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CROSS-CUT BAND SAWS.

THE cross-cut band saw is designed to take the place of the drag and circular saws for cross cutting. As is shown by accompanying cut, the saw passes over the pulleys, A A, as in ordinary band saw rigs. At the points B B are rotary guides made similar to a small circular saw arbor. The tooth edge is turned down, the back passing between these collars on guide, giving the saw a quarter twist from the band wheel to the first guide, and between the two guides the teeth are turned down at right angles to the blade when it passes over the pulley again. After passing the second guide it twists back again to pass over the driving pulley.

At the point C is a guide that prevents the frame from moving out of a perpendicular line while moving up and down. The frame D is pivoted at the point E, and is balanced by the weight F, so it will remain in any position, and is easily moved up and down by the operator. The makers claim for this cross-cut band saw rig that, it will cut double the amount of any drag saw rig, with half the power, the saw safe being only 1-16 inch. It is easily set up—requiring no foundations—runs perfectly still, no shaking or jerking. They claim that it cuts the block smoother than can possibly be done by either drag or circular saws; that it requires less filing than a drag saw to do the same work, as the plate is so very thin (21 gauge); and lastly, that it is a pleasure for a mechanic to operate it, it does its work so nicely. This saw is manufactured by the Eastman Lumber Co., Eastman, Que.

ELECTRICITY AND WATER-WHEELS.

THERE is no doubt that the growing use of electricity will, in the end, say the American Machinist, materially help the trade in water wheels that has been rather hardly pushed by the steam engine. Water powers are being, and will be, turned to account that would remain dormant but for electrical distribution of power. Where mills and factories can not be well located the energy of the falling water may be taken by electricity to convenient positions, and to some extent this is being and will be done. This will, however, cut but a small figure in the manufacture and sale of steam engines—probably not enough of a figure ever to be noticeable. It will in some instances provide for locating shops and factories that would not otherwise be built, and provide for the lighting of places that would otherwise grovel in the darkness of gas, or oil lamps. Electricity will help the water wheel without, to any appreciable extent, injuring the steam engine.

THE STEAM GAGE.

IN placing the gage on boilers, says Power, it should be so connected as to take steam from a part which will be as free from vibrations of pressure as possible, that is, away from the outlet to the engine, and a siphon should never be omitted. It is also necessary that the gage shall not be placed at or near the lower level of a connecting pipe which has a drop of any extent, which will create an excess of pressure on the dial by the weight of water on the column. In a battery of boilers there should be a gage on each boiler and not one gage for the whole.

Too much tension tends to destroy the elasticity of a belt, and when its tension is gone the belt is useless. Then, too, useless tension makes useless friction, and friction wears out journals and boxes, while it consumes more power,

BY THE WAY.

TIME works many changes. It is hardly safe for a man to be too dogmatic in these days of quick living and thinking. The fancy of to-day may be the fact of to-morrow. A suggestion to establish schools of forestry would, not far back in the present decade, have been laughed out of court by every lumber journal in the country. To-day, however, we find the lumber press and lumbermen seriously considering the question of establishing chairs of forestry in our universities, and of giving the subject a place upon our school curriculum.

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In other lines of commerce there is nothing very new in the technical school or academy for the special training of men and women in the trades that they may be following. One of the most conservative trades to take hold of work in this line has been that of flour-milling. Without getting out of the realm of level-headed business practice, why should we not have schools of for-

the Biltmore forest in North Carolina. This forest is the property of Mr. Geo. W. Vanderbilt, and his purpose is to treat the Biltmore forest systematically on the lines of forest management. The experiment so far may be said to have been fairly successful and with perseverance along that line something practical is likely to be attained. In remarks, suggested by Mr. Vanderbilt's experiment, a writer in the Lumber Trade Journal, of New York, expresses the opinion that there is an opportunity, owing to the similarity in many of the forests in the United States and Canada, for the effecting of an arrangement for a system of forestry schools suitable to the wants of either country. Such schools might be established at the east on the dividing line between Canada and the United States, where common teaching might be had for young men from either country, who were desirous of learning forestry.

