

wear out in time. Your saws will run better and be a credit to the filer.

I have charge of a mill here with two large bands and two small bands, using ten and six-inch saws. It has run steadily since the 20th of April, with four new saws to the mill. I have not had to make a braze yet, and only had one crack, which I patched in the above way. If any of the readers of *The Woodworker* know of any one that makes a machine for grinding out a crack and putting in a piece or patch, I would be glad to hear from them, with the address of the makers. *The Woodworker*.

A DOUBLE-ACTING BAND SAW.

In the mill of the H. C. Akeley Lumber Company, Minneapolis, Minn., there is in operation a double acting band saw, manufactured by the Edward P. Allis Company, and of which an illustration is given herewith. It is claimed that the saw has given entire satisfaction, and has a capacity greater than any single saw ever operated.

The following particulars of the invention will no doubt be read with interest by lumbermen in Canada:

To the ordinary observer the mill does not look any different from the ordinary band mill, with the exception that the saw has teeth on both sides, but there is a material difference that appears when the mill is running. Some considerable changes were made in the mill to receive this double saw. E. E. Fitzgerald, salesman for the E. P. Allis Co., some time ago worked out a scheme for the raising and lowering of the whole mechanism of a band mill. His idea in this was to do away with the guide that has been necessary for the saw, and by bringing the upper wheel down close to the log, to make the saw more rigid at that point. Heretofore objections have been raised to the band saw for the reason that it could not be made rigid enough to get the amount of speed out of it that was wanted. The whole mill is raised by hydraulic power, operated by means of a lever near the sawyer, and pulleys and a weight that nearly balance the mill.

The live rolls have been extended back through the saw and along the lower edge of the log deck, and to keep the logs off them on their way to the carriage, there are built extended arms to the log loaders that reach out over the rolls to the carriage. The position of the setter on the carriage has been moved to the other end, so that he can see the sawyer when he starts on a back trip. On the other side of the saw an arrangement has been devised by means of which the log, after it has been slabbled for the gang saw, can be canted off the carriage and carried to the gang, while the last board cut is carried along under it on the live rolls.

The saws that are used on this mill differ from the ordinary band saws in that they are double edged. They are fourteen inches wide and have teeth on both sides. Another machine that has been made necessary in the mill by the introduction of the double edged band, is a filing machine built specially for it, and which will file both sides of the new saw at once.

This double acting band mill is made to move on three vertical slides that are mounted in the center of a large base plate. The upper ends of the slides are supported in a heavy column, the lower ends of same supported by an independent plate that is bolted to frame work in foundation. By supporting the slides at the top and bottom ends as well as in the center, a very rigid construction for the support of the band mill is secured.

The machine is lowered by gravity and is raised by a hydraulic cylinder located under same. The hydraulic cylinder is supplied with pressure by taking water from the boilers below the water line at boiler pressure, or if used in a water mill by an independent pump. The band mill is counterweighted to within two thousand pounds of a balance, so that a comparatively small cylinder does the work rapidly and with ease.

The advantage of this machine over others is claimed to be that it moves the entire mechanism carrying the wheels up and down so as to bring the point where the saw leaves the upper wheel as close to the top of the different sized logs as possible. The object in this is to get a short, rigid blade, to keep the saw above the cut as short as possible at all times, and to keep the surplus length of blade below the log instead of on top, as with

