(No Model.)

J. B. CARTER.

RUBBING SURFACE FOR PULP REDUCING MACHINES.

No. 482,619. Patented Sept. 13, 1892.

FIG. 1.

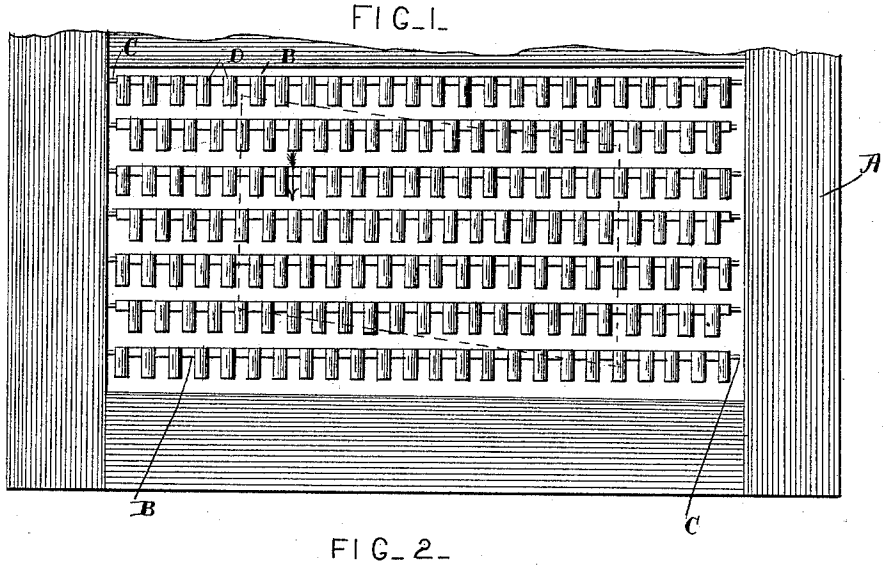


FIG. 2.

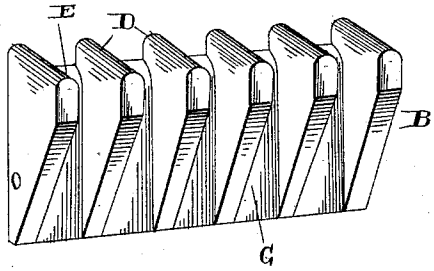
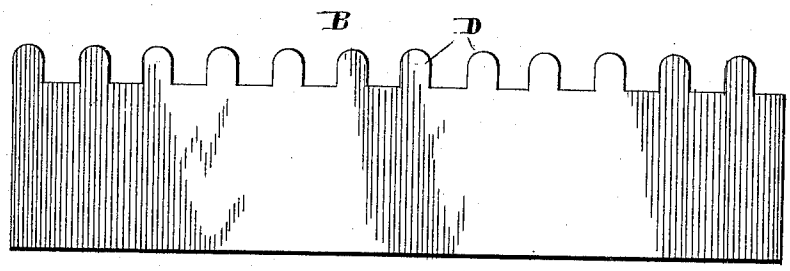


FIG. 3.



WITNESSES.

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RUBBING-SURFACE FOR PULP-REDUCING MACHINES.

SPECIFICATION forming part of Letters Patent No. 482,619, dated September 13, 1892.

Application filed June 20, 1891. Serial No. 396,921. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. CARTER, of Kokomo, in the county of Howard and State of Indiana, have invented certain new and useful Improvements in Rubbing-Surfaces for Pulp-Reducing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in an apparatus for reducing pulp, which will be fully described hereinafter, and particularly referred to in the claims.

The object of this invention is to construct a rubbing-surface which reduces the wood to a fine fiber by a pulling or rubbing rather than a cutting process, as is common in pulp-reducing machines heretofore produced.

In the drawings, Figure 1 is a plan view of a rubbing-surface which embodies my improvement. Fig. 2 is a perspective view of one of the bars alone. Fig. 3 is an enlarged side view of one of the bars, looking in the direction indicated by arrow in Fig. 1.

A indicates a frame, which is preferably rectangular in shape, but which may be of any other shape desired. The rubbing-bars B, which are provided with the transverse rubbing projections D, are secured in the frame A by means of the rods C, which pass through the bars D and into the frame A, as illustrated. The upper edges of these rubbing-surfaces D are made rounded and smooth on their tops, as shown. When the smooth rounded upper edges of the teeth D are pressed tightly down upon the stock, they bury themselves in the surface of the wood, which causes the fiber to stick thereto, which removes the fine filaments of the fiber by a rubbing or pulling action. These bars B are formed, as shown in Fig. 2, by cutting notches in one edge of the bar, as shown at E, and then cutting out between the teeth or projections D, which forms a straight surface G between the teeth. The opposite edges of the teeth from the surface or wall G are cut inward at an angle, as shown, which offers less obstruction to the passage of the fiber than if they were left straight, as a larger space is formed between the teeth of the adjacent bars, and which prevents all clogging or lodging of the reduced fiber. The teeth on the several bars are placed so that they alternate—that is to say, the teeth upon one bar are opposite the recesses which are cut between the teeth in the adjacent bar or bars. The feed-box is set at a slight angle to the length of the rubbing-bars, as shown in dotted lines in Fig. 1, and which angle is such that the stock in the feed-box and the feed-box itself angles across one bar about every foot in length of the feed-box. By this I mean that if the reciprocating movement or stroke of the machine is one foot then I place the feed-box so that the stock will angle across one bar for every foot the feed-box is long. This is done to cause the wood to rub off alike and to cut out the space between the reducing-bars. By rubbing the wood substantially with the grain I am enabled to produce a much longer and finer fiber. The stock is placed in the feed-box over the rubbing-surface and is held down upon the rubbing-surface by means of a screw-feed similar to a milling-machine feed, so that the wood or stock is pressed tight to the rubbing-bar, and the fiber is pulled out of the wood in a line with its grain, which produces a superior fiber as compared to the ordinary way of rubbing it off across the grain.

Having thus described my invention, I claim—

1. A rubbing-surface for pulp-reducing machines, consisting of bars having transverse rubbing surfaces or teeth, substantially as described.

2. A rubbing-surface for pulp-reducing machines, consisting of bars having transverse rubbing-surfaces, which are slightly rounded on their upper edges, substantially as specified.

3. A rubbing-surface for pulp-reducing machines, consisting of bars having transverse rubbing-surfaces and recesses between the rubbing-surfaces, substantially as specified.

4. A rubbing-surface for pulp-reducing machines, consisting of a series of parallel bars separated a suitable distance and each having transverse rubbing projections, substantially as described.

5. A rubbing-surface for pulp-reducing machines, consisting of a series of parallel bars separated a suitable distance and each having transverse rubbing-surfaces, the rubbing-surfaces of the bars alternating, as described, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. CARTER.

Witnesses:
H. M. COOPER,
C. E. MIDDLETON.