

PINKING MACHINE.

The annexed engraving represents a simple machine for pinking the edges of cloth, silk, velvet, leather, etc., and is designed to replace the punch used at present. The invention consists essentially of two rollers, one of which has the design in relief, the other having it cut in, the two rollers being in contact. They are made of hardened steel, and are mounted on parallel shafts, one of which is provided with a hand wheel for rotating it. The other shaft is rotated by means of a pair of gear wheels mounted on the shafts. The upper shaft can be raised or lowered according to the thickness of the material by means of an adjusting screw.

The relief of the pattern roller is not sharp, and does not really cut the fibers, but crushes them. As the various pattern rolls are not of the same diameter, the upper shaft is made adjustable in height, and can be locked in any position by means of a screw passing through the side of the frame. This machine is the invention of H. Schmidt, Berlin.—*Deutsche Industrie Zeitung.*

New Use for Sawdust.

The *Lumberman* says: We have been shown a model of a car wheel consisting of an iron rim of seven inches outward diameter by one-half inch thick, fitted with a well proportioned hub, the space between the hub and rim filled with pine sawdust, pressed in so solidly that we are ready to believe the assertion that resting the iron rim upon bearings, a pressure equal to 23 tons applied to the hub failed to develop any signs of weakness. We hesitate in these days of progress to assert that anything is impossible, and we begin to think that even sawdust possesses elements of value hitherto unsuspected, and that the day may come when the filled grounds adjacent to all sawmills may be seen to have a great value in the mechanical development and utilization of the now useless *débris* placed upon them to get it out of the way. Sawdust car wheels, sawdust brick, sawdust fence posts, railroad ties, and even sawdust window and door frames, wainscoting and mouldings, begin to appear among the possibilities of the immediate future.

AMATEUR MECHANICS.

WOOD-WORKING.

It is not the intention of the writer to enter largely into the subject of wood-working, but simply to suggest a few handy attachments to the foot lathe which will greatly facilitate the operations of the amateur wood-worker and will be found very useful by almost any one working in wood. It is not an easy matter to split even thin lumber into strips of uniform width by means of a handsaw, but by using the circular saw attachment, shown in Fig. 1, the operation becomes rapid and easy, and the stuff may be sawed or slit at any desired angle or bevel. The attachment consists of a saw mandrel of the usual form, and a wooden table supported by a right angled piece, A, of round iron fitted to the tool post and clamped by a wooden cleat, B, which is secured to the under side of the table, split from the aperture to one end, and provided with a thumb-screw for drawing the parts together. By means of this arrangement the table may be inclined to a limited angle in either direction, the slot through which the saw projects being enlarged below to admit of this adjustment.

The back of the table is steadied by a screw which rests upon the back end of the tool rest support, and enters a block attached to the under side of the table. The gauge at the top of the table is used in slitting and for other purposes which will be presently mentioned, and it is adjusted by aid of lines made across the table parallel with the saw.

For the purpose of

cross-cutting or cutting on a bevel a thin sliding table is fitted to slide upon the main table, and is provided with a gauge which is capable of being adjusted at any desired angle. For cutting slots for panels, etc., thick saws may be used, or the saw may be made to wobble by placing it between two beveled washers, as shown in Fig. 2.

The saw table has an inserted portion, C, held in place by two screws, which may be removed when it is desired to use the saw mandrel for carrying a sticker head for planing small strips of moulding or reeding. The head for holding the moulding knives is best made of good tough brass or steam metal. The knives can be made of good saw steel about one-eighth inch thick. They may be filed into shape and afterward tempered. They are slotted and held to their places on

ing three spurs, a central aperture, and a series of holes equally distant from the center and from each other, is attached by its spurs to the end of the cylinder to be fluted, and the center of the arbor in the arm, D, enters the central hole in the disk while its finger enters one of the other holes. The opposite end of the cylinder is supported by a center screw. A fork attached to the back of the table embraces the twisted iron, E, so that as the wooden cylinder is moved diagonally over the cutter it is slowly rotated, making a spiral cut. After the first cut is made the finger of the arbor is removed from the disk and placed in an adjoining hole, when the second cut is made, and so on.

