BEADING TOOLS CONSIDERED.

BY "HOMO."

IN our desire to excel in the quantity and quality of the wares we produce, and in our interchange of ideas with our fellow men who are interested in a kindred business, we are very apt to reach for something large and great and entirely ignore the small things, the knowledge and thorough practice of which are the very foundation of success. It is as fully appreciated in wood-working factories as anywhere else that one can furnish a plant of the best and most expensive kind, but if he neglects to pay close attention to the small details, his large and costly machinery is of no avail. How many operators have been bothered with lack of little accessories in the way of supplies, tools and other conveniences, and how many have been cursed with a goodly supply of poor worthless stuff that is an annoyance and a thing of misery forever! In this connection we may bring to mind the many kinds of beading tools that are and have been in use from time to time, and consider their qualities and objections. Those who have been interested in dressing lumber for any great length of time can remember when almost all beading was done on a separate head for the purpose, generally located near the delivering end of the machine. The board was fed through, surface on top, matched, and perhaps beaded on top and surfaced on the under side at the same time, or, if not undersurfaced it was beaded last. Does any one recollect that he could get good, nice beading and rely on having it run so all day? Not to any great extent. He would find that nice straight boards had good beads and *vice versa*. The reason is clear. They might be pressed straight under the pressure bars while being planed on top, and when under the beader head did not get exactly the same pressure, consequently when the pressure on the board was light the bead was sunk deep, and where the pressure was heavy the bead was scant. Another trouble was with boards having a crooked or bowing edge. If they had ever so little tendency to leave the guide the bead would run out. It was an utter impossibility to do nice work with a separate beading attachment from the fact that the principle was all wrong. To insure either first-class beading or rustic siding in connection with tonguing and grooving, it must be done with the top planer head at the time that the top surface is being dressed. The uniformity of depth is then assured, and it will always have the same relation to the surface. Another point in its favor is that it will be properly related to the edge for the very reason that it is acted on so closely to the matcher cutters that it cannot get away from the guide so easily. In fact, if it does, both head and tongue are left off, but this is a rare occurrence. These facts are so generally recognized that but few builders will consent to furnish an independent beader attachment, and if those who do would only go around the country and see them standing idle and the tools placed on the main head, they would quit furnishing superfluities. Naturally, some one asks, what is the best form of beading tool, and how can it be attached to the head in the best manner? As an answer, I illustrate a few of the many ways it is done in common practice.

Fig. 1

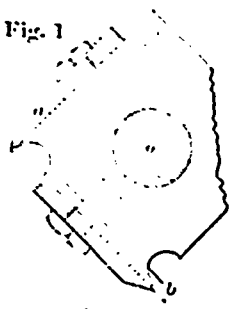
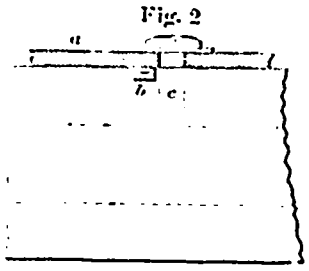


Fig. 2



a Planer Knife
b Beader Tool.

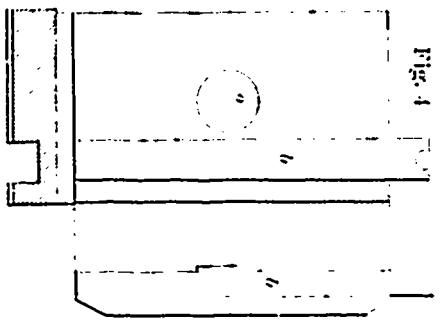
Figures 1 and 2 represent the tool called a beading slip placed in the cutter head under the planing knife. It is a steel slip about ⅛ of an inch wide and ¼ thick, with a semi-circular groove the whole length. It fits in a corresponding slot planed in the cutter head. The slot, being slightly shallower than the thickness of the beader, allows the planing knife to hold it down. This tool has objections; first, it calls for a blank of the same size to put in the slot when not in use to prevent the chips from driving in and springing up the planing knife; second, the chips drive through the little semi-circular groove of the knife itself and make trouble; third, you cannot tell where to have your planer head cut out for the tool and after you have found out, along comes some stuff which may be several different widths to be double beaded, and then where are you?

Figure 3 represents a very common form of beading tool that is readily placed on two sides of any head that is slotted, leaving the other two sides for the surfacing knives. It is commonly made of steel, slotted, with a

Fig. 3

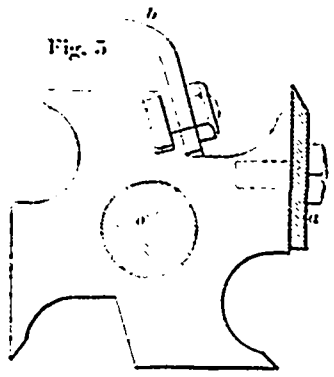
small semi-circle planed in the top, and beveled on its under side for the purpose of keeping it sharp with the least possible work, the same grinding bevel always insuring the same depth of groove. It is simple, easily taken care of, and can be placed on any part of the cutter head. The objection to this form is that when you pull the nut or bolt down on it for the final squeeze it turns, just a little bit perhaps, but enough to make you wish you had something better. You loosen up again, perhaps put sandpaper under it and grease the washer on top of it, then try it again; you start again, not to wrench it down but to swear through some knot hole where the angels can find no record against you; you finally get ashamed of yourself and drink some ice water and drown your feelings and, by exercising what little patience you possess, get the measly thing set right. If you don't want to be bothered with these negative blessings try beading tools like those shown in Fig. 4.

