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WOOD PLANER BLADE SETTING GAUGE

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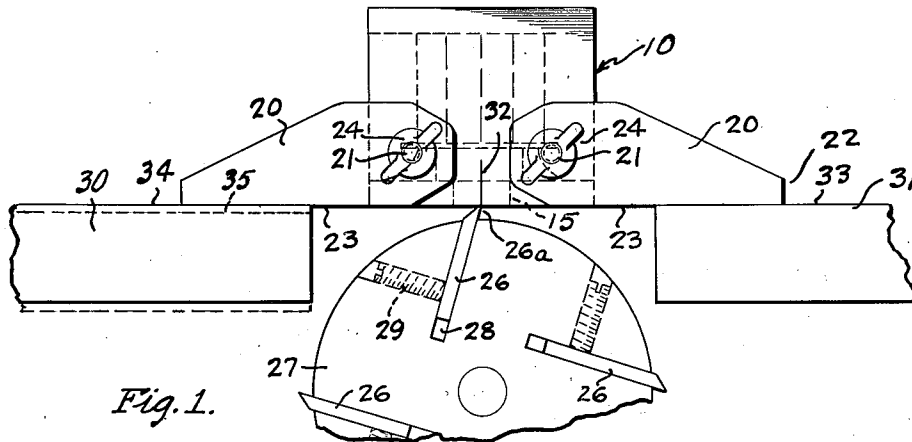


Fig. 1.

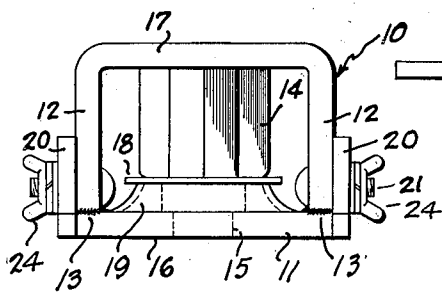


Fig. 3.

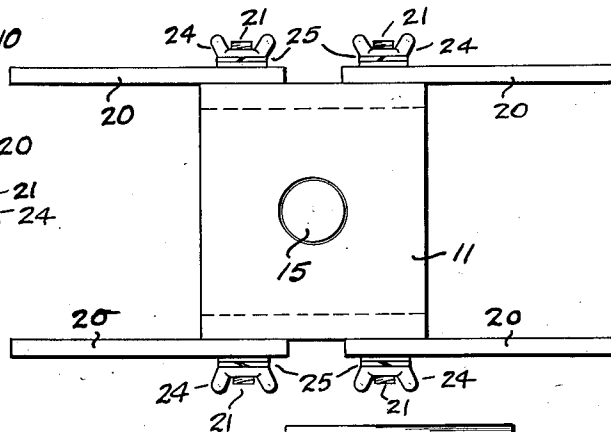


Fig. 2.

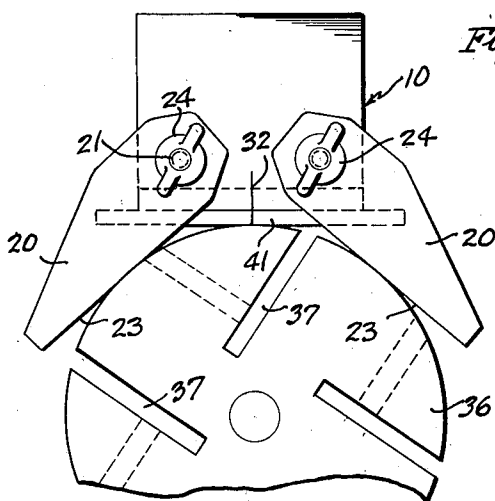


Fig. 4.

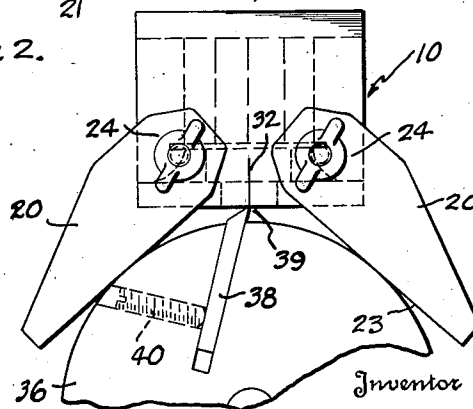


Fig. 5.

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## UNITED STATES PATENT OFFICE

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## WOOD PLANER BLADE SETTING GAUGE

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2 Claims. (Cl. 29—200)

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This invention relates to a gauge for setting planer blades, and has for an object to provide a very simple, effective device for facilitating the setting of the blades more accurately and in a more expeditious manner.

Another object is to provide a construction which may be readily used for quickly and accurately setting blades of both so-called wood jointer and wood thickness planers.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In this drawing:

Fig. 1 is a side elevation of the device showing how it may be used to set the blades of a so-called wood jointer planer;

Fig. 2 is a bottom view of the gauging device;

Fig. 3 is an end view, and

Figs. 4 and 5 are side elevations showing how the device may be used for setting the blades of so-called wood thickness planers.

