

H. Monroes.

IMPROVED

WASHING & BLEACHING MACHINE FOR PAPER STOCK

116338

PATENTED JUN 27 1871

FIG 2

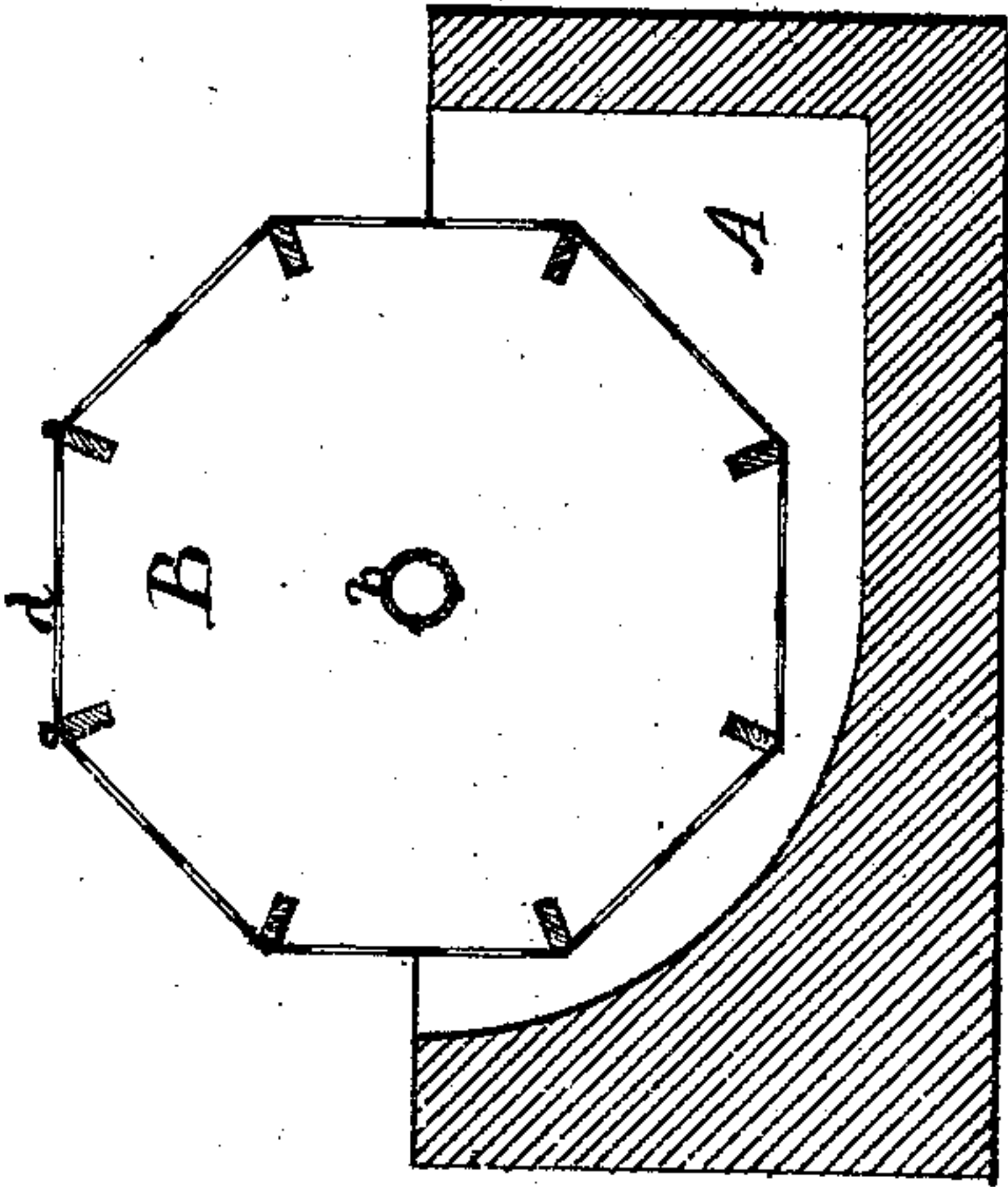


FIG 1

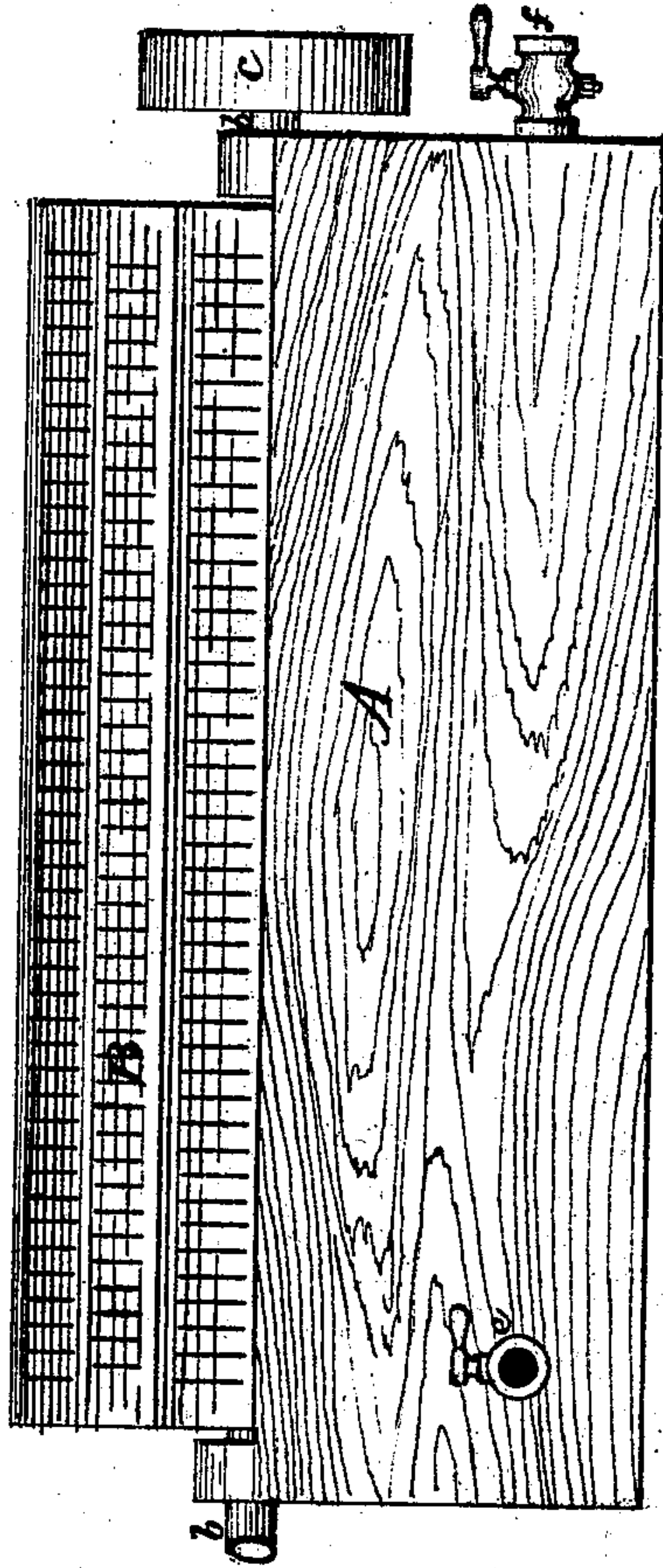


FIG 3



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HENRY MONROE, OF BALDWINVILLE, NEW YORK.

IMPROVEMENT IN MACHINES FOR WASHING AND BLEACHING PAPER-STOCK.

Specification forming part of Letters Patent No. 116,338, dated June 27, 1871.

To all whom it may concern:

Be it known that I, HENRY MONROE, of Baldwinville, in the county of Onondaga and State of New York, have invented certain Improvements in Washing and Bleaching Paper-Stock, the process being especially advantageous in using straw-stock, but applicable also to other paper-stock; the following is a specification thereof:

Heretofore the usual method of preparing paper-stock for the beating-engine, in the process of making paper, has been to cut and boil the stock in a rotary boiler or bleacher. It is then emptied into a chest to drain, after which it is put into a washing-engine and washed until it is prepared for bleaching. During the washing the stock rises in foam, and is constantly liable to run over and waste. To prevent this oil is used in considerable quantities, at great cost, as it is washed away and wasted. The stock is then emptied into the soakers or drainers, and is then put into the bleaching-engine and treated with the bleaching liquid. It is then again emptied into the drainers, washed and drained, and then goes to the beating-engine, where it is pulped for making paper.

The nature and object of my improvement are to cheapen and facilitate the processes, simplify the manufacture, and save material. To do this I proceed as follows: The stock is first cut and boiled or treated as in the old method; it is then conveyed from the boiler into a new apparatus, which I have devised for the purpose of completing the washing and bleaching with greater facility and economy without handling, to perfect its preparation for the beater.

This apparatus is shown in the accompanying drawing, in which Figure 1 is a side elevation. Fig. 2 is a cross-section. Fig. 3 shows the hollow axis detached.

The same letters of reference are used to designate like parts in all the figures.

A represents an oblong trough or reservoir, one side and both ends of which I make vertical, and the other side inclined in a curve, as clearly shown in Fig. 2; or it can be otherwise formed, although this is convenient. At the two ends of the reservoir I affix journal-bearings and caps *a*, in which the hollow shaft *b* of a revolving washer, B, rests and revolves. On the closed end of this shaft *b*, outside the reservoir A, I put a driving-pulley, *c*, and within the trough is the washer B, extending nearly from end to end