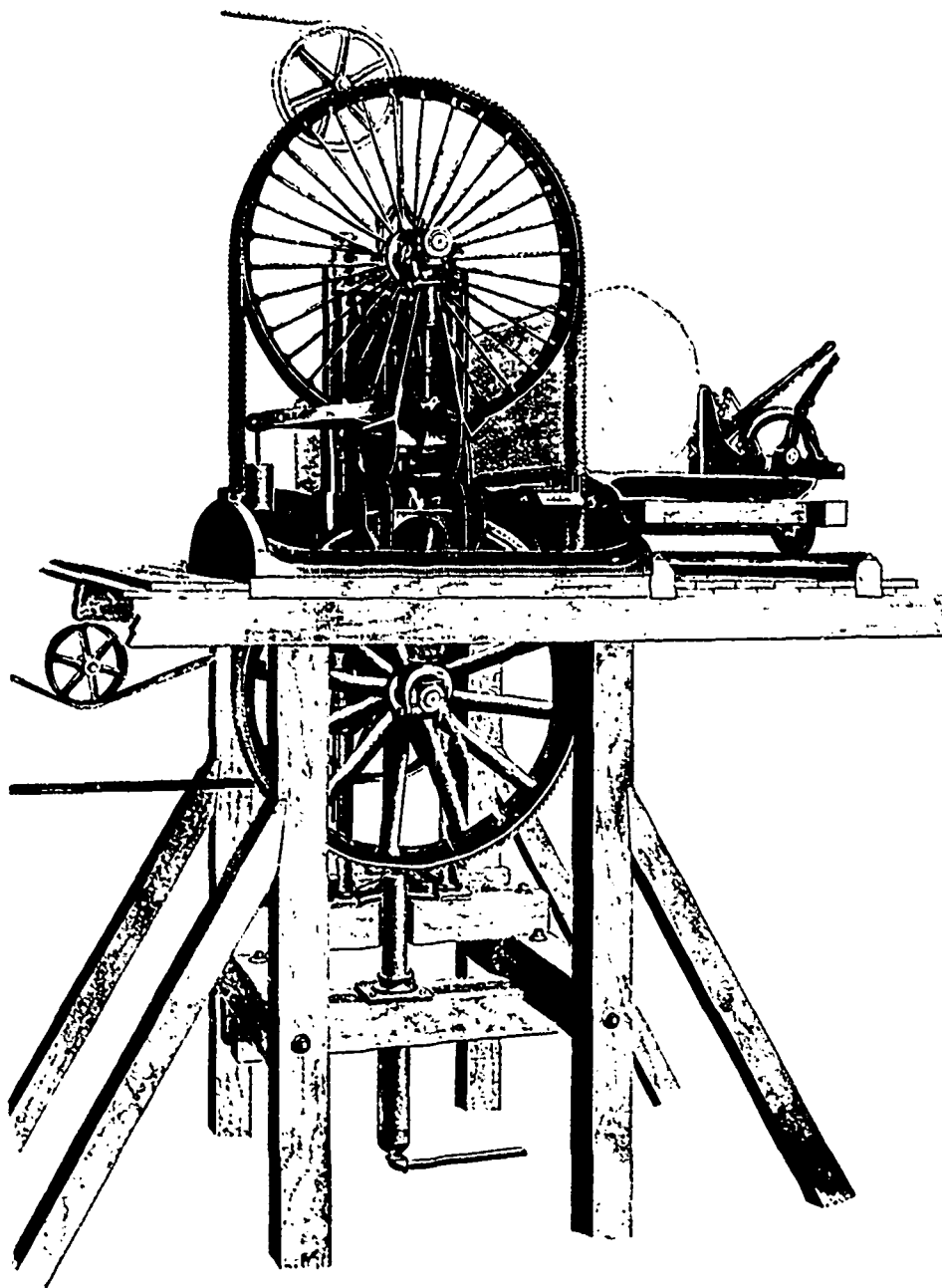
the ordinary mill. By lowering the mill they also bring the pressure of the log against the saw at a point close to where the saw leaves the upper wheel, making it impossible for the feed to crowd the saw backward on the wheels. The cutting capacity of the saw is limited only by the capacity of the teeth to carry out the sawdust.

In sawing under the upper wheel the saw will stand the feed and remain in place on the wheel with 50 per cent. less strain than the old style band mill. This naturally is easier on the saws, requires less work on the part of the filer to keep the same in order, and saves a great loss of power in friction, hot boxes, expensive stops, etc.

The invention of the telescopic band mill made the use of a double tooth band saw possible, as the upper wheel of this machine absolutely controls the direction of the cut and is set in perfect line; lower wheel is made adjustable

FOREST, CLIMATE AND WATER FLOW.

THE beneficial influence of the woods in tempering the rigors of a cold continental climate, with its sudden changes and severe storms, is probably conceded by all, writes Filibert Roth, special agent of the Division of Forestry, in his report on forestry conditions and interests in Wisconsin. What share the forest has in the general changes of humidity is not so apparent. That a general and very gradual change from a moisture to drier condition has been going on for a long time over the entire lake region seems quite certain. The behavior of hemlock and even white pine in the matter of distribution is probably in part due to this change. How much the forests have done to retard the progress of this desiccation can only be inferred. On the other hand, the striking changes in the drainage conditions which have taken place within the



DOUBLE ACTING BAND SAW—POSITION WHEN SAWING A LARGE LOG.

to range the saw on the wheels and is also used without an upper guide.

It is said that no time is lost in taking care of the lumber that is cut on the backward run, as the log deck is fitted with live rolls set 8 inches below the top of head blocks, and the steam log loader arms are provided with extensions which bridge over these rolls when loading logs onto the carriage, thus loading the logs without interfering with the board while passing on to the edger.

To test the capacity of the mill an eleven hour run was made recently. There was no selection of logs for the trial, which was just an ordinary run of the mill. In eleven hours there were cut 744 logs. The lumber cut from these logs was tallied, and amounted to 101,560 feet of inch lumber.

The British American Land Company have closed down their saw-mill at Sherbrooke, Que., and will not operate in the woods this winter.

memory of many of the residents, have fairly forced themselves on the attention of all experienced and observing people, and are all too intimately connected with the changes in the surface cover to leave in doubt the influence of this latter on the former.

The flow of all the larger rivers has changed during the last 30 years, navigation has been abandoned on the Wisconsin, logging and rafting have become more difficult on all rivers, and, what is even a far better measure of these important changes, the Fox river is failing to furnish the power which it formerly supplied in abundance. The "June freshet," which in former years could be relied upon in driving operations, has ceased on most streams and is uncertain on the rest of them. Of the hundreds of miles of corduroy road a goodly per cent. has fallen into disuse, the ground on the sides has become dry enough for teams, many swamps of former years are dry, and hundreds of others have been converted into hay meadows and fields without a foot of ditching.