



HODGSON'S PATENT SAW-GRINDER.

PATENTED IN THE UNITED STATES MARCH 19TH, 1878, AND IN CANADA JUNE 8TH, 1878.

It is estimated that there are in the United States and Canada about 42,000 saw mills, running about 140,000 saws, and that to keep these saws sharp requires the cutting away of over 200 tons of tempered steel each year. How to accomplish this Herculean task the most rapidly, the most cheaply, with the least expenditure of muscular effort, and with the least damage to a saw, has long been a vital question among the mill-owners of this continent.

The file, the burr gummer, the punch gummer, the grindstone, and the emery wheel has each had its turn. The file has been found too expensive in itself, and too laborious in use, except for merely pointing up the teeth. The burr gummer has been found subject to the same objections, with the additional one, that it is very poorly adapted to any of the work to be done except throating out the teeth of large circular saws. The punch gummer has long been condemned as liable to strain and weaken any saw, and as entirely unfit to use on a circular. The grindstone has had to stand aside on account of the rapidity of its wear, and the difficulty of keeping it in proper shape, to say nothing of the discomfort in using it, leaving

THE EMERY WHEEL.

in undisputed possession of the point, for there is no fact in the whole range of the economy of mechanics better established than that a well made and well mounted emery wheel will cut away tempered saw plate more rapidly, more cheaply, more easily, and with less damage to a saw, than any other tool.

To do good work on any but the smallest saws, the wheel must move to the saw, and not the saw to the wheel, and it should have two motions, one allowing it to move in to the saw the depth of the tooth, and the other allowing it to move along the saw the length of the tooth.

There have been several saw grinders combining these two motions placed on the market, but they have all been large and complicated affairs, and so expensive as to put them entirely out of the reach of any but the owners of the larger establishments, so that the want of the great body of the mill-owners of this continent has been, up to the present time, a really good practical Saw Grinder at a moderate price.

This want is fully met by the machine represented in the engraving at the beginning of this article. It is bolted, as seen at the right hand, to a bench, similar to the small workbench, only part of it being shown in the cut. The saw, whether a long saw or circular, lies on the bench in such a position that the flat side of the wheel shall give the proper hook to the teeth. The whole of the machine, except the piece bolted to the bench, swings on a hinge or joint, seen under the pulley; this motion allowing the emery wheel to work into the saw the depth of the tooth, while the arbor is so long that it has about three inches of end play in its bearings, this motion allowing the emery wheel to work along the length of the tooth.

The arbor may be belted from either above or below, but that part of the belt running on to the pulley must run vertically, or "plumb," and as the pulley is fair over the hinge on which the machine swings, the swing of it has no tendency to throw the belt, even if it is swung square out from the table, and the most rapid movement that can be given to the arbor length

ways will not throw the belt, which steadily leads on to the crown of the pulley on the arbor, while it traverses the driving pulley, which should be about six inches wide, and perfectly flat on the face. The emery wheel is secured to the arbor by a tight and a loose collar and nut, in the usual manner. The arbor extends through this nut some three inches to the left, and on this is fitted a small pipe or sleeve, somewhat like the pipe on a carriage axle, and on one side of this pipe is cast the handle, seen in the engraving. By means of this handle the operator can place the wheel to the saw with the greatest accuracy and with perfect ease. Indeed, holding the handle so near the wheel, without the intervention of any lever or counterweight, and without having to move any considerable weight of material, he gets the feel of what the wheel is doing better than with any other Grinder, and no one offers him a better chance to see his work.

The design of this grinder combines, with its other excellencies, elegance and strength, and every part of it is made in the most careful manner. The arbor is of steel, and runs in very long chilled bearings. The pulley and collars are turned both inside and out, so that the arbor is in such perfect trim that it runs without a tremble.

A large number of mill owners in Canada and the United States are using this grinder with great satisfaction, and there is no doubt that its simplicity, its efficiency, and its cheapness will soon bring it into universal use. It is manufactured in Weisport, Pennsylvania, and in Amherst, Nova Scotia. For further particulars address the inventor and patentee, T. Hodgson, Amherst, Nova Scotia.

QUEBEC EXPORTS AND STOCKS.

The following is the annual circular of J. Bell Forsyth & Co., dated Quebec, 15th December, 1881:—

We have again the pleasure of publishing our Annual Statements, which at this particular period must prove of great interest to all engaged in the Timber Trade of Canada.

