

# SCIENTIFIC AMERICAN

[Entered at the Post Office of New York, N. Y., as Second Class Matter.]

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

Vol. XLV.—No. 7.  
[NEW SERIES.]

NEW YORK, AUGUST 13, 1881.

[\$3.20 per Annum.  
[POSTAGE PREPAID.]

## IMPROVED BAND LOG SAW MILLS.

The gradual yet rapid depletion of the American forest and lumber regions the past few years, the increase in consumption of nearly every kind of lumber into the thousand and one articles into which it is so cheaply and easily converted, has led to a growing scarcity and very material increase in price of nearly every variety of hard and soft wood lumber, especially that used in coach, cabinet, car, and house-building purposes.

To supply the enormous and growing demand, large shipments and importations of mahogany, ebony, red and white woods, and white and yellow pines, are constantly being made from South America, Mexico, Canada, and California. It is said that the single article of black walnut lumber, which twenty-five years ago brought only about \$25 per thousand feet at the mills where cut, to-day, in the lumber market, commands from \$75 to \$150 per thousand feet, while in some localities very choice and evenly-sawed lots command still higher prices than these, and in fact is already quite a difficult article to obtain.

This scarcity has become so serious a question that attention has already been turned to the question of devising better means for reducing the logs and deals into boards, and by the use of a thinner saw blade produce a greater per cent of good lumber, and save the enormous kerf wastage, said to be from 15 to 20 per cent in most circular and other mills.

Any machine or tool that will effect such a saving in the making of lumber is a cheap investment at most any price, and especially is it so in the sawing of the fine and higher grades of lumber. The old adage, "the best is the cheapest," is particularly applicable in this case, whether the price be high or low. In these days of improvement, he who would best succeed must have the best. Profits in lumber making, like many other things, seem to go with those having the most approved appliances and best facilities. Particularly true is this in sawing lumber. Here a constant loss either in quality of product or amount of production, according to running expenses, puts the owner at a disad-

vantage as respects more enterprising rivals, and frequently determines the question of his success or failure.

Any one can see at a glance that a few hundred feet more or less a day; a few cents per thousand difference in the expense of production; the effect upon the market value, or even ability to sell at market prices, due to even or uneven sawing, very soon amounts to more than the first cost of the machinery. On the one hand, disappointment and failure; on the other, success and competency follow.

Believing this matter one of no little interest to a large number of our readers, we take pleasure in laying before them an engraving made on the spot by our artist, also a description of a new band log saw mill (both front and rear views) designed for sawing black walnut and other high priced lumber, as it was seen running in one of our Western saw mills.

It is from the establishment of the celebrated American wood machinery builders, Messrs. J. A. Fay & Co., of Cincinnati, O., well known, we think, to most of our readers.

The machine proper, except the carriage, is mounted on a heavy cast iron sole plate which sustains and supports all the operative parts. The operator, without changing his position, has entire control of the mill, and can start or stop it, change the feed, or vary the direction of the carriage at will. It is massive and substantial, wheels 72 inches in diameter, and arranged so the saw can be made to run on any portion of the wheel almost instantly. The guides—upper and lower—are those peculiar to all of the Fay & Co. machines, having a wheel to receive the back thrust of the saw, and lateral supporting side guides or packing plates to suit the thickness of the saws; the upper guide is also so arranged that it can be raised or lowered instantly to any desired size of log, and yet will always remain in a true vertical line with the lower one—a very important feature. The carriage head blocks and set works are the most improved known. The log is set with the greatest ease and convenience, and with unerring accuracy. The set works are arranged to be operated in the most expeditious manner. The carriage runs on friction rolls. The side supports are arranged so as always to

secure an even thickness of the last board. Rests at the same distances apart as the side supports afford a decided advantage over ordinary mills in edging up boards and splitting plank into scantling.

The nearness together of blocks saves any change or moving of head blocks in sawing logs of different lengths. No calculation is required to leave the last board of the desired thickness.

The operator and assistant stand at the sides of the carriage, where logs can be easiest handled, and where the proper set, when slabbing, can be determined. The position of the sawyer has the further advantage of enabling him to cut different grades of lumber in the same log into the most suitable dimensions.

A single improved dog quickly operated holds securely any size of logs until nearly finished. Sliding dogs can be quickly applied to hold the last board without tearing or otherwise injuring the lumber.

