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[54] **BLADE SETTER FOR PLANERS AND THE LIKE**

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[63] Continuation of Ser. No. 284,948, Aug. 30, 1972, abandoned.

[52] **U.S. Cl.** ..... **33/185 R**; 33/201

[51] **Int. Cl.**[2] **B27G 23/00**

[58] **Field of Search** ..... 33/185 R, 201

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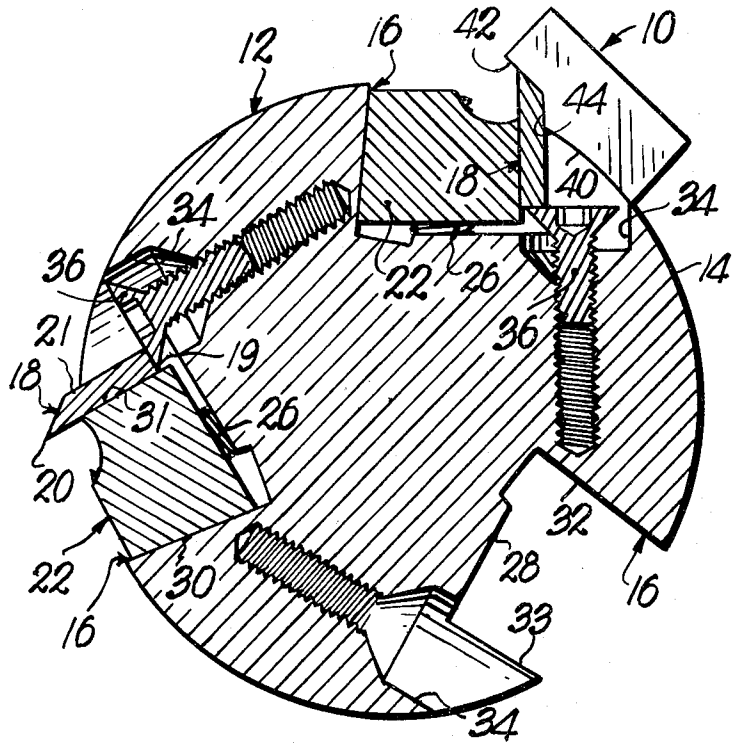
[57] **ABSTRACT**

A gauge tool for setting a blade in an elongated, rotatable cutterhead of a planer or jointer is provided with a pair of elongated, relatively offset, parallel surfaces. One of the surfaces is adapted to be placed on an elongated, longitudinal face of the cutterhead, which is parallel with the longitudinal axis of the latter, in such a manner that the other surface is placed in a position overlying a cutting edge of the blade. The tool properly locates the cutting edge of the blade parallel with the longitudinal axis of the cutterhead when the entire length of the one surface engages the face of the cutterhead adjacent the blade and the cutting edge is shifted outwardly from the face so that it engages the entire length of the overlying surface.