The arrivals from sea of sailing vessels have not equalled our expectations, while a steady increase is perceptible in the number of deal shipments by ocean steamers from this port as well as from Montreal. The comparison with last year being as follows, viz:—

	Sailing Vessels.	Steamships.
1881.....	643 .. 498,570 tons.	233 .. 385,818 tons.
1880.....	895 .. 708,346 "	261 .. 407,737 "

We also note that 459 sailing vessels, 380,186 tons (lumber laden) cleared at this port for sea against 634 vessels, 555,451 tons, in 1880.

We had the satisfaction last year of congratulating the manufacturers on the marked improvement in our trade and on the remunerative prices then realized, and in our annual circular we remarked:—"The trade of this port is in a sounder and more satisfactory state than it has been for years. The experience of the past season, together with the further advance in some woods, prove that our statements were in every way justified, and a correct view of the state of things then existing. We have again the pleasure of reiterating our congratulatory remarks, and are convinced that the trade has never been in a more healthy or in a better position than at the present time.

WHITE PINE.—The market did not at first open with that briskness and great demand that was looked for, and a few rafts in market and

to arrive were purchased at moderate figures; but as the spring shipments were being completed it became evident that the stock on hand was unusually small, and now timber was eagerly bought up, in some cases before the rafts had left the Ottawa district. A lull occurred in August, and for a time little business was transacted, but it was of short duration, and subsequently prices were paid for choice rafts such as never before had been given. We may here mention that in some instances 39 cents to 40 cents for waney board, and 35 cents to 37 cents for square in the raft was paid, the purchasers having of course to bear all loss from culls and defective wood as well as the expense of putting the timber in shipping order. It may be said that such high prices may bring about an over-production, but our shippers and consumers in Great Britain must bear in mind that the trade is in few hands, the manufacturers being in most cases men of very considerable means, who will not dispose of their timber unless they obtain good figures, and who find it more difficult each year to procure choice wood. The greatest care and attention was paid last winter in the selection of timber, in some instances miles of timber limits were traversed to hunt up good and choice trees; and after all a great falling off in the percentage of first-class was noticeable in rafts generally, though some few exceptionally fine ones were placed on the market. The supply this year has been under the average of past years, though in excess of 1880, and it is estimated that if the present winter is favorable for manufacture, an increased production may be looked for, should all reach market next season; this is certainly to be desired, seeing that the present stock is so light, and scarcely sufficient for spring requirements.

The local consumption has been fair all season, and since the great conflagration which occurred in June last, a further demand for building timber of every description has arisen, a portion of which the present stock must supply up to next June or July.

	Supply.	Export.	Stock.
1881 Square..	6,029,641	9,101,880	4,526,102 Square
Waney..	3,065,274		1,519,950 Wan'y
1880 Square..	4,214,285	11,582,560	6,197,318 Square
Waney..	2,235,500		797,346 Wan'y

RED PINE.—This year's production has been considerably over that of last year, the increase being entirely in small and inferior wood, a good deal of which is unfit for shipment and will only suit local requirements. Large and choice wood is becoming scarce on most limits, and has been in good request all season. Of this description the quantity in stock is very limited.

	Supply.	Export.	Stock.
1881.....	1,945,720	922,000	2,145,833
1880.....	1,056,167	1,433,200	1,372,572

OAK.—Notwithstanding that the quantity measured to date is over the manufacture of 1879 and 1880 put together, this wood has maintained its price for choice parcels, though inferior and common is difficult of sale. The scarcity of good wood and enhanced cost of production forces manufacturers to hold their timber, unless something like our highest quotations are realized. The estimated production of good oak is light, and to date the weather has been most unfavorable for the manufacturers.

	Supply.	Export.	Stock.
1881.....	2,004,477	1,583,360	1,916,622
1880.....	1,760,236	2,316,840	658,026

ELM.—The supply has been slightly over that of last year, the shipment fair and the stock wintering below the average. It is difficult to procure good rock elm, the trees being scattered and the prices asked for standing timber so high, that unless full rates can be obtained the production for this market must be greatly curtailed.

	Supply.	Export.	Stock.
1881.....	1,027,070	737,100	439,912
1880.....	937,253	1,041,800	237,610

ASH.—Of this wood a good deal of small inferior has come to market, and we warn manufacturers to get out nothing but good white ash. Large and good wood is in request at our quotations.