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Our cotemporary, the Northwestern Lumberman, of Chicago, who does not usually throw much sentiment

into his views of lumber matters, speaks out in an article a week ago, saying that nothing is plainer than that the American people must be educated up to the importance of forestry, and thinks it would be an excellent idea for the teachers in our public schools to give their pupils a little talk whenever they could handily do so on the beauty and importance of trees. \$50,000 is granted by the Washington authorities for the maintenance of the forestry division of the United States government, a sum which the Northwestern Lumberman does not hesitate to say is paltry and insignificant in contrast with the importance of the subject. Harper's Weekly of late date strongly advocates the giving of needed attention to the question of forestry. Prof. E. G. Houston, of New York, has just delivered a lecture on forestry, in which he advocates making elementary forestry a study in the lower schools, and is of the view that the tree planting practice, common now both in the schools of the United

States and Canada, furnish an excellent opportunity for the inculcation of thousands on the subject.

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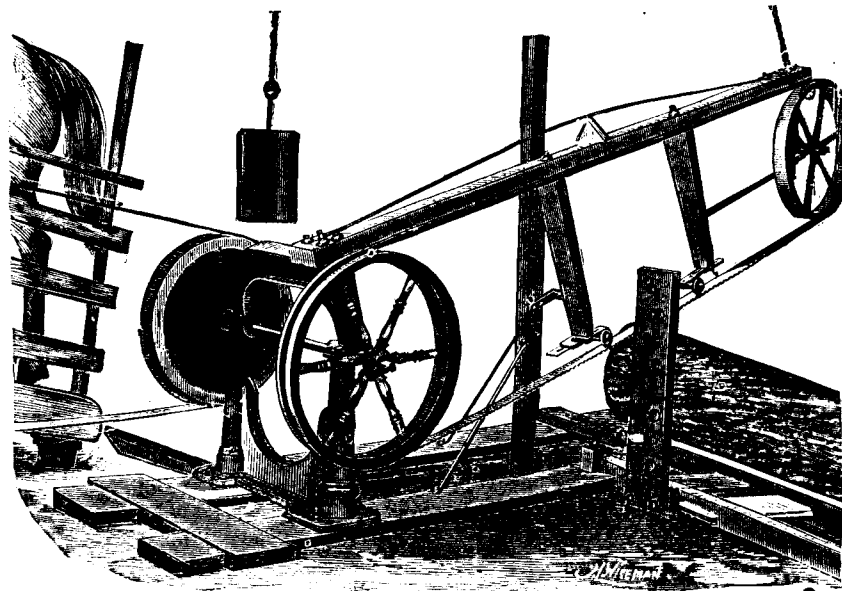
Where does Canada stand on the subject? In the person of the late forestry commissioner Phipps, no country had a more enthusiastic and intelligent student of this question, and he never lost an opportunity to keep the matter to the front. It is to be hoped that his successor, the Hon. C. F. Fraser, will see his way to, probably, further develop work on these lines, and devise plans, possibly, that will bring the question in more practical shape into our public schools. We are ourselves no sentimentalists on the question, but the necessity for greater care to the forests of Canada is becoming growingly noticeable to all who give unprejudiced thought to the question. We shall be glad to know what LUMBERMAN readers think of the subject.

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ONE of the most enterprising American firms owning limits in Canada is J. W. Howry & Sons, Michigan. Though severe depression has existed with lumbermen in the States, and things here have been sympathetically slow, this firm is showing very little restriction in business operations. Their mill at Fenelon Falls is now in operation, and they are already engaging men to start fresh camps at once. They will run two camps on the north shore of Georgian Bay and several near their mills at Fenelon Falls. What stock will be cut in Georgian Bay waters will be towed to Saginaw.

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The question has come suggestively to the front in the United States through a little pamphlet, giving an account of the treatment and results of the year's work on



CROSS-CUT BAND SAW.