1 Claim, 6 Drawing Figures



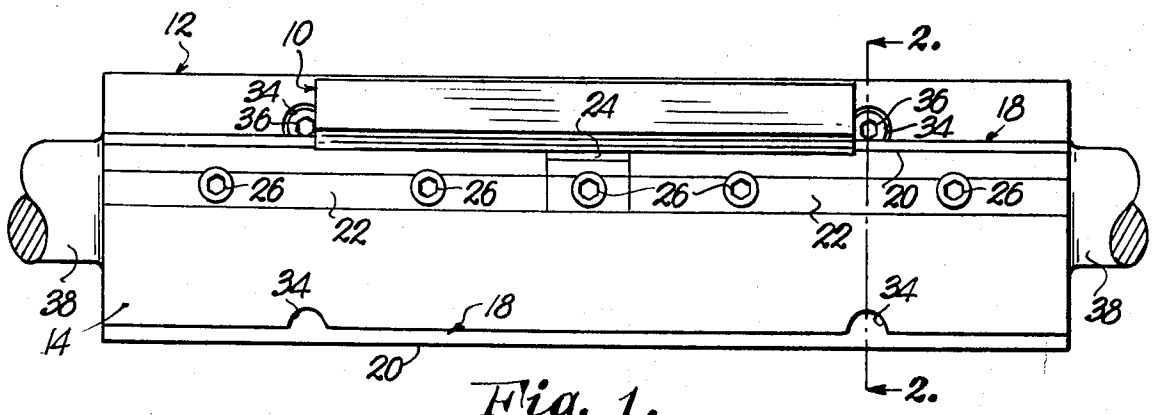


Fig. 1.

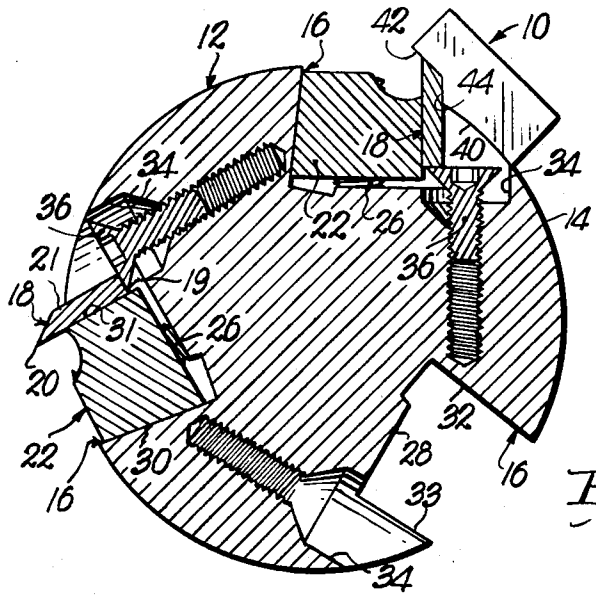


Fig. 2.

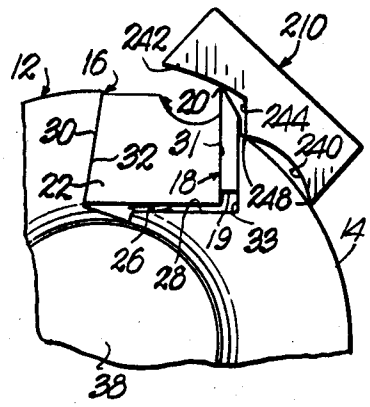


Fig. 6.

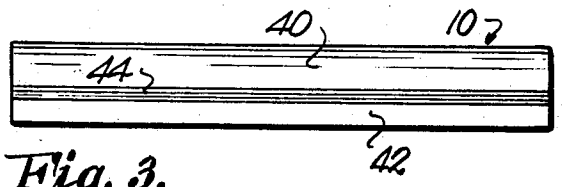


Fig. 3.

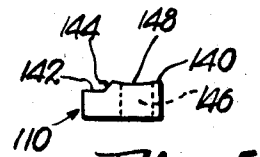


Fig. 5.

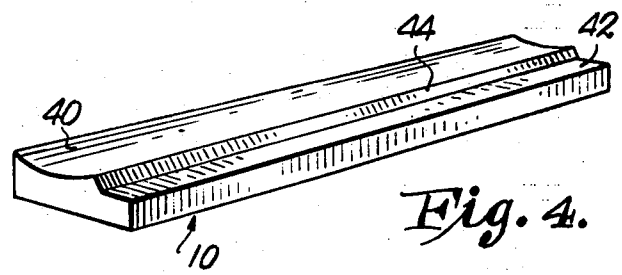


Fig. 4.

BLADE SETTER FOR PLANERS AND THE LIKE

This is a continuation, of application Ser. No. **284,948,** filed on Aug. **30, 1972,** now abandoned.

This invention relates to a tool for accurately, quickly and safely positioning a cutting edge of an elongated blade in a powered surface planer and is particularly intended for use with any planer or jointer having an open-face, rotatable, -blade-holding cutterhead such as is common in planers found in home workshops.

