T. J. KINTNER.

GAGE ATTACHMENT FOR PLANES.

APPLICATION FILED OCT. 13, 1914.

1,144,041.

Patented June 22, 1915.

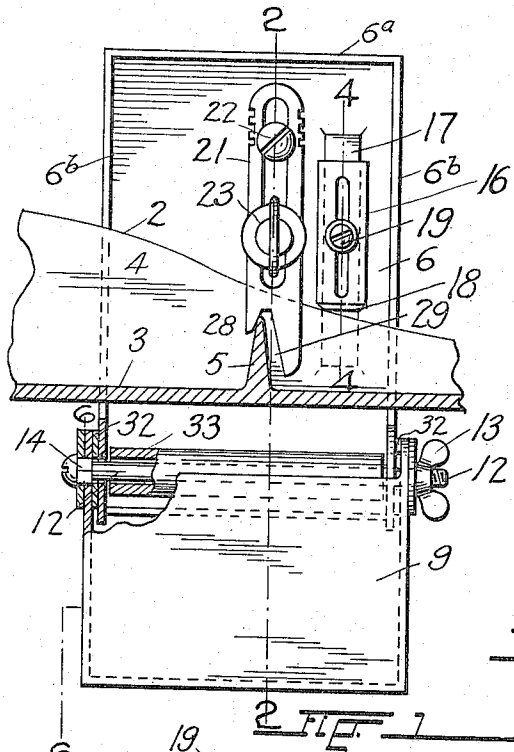


Fig. 1

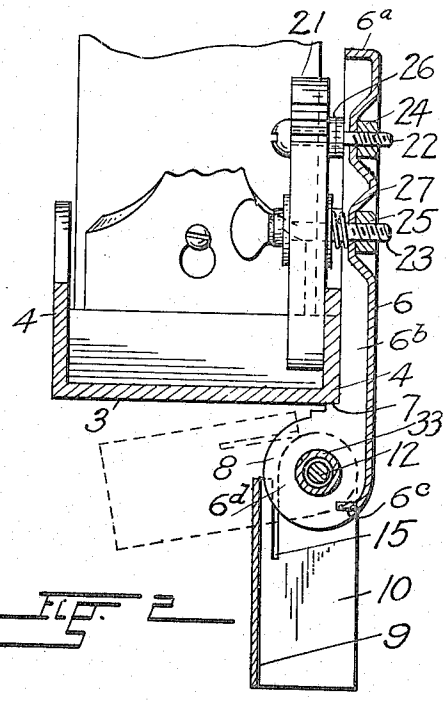


Fig. 2

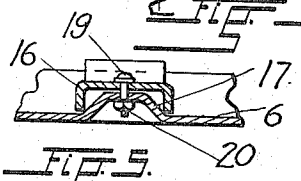


Fig. 5.

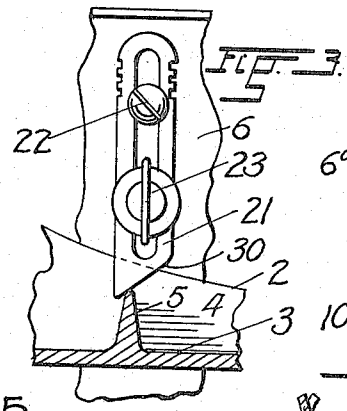


Fig. 3.

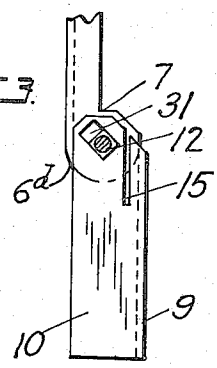


Fig. 7.

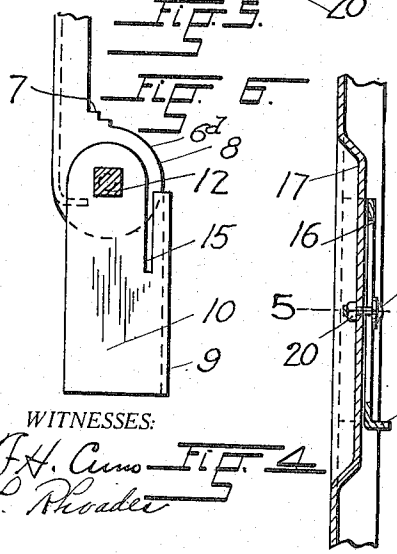


Fig. 6.

Fig. 4.

