(No Model.)

A. ZOLLER.

HOP SEPARATOR.

No. 303,200. Patented Aug. 5, 1884.

Fig. 1.

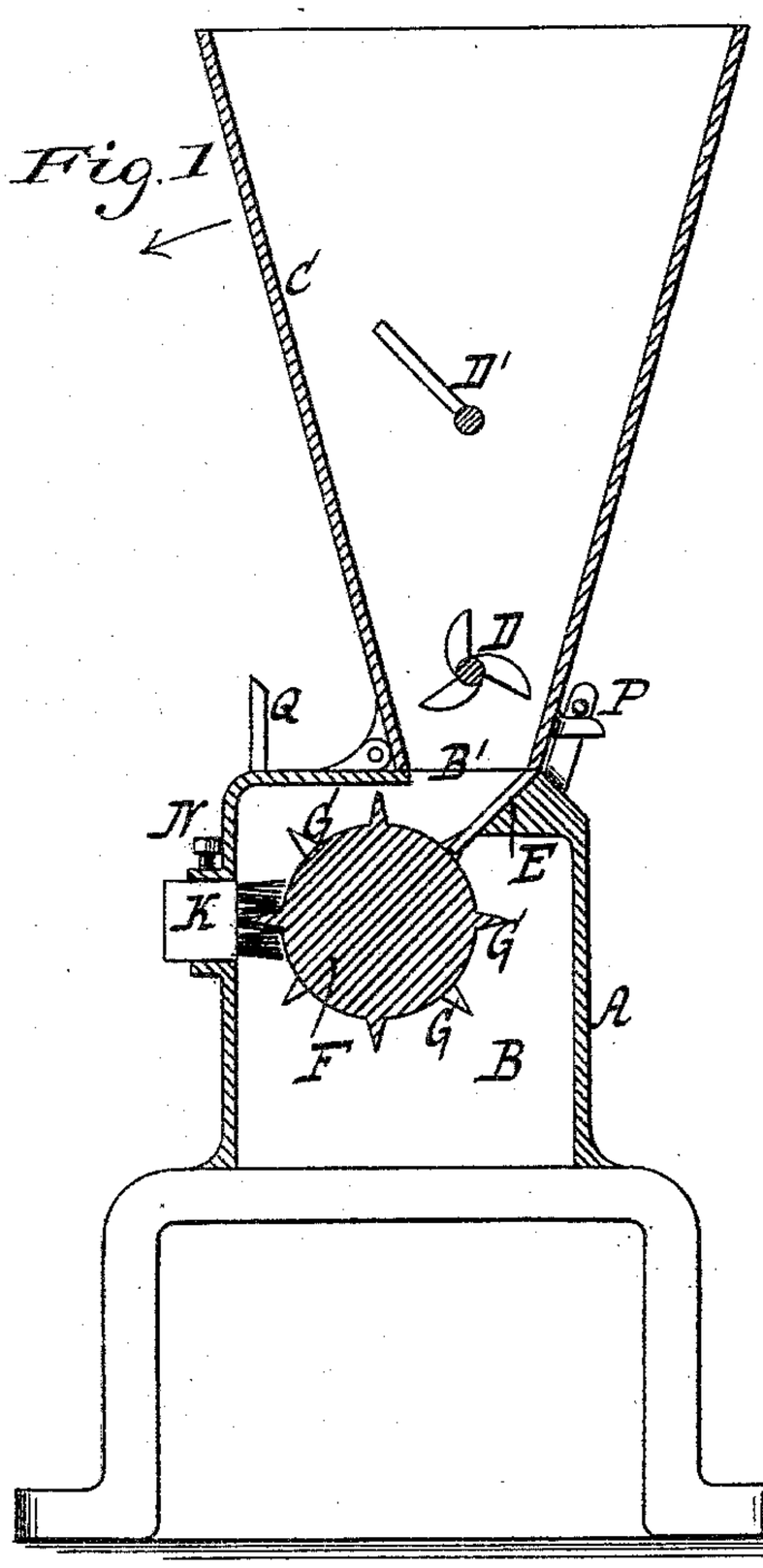


Fig. 2.