It has always been a time-consuming task to properly position the longitudinal cutting edges of the blades relative to the face of the cutterhead so that a smooth, flat and even surface is obtained when a piece of material passes through the planer. The generally accepted procedure of setting the blades has been to place a gauge, which has been designed primarily for setting the depth of cut, at one end of the blade, bring the cutting edge of the blade immediately below the gauge into contact with the latter and then relocate the gauge at the opposite end of the blade and likewise again bring the cutting edge into contact therewith. Each time one end of the blade is raised, the opposite end tends to move downwardly, thus necessitating the need for again raising the first end of the blade. This procedure results in having to alternately shift the gauge from one end of the blade to the other until the edge has been gradually brought into parallelism with the longitudinal axis of the cutterhead. The repeated shifting of the gauge is tedious and time-consuming, thus making it most difficult to readily and quickly change the blades when they become dull or when the blade has been moved and requires resetting.

It is, therefore, a very important object of my present invention to provide a blade-setting tool that accurately positions the cutting edge of a planer blade parallel with the longitudinal axis of the cutterhead.

It is a still further very important object of the invention to provide a blade-setting tool that enables the user to quickly, as well as accurately, set the blade cutting edge parallel with the longitudinal axis of the cutterhead.

It is yet another very important object of my invention to provide a blade-setting tool that need not be shifted from one end of the blade to the other in order to accurately position the cutting edge of the blade parallel with the longitudinal axis of the cutterhead.

It is another important object of the present invention to provide a blade-setting tool that sets the cutting edges of all the blades of uniform distance from the face of the cutterhead.

It is a further object of my invention to provide a blade-setting tool that may be used to set the depth of cut of the blade simultaneously with setting the parallelism of its cutting edge with the face of the cutterhead.

In the drawings:

FIG. **1** is a fragmentary, side elevational view of a planer cutterhead having a blade setter placed thereon and made in accordance with one form of my present invention;

FIG. **2** is an enlarged, cross-sectional view taken along lines 2—2 of FIG. **1,** parts having been removed for clarity;

FIG. **3** is an elevational, longitudinal view of the blade setter removed from the cutterhead;

FIG. **4** is a perspective view of the blade setter;

FIG. **5** is an end elevational view of a blade setter provided with means for securing the same to the cutterhead; and

FIG. **6** is an enlarged, fragmentary, end view showing a modified form of the blade setter.

Referring initially to FIGS. **1–4,** a gauge tool in the nature of an elongated member **10** is adapted to be placed on a rotatable cutterhead, which is of the kind having a solid, elongated, circular body **12** as seen in FIGS. **1** and **2** of a planer or the like (not shown). A pair of shafts **38,** integral with and extending in opposite directions at each end of the body **12,** cooperate with bearings (not shown) to support the body **12** in the planer. The substantially cylindrically shaped body **12,** rotatable about its longitudinal axis, is provided with an elongated, transversely convex face **14** parallel with the above-mentioned axis and three longitudinal grooves **16** equally spaced circumferentially about the body **12** and extending inwardly from the face **14.** Inasmuch as the three grooves **16** are identical and each contain a plurality of elongated gibs **22** and an elongated blade **18,** all of which are also identical, only one groove **16** and its related components will be described with like numerals being used for each of the three sets. It is to be understood that a single tool **10** is used to successively position each of the three blades **18,** therefore its operation will likewise be described only once.

