

you want knives that you can grind for the different kinds of work that come to hand.

In the matter of side cutters two lumbermen should not confine themselves to any one style. If they do they will many times find they are in the condition the slang phrase "get left" so nicely expresses.

Shimers are good. Solid bitts are very good, but you are not in fine shape for everything that comes along till you are well fitted up with three part bitts. The three kinds taken together with a few spare heads gives you a confidence in yourself that you are fully prepared for business of any kind. In bench sawing, too, a good variety and style of saws is just what is necessary to do all kinds, and to pinch yourself here is to spite your face by biting your nose off.—John Shaw, in Lumber.

NUMBER AND ARRANGEMENT OF CYLINDERS.

REPLYING to the question "How should lumber be dressed?" referring especially to the number of cylinders and their relative arrangement, a correspondent of Sawing Wood says: "That depends. If the lumber is sawed with a circular, two cylinders placed most any practical way would surface both sides well, for the reason that any ridges left by the saw teeth would extend more or less lengthwise the board, and give some bearing all the time under the first cylinder. If the lumber be band or gang sawed any ridges—and there are many—would run across the board, and while the opposite face between these ridges is being dressed it is poorly done, because that space does not lie on the bed. Hence, if I were to select a double surfacer for doing fine work on both sides of band sawed lumber, I should require three cylinders, two upper and one lower. The first cylinder on this kind of lumber can not possibly dress it smoothly, for reasons given above, but could give a comparatively even surface to rest on while being dressed on the other side by the next cylinder. This cylinder would do smooth work because of the fine bearing the lumber would have, and would, of course, give a perfect foundation for the third or finishing cylinder, which would operate on the face first operated upon, and give as a result two perfect faces.

"Some people advise running lumber face down. Of course it makes no difference in surfacing only, but when matching it is difficult and unnatural to run flooring face down, as you never can see what the machine is doing until the board is completely out of the machine, and then you must turn it over."

DRYING LUMBER.

A SUBSCRIBER of THE LUMBERMAN wishes to know the best way of drying lumber in a kiln by means of a stove. If any of our readers have experimented in this direction, we would be pleased to learn the results of their efforts.

ONE OF THE BEST.

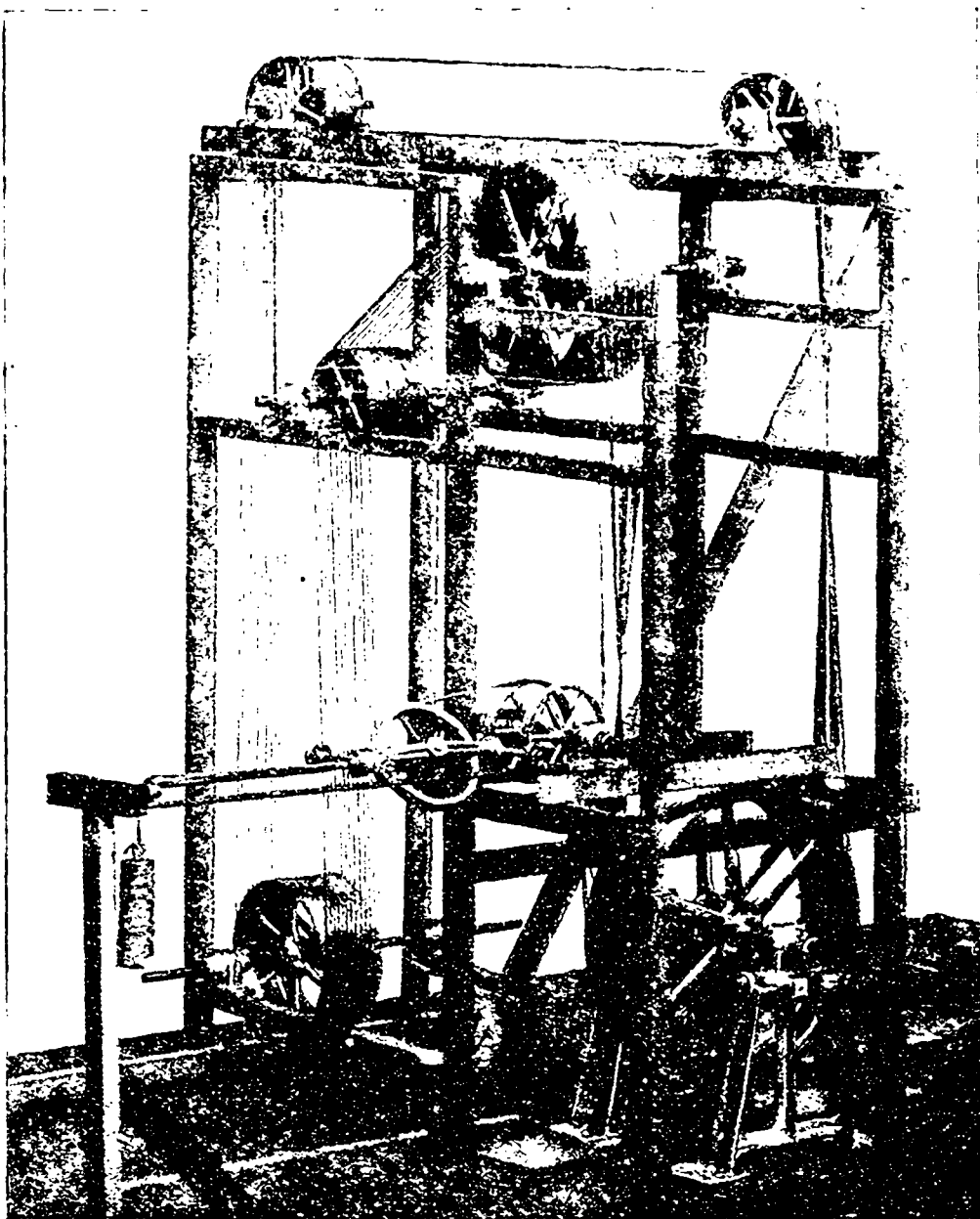
MESSRS. Reid Bros., Hepworth Station, Ont., in renewing their subscription to THE CANADA LUMBERMAN, write:—"We consider THE LUMBERMAN one of the best papers we get, and would not be without it."