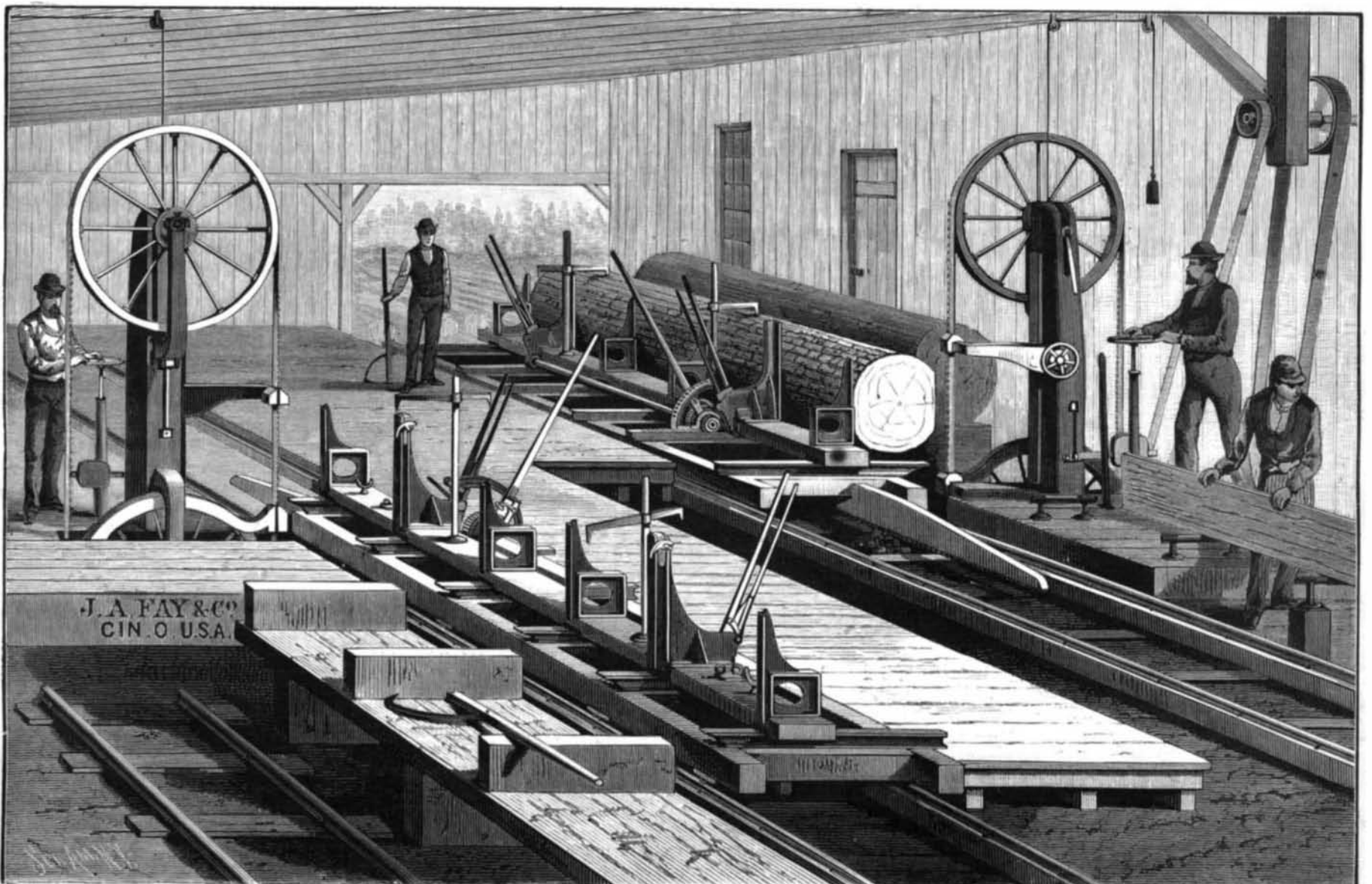
The carriage can be run close to the rear of the mill building. Every part is most thoroughly constructed, and the working parts are all readily accessible. The blade is usually four inches wide and No. 18 gauge, and removes a kerf of one-sixteenth of an inch.

The enormous saving in lumber over other saw mills by this machine we leave to our readers to compute, feeling it will be worth their most careful investigation.

Any further particulars can be had by addressing the makers, Messrs. J. A. Fay & Co., Cincinnati, Ohio.

## Bring Out another Gun.

England has just finished a ram that is supposed to be almost invincible, the United States Government has been trying a torpedo that may blow the ram to pieces, and a Pittsburg man has been experimenting with a new breech-loading rifled cannon of unusual power. That old problem about what would happen if an irresistible force should meet an immovable body will yet be put to the test if inventors go on improving their guns, torpedoes, and armored vessels.—*Philadelphia Ledger.*



J. A. FAY & CO'S BAND LOG SAW MILL.