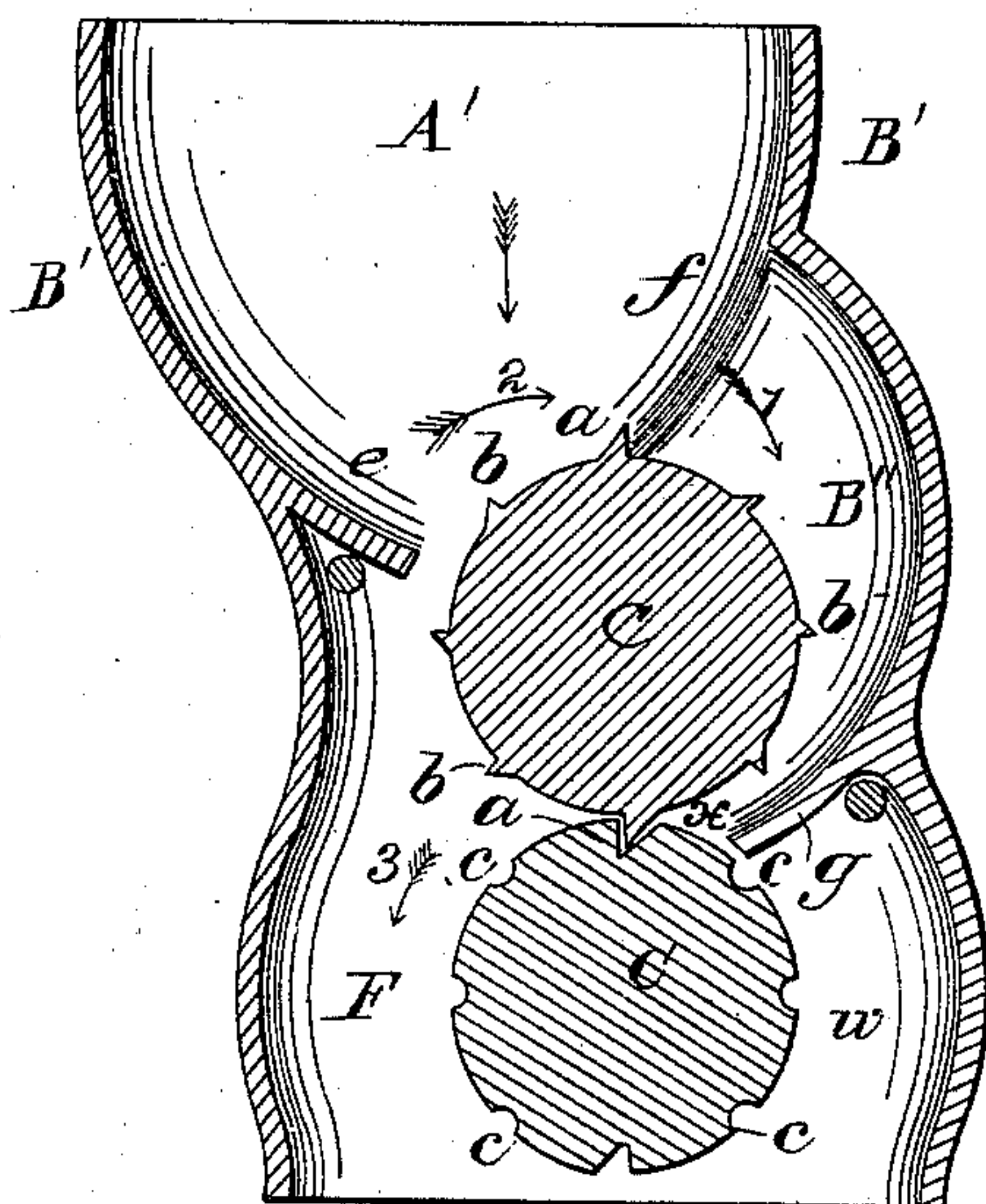
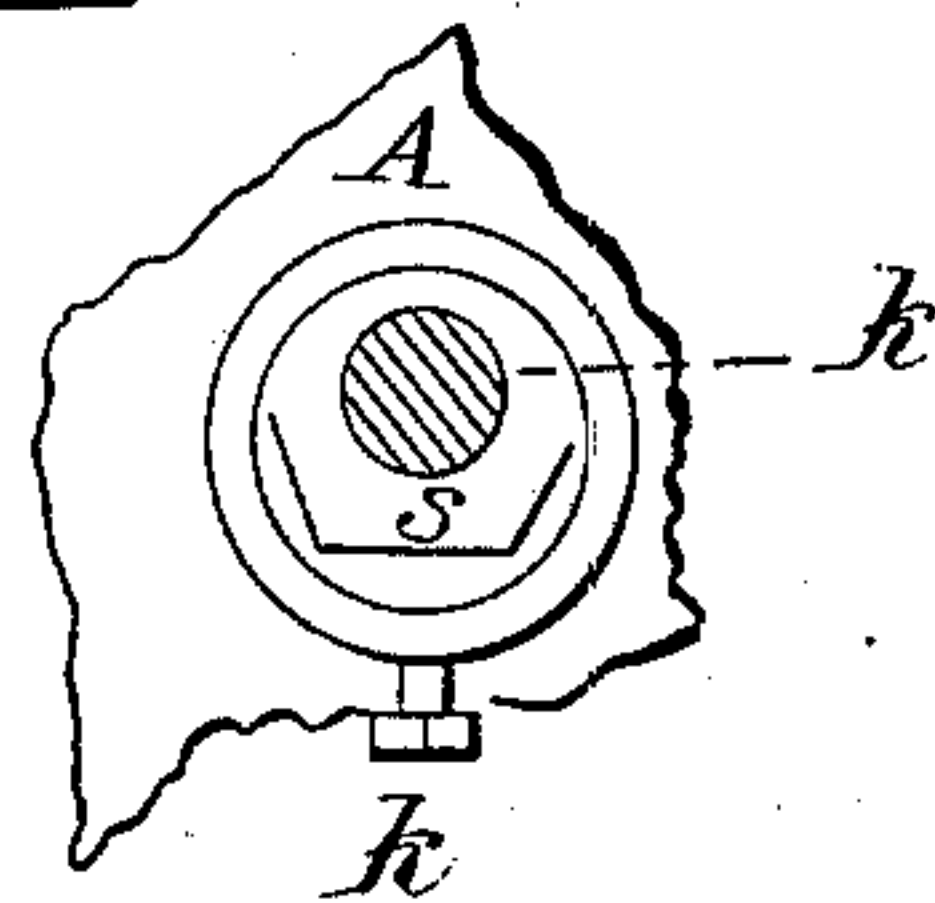