thereof. This is a prism or cylinder in its outline, composed of two heads affixed to the hollow shaft *b*, with bars reaching from one head to the other at fixed intervals. The whole surface is then formed with perforated metal, one section, *d*, of which is made to open to receive and discharge its contents. The hollow shaft or axis *b* is perforated with small holes its whole length within the washer, as clearly shown in Fig. 3. The end opposite that on which the pulley is shown is coupled with two pipes by an ordinary packed coupling that allows the shaft to revolve. One of the pipes connects with an elevated water-reservoir, the other with a reservoir containing bleaching liquid, both being furnished with stop-cocks to open or close a communication with the hollow shaft *b* at will.

The stock from the boiler is put into the washer through the opened door-way or section *d*, which is then closed and the washer set in motion. Water is then let in from the reservoir above named, through the hollow shaft *b*, which runs through the stock in the washer, until it fills the trough A to the top and flows over; or it may be drawn off through an opening near the top and conveyed in a pipe to any convenient point of discharge. When the material is sufficiently washed, which is done without danger of any escape or waste of the stock, and without the necessity or expense of the use of oil, the water is drained off through a pipe, *e*, the supply-water having been stopped, and the bleaching liquid is then let on through the hollow shaft *b* in the same way as the water aforesaid, until the reservoir A is filled. The washer B is then revolved in this bath until this part of the process is completed, when the bleaching liquid is pumped back into its reservoir through a pipe attached at *f*, after which the stock has the bleaching liquid washed out of it by a current of water again let on, and it is then let out of the washer, and, when drained, it is ready for the beating-engine.

I claim as my invention—

1. The washer B and reservoir A for washing and bleaching paper-stock, constructed and arranged substantially as and for the purposes set forth.

2. The process of washing and bleaching paper-stock, substantially in the manner and for the purposes specified.

Witnesses:

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