Figs. 6 and 7 show a convenient and easily made attachment for moulding the edges of irregular work, such as brackets, frames, parts of patterns, etc. It consists of a brass frame, F, supporting a small mandrel turning at the top in a conical bearing in the frame, and at the bottom upon a conical screw. A very small grooved pulley is fastened to the mandrel and surrounded by a rubber ring which bears against the face plate of the lathe, as shown in the engraving. The frame, F, is let into a wooden table supported by an iron rod which is received by the tool rest holder of the lathe. The cutter, G, is made by turning upon a piece of steel the reverse of the required moulding, and slotting it transversely to form cutting edges. The shank of the cutter is fitted to a hole in the mandrel and secured in place by a small set screw. The edge of the work is permitted to bear against the shank of the cutter. Should the face plate of the lathe be too small to give the required speed, a wooden disk may be attached to it by means of screws and turned off.

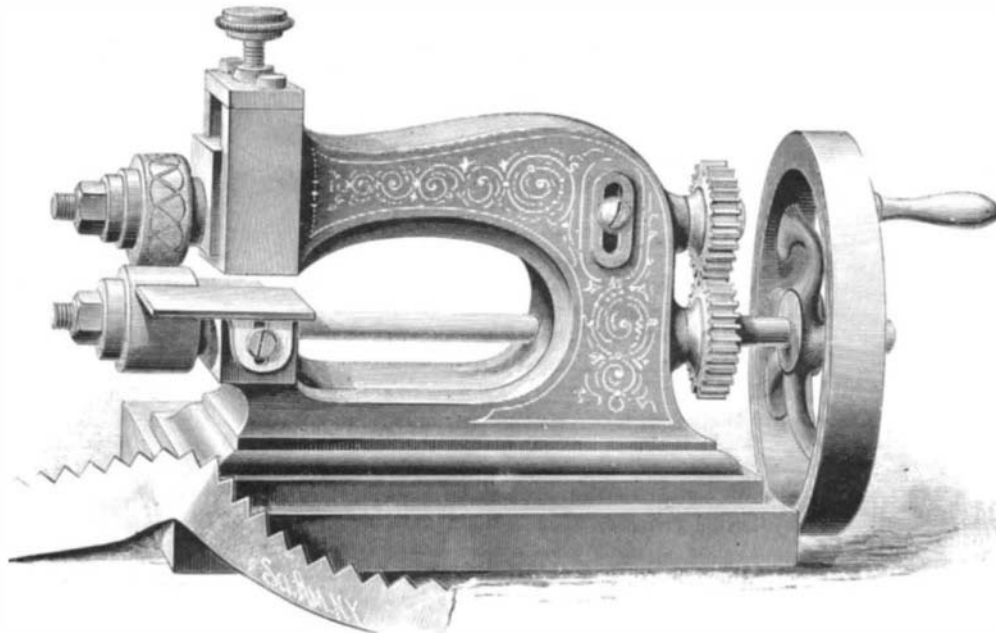
Figs. 8, 9, and 10 represent a cheaply and easily made scroll saw attachment for the foot lathe. It is made entirely of wood and is practically noiseless. The board, H, supports two uprights, I, between which is pivoted the arm, J, whose under side is parallel with the edge of the board. A block is placed between the uprights, I, to limit the downward movement of the arm, and the arm is clamped by a bolt which passes through it and through the two uprights and is provided with a wing nut.

A wooden table, secured to the upper edge of the board, H, is perforated to allow the saw to pass through, and is provided with an inserted hardwood strip which supports the back of the saw, and which may be moved forward from time to time and cut off as it becomes worn. The upper guide of the saw consists of a round piece of hardwood inserted in a hole bored in the end of the arm, J. The upper end of the saw is secured in a small steel clamp pivoted in a slot in the end of a wooden spring secured to the top of the arm, J, and the lower end of the saw is secured in a similar clamp pivoted to the end of the wooden spring, K. Fig. 10 is an enlarged view showing the construction of clamp.

The relation of the spring, K, to the board, H, and to the other part is shown in Fig. 9. It is attached to the side of the board and is pressed upward by an adjusting screw near its fixed end.

The saw is driven by a wooden eccentric placed on the saw mandrel shown in Figs. 1 and 2, and the spring, K, always pressed upward against the eccentric by its own elasticity, and it is also drawn in an upward direction by the upper spring. This arrangement insures a continuous contact between the spring, K, and the eccentric, and consequently avoids noise. The friction surfaces of the eccentric and spring may be lubricated with tallow and plumbago. The eccentric may, with advantage, be made of metal.