CIDER MILL.

Patented Jan. 11, 1870.

Fig. 3.



E. L. Greenough
Saml. C. Greenough

W. S. Garrison
by John M. Giedersheim
att'y

UNITED STATES PATENT OFFICE.

O. S. GARRETSON, OF BUFFALO, NEW YORK.

IMPROVEMENT IN CIDER-MILLS.

Specification forming part of Letters Patent No. 98,757, dated January 11, 1870.

To all whom it may concern:

Be it known that I, O. S. GARRETSON, of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Cider-Mills; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end view of the device illustrative of my invention. Fig. 2 is a central longitudinal section. Fig. 3 is a detached view.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in forming the casing of a cider-mill of cast metal, so as to constitute the hopper, feed and crushing throat, and bearing for the rollers and discharge-passage.

It also consists in the peculiar location of the curved feed and crushing throat.

It also consists in constructing the rollers with cutters and feeders.

It finally consists in means for adjusting the rollers, the same consisting in bushings, which are mounted in projections cast with the casing, and said bushings have eccentric openings, in which the shafts of the rollers are journaled. With these bushings squares are cast, whereby the adjustment is readily performed by key-wrench or other tool, which shall engage with the squares of said bushings.

In the drawings, A represents the casing, which is constructed of cast metal, and consists of a hopper, A' B', a curved throat, B'', and a discharge-passage, E.

It will be seen that the casing is made of two corresponding parts, each of which constitutes half of the hopper, throat, and the walls of the discharge-passage, which are continuous of each other and cast in one piece, so that when the two parts are together the casing is complete, and is entirely constructed of metal.

