SHINGLE SAWS.

BY KERF.

Shingle-sawing machines usually employ circular saws, and these are more often flat or on vertical arbors than otherwise. Some have reciprocating carriages for the spalt or block, and otherwise have a rotary motion; some employ but one saw and other two or more.

A drag saw is first used to saw logs up into lengths required for shingles, 16 inches and 18 inches, sometimes 20 inches, for heading from 10 inches to 22 inches long. There are also bolters having two saws which cut faster, as the saws are set the distance apart the bolt is wanted and driven together, as both being connected to the sword piece. The bolter is then used to cut rots and bad places out of bolts, also to split them and sometimes to sap or take off the bark or sap from the outside.

The shingle machine takes the bolts and makes them into shingles, the block or bolt being placed on the tilt table. The slides are planed into the tilt table top, so as to allow them to be moved ahead toward the saw as the latter wears up. This table hangs on trunnions, and oscillates as a tilt lever is moved from side to side. The butts and points of the shingles are regulated by four hand wheels, which are also used to set the table top parallel with the track of the machines. The tilt leaves do not have to be removed every time a shingle is cut, but only as required to throw knots, etc., into the point of the shingle, when possible; also so as not to saw the wrong way of the grain. This handle is moved by the arm of the operator between the elbow and wrist. The stops are set so as to give the lever the same throw each side of the centre. The rock shaft to which this lever is attached is cast with a crank on one end, which oscillates the table. A one-screw device is arranged in the side of the tilt table to raise or lower the table after being once adjusted. The carriage is adjusted to different lengths of blocks. On the standard sized machine the saw is fastened by saw screws to a 22-inch cast iron collar. The collars are faced to make the saw hang somewhat low in the center The saw is 38-inch diameter, nine gauge in the eye, fifteen to seventeen gauge at rim, and has about ninety teeth. It is ranged or made to lead as required by swinging the lower part of the yoke (in which are cast the arbor boxes, entirely independent of the frame), one way or the other, thus raising or lowering the saw rim at the cutting point. This ranging is done by loosening two nuts on bolts on the back side of the frame and turning the hand wheel, and then retightening the nuts. The upper part of the yoke has a groove planed in, and the frame has a rib cast on and planed off to correspond. A spring lock to the tilt lever holds the lever against the stop so that it will not rebound. When heading is being cut the stops are turned down so as to hold the table level. As heading is the same thickness from one end to the other, and does not require a tilt frame shingle machine, the shingle goes to the jointer, who joints them on the edges, either on a wheel carrying knives or on knot saws; also throwing knotty ones to be sawed out on the knot saw.

In one variety of flat saw shingling machines, the ways on which the block rests are changed to any thickness or any taper by four hand-screws. The first changes the shingle to thick or fine; the second regulates the butt; the third regulates the top and is held by jam nuts; the fourth changes the rake in the saw on the top. On such a machine, if a block is four inches thick on one end and ten on the other, all the butts may be sawed upon one end and all the tops on the other, bringing the block even at each end, and making the entire block into shingles except a thin slab. The saw strikes the block on the side, which is considered to make a smoother shingle

Evart's shingle machine also employs a flat saw, that is, one having a vertical arbor, and the bolt is entered on the side by the saw.

Then the packers bunch them up, which work is always done by hand. Aside from these machines a "jack works" is used for hauling logs into the mill and up to the drag saw, which is an endless chain generally carrying dogs. There is also a sawdust carrier to take sawdust, edgings, saps, etc., to where they are burned. Sometimes the bolts are sawed in the woods and bolted with an axe, in this way not needing a drag saw or bolter. Such a mill is called a bolt mill.

A new type of shingle dresser is a planer with an endless wooden carriage bed, in which are made beds in which the sawed joint shingle is put and held in place by pressure rolls held down by springs, so that they are sprung into a dished board transversely across the shingle bed while being planed. When they come out they have a convex upper face, thinned down at the left edge, so that, in driving, the thick side overlaps the thin edge, and thus the shingles when on the roof rest on their two edges, leaving an air space between. It is claimed for them that as soon as the rain is over they dry at once, while joint shingles, lying flat together, become water-logged and rot in the lap. A twenty-four inch shingle of this kind is put eleven inches to the weather, while a joint would be only seven and one-half inches, thus covering more surface, saving one-third inch lath, and being claimed to make a roof last longer.

A UNIQUE CIRCULAR SAW.

Among recent important inventions which have been brought under the editor's notice none is more worthy the attention of the wood-worker than the B. M. T. Circular Saw, which is now being introduced by the Montreal Saw Works Co., Ltd., Montreal, Que.

In company with Mr. Chas. M. Whitlaw, manager for the above company, a representative of THE LUMBERMAN visited a number of wood-working establishments in this city for the purpose of testing the ability of this saw to do all that is claimed for it. The neatness and thoroughness with which it did its work on all classes of woods was a surprise even to the oldest sawyers, and was generally acknowledged to stand ahead of any other saw yet introduced for the finer classes of wood-work.

