

A COMPLETE WOOD-WORKING ESTABLISHMENT.

THE many improvements which have been made in recent years in wood-working machinery are forcibly illustrated by a visit to the establishment of Messrs. J. B. Smith & Sons, on Strachan avenue, Toronto. There the manipulation of lumber into the various classes of stock, such as doors, sashes, mouldings, blinds, boxes, etc., is carried on at a surprising degree of rapidity.

The firm is composed of Messrs. John M., Robert, William J. and James H., four sons of the late J. B. Smith, and the business has been established since the year 1851.

The lumber for the factory is obtained from their saw mill at Callendar, a siding from the Grand Trunk Railway running through the yard adjacent to the mill and affording track room for twenty-five cars. The yard covers an area of $3\frac{3}{4}$ acres, and is kept constantly filled with the various classes of lumber required for their purpose, some of which is obtained from the Southern States. The factory is a three-storey brick structure, 200 x 50 feet in size. The machinery is driven by a 150 h. p. Goldie & McCulloch engine, backed by two boilers. The factory and dry kiln is heated by hot air forced through coils of pipe with a separate engine and fan. This is accomplished by means of a Moffatt feed water heater and purifier, which also purifies the water and removes the scale, thereby preventing it from getting into the tubes of the boiler.

The machinery on the ground floor consists of four planers and matchers, three four-headed stickers, two band saws, circular re-saw and other cross-cut and wood saws. One of these matchers is capable of matching all four sides up to 6 x 24. The second floor contains a double set of sash and door machinery, including an "Invincible" polisher or planer, capable of dressing stock 60 inches in width and 8 inches in depth, which is done by means of sand-paper drums. This planer will perform, it is claimed, as much work as twenty-five men. At the present time the firm have large orders for veneered doors, which they manufacture in white-wood, black and white ash, and quarter cut oak. In a small room off this floor is the glueing department, where the veneers are glued together. This is kept warm by means of the system of coils before mentioned. The top storey is devoted to a store room for mouldings, sash and doors and kiln-dried material. The size of the dry kiln is 50 x 18 feet.

Fuel for the boilers is furnished by the shavings and sawdust, which are blown by fans through galvanized iron pipes running up the outside of the building to cyclone separators on the roof, which separate the dust

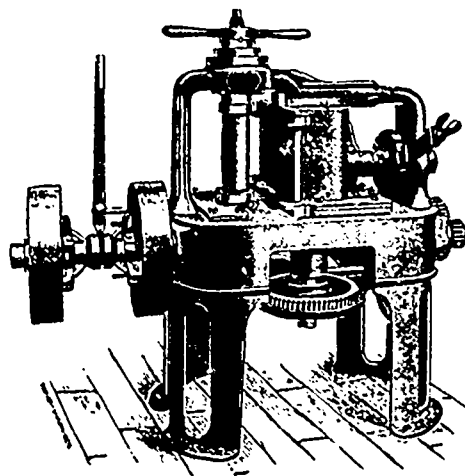
from the shavings and sawdust, the latter dropping into hoppers and being carried to the boilers.

A machine shop is also in connection with the premises for repairing.

DROP CARVING MACHINE.

THE accompanying illustration represents a drop carving machine which is said to possess much merit, and which has been patented in the United States, Canada and European countries.

The machine is simple and easily operated. When the carvings leave the machine they are ready to be placed on the furniture. They can be made of any thickness from one-sixteenth to an inch thick. A furniture manufacturer who



DROP CARVING MACHINE.

has been using the machine says: "Prior to putting in a carving machine I employed eight hand carvers and five spindle carvers. I am now doing all of the carving formerly done by this force of men with one drop carving machine and one man, and am using far more carving on my furniture than when I used the old method; besides this, my saving is very large in that the machine does all of the scroll sawing and sanding of the carvings."

BAND VS. CIRCULAR-SAWN LUMBER IN THE PLANING MILL.

Not many numbers since considerable was said comparing band and circular saws and their work. Some writers were quite hard on the band, condemning its work without scruple, and giving it no credit except that it could saw, and it was a foregone conclusion that it saved badly.