	Supply.	Export.	Stock.
1881.....	498,788	355,080	210,101
1880.....	215,480	203,520	136,317

BIRCH AND MAPLE. The production has been light, the export about an average one, and the stock reduced. These woods are more easily obtained than those already dealt with in these remarks, and the supply for some years to come must depend to a certain extent on the rates offered.

	Supply.	Export.	Stock.
1881.....	161,774	203,880	65,423
1880.....	594,314	5,823,840	170,008

STAVES.—Both pipe and puncheon have been in great request, and towards the close of the season unusually scarce. This branch of our trade has greatly decreased during the past ten years, and a large proportion of the business has fallen into the hands of Americans, which used to be transacted at this port. With the high prices now ruling we hope for a revival in this line of our commerce.

	Supply.	Export.	Stock.
1881 Pipe.....	418	480	238
Puncheon.....	671	602	280
1880 Pipe.....	190	362	206
Puncheon.....	488	921	271

PINE DEALS.—Compared with 1880 the supply has been about a million standard short, the exports also show a diminution of nearly two millions standard; this latter has arisen from the limited tonnage obtainable since September. The demand for deals up to July was not active, but since that date a better feeling has prevailed. The increasing consumption in the United States will absorb a large quantity of sawn lumber and thus diminish the future supply of deals.

	Supply.	Export.	Stock.
1881.....	4,252,285	3,876,187	1,708,597
1880.....	5,320,000	5,823,263	1,026,168

SPRUCE DEALS.—The short supply of 1881 was caused by the lowness of the waters prevailing until late in the season, which prevented logs from reaching the mills. The export is some 200,000 standard less than it was in 1880, and the stock wintering is about an average of the last five years. Deals have commanded fair prices throughout the season.

The American demand for lumber at high figures continues.

	Supply.	Export.	Stock.
1881.....	1,590,457	3,097,342	810,023
1880.....	3,500,000	3,200,130	515,110

FREIGHTS opened at about 24s. timber and 60s. deals to Liverpool, 25s. timber and 60s. deals to London, 22s. timber and 60s. deals to Clyde, closing at 24s. 6d. timber, 67s. 6d. deal to Liverpool, 71s. deals to London, and 24s. timber to Clyde.

Croosoting Cross-Ties.

Colonel A. Hanson, superintendent of the Texas Central railroad, has had croosoting works constructed at Houston, for treating cross-ties, with a capacity of 760 pieces a day. The reservoir tanks are three in number, and will contain 4,000 barrels of crude oil. The cost of this oil is eleven cents, in Galveston. The cost of each tie, when croosoted, is \$1.10. The tanks are constructed of brick and Portland cement. The timber is loaded upon low tramway cars. These are drawn by machinery and an endless chain into the reservoir cylinders, which are then sealed, and the process therein completed, after which the cars are withdrawn. In the yards of the company are immense quantities of bridge timber and ties awaiting treatment. One of the advantages of this process is the fact that the common loblolly pine, which is regarded of so little value, and which exists in such immense quantities in eastern Texas, and throughout many parishes in Louisiana, is the most suitable wood for croosoting, as it requires an open, porous timber and rapid treatment.

A LADY'S EXPERIENCE.—Mrs. T. A. Gist, No. 1204 Walnut street, Philadelphia, Pa., writes: "I had inflammatory rheumatism very badly. In one foot and ankle it seemed to have taken hold with the determination to stay some time; and the morning I obtained the St. Jacobs Oil I could not put my foot down to the floor, even for an instant. I used it that evening for the first time, and the next morning for the second time, and that afternoon put my foot down for several minutes. On Sunday following I could stand up and walk a few steps. On Tuesday could walk about my room, and went down stairs by holding on to the banisters. Now I can walk quite well, and there is very little pain left. Just think! one bottle and a half and I am almost free from pain. It is a wonderful medicine.

A CURE FOR CROUP.—Apply flannel saturated with Hagar's Yellow Oil and administer the oil internally on a little sugar as directed on the bottle. Yellow Oil cures rheumatism, burns, scalds, chilblains, lameness, and all flesh wounds. All dealers supply it, only 25 cents.

SURE CURE FOR A COUGH.—The most reliable remedy for a cough or a cold, asthma, shortness of breath, sore throat, weak lungs and all bronchial troubles, is Hagar's Pectoral Balm. Price 25 cents.