

F. Stamm,

Bar Mill.

No. 111,397.

Patented Jan. 31. 1871

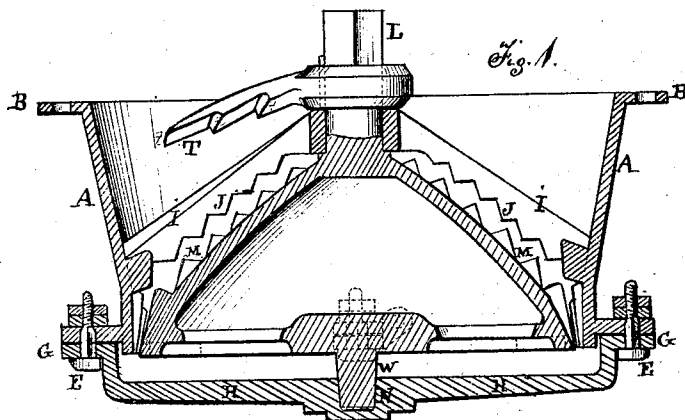


Fig. 2.

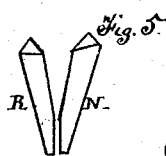
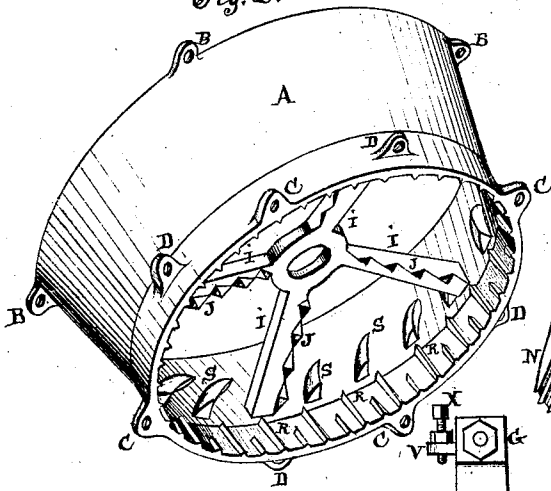


Fig. 3.

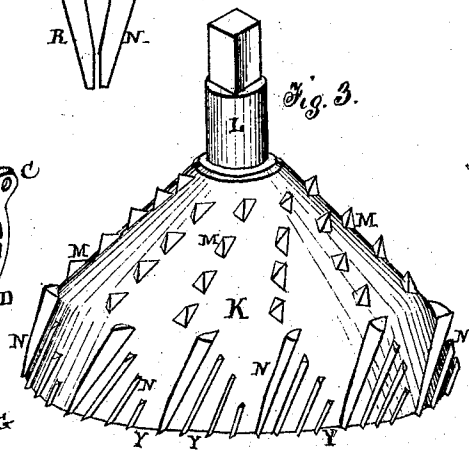
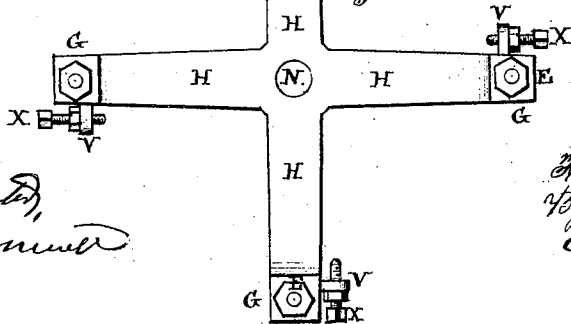


Fig. 4.



Witnesses -
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FREDERICK STAMM, OF EAST LAMPETER, PENNSYLVANIA.

Letters Patent No. 111,397, dated January 31, 1871.

IMPROVEMENT IN BARK-MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, FREDERICK STAMM, of East Lampeter, Lancaster county, State of Pennsylvania, have invented certain Improvements in Bark-Mills; and I do hereby declare the following to be an exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction of the shell, having inclined arms cast solid on the inside of the shell, united centrally in an open or annular head, forming a bearing for the shaft of the runner and crushers independently of the peculiar and novel breaker keyed to the shaft, together with the central dished step, with beveled sides, to receive the tapered gudgeon of the runner, which is adjustable vertically and laterally to centralize the runner; also, the construction of the crushing and grinding teeth.

Figure 1 represents a vertical section of the shell, runner, crushing, and grinding-teeth, and breaker at top.

Figure 2 shows a perspective view of the shell with its central arms.

Figure 3 is a perspective view of the conical runner with its teeth.

Figure 4 represents the cross-bars constituting the adjustable step.

Figure 5 shows the angles of the cutting edges of the lower teeth on the shell and runner.