Self interest looks only from one standpoint, and whatever comes under the scope of the individual observation is either all sunlight or all shadow. The drummer, selling for a house making only circulars, can see no good in the band, and, of course, the band drummer sees only perfection in the shining band, which saves half the stock in each cut—which may, or may not, be even the shadow of truth.

I haven't the least prejudice against either, having no interest in either except to have the work go through and come out of the planing machine as nearly perfect as pos-

sible. It makes no difference to me if a plank is two inches thick at one end and three inches thick at the other, or whether it is band or circular sawed. The question with me is the wear and tear of the machine in planing it, and the loss of time made necessary in such unevenly sawn stock.

I claim, as I will try to show, that all of this poor work comes from either not knowing how to keep saws and machinery in order, or from a desire to rush the work. No matter what shape it comes out, as long as it comes out and is counted and shipped. The stock is sawn and shipped and the planer does the rest. You planing mill machine men who make a specialty of running yellow pine stock, know how it is.

From this standpoint I give you a result of some of my observations running circular-sawn stock. Here is a lot of 5-4x3, sawed by Tift, Brunswick, Ga. The sawing is uniform in width and thickness on much of the stuff, only the cut of every tooth can be seen. So much circular-sawn work shows the feed that this is a very noticeable thing. Some of this stock is so nicely sawn that even the tooth-marks are scarcely visible. Of the 20,000 feet in this little order there were no poor pieces. The strips were very uniform in thickness and width, and the sawing was perfection itself.

This shows one fact in circular sawing: that it can be well done, and that some people can and do keep their saws in good shape. Timber from the same parties always comes sawed squarely, even in size from end to end, and only the tooth marks are to be seen.

About this tooth mark business, what I mean is this: Instead of the feed mark, which is almost invariably seen in sawing, and by which we tell how much the saw is feeding, we see only the cut of each single tooth. This lot under consideration showed just the tooth mark.

Put alongside of this another lot which was shipped us from Fernandina; the same kind of stuff, 5-4x3. All of this lot showed the feed mark very plainly. Some was so bad that you could put a straight-edge across and see one-sixteenth of an inch between the ridges, while the strips in width often vary an inch from end to end, and often almost as much in thickness. A considerable lot had to be thrown out from thin ends, or thin in the middle. Of the 15,000 feet in the lot, as much as 500 feet had to be thrown out on account of thin ends and thin centres.

Now take two lots of heavier stock, the shipment and sawyers of which are not known to me. The first lot of stuff, 3x12, from Fernandina, p4s, was even in thickness and width. The sawing was good, the feed marks showing about as usual, but not badly. We ran all day on this lot on a 40-foot feed, and not a belt slipped nor did we have to shut off feed to catch up speed. When the last plank went through I knew we had made a remarkably fine run.

Contrast with this what I shall call the gulf lot, 3x8, also p4s. This lot had all the qualities of the 5-4x3 spoken of, wide and narrow ends, thick and thin ends, and middles varying often more than an inch in both. We had to have the ends of much of it chamfered in the thickness. I took off the outside chip-breaker to prevent breaking it and waded through with the feeder's hand on the shipping lever. Of course we put it out, but when we shipped the last plank of this lot out I felt as the parson did who was called upon to make remarks at the funeral of a noted jockey and gambler. He began by reading one of Watts' hymns, the second line of which reads, "Thank God the curse's removed."

We are repeating these things from day to day as orders come in. I give these instances to show that the circular saw can do good work as well as poor. It all depends on the way it is handled. We see two lots of planed stuff come in, one nearly perfection, the other anything but desirable.

I might say the same about the band-sawn stuff that comes to us. We have lots of 5-4x12 North Carolina stock shipped us by two different parties. Both are band sawed. One is all ridges, the other as nice as can be sawed.

The trouble is with the man handling the machines. It is worse than folly to say that the band is a failure or that it cannot fairly compete with the circular in every place where they may be brought into competition. Place the trouble where it belongs. An old aphorism says: "What man has done, man can do;" hence, if one man can make a circular saw cut so that every tooth will show exactly the same cut, another man can if he has the right education and qualifications.—"E. L. O." in Woodworker,