A brief description will give the reader an idea of how this saw is constructed and the class of work it turns out: The teeth are arranged in sets of three each, and after each set is a recess or gullet for the reception of the saw-dust liberated. There are two distinct kinds of teeth in each saw, two side cutting teeth, and one centre cutter and cleaner combined. On each pair of side cutters the cutting edges are on opposite sides, so that the bevels face each other, thus making two parallel gashes in the wood. The clearing tooth is slightly below the points of the side cutting teeth, and formed like a common mortising chisel, with its cutting edge at a right angel to the gash, and its purpose is to cut away the wood which has been side gashed, and remove it into the recess or gullet before it, thus leaving the next group of teeth free from obstruction to their work.

The sharp chisel edge of the side cutting teeth leaves the sides of the wood as smooth as though planed, and as no set is required the saving of material is very great, while the absence of roughness and fibres lessens the friction, enabling the saw to work successfully with much less power that the V tooth.

With this construction, the same saw will cross-cut, rip or cut a mitre faster and better than any one saw now made specially for any one of these purposes. Each tooth acts like a chisel and cuts perfectly smooth.

The planing mill, sash, door and blind factory, pattern shop, furniture factory, and, in fact, any establishment where fine work in wood sawing is required, is working at a disadvantage where this saw is not used.

HAMMERING SAWS.

Take a piece of round saw plate about two and one-half inches in diameter, place it on an anvil, and strike it a blow with a hammer in the middle. The blow will spread the steel under the place struck, the elasticity of the surrounding steel will give, and it will not be any longer in diameter than before struck. But cut it in from the edge to the spread plate, this will relieve the outside strain, and it will then expand and will be more in diameter.

A sawmaker, in hammering a saw, hammers all over the plate, the hammer marks some little distance apart. Imagine a finished saw cut into pieces, one for each hammer mark, and each piece cut in from the outside of each piece to the expanded place, and then try to fit these pieces in place exactly as before cut. This will give an idea of the shape or condition of a saw plate when it is put to work in a saw mill.

It is expanded all over in spots, and surrounded by pieces that want to expand inward; the equilibrium of the two expansions is a straight saw. The saw is put to use in the saw mill and commences wearing. In keeping it in order the plate is cut down in diameter. The first cut of the file weakens the outside rim around a hammer mark, and it will expand a corresponding amount. By filing it down it increases the expansion, and the result is a saw that is too loose on the outside. If cut down by an emery wheel and heated it relieves the tension to an increased depth in the plate, and gives a greater chance for expansion. If filed down and the corners left square, the bottom of the teeth may come near one of the hammer marks. The result is the steel is already strained by hammering nearly to its breaking strength, and when the tooth strikes a knot or other hard substance it makes it more than its breaking strength, and the result is a crack in the saw, and the square corner gets the blame when not one-one-thousandth part of the strain was caused by the cutting of the saw, and the other nine hundred and ninty-nine one-thousandths were caused by bad hammering. This gives a reason why a saw should not be hammered by an inexperienced person, the result is likely to be an unequal strain on the saw, and cracks in saw, and it will have to be thrown away before it is half worn out.

England's Favorite Hardwoods.

[Timberman.]

Owing to the fact of the extended commerce of Great Britain, and that her trade relations bring her into intimate connection with every nook and corner of the uncivilized as well as the civilized world, the varied products of every clime are familiar in all her great marts. This fact is quite as true of the department of forest products as any other, and many woods are quite familiar to cabinet makers and other woodworkers of Great Britain, which are almost unknown in this country. The list of hardwoods embraces the partridge, the zebra wood, the mola, snake wood, the cocus wood, the teak, the jarah and many others, whose names even, are unfamiliar in this country.

Notwithstanding this fact, however, that the list of woods used is much larger there than here, the principal varieties, furnishing the great bulk of the consumption of Great Britain, are there as here, but few. First among them comes the oak, and following in the order named are ash, elm, alder, box, basswood, mahogany, teak and greenheart. Of all these woods, in value and variety of uses, comes first the oak. It is used by the cabinet maker for his work, its beauty of grain and enduring qualities recommending it highly for this purpose. No timber can stand as many changes as this, and it is extensively used in railway work, such as frame work for passenger and freight cars; it is used in the country for carts and waggons; for the frames and spokes of wheels; for all classes of agricultural implements, and is regarded with high favor by the building trades.

The tough and elastic ash is also in great demand by our English cousins. The cabinet maker and the ship joiner use it extensively, as it makes splendid fittings, and takes a good polish. Manufacturers of street cars and carriage makers also buy large quantities of it. American ash is highly esteemed, but the Hungarian ash with its rich and beautiful figure, has the preference for ornamental purposes. Elm is much used for a variety of purposes, but it is preferred for indoor work, as it will not stand the weather, the alternate wet and dry, soon rotting it. Teak is a valuable timber, somewhat resembling oak, coming from India and Burmah, and is sometimes called Indian oak. It is very heavy, and highly esteemed for ship work, such as deck houses, sash, sky lights, combings for companion ways, etc. Some of the better qualities of this wood resemble rosewood, and it has a very strong smell, preventing insects from attacking it. Sycamore which in this country is coming to be valued highly by furniture makers and for