The groove **16** presents an inner wall **28,** a tapered sidewall **32** and a straight sidewall **33** perpendicular to the wall **28.** Immediately adjacent and contiguous with the groove **16** are a pair of spaced-apart holes **34** drilled into the body **12** from the face **14,** each of which are tapped to receive a flanged socket head jackscrew **36.**

The blade **18,** having a longitudinal cutting edge **20,** a longitudinal side **21** and a flat, longitudinal edge **19,** is received by the grooves **16** and is held in place by the wedge-shaped gibs **22** a central one of which is somewhat narrower for cooperation with a shim-like keeper **24.** It is to be understood that the keeper **24,** which is conventionally disposed intermediate the central gib and the blade **18,** cooperates with the central gib to clamp the blade **18** in much the same manner as do the two outer gibs **22.** The gibs **22** are provided with a tapered side **30** and a straight side **31,** both of which are parallel with the walls **32** and **33,** respectively, of the groove **16,** and socket setscrews **26** that pass therethrough in parallelism with the side **31** and abut the wall **28** of the groove **16.**

The member **10** is provided with a pair of elongated, relatively offset surfaces **40** and **42** parallel with each other along their longitudinal axes. The surface **40** has a transversely concave contour that is adapted to be placed on the face **14** of the body **12** adjacent the groove **16** and is concentric with the transversely convex face **14** of the body **12** when the surface **40** is placed thereon. Rectangular surface **42** is planar and overlies the grooves **16** in an outwardly spaced relationship thereto when the surface **40** is in engagement with the face **14,** the entire length of the surface **42** thereby being in a position to contact the cutting edge **20** of the blade **18** when the latter is properly adjusted. An elongated extension **44** of the surface **42** is angularly disposed between the surfaces **40** and **42** so that its longitudinal axis is parallel with the longitudinal axes of the surfaces **40** and **42.**

In operation, the gibs **22** are placed in end-to-end relationship in the groove **16** with their tapered sides **30** and the tapered wall **32** of the groove **16** in juxtaposition. The blade **18** is then also placed in the groove **16,** between the sides **31** of the gibs **22** and the sidewall **33,** with the cutting edge **20** spaced outwardly from the face **14** and the edge **19** resting on the heads of the jackscrews **36** as seen in FIG. **2,** jackscrews **36** having been turned outwardly a sufficient distance to engage the blade **18** before the latter comes in contact with the wall **28.** The usual keeper **24** is also inserted between the middle gib **22** and the blade **18** at this time. The member **10** is placed on body **12** adjacent the groove **16** such that the entire length of the surface **40** is in engagement with the face **14,** the entire length of the extension **44** also being in engagement with the side **21** of the blade **18.** The mating contours of the face **14** and the surface **40** are now concentric, thus placing the longitudinal axis of the surface **40** parallel with the longitudinal axis of cutterhead **12.** The fact that the longitudinal axes of the surfaces **40** and **42** are parallel results in the longitudinal axis of the planar surface **42** also being parallel with the longitudinal axis of the body **12.** A releasable securing means, such as a C-clamp (not shown), may be used to clamp the member **10** to the body **12** for maintaining the member **10** in position as the blade **18** is adjusted and set.

After the member **10** has been properly secured to the body **12,** the jackscrews **36** are turned in an outwardly direction, thus moving the blade **18** outwardly from the wall **28** of the groove **16** and into a position placing that portion of the cutting edge **20** beneath the tool **10** into engagement with the surface **42** throughout the entire length of the latter. The surfaces **40** and **42,** as well as the extension **44,** are coextensive in length with one another and define the full length of the member **10,** such length being sufficient to extend along a major stretch, more than half the length, of the face **14** of the body **12.** The cutting edge **20** is now in parallelism with the longitudinal axis of the body **12** and the blade **18** may now be set by turning the socket setscrews **26** (the middle one first) so that as they abut the wall **28** of the groove **16,** the gibs **22** are forced away from the wall **28** and the tapered wall **32** causes the gibs **22** to move laterally with respect to their longitudinal axes and clamp the blade **18** tightly between the sides **31** and the wall **33** of the gibs **22,** and it is to be understood that the central gib, which cooperates with the keeper **24,** is tightened first in order to initially secure the blade **18** relative to the body **12** and to keep the blade **18** positioned while the remaining end gibs **22** are tightened groove **16,** respectively. The jackscrews **36** may now be turned back into their respective holes **34** as they are no longer needed to support the blade **18.** The abovementioned C-clamp is now removed, thus releasing the member **10** from the body **12** after which the remaining blades **18** are set.