ROPE TRANSMISSION.

THE illustration given below was taken from a model of the Dodge Patent American System of Rope Driving, designed to transmit power as required in a large mill, and at the request of the mill owners designed to avoid the use of the ever-troublesome and expensive gearing which would be necessary to otherwise accomplish the results herewith successfully attained. This illustration demonstrates the simplicity with which a shaft may be run at right angles to the driver, and with little or no loss of power. It is a well known fact, however, that with gears there is a great loss of power from friction, and many other disagreeable points of contention; also, with a belt and set of mule pulleys, there is great loss by imperfect contact of the belt with the pulleys, journal friction, and other annoyances sufficient to condemn it. On the contrary, with the manilla rope system, under the

of transmitting power) in this case is of the horizontal type. The idler sheaves near the rope tightener carry up and over to the travelling carriage, and are so placed that this carriage always keeps the rope at an even and correct tension (governed by the amount of weight used, see left of illustration), so that the rope will always follow the grooves, and is thus carried to and from the driven sheaves and the driver, always keeping its alignment. The tension weight serves a double purpose in taking care of all slack caused by stretch of the rope or by atmospheric changes, and by keeping a continual and proper tension on the rope.

In the United States, during the past ten years, rope driving has gained a wonderful precedence. Its former opponents have been convinced of open merits and are now the strongest advocates of this system of transmitting power. Belting has its place; driving by means of ropes has its place in mechanics. The latter, however, has two great advantages over the former: the first, the ease



DODGE PATENT AMERICAN SYSTEM OF ROPE TRANSMISSION.

Dodge patents, a shaft may be driven at right angles to another with the same efficiency as two parallel shafts are ordinarily driven.

This drive is peculiar to itself; the double right angle driving being a feature not frequently brought to notice. The driver on the engine shaft makes 70 R.P.M., operating the transmission in either direction, and carries fifteen wraps of one and one-quarter inch manilla rope to the driven sheaves, both at right angles to the driving sheave on the engine. The first driven sheave is 36 feet above the center of the engine shaft, makes 90 R. P. M. and transmits two hundred H. P. The second right angle drive is six feet below the center of the engine shaft, makes 140 R. P. M. and transmits three hundred H. P. The arrangement of the ropes is nicely shown in the illustration and needs no further explanation.

The travelling carriage or automatic slack rope take up, (one of the valuable features of the American System

with which it overcomes any of the knotty problems frequently met with in power transmitting engineering; the second, its great cheapness as compared with any system of belting or gearing. A rope will always do the work of a belt, but there are, in daily operation in all portions of the United States, rope drives doing excellent work which, if replaced by any combination of belting, would simply evolve a most disastrous failure.

The very low first cost of rope transmission is an indisputable fact, and likewise is the cost of maintenance where the drive is designed and erected by parties whose trade mark is formed by long experience and excellent workmanship. Dodge Manufacturing Co. have designed, manufactured and installed rope transmissions of their Patent American System for the past twelve years, and the success of their work is now depicted in every state in the Union.

The merits of this system are, its simplicity, great efficiency, cheapness, and wonderful saving in journal friction as compared with gears or a heavy belt with mule pulleys. The sole manufacturers in Canada are the Dodge Wood Split Pulley Company, 74 York street, Toronto.