With the casing A, there are cast bosses *v*, which project from opposite sides of the casing, and form the bearings for the rollers C C. These rollers are arranged horizontally,

one above the other, and located near to one end of casing, or, in other words, out of the central line thereof.

e represents a flange, which is cast with the wall of the casing, constituting one side of the hopper, and extends into the casing toward the roller C, but below the top thereof. This extended flange serves to increase the depth of the hopper, and assists in producing a uniform feed to the roller, as will be hereinafter explained.

g represents a flange, which is cast with the curved throat B'', and extends into the casing below the upper roller, and to such a point that it will almost touch the lower roller, and it is near this point that the two rollers come in contact. The upper roller has on its periphery a series of cutters, *b*, which are of triangular form, and has also two or more feeders, *a a*, which correspond in form with the cutters *b*, but of larger dimensions. A series of notches or grooves, *c c*, are formed on the periphery of the lower roller, C, and are adapted to receive the feeders and cutters of the upper roller.

The apples or other material are thrown in the hopper, and power is communicated to the rollers, and then the operation commences. The tendency of the fruit is in the direction of the arrow 1, owing to the flaring mouth *f* between the hopper portion and the curved throat; but as it is evident that at the moment that the apples become pressed against each other they will seek to escape upward, the weight of those above the point *f* would not be sufficient to prevent said upward escape; but the remedy arrives from the direction of arrow 2. The apples that rest on the flange *e* are carried over continuously toward arrow 1 and join the apples at the point *f*, and thus check any upward tendency. In this operation the feeders *a*, which are arranged at opposite points of the roller C, perform an important part. They arrive in the hopper at every half-revolution of the roller, and assist in giving a fresh impulse to the fruit in the curved throat. As the fruit is forced down said throat it is gradually cut and broken, and becomes fine or pulp at the point *x*, where it is delivered on the lower roll, and thus passed between the two rollers, subjected to their final

crushing pressing action, and then is discharged in the direction of arrow 3.

It will be noticed that the feed is continuous and uniform, and while the fruit is being directed toward the rollers is gradually crushed before reaching the rollers. The curved throat therefore not only guides the fruit, but forms a bed against which the fruit is jammed and reduced to pulp. There is no escape whatsoever for the fruit, not even in the space *w*, for the flange *g* delivers the fruit uniformly on the roller C, which certainly will carry it between the rollers.

It will be perceived that the fruit is carried through a continuous channel, commencing at the top of the casing and ending at the bottom thereof.

In order to adjust the rollers relatively to the required distance between their surfaces, and to compensate for their wear, I mount within each of the upper or lower bosses *v* a rotating bushing, *k*. (See Fig. 3.) Eccentric openings are made in said bushings, in which openings the rollers are journaled.

To operate the bushings, there is cast with them squared heads *s*, which project beyond the bosses, whereby a key or wrench may readily grasp the squares, and thus bring the upper or lower roller nearer to or farther from the roller, which will be stationary. When the adjustment is made, the bushings are held in place by set-screws *t*, which pass through the bosses *v*.

The shaft of the lower roller is extended beyond the square head of its bushings, and has there connected to it a toothed wheel, which gears with a similar wheel on the shaft of the upper wheel, to which shaft is also connected

a crank-wheel and handle for transmitting the necessary power to the rollers.

For the purpose of lubricating, I form openings *l* in the upper bosses, and likewise in the squared heads of the bushings, and thus introduce the lubricant to the journals.

A simple and practical device is produced, and one in which there is designed to be no wood-work.

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

1. The casing for cider-mills consisting of the hopper A' B', guiding and pulping throat B'', and walls of discharge-passage F, cast together, and adapted as and for the purpose described.

2. The flange *g*, continued from the curved throat B'' and extended toward the periphery of the lower roller, and arranged to operate together in relation to the upper roller, substantially as and for the purpose described.

3. The roller C, provided with a series of cutters and feeders, in combination with the hopper extended below the top of said roller, and with the curved throat communicating with said hopper, substantially as and for the purpose described.

4. The squared heads *s*, cast with the eccentric bushings, and projecting beyond the bosses *v*, as and for the purpose described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

O. S. GARRETSON.

Witnesses:

J. R. DRAKE,

C. N. WOODWARD.