It is most important that each of the blades **18,** with their edges **20,** extend outwardly from the face **14** an equal distance in order to obtain a uniform depth of cut. If the distance between the edge **20** and the face **14** is not the same and varies from one blade **18** to another, the material being planed will not have a smooth and even surface. The engagement of the extension **44** with the side **21** of the blade **18** insures that the surface **42** is consistently located relative to the groove **16,** the blade **18,** and the edge **20** each time member **10** is placed on the face **14,** thus causing the edge **20** to always be spaced outwardly from the face **14** a uniform distance. If the spacing of the edge **20** from the face **14** is to be changed, then a different tool **10** is required in which the relative offset or defined by the transverse width of the extension **44,** between the surfaces **40** and **42** is either more or less, depending on whether a greater or a lesser depth of cut is desired.

The member **10** of the present invention eliminates the need for constantly shifting a gauge from one end to the other of the blade **18** as previously mentioned. The elongated, parallel surfaces **40** and **42** are of sufficient length that when the edge **20** of the blade **18** engages the entire length of the surface **42,** the edge **20** is also parallel with the longitudinal axis of the body **12** by virtue of the fact that the surface **40,** which is in contact throughout its entire length with the face **14,** is also parallel with the longitudinal axis of the body **12.**

The utility and, therefore, the desirableness of the member **10** is clearly shown by the fact that the user is able to set the three blades **18** of the cutterhead **12** in approximately thirty minutes whereas the earlier-mentioned laborious procedure takes approximately 1½ hours. It can be readily seen that this excessive amount of time results in a tendency to neglect adjusting the blades **18** as frequently as they should be, as well as to neglect replacing them as soon as one might normally otherwise do. The tendency to neglect the proper maintenance of the blades **18** not only results in poor quality workmanship, but also introduces a safety factor in that hazardous conditions are created when planers are used which have dull blades that do not function properly. The speed and ease with which the blades **18** may now be set is such that the tendency to overlook maintenance functions because of the time involved is virtually eliminated and makes the 30-minute process of setting the blades **18** a simple and routine matter that may be easily and accurately done as often as needed without consuming a large amount of time.

The convenience and ease of properly maintaining the parallelism of the blade's cutting edge **20** with the longitudinal axis of the cutterhead through the use of the member **10** is especially helpful to the hobbyist who has a planer or jointer in his home workshop and does not have a great amount of time to spend in maintaining his equipment. Very often individuals, such as these, have only an hour or two that they are able to spend in their workshop in any one span of time and having to spend the greater share of this time setting the planer blades is most discouraging and is conducive to the aforementioned neglect. The member **10** of the instant invention overcomes this disadvantage because of its simplicity, ease of use and low cost.

OTHER EMBODIMENTS

In FIG. **5,** a member **110** is shown having a magnet **146** embedded therein and made a part thereof, which serves as an alternate to the C-clamp for securing the member **110** to the body **12,** provided the latter is responsive to magnetic attraction. The magnet **147** presents an arcuate surface **148** which is flush with and forms a part of a transversely concave surface **140** that is identical to the surface **40** of the previously described embodiment with the exception of the surface **148.** It is to be understood that the magnet **146** is of sufficient strength and size to hold the member **110** properly po-

sitioned on the face **14** with respect to the groove **16** and the blade **18** to enable the edge **20** to contact the surface **142** without dislodging the member **110.** A planar surface **142** and an elongated extension **144** are identical to the surface **42** and the extension **44** respectively, as shown in FIG. **4.** With the exception of the magnetic securing means, the operation and use of the member **110** is the same as that for the member **10.**

