

THE ALLIGATOR STEAM WARPING TUG.

LUMBERING operations have of late years been driven so far back among ranges of small lakes connected by narrow and uncertain outlets, that it has become a serious question with many lumbermen how to get their timber and logs over these lakes during the short season of high water. The old horse capstan has been found to be too slow, besides being awkward and involving much labor and loss of time in moving it from place to place.

We take much pleasure in printing herewith an illustration and description of an invention, called the Alligator Warping Tug, which is intended to take the place of the Capstan. It has been in successful operation during the past four years on the French River and between Restoul Lake and the Georgian Bay.

It will climb hills and go through swamps and woods, or up small streams from one lake to another. After warping down a boom of logs, it will return with the empty boom, doing the work cheaply and thoroughly, with a great saving in time and number of men.

It is also useful in taking supplies to the lumber camps, or in towing scows bearing horses and provender.

One of these tugs will pay for itself in a single season; such is the testimony of those who are using them.

The steam warping tug, of which an illustration is given on this page, is a steam boat and steam winch combined. The engine can be thrown in gear to drive the paddle wheels, or to drive cable drum, which holds from half a mile to a mile of $\frac{3}{8}$ cast steel wire cable. The hull is built scow shape and is 37 feet long and 10 feet beam, decked all over, with berths for the sleeping accommodation of four men arranged in the bow. The bottom is of 3 inch white oak plank, the sides of pine 6 in. thick, laid in white lead. At intervals of 12 inches, $\frac{3}{8}$ inch bolts run through from top to bottom. On the bottom of the boat two runners are placed, 6 feet apart, each runner being 6 x 8 inches, shod with $\frac{3}{8}$ x 8 inch steel or iron. Part of the bottom and all up the bow of the boat is also covered with steel boiler plate. A steel drum is placed on the bow, over which the cable runs in paying out, or winding in. There is also a carriage in the bow with two shive pulleys, which is moved backward and forward across the bow by a screw and drive chain, operated by the engineer from the inside. This arrangement winds the cable level on the drum.

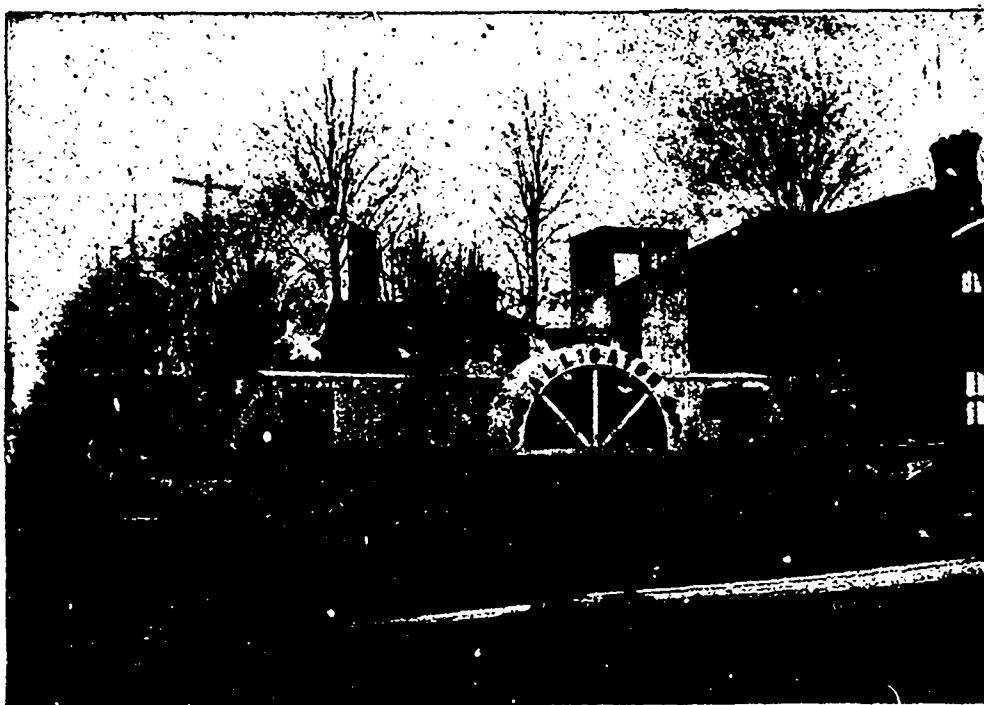
The boiler is hung on an axle in the centre, a screw being arranged on the front end to enable the fireman to tip the boiler forward or back, in order to keep it level when going up or down hill, in crossing a portage. The boiler is of special design, 22 horse power, and will furnish steam to warp 10 hours with $\frac{1}{4}$ of a cord of good dry wood of any kind. The engine is 9 x 9 inches, and will make from one to three hundred strokes per minute, propelling the boat from 5 to 6 miles per hour, either backward or forward, as it may be required in warping.

In warping, the boat can be used in either of the following ways: First—the bow can be run up to the boom and the cable made fast to it; then run backward until the cable is all paid out, made fast to a rock, a tree on the bank, or any suitable anchorage, the cable wound up, the raft moving, the boat standing still. Or the boat can be run to the shore, or rock, the anchor dropped with the cable made fast, backed up to the raft, made fast with the stern line, the cable wound in and the boat and raft thus moved together. This last method of warping is the best, particularly where a sack boom has to be rolled through narrows, as

fresh holds can be taken along the boom without disturbing the anchorage until the boat and raft have been hauled up to it; then the anchor can be raised and a fresh hold taken on another snub on shore, as may be most convenient. The boat is sufficiently powerful to move a bag-boom containing 60,000 logs, when there is no wind to interfere, or 30,000 against a head wind.