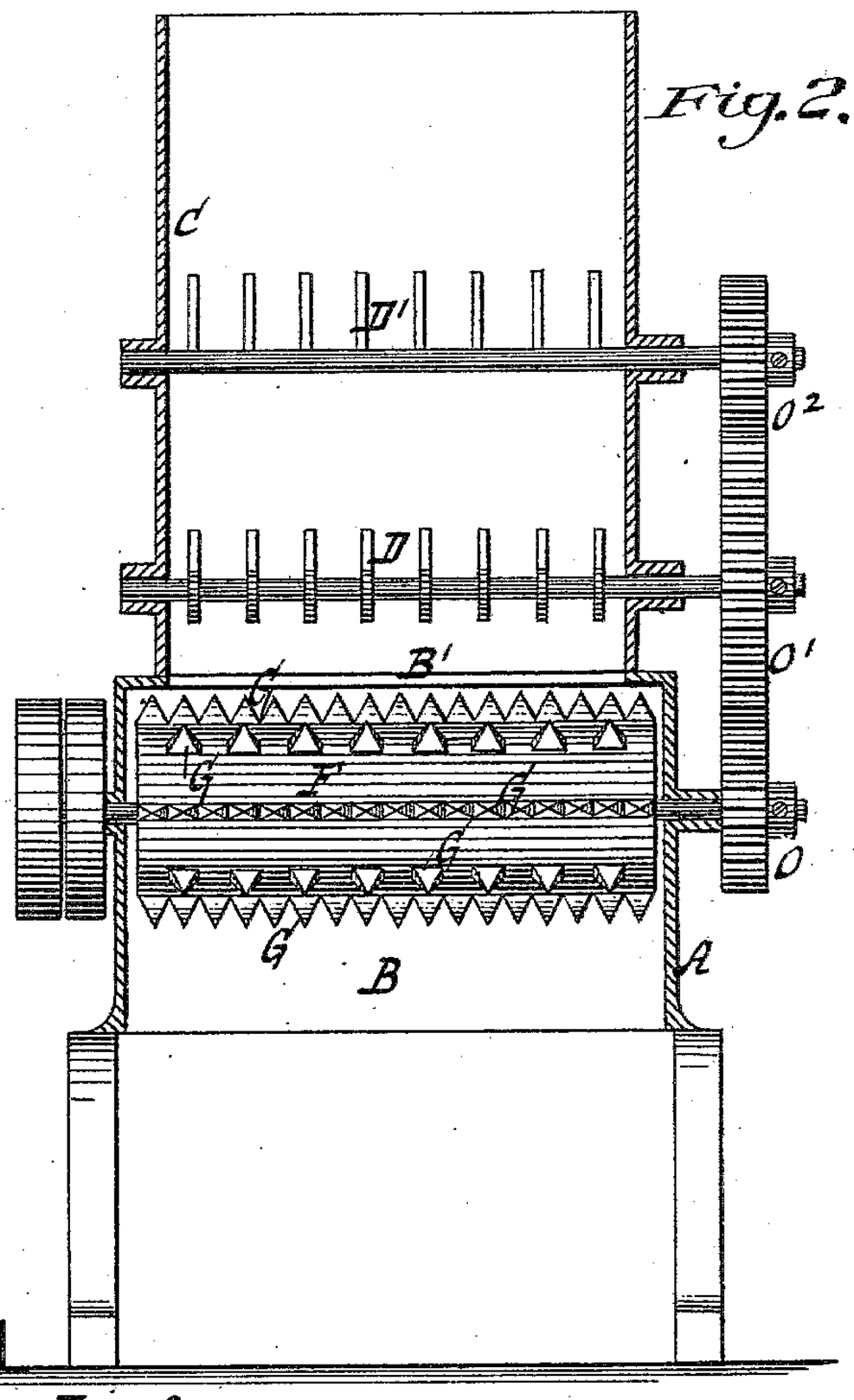
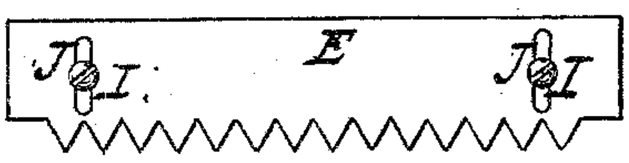
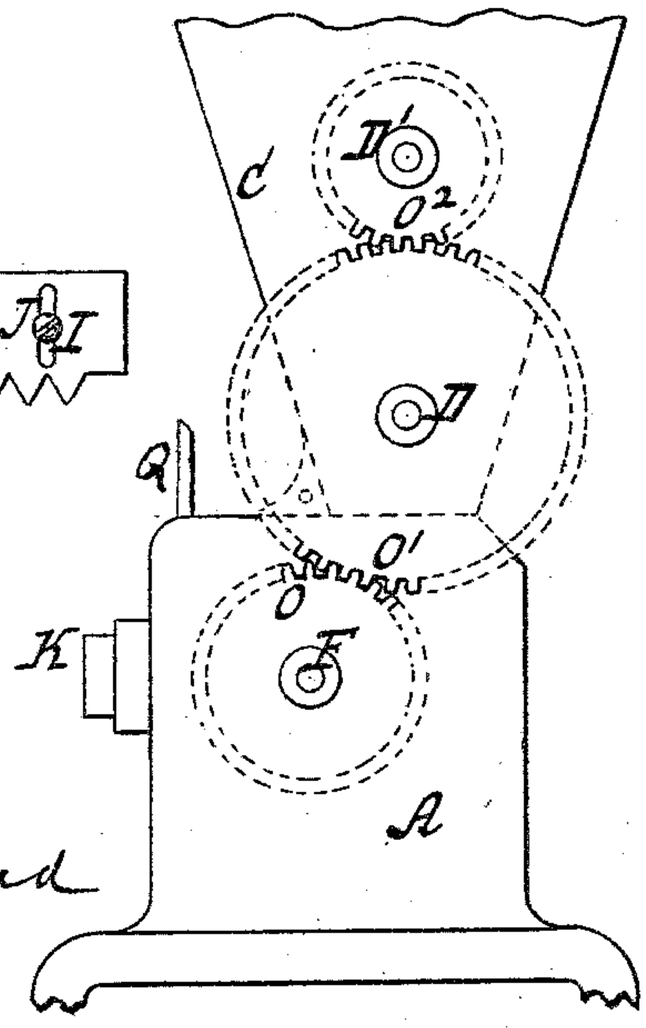