The usual hand method of setting the planer blades is a very tedious and difficult operation, and it is hard to get all the blades set the same so that the rotating cutters will cut properly. This device will set them quickly and accurately without the use of the usual cut-and-try method. The construction may, of course, be varied, but that shown in the drawing comprises a body including an inverted U-shaped frame 10 with a strap or face plate 11 joining the ends of the side members or laterally spaced legs 12. The plate 11 may be secured to the ends of these legs by any suitable means, such, for example, as welding, as shown at 13. Mounted in the frame is a strong electric magnet including a body 14, one pole 15 of which is extended through an opening in the plate 11 with its end surface preferably substantially flush with the lower face 16 of this plate. The magnet may be mounted in any suitable way, but, as shown, its upper end is against the connection portion 17 of the U-shaped body member and rests by an intermediate shoulder on a plate or washer 18 resting on a substantially cone-shaped sheet metal member 19, which may have a certain amount of resilience to allow for expansion and contraction.

Adjustably secured to the member 10 are suitable supporting members adapted to rest on one or more locating surfaces to position the surface

of the magnet pole 15 in a given relation with these locating surfaces. In the form shown, these supporting and positioning members comprise fingers or plates 20 pivotally secured to the outer surfaces of the legs 12 by any suitable means, such as the bolts 21. These fingers may be of different shapes as found desirable, but those shown have been found to be very satisfactory and are formed from plates of suitable thickness or gauge, preferably tapered on their upper edges to a narrower outer end 22 with a straight lower edge 23 forming a supporting and locating means. There is a pair of these fingers or supporting members mounted on each of the opposite sides of the member 10, and they are preferably of a length so that the respective fingers of each pair extend well beyond the opposite ends of the member 10, as shown in Figs. 1 and 2. These fingers can be adjusted to different positions by swinging them about their pivots 21, and they may be secured in any adjusted position by any suitable means, such, for example, as the wing nuts 24, on these screws, and it is also preferred to use split spring or lock washers 25 whereby these fingers may be secured and clamped or locked in different adjusted positions.

As stated above, there are two main types of planer knives which must be properly set for effective operation of the planer. They are commonly called (1) wood jointer and (2) wood thickness planers. Fig. 1 shows how the device is used to set the so-called wood jointer cutters. The blades 26 are properly set in the rotating roller 27, the blades normally running the full length of the roller, and are usually set in longitudinal grooves 28 in the roller and secured by set screws 29. This roller is mounted to rotate at high speed in the machine, and there are two tables 30 and 31 mounted on opposite sides of this roller. The board to be planed is fed from the table 30 to the table 31 while passing over the cutter roller 27, the knives of which do the planing operation, the board, or course, being guided and held down against the tops of these tables during the planing operation by suitable means (not shown).

In setting the knife roller 27 with this device, after the blades 26 are properly located in the roller and clamped therein, either by this device in the manner presently to be described in connection with Figs. 4 and 5 or by some other means, the side plates or fingers 20 are adjusted so that their lower edges 23 are in the same plane as the surface 16 of the plate 11, and therefore in the same plane as the exposed surface of the

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magnetic pole 15, and then these fingers are clamped by the thumb nuts 24. These fingers may be so located on a surface gauge or other suitable means, or they can be located by a straight-edge placed on the surface of the plate 11. Then the device is placed on top of the table 31, as shown in Fig. 1, and held level on this table while the other table 30 is raised by suitable adjusting means (not shown) to bring the top of this table up to engage the lower edges of the fingers 20 on the opposite side of the roller 27, as shown in full lines Fig. 1. This brings the top of table 30 on the same level as the top of table 31, and the top surfaces of at least one of these tables, in this case table 31, acts as a locating surface for the fingers 20 and thus the face of the magnet pole 15. The device with the fingers 20 is centered with respect to the roller 27 by the center gauge line 32 on the outer surface of the legs 12. One of these devices is used adjacent each of the opposite ends of the roller and both properly set, as described, on the tables 30 and 31. Now, if the roller 27 is loosened, the strong magnets of the two devices adjacent the opposite ends of this roller will draw it up against the bottom of the plates 11 of the two devices and hold it there. It is preferred to use the two devices to thus simultaneously locate the opposite ends of the roller, but it will be understood that one end of the roller may be located with one of these devices secured in this position, and then the device shifted to the other end of the roller to locate that end. After the roller is located by the device or devices the bearings for this roller can be set while the roller is held by the magnet, and it will be understood these cutting edges of the blades 26 when in their top position will be accurately located on the level of the plane of the top surfaces 34 and 33 of the tables 30 and 31. Now the gauges can be removed and by means of the adjusting means (not shown) for the table 30, this table may be lowered to any given dotted line position 35 to bring its top surface 34 at the proper distance below the level of the surface 33 of the table 31, and the top of the edges of the cutters 26. This will, therefore, determine accurately the amount of bite or cut which is to be taken off the surface of the board in the planing operation. It will be seen this is a very simple operation to accurately locate the roller 27 and one which may be performed easily and quickly without any tedious cut and try operation.