In crossing portages from one lake or stream to another, it is not necessary to make and grade a level road for the boat to move over. All that is required is to place logs and green skids across under the runners, about 6 or 8 feet apart, to keep the shoeing from grinding on the rocks or earth. Attached to the bow of the boat, near the bottom, is a heavy chain, to which is fastened a single block pulley; another single block is taken to a tree on the side of the road and made fast, then the cable is run out, passed round the block at the tree, brought back to the boat and passed round the block attached to the bow chain, then taken to a tree opposite the first on the roadside. This arrangement causes the boat to travel between these anchorages, and a straight course can be kept without dodging the anchor trees. In this manner the boat can be moved a mile a day with ease.

These boats draw about 28 inches of water to the bot-



THE ALLIGATOR STEAM WARPING TUG.

tom of the runners. They can be moved up a hill or incline of one foot in three. The helm is hung with a hinge, so that in going over booms or logs, it will lift up, dropping back to its former position of its own accord.

The manufacturers, Messrs. West & Peachy, Simcoe, Ont., are now at work on the largest machine they have ever turned out. It will be of 40 h.p. (double the power of the ordinary machine) and is to be shipped to South America. The following lumber firms among others have this novel machine in use.

Joseph Jackson, Simcoe, Moar Lumber Co., Detroit, Mich.; R. H. Klock & Co., Klock's Mills, Ont.; J. W. Howry & Sons, Saginaw, Mich.; McLachlin Bros., Arnprior, Ont.; Gilmour & Co., Trenton, Ont.; Shepherd & Morse Lumber Co., Upper Ottawa Improvement Co., A. Loinsden, J. R. Booth, Ottawa, Ont.; Buell, Hurdman & Co., Gilmour & Hughson, Hull, Que.; Robert Booth, Hale & Booth, Pembroke, Ont.; Saginaw Lumber Co., Saginaw, Mich.; John Fergusson, Renfrew, Ont.; Ontario & Western Lumber Co., Rat Portage, Ont.; Hardy Lumber Co., Trout Creek, Ont.; Barney & Stevens, Honda and Verna; Transporting Co., South America.

"Although," cried the revolving saw,
"I do not understand
The games these foolish mortals play,
Still I can take a hand."

THE ST. JOHN, N. B., EXHIBITION.

A REPRESENTATIVE OF THE LUMBERMAN who visited St. John, N. B., during the recent exhibition held in that city, found much to interest him and visitors generally, at this exhibition. The exhibits were numerous and in great variety, and were arranged in a manner well calculated to attract the attention of visitors. The attendance was very satisfactory. Without mentioning the many exhibits which might not have any special interest for LUMBERMAN readers, a few particulars may be given of those exhibits which relate specially to the lumber and wood-working industries, with which our readers are more particularly connected.

On the ground floor of the main building, the Small & Fisher Co., Ltd., of Woodstock, N. B., had in operation one of their improved shingle machines. These machines attracted much attention, and are said to give excellent satisfaction where they are in use.

Messrs. Cowan & Co., of Galt, Ont., had a large exhibit of wood-working machinery. Mr. Cowan, who was in charge of the exhibit, intimated to THE LUMBERMAN representative, that little, if any, of the machinery comprising the exhibit would be brought back to Ontario, as it had nearly all been sold.

The McFarlane, Thompson, Anderson Co., of Fredericton, N. B., exhibited their Dundas shingle machines, which are well known throughout the Lower Provinces. A representative of THE LUMBERMAN recently visited a mill in these Provinces where thirteen of these machines were in satisfactory operation.

A large space on the floor of the main building was occupied by the St. John branch of the James Robertson Co., Ltd., of Montreal, and contained a fine display of circular, gang and other saws from the company's factory in St. John, together with exhibits of the various lines of goods which the company manufacture. The exhibits were in charge of Mr. J. Robertson, superintendent of the company's business at St. John.

Messrs. Fowler & Rankin, of St. John, N. B., showed a full line of edge tools, and car and carriage springs, of which they are manufacturers. The company, who are successors

to Josiah Fowler, had men at work in the building, forging and welding axes. Mr. Rankin stated to the representative of THE LUMBERMAN that the company were pushing for business in all parts of the Dominion.

A very creditable exhibit of saws was made by the Lorton Saw Co., of St. John.

Messrs. Walter Wilson & Son, of St. John, also had a creditable exhibit of saws of their manufacture, including a large band mill saw.

An interesting exhibit of edge tools was made by the St. Stephen Edge Tool Co., of St. Stephen, N. B.

DIVIDING THE WORK.

OWING to the increase of lumbering on the north shore of Lake Huron, the Sault Ste. Marie Crown Timber Agency has been divided. The eastern part of the present agency has been made into a new one and Mr. Edward Garrow appointed as agent, with residence at Webbwood, Ont. The western agency will remain under the charge of Mr. P. C. Campbell, with office at Sault Ste. Marie.

—There is a great scarcity of mill hands in the south.

—Bacroft & Sloan, of Flesherton, Ont., are going to build, late this fall, a new mill on the site of the one lately burned. The mill will be 24 x 50 ft. with a capacity of a daily output of 10,000 feet, and will be fitted with modern equipments.