A further embodiment is shown in FIG. **6** in which a member **210** is provided with a pair of spaced-apart, elongated surfaces **240** and **242** having transversely concave contours and parallel longitudinal axes. An elongated extension **244,** identical to the extensions **44** and **144** in the previous embodiments, is disposed between the surfaces **240** and **242.** The surface **240** has a pair of spaced, parallel, longitudinal edges **248** which provide lines of contact with the face **14** of the body **12** when the member **210** is placed thereon. The parallelism of the edges **248** establishes and maintains the longitudinal axis of the surface **242** parallel with the longitudinal axis of the body **12** as long as the edges **248** are in contact with the face **14** throughout their entire lengths. Furthermore, the surface **242** is concentric with face **14** when the edges **248** are disposed on face **14** throughout their lengths.

The configuration of the member **210** is distinctive in that the concentricity of the surface **242** and the face **14** precludes the need for having the extension **244** in engagement with the side **21** of the blade **18** as the latter is being adjusted and set. As long as some part of the surface **242** overlies the cutting edge **20** of the blade **18** and the edges **248** are in contact with the face **14** throughout their entire lengths, the edge **20** will be spaced a uniform distance outwardly from the face **14** of the body **12** when in contact with the surface **242** along the entire length of the latter. In other words, if in setting the first of the three blades **18** the member **210** is placed on the face **14** so that the edge **20** engages the surface **242** adjacent the extension **244** and the remaining two blades are subsequently set with their edges **20** engaging the surface **242** at some point further removed from the extension **244,** the three edges **20** are still uniformly spaced outwardly from the face **14** by virtue of the concentricity of the concave surface **242** with face **14.** With the exception of the way in which the tool **210** may be positioned on the body **12** with respect to the blade **18,** the operation and use thereof is the same as that for the tool **10.**

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A gauge tool for setting an elongated blade in a cutterhead, the latter including an elongated, axially rotatable cylindrical body having an elongated, transversely convex face parallel with the axis of rotation, and a longitudinal groove extending into the head from said face receiving the blade with the longitudinal cutting edge thereof being spaced outwardly from said face, said cutterhead further being provided with means within said groove releasably holding the blade in a clamped condition in the groove and against a sidewall of the same, said tool comprising:

a unitary, elongated member having a first segment of a length and configuration for continuous, uninterrupted engagement with a major stretch of said convex face adjacent the groove and blade when said first segment is positioned on said convex face proximal to the juncture of said groove sidewall and convex face with the longitudinal axis of said member in parallelism with the longitudinal axis of said body,

said member also having a second blade-engaging segment extending only partially across the width of said groove in overlying relationship to that length of said blade adjacent said member, said second segment being equal in length to said first segment and configured to permit access to said blade-holding means within said groove along the entire length of the latter,

the normal underside of said member being defined by a pair of elongated, interconnected, juxtaposed surfaces of a uniform length and disposed in laterally offset relationship relative to one another with their respective longitudinal axes being parallel with that of said body,

one of said surfaces defining the normal underside of said first segment and being transversely arcuate to present a contour concentric with said convex face for said continuous, uninterrupted engagement therewith along the entire length of said one surface,

the other of said surfaces defining the surface of said second segment adjacent said blade, said other surface being planar and extending only partially over said groove in an outwardly spaced relationship thereto,

there being a fixed, elongated, planar, angularly disposed blade-side-engaging extension surface of predetermined, uniform transverse width interconnecting said pair of surfaces along the full length of the member and having a longitudinal axis parallel with the longitudinal axes of said pair of surfaces,

said blade-side-engaging extension surface being configured to define a continuation of said groove sidewall extending outwardly from said convex face in continuous and uninterrupted laterally abutting engagement with the entire surface area of that portion of one side of the blade extending outwardly from said convex face and disposed adjacent said blade-side-engaging surface whereby, upon movement of the blade outwardly of the groove to a position placing the cutting edge thereof in engagement with the outer surface throughout the length of the latter, the full length of the cutting edge is uniformly spaced outwardly a predetermined distance from said convex face and said cutting edge is parallel with said body axis.

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