The device can also be used to set all the blades in the roller 27 with their cutting edges at a uniform distance above the surface of the roller, or that is, at a uniform radial distance from the axis of the roller, so that all blades will operate the same on the work. After setting or locating the roller with one blade as described the other blades can each be loosened, the roller turned to bring each blade under the magnets so it is drawn outwardly and located by the magnets, and then secured in this position by the set screws.

Figs. 4 and 5 show how the device is used to set the blades in the large roller of the thickness type of planer, but the same operation can be used for setting the blades 26 in the smaller roller 27 of the type of planer shown in Fig. 1. The larger roller is indicated at 36, and has the longitudinal slots 37 running lengthwise of the roller at the proper angle to the axis for the plurality of cutter blades 38, only one of which

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is shown, and which blades are adjusted in or out to locate the knife edge 39 at the proper distance above the surface of the roller, after which it is adjusted in position by its set screws 40. By the ordinary methods it is very difficult to set these blades so that the cutting edge of each projects the same distance above the surface of the roller 36, as the roller is usually rather inaccessible and not much space is available to get at it, and the roller will not operate properly in a planer if these cutting edges are not located at the same distance from the axis of the roller. These blades may, however, be very easily and accurately set with this device. To do this, the wing nuts 24 are loosened, therefore loosening the fingers 20 to swing about the bolts 21. The device is then set on roller 26 with the magnet toward the roller, and with a thickness gauge 41 seated on the roller and between the surface of the roller and the plate 11 and the magnet. This thickness gauge or plate 41 of the desired thickness is placed on top of the roller or the face of the magnet to position this face of the magnet at a distance above the surface of the roller determined by the thickness of this plate 41. This gauge or thickness plate is of the thickness it is desired that the cutting edges 39 of the knife blades 38 be set above the outer surface of the roller 36. After the magnet has been placed and located by this thickness gauge, as shown in Fig. 4, the fingers 20 are swung down so that their lower edges 23 engage the surface of the roller as shown in Fig. 4, and the thumb screws 24 tightened up to secure them in this position. Then the thickness gauge 41 is removed, and it will be seen that now when the edges 23 of the fingers 20 are seated on the surface of the roller 36, as shown in Fig. 5, the base of the magnet 15 will be spaced above the surface of the roller 36 an amount equal to the thickness of the thickness gauge 41. Now, if the magnet is placed over the outer edge of one of the knife blades 38, as shown in Fig. 5, with the edges of the fingers 23 still seated on the roller 36, and the blade released by loosening the set screws 40, its outer cutting edge 39 will be drawn up to and held by the magnets 15, there being one of these devices used adjacent each of the opposite ends of the roller. This will accurately position the cutting edge of the blade the proper distance above the surface of the roller, and this distance will be uniform for the entire length of the blade, and it is the thickness of the thickness gauge 41. Then by setting up the set screws 40, the blade 38 is clamped in this position while it is still held by the magnet, and as suggested, by using one of these gauges at each end of the roller 36 the blade is very accurately and uniformly located with relation to the surface of the roller 36 throughout its entire length. The same operation can then be employed for each of the other blades of the roller, and it will be clear that each can be easily and quickly adjusted to the proper position and clamped therein, and they are all accurately mounted with their cutting edges each the same distance above the surface of the cylinder or roller 36, or that is, the same distance from the axis of the roller so that they will all operate the same on the work.

Having thus set forth the nature of my invention, I claim:

1. A wood planer blade setting gauge comprising a body member, a strong magnet mounted in said body with a pole face of the magnet

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substantially flat and constituting a gauging surface at the lower side of the body, a pair of locating and supporting fingers pivotally mounted on each of the opposite sides of the body to swing about axes substantially parallel to the face of the magnet with the respective fingers of each pair extendable beyond the opposite ends of the body to rest on locating surfaces to support and locate the pole surface with respect to said locating surfaces, and means for securing the fingers in adjusted positions.

2. A wood planer blade setting gauge of the character described comprising an inverted U-shaped member including spaced side legs, a face plate extending between the free ends of the legs of said member, a strong magnet mounted in said member with a pole located in the plate the face of which is a substantially flat surface at substantially the face of the plate, the face of the plate being substantially flat and constituting a gauging surface, a pair of supporting fingers pivotally mounted on each of the opposite sides of said member to swing about axes substantially parallel to the face of the plate and adapted

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ed to rest on locating surfaces to locate the magnet pole surface in a given relation to said surfaces, and means for securing the fingers in adjusted positions.

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