the shaft S inserted in its hub. Fig. 5 is a section of the hopper and the connection of the sieve showing its meshes.

The machinery of the mill is mounted upon a rectangular frame consisting of four posts *a a a a* connected by suitable side and end rails *b b b b b*.

The same letters refer to like parts in the different figures.

The form and position of the hopper is seen in Figs. 1 and 2. *o o o o* are the four converging sides and *o' o'* are vertical sides of the hopper inclosing the sieves.

The apparatus whereby the fruit is reduced to a pomace, consists of two scraping wheels *x x* and two stationary cast sieves *x' x'* armed on their inner surfaces with sharp teeth, together with a grinding disk *x''* armed on both its sides with similar teeth. The scraping wheels and disk are operated by the horizontal shaft S which when in operation has a reciprocating as well as a rotary motion communicated to it by means of suitable apparatus hereafter described. The grinding disk *x''* is permanently fast upon the shaft S and therefore revolves and reciprocates with it. But the scraping wheels *x x* are allowed to have the rotary motion alone. For this purpose the shaft S is permitted to reciprocate freely through their hubs, while its longitudinal projection *c* (Figs. 2 and 4), fitting loosely into a corresponding recess in the hubs of the said scraping wheels will cause the latter to revolve (but not to reciprocate) with the former. The sieves as above mentioned are stationary, the shaft S passing freely through their centers.

The reciprocating motion of the shaft S is produced by means of a left and right screw cut upon a part of its length as seen in Figs. 1 and 2. The reversed threads of the screw are separated by a flange D upon which there is a pin D', as seen in Fig. 2. The opposite ends of the screw are terminated by eccentrics, E E'; and F F' are tumblers mounted permanently upon a horizontal shaft R upon which they vibrate. Their inner concave surfaces are made to fit easily into the matrix of the screw so that when the screw revolves it will be acted upon by them, the same as it would be by a stationary nut, causing the screw thereby to travel the entire length of its thread either to the right or left, the deviation depending upon which of the tumblers is in gear. The operation of the tumblers with reference to the screw is such that while the one is in gear the other is out of gear and a continued rotary motion of the shaft S, will therefore cause it to have a continued reciprocating motion as required. The tumblers are provided with balls T, T, which are used to assist in throwing them in and out of gear.

It has been found by actual experiment that when the machine is in effective operation the lateral pressure of the screw against the tumblers has a tendency to throw them out of gear. To obviate this difficulty two catchers *m m* have been provided. These catchers are operated by the eccentrics E, E', as hereafter described. The scraping wheels are protected on the outsides by the circular sides K, K, through the centers of which the shaft S passes freely. It will be observed that the journals of the shaft S, reciprocate freely, through their boxes or supports L, L. Motion is communicated to the shaft S by means of the crank P.

The tumblers and catchers in combination with the right and left screw are operated in the following manner. Suppose the left tumbler F Figs. 1 and 2, is shown in gear, and the eccentric E is close alongside of the tumblers, then by turning the shaft S, the screw will move forward to the left. Now suppose it has to move 3 inches. When it has nearly completed that distance, the eccentric E, will strike the catcher *m*, and remove its lower lip *e*, from the shaft R, Figs. 1 and 2, which supports the tumblers. As soon as the catcher *m*, is

removed the projection pin D' on the flange D, Fig. 2, arrives at the striking point H, on the left tumbler F, Fig. 2, and throws it out of gear, simultaneously with this movement.

5 The tumbler F', is thrown in gear and then the screw moves to the right, and so vice versa.

Operation: The hopper being supplied with fruit, and the grinding disk made to
10 revolve, the fruit will be immediately acted upon by the sharp projections upon its sides. The fixed projections upon the inner surfaces of the stationary sieves will also contribute toward reducing the fruit to pomace.
15 As fast as the fruit is reduced to pomace, the latter will be pressed through the meshes of the sieve, by the gradual approach alternately of the grinding disk toward their inner surfaces. This reciprocating movement of the grinding disk will also enable
20 it effectually to feed off the entire contents of the hopper, and facilitate the supply of fruit to its grinding surfaces.

It will be observed that the hopper is provided with a skeleton concave W, corresponding to the circumference of the grinding disk; a peculiarity in the adaptation of this skeleton concave is that its sides do not touch the sides of the stationary sieves; the
30 spaces thus left open afford an additional avenue for the escape of the confined pomace. The office of the scraping wheels is to keep the sieves clean; they also assist to reduce those portions of fruit which happen to escape the action of the grinding
35 disk.

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

1. Communicating a reciprocating as well as a rotary motion to the grinding disk, in the manner and for the purposes within described. 40,

2. The use of the grinding disk with its peculiar movements in combination with the two stationary sieves as described and set forth. 45

3. The use of the stationary sieves for the purpose of passing the whole or a part of the pomace through their meshes, and also causing them to assist in reducing the fruit to a pomace by providing their inner surfaces with sharp projections as described and set forth within. 50 55

4. The arrangement of the skeleton concave W, with reference to sieves in the manner and for the purpose as described.

5. In combination with operating the screw by means of two vibrating tumblers, as described, the use of the catchers *m*, *m'*, in the manner and for the purpose within described. 60

6. In combination with the side screens, the application of the scraping wheels in the manner and for the purpose within set forth. 65

SAM. KRAUSER.

Witnesses:

WM. B. SCHOENER,
J. HAGERNAN.