To enable others skilled in the art to make and use my invention, I will proceed to describe it as follows:

The object of my invention is the perfect adjustment of the mill, so that the breaking, crushing, and grinding operation is regular, preventing the escape of coarse pieces of bark, or the clogging or gumming of the mill.

The shell A is provided with lugs BB above, perforated for attaching a hopper, also similar lugs CC below, to secure the mill to a proper frame-work at four sides, and intermediate with the lugs C are four lugs D D, with holes to receive the stem of the adjusting bolts B E, that are secured by pairs of jam-nuts to the upright flanged ends G G of the cross-bars H H. In the center of the arms H is the dished step N.

The four arms I I, shown, are a part of the shell, and are provided with triangular teeth J J, set inclined on the lower sides of the arms, so as to be parallel with the conical side of the runner K, the shaft L of which has its bearing in the union P.

This runner K is of the usual conical form above, but is provided with a series of about nine rows of teeth M M. These teeth have a vertical triangular

face and a triangular base, so arranged, somewhat spirally, that each succeeding tooth is slightly in advance of the other, in order to bring them into action in quick succession.

The base of the cone is slightly tapered downward from the cone, and is provided with a series of graduated oblique grinding-teeth N N, the shortest starting from the edge of the base, and inclined, say, at an angle of thirty degrees, so that the front and longest tooth is in the lead and extends upward onto the cone.

In a full-sized machine the cutting edges of these lower teeth N are beveled for about the distance of an inch vertically, and parallel to and in close connection with the lower ends of the grinding-teeth R, on the inner surface of the shell, as shown at fig. 5.

Above the grinding-teeth of the lower series of teeth are crushers S S, on the shell.

The breaker T is keyed to and revolves with the shaft L over the fixed and stationary arms I, and the cutting-edge sections of the breaker T operate shear-fashion, and prepare the bark for the crushing action of the teeth J and M, on the lower sides of arms I, and upper side of runner K, and crushers S of the shell A, successively reducing the bark for the final action of the grinding-teeth N and R to the quality desired.

The edges of the lower grinding-teeth N and R project outward at their tops, and are tapered to within an inch of their lower ends, where they are beveled parallel to each other, as shown at fig. 5, for the purpose of more thoroughly and easily grinding the bark, while the difference of the angles of the cutting-edges of the teeth and the spaces Y Y, between each one of the grinding-teeth, allows those portions of the bark, sufficiently reduced, to pass through without being retained and unduly pulverized, and effectually prevents the clogging or gumming of the mill, as is the case in the ordinary arrangement of teeth close together, and enables the mill to be closely adjusted to prevent the escape of coarse pieces of bark.

The cross-arms H, with their central-closed step N, shown at figs. 4 and 1, have their four ends turned up vertically, then horizontally, at right angles G, with square holes, and side lugs V perforated with a female screw for the lateral adjustment to centralize the runner K with its gudgeon W, that is slightly tapering at its base, to adjust itself, in wear, with the inclined sides of the step N.

The square-headed adjusting-screws X X are held by jam-nuts, and the screws are operated against the outside of the shell A to produce the central adjustment.

The step is vertically adjusted by the suspending

bolts E E. By this twofold adjustment the teeth of the runner and those of the shell are completely prevented from scutching or grinding each other.

Other advantages of my invention are the step-box N in the cross-bar H, and the mode of adjusting laterally; also, the crushing-arms I, four, more or less, as connected solid with the shell A, are so strong and centrally united as to be a firm support to preserve the vertical position of the shaft L.

The manner of arranging the teeth S and R on the shell, as shown at fig. 2, and the graduated and angular teeth M and N on the runner K, and the beveled and toothed-breaker C operating in conjunction with the inclined and toothed-arms I, producing a regular, unfailing, breaking, crushing, and grinding result.

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

1. The conical runner K, provided with the triangular teeth M, and graduated tapering grinding-teeth

N, all constructed and arranged as shown and described, for the purpose set forth.

2. The shell A, provided with the tangential graduated teeth S, radial tapering teeth R, and arms I, provided with teeth J, all constructed and arranged as shown, for the purposes described.

3. The combination and arrangement of the shell A and runner K, constructed as described, with the breaker T, provided with shear-teeth t, and the cross-bars H, all constructed substantially as shown and described, for the purposes herein set forth.

4. The cross-bars H, with their ends G and lug V, and adjusting screws E and X, for adjusting the runner K vertically and laterally, as herein described.

5. The construction of the breaker T, attached to the shaft L, as herein described, and for the purpose set forth.

Witnesses:

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F. STAMM.