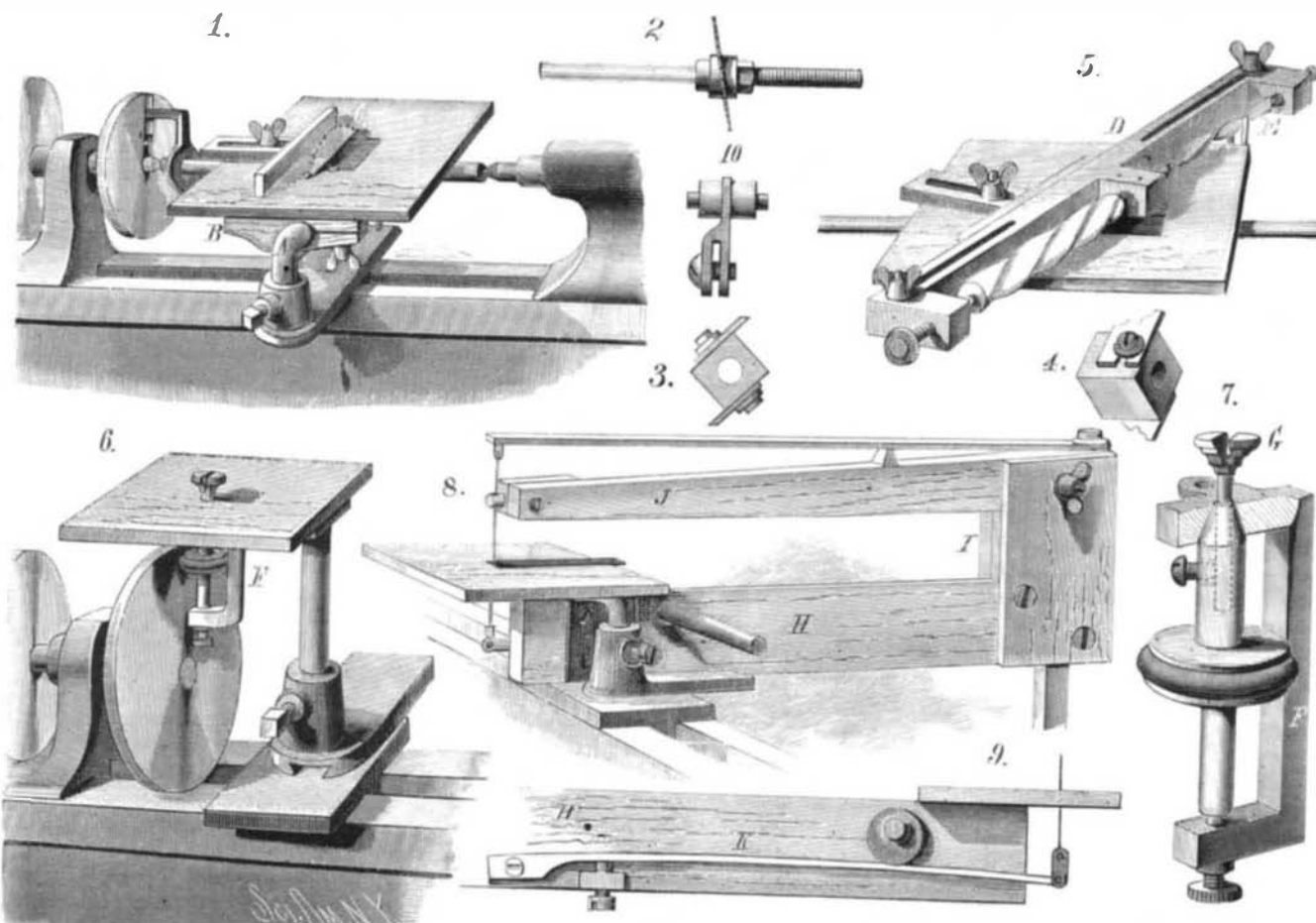
The tension of the upper spring may be



PINKING MACHINE.

the head by means of quarter-inch machine screws. It is not absolutely necessary to use two knives, but when only one is employed a counterbalance should be fastened to the head in place of the other. All kinds of moulding, beading, tonguing, and grooving may be done with this attachment, the gauge being used to guide the edge of the stuff. If the boards are too thin to support themselves against the action of the knives they must be backed up by a thick strip of wood planed true. The speed for this cutter head should be as great as possible.

Fig. 5 shows an attachment to be used in connection with the cutter head and saw table for cutting straight, spiral, or irregular flutes on turned work. It consists of a bar, D, carrying a central fixed arm, and at either end an adjustable arm, the purpose of the latter being to adapt the device to work of different lengths. The arm projecting from the center of the bar, D, supports an arbor having at one end a socket for receiving the twisted iron bar, E, and at the other end a center and a short finger or pin. A metal disk hav-



WOOD-WORKING ATTACHMENTS FOR THE FOOT LATHE.