Fig. 3.

Fig. 4.





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HOP-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 303,200, dated August 5, 1884.

Application filed April 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ZOLLER, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Hop-Separators, of which the following is a specification.

This invention relates to apparatus for separating from each other the cohering scales of hops, preparatory to using the latter in the manufacture of beer; and it consists in the novel features of construction hereinafter described, whereby an apparatus of superior utility is obtained.

In the accompanying drawings, Figure 1 is a cross-section of an apparatus embodying my invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a side view of the same. Fig. 4 is a detail view of parts.

Similar letters indicate similar parts.

The letter A designates a shell of cast-iron or other suitable material, forming a chamber, B, in which the separating operation is performed, this chamber having an inlet-opening, B′, in the top, and being left open at the bottom for discharging the hop-scales. On the top of the shell A, and supported thereby, is a hopper, C, which communicates with the separating-chamber B through its inlet-opening, and in which are arranged agitators D D′, to receive a revolving motion, so that when the hopper is supplied with hops these agitators act thereon with a tendency to disintegrate the mass, thereby facilitating the separation of the hop-scales, as presently explained. The agitators D consist of shafts carrying radial arms or beaters, and in the example shown two agitators are used, both occupying a horizontal position. The number of the agitators, however, may be varied, and, if desirable, they may be placed in a vertical position or in an inclined position. The inlet-opening B′ is formed in the top wall of the shell, and such shell is formed at the inlet-opening with an inclined seat or bearing, to which is attached a comb, E, so that the latter depends into the chamber B, formed by the shell. Below the comb and within the shell is arranged a revolving cylinder, F, having teeth G, which alternate with the teeth of the comb, so that in the motion of this cylinder its teeth pass between the comb-teeth, the comb extending from one edge of the inlet-opening on an inclined plane toward the cylinder, and consequently the hops discharging from the hopper are exposed to the triturating action of the teeth, whereby the cohering scales are effectually separated from each other. To permit of compensating for wear of the teeth, either of the comb or the cylinder, the comb is made adjustable in relation to the cylinder by means of slots I and screws J, passing through the slots to fasten the comb to the proper support.

In one of the vertical side walls of the shell A is arranged a brush, K, which acts on the cylinder F with a tendency to clean its teeth, and thus prevent clogging, the acting surface of this brush being preferably composed of wire, and it being fastened by means of a set-screw, N, to render it adjustable.

The agitators D D′ are geared together and to the cylinder by means of cog-wheels O O′ O^2, which are fixed to the agitator-shafts and cylinder-shaft, respectively, so that a motion imparted to either shaft is transmitted to the other or remaining shafts.

In order to afford access to the comb E and concomitants, the hopper C is hinged to the shell A on the edge opposite to the comb, so that it may be tilted in the direction of the arrow shown in Fig. 1, to expose the inlet-opening B′ of the separating-chamber, the hopper being provided on the opposite edge with a fastening device consisting in this example of a linch-pin, P, for holding it in a normal position. A brace, Q, serves to support the hopper in its tilted position. When the hopper is tilted, as stated, the cog-wheel Q′ of the agitator D is thrown out of gear, while when the hopper is returned to a normal position such wheel is again brought into gear, thus preserving the proper relation to its fellow wheel.

This machine is intended particularly for separating hop-scales which have been compressed for transportation; but it is evident that it may be used for separating the scales from the flowers or catkins.

If desirable, a shaking motion may be imparted to the hopper.

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

1. The combination of the shell A, having a

top wall provided with the inlet-opening B′, having an inclined seat, the comb E, secured on said seat to depend below the top walls of the shell, the toothed rotary cylinder F below the comb, the brush K, secured to one of the vertical side walls of the shell, the hopper C, supported on the top wall of the shell, the rotating agitator in the hopper, and gearing connecting the cylinder with the agitator, substantially as described.

2. The combination of the shell A, having a top wall provided with the inlet-opening B′, having an inclined seat, the comb E, adjustably secured on said seat, the toothed cylinder F below the comb, the hopper supported by the top wall of the shell, and the rotating agitator in the hopper, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALBERT ZOLLER.

Witnesses:
W. HAUFF,
CHAS. WAHLERS.