The cutter itself is the same as Fig. 1 fitted in a steel cap that has a tongue on its under side at right angles



to the tool. This tongue need not be over 1-16 inch thick and just the width of the bolt slot in the cylinder. It is held down by a bolt and not in the ordinary manner; it cannot turn around or get away, and it holds the knife from driving back because the knife is slightly thicker than the cap and is consequently held by compression. It will stay put and can be moved so as to cut at any part of the board. The objection to this as well as Fig. 3 is that it necessitates the displacement of two of the surfacing knives while in operation. As a partial answer to this I would say that in these days of high speed it does not make so much difference as it would have made a few years ago, and the chances are that not more than two of your knives have been cutting anyway; besides it is not everyone that pretends to make beading or rustic siding as fast as plain flooring.

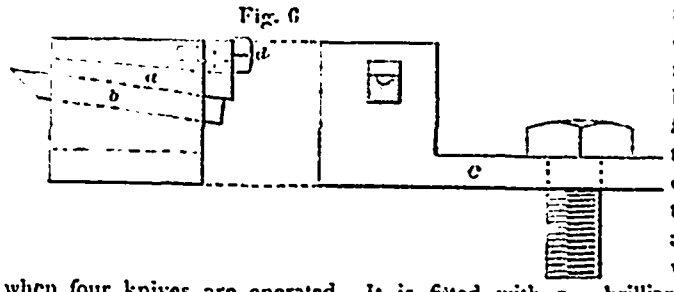
Fig. 5



This form of beading tool is intended for use in connection with a four-wing cutter head, allowing the use of all four cutter knives at the same time. As will be seen, it is made the proper length and bent to cut the proper depth, fastened by two bolts, the heads of which can be moved in the bolt slot in the throat of the cutter head. Care should be taken to make it thick enough to prevent vibration and give it the proper curve, so that as it wears it can be ground and set out to use as far as possible.

Fig. 6 is another form of cutter that can be used

Fig. 6



when four knives are operated. It is fitted with a tongue on its under side to prevent slipping or turning around and has a mortise for the cutter and a small taper key to hold the cutter firmly in place. The cutter can be made to cut more or less by loosening the taper key, setting the knife as you want it, and driving the key home, or it may be held by a set screw pressing against the side of the cutter. It will be noticed that all these cutters are beveled on their under side for the convenience of grinding and because they will produce better results. They are a few of the many kinds of cutters used for the purpose and seem to be in the most common use for their convenience, simplicity, and general adaptability.

THE ELECTRIC LIGHT IN AUSTRALIAN MILLS.

Messrs. Harrison & Co.'s mill, Port Adelaide, is the first in South Australia to be lit up at night by electricity. The machine is a dynamo, supplied by the Australian Light Power and Storage Company of Sydney, who have taken a contract for lighting the mill. The dynamo used is known as Class A2, Victoria Brush, and is capable of supplying a current for forty Swan lamps of an electromotor force of 53 volts. The current from the machine is conducted to the lamps in main cables of seven strands of No. 16 B. W. G. These wires are insulated with a composition so as to ensure thorough immunity from connection with anything likely to damage the cable or make an improper connection. The current is directed straight to the lamps from these main cables by minor leads of No. 18 B. W. G., insulated, and covered with fancy cotton so as to give a neater appearance. To each of these minor leads is attached a safety-fuse, which consists of a very fine wire of low fusing point and high conducting activity, so that on any danger arising in the wires from heating this fuse immediately melts, stopping all currents in the leads. Thus is avoided risk of fire. To these leads is also attached a switch, so that the lamps can be turned off or on at pleasure. At present there are twenty-five lamps actually in use in the mill, two of which are in the basement, four on the ground, four on the first, four on the second, and three on the top floors, two in the smutting and two in the engine-rooms, one in the boiler-shed, and three in the offices. The office lights are mounted on brackets with switches combined, fitted with opal shades. The machine is worked from a countershaft driven off the main shaft with belt gearing driven at a speed of 1,300 revolutions per minute. This class of machine is the latest improvement from home in incandescent dynamos. It is Morley's patent, belonging to the Anglo-American Brush Company, and made at their works, London. It is an improvement on the old class of dynamo, as it has compound setting, by means of which 99 per cent of lamps can be turned out without affecting the force of the light of the last one. The cost of working the machine will be purely nominal to Messrs. Harrison & Co., because the motive power, which is already supplied by the mill, is about the most expensive item usually. The renewal of lamps will be about once in five or six months. The machine is so simple that with a few instructions any one can attend it. Altogether it is expected that the electric light will prove 30 to 40 per cent cheaper than gas in the mill. In some of the Victorian mines the saving thereby has been as much as 50 per cent. Though this is the first mill lit by electricity in the colony, several have been lit in the other colonies. The most notable in New Zealand recently is reported to be a marked success. Mr. E. M. Grant, the Engineer for the Lighting Company, is also engaged in putting up an insulation at the Albion Mill, Gawler, which will be lit by electricity by about the middle of next week. The work at Messrs. Harrison & Co.'s mill has been rapidly executed, it having been commenced only on Monday. It was tried on Wednesday and Thursday nights, and on the first trial every light gave satisfaction. —*Adelaide Observer.*

SPEED OF DYNAMOS.

The schedule speed of all dynamos from sixteen to forty-five lamps 2000 candle power, is 850 revolutions per minute. Now I get very much better results in the matter of light, and as to flashing on the brushes, and as to hissing in the lamps, by adopting a speed of from 650 to 775, than by adopting the high rate prescribed in the printed schedule. I find better results by having the wall controllers so fastened that they did not tremble. I have had the most trouble with carbons. I make a most critical examination every day, keep a record of the carbons used and the success of each kind, and reach the conclusion that any good dynamo, with a fair even speed, will give a most even, brilliant light, if good carbons are used.—Pliny Norcross, in *Electrical Review.*