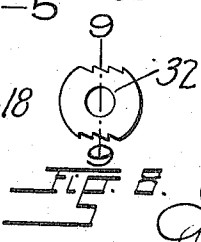


Fig. 8.

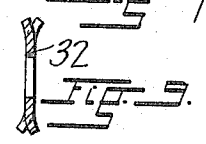


Fig. 9.

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UNITED STATES PATENT OFFICE.

THEODORE J. KINTNER, OF DENVER, COLORADO.

GAGE ATTACHMENT FOR PLANES.

1,144,041. Specification of Letters Patent. Patented June 22, 1915.

Continuation in part of application Serial No. 820,890, filed February 25, 1914. This application filed October 13, 1914. Serial No. 866,453.

To all whom it may concern:

Be it known that I, THEODORE J. KINTNER, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Gage Attachments for Planes, of which the following is a specification.

This invention relates to improvements in gages of the type used on jointer planes to guide them in their movement along a piece to be worked so as to plane the same at a definite angle with respect to a side thereof.

The primary object of my invention resides in the provision of a guide of this character which is very simple of construction, may be easily attached in its proper position, to planes of different proportions by means of novel design and which by a simple adjustment can be employed for guiding a plane to which it is applied, to cut surfaces at different angle to the guiding surface of the work.

The present application is filed as a continuation of my application No. 820,890, filed February 25, 1914, and allowed June 11, 1914.

In the accompanying drawings in the various views of which like parts are similarly designated, Figure 1 represents a fragmentary, longitudinally sectional view of a plane with my improved gage in its operative position, Fig. 2, a section taken along the line 2—2, Fig. 1, Fig. 3, a fragmentary view showing a modified construction of the member of the gage which in practice engages the transverse rib of the plane, Fig. 4, a section taken along the line 4—4, Fig. 1, Fig. 5, a transverse section along the line 5—5, Fig. 4, Fig. 6, a fragmentary section along the line 6—6, Fig. 1, Fig. 7, a view similar to Fig. 6, showing a modified method of constructing the adjustable guiding member of the gage, Fig. 8, a face view of one of the washers used to maintain the said guiding member in its adjusted positions, and Fig. 9, a section on the line 9—9, Fig. 8.

In the drawings, the reference numeral 2 designates a metal jointer-plane to which my improved gage is attached, and which as usual comprises a sole plate 3 provided with parallel sides 4 which extend upwardly along its longitudinal edges and are connected at a point in front of the cutter of the plane, by a transverse rib 5. The edges of the sides 4 curve from their ends upwardly to the central portion of the tool at which the cutter is located.

The gage which serves to guide the plane along a surface of the work to cut the latter at a definite angle with relation to said surface, comprises a body member 6 composed of a metal plate the edges of which are bent at right angles to provide flanges 6^a, 6^b and 6^c. The side flanges 6^b of the plate are at their lower ends enlarged and made of circular form as indicated at 6^d to provide conjointly a curved rest 8 for the end of an adjustable member 9 which determines the angle at which the work is planed, with relation to a surface which said member slidingly engages, and offsets at the upper ends of the said enlarged portions provide conjointly a seat 7 to engage the sole of a plane to which the guide is attached. The longitudinal edges of the side flanges 6^b above their offsets which as mentioned above, form a seat for engagement with the sole of the plane, provide conjointly an abutment which when the seat thus engages the lower surface of the plane, are in contact with the outer surface of the adjacent side of the same.

The adjustable member 9 consists of a metal plate provided along its longitudinal edges with flanges 10 which extend at right angles to its body portion and which at their upper ends project beyond the same to receive between them the enlarged portions 6^d of the side flanges of the member 6.

A pivotal connection between the members 6 and 9 is established by means of a bolt 12 which extends through registering apertures in the parts 6^d of the body-member and the extensions of the flanges on the guide-member 9 which are held against deformation by a distance sleeve 33. A wing-nut 13 screwed onto the projecting threaded end of the bolt, is provided to clamp the member 9 in its adjusted positions, and to prevent rotation of the bolt on the plate, its shank adjacent its head has been squared as at 14, to fit the correspondingly formed opening in the flange 10 of the plate, said head engages. By this arrangement the nut 13 when screwed home will always be in the same position with relation to the member 9 with its wings substantially parallel to the working surface of the same to prevent their contact with the work. The member 9 is slit at its upper

end at or adjacent the bending lines between its body portion and its flanges as at 15, to render the upper parts of the latter bendable for the purpose of preventing transverse curvation of the body-portion when the nut 13 is screwed onto the bolt 12, and the upper part of the said body portion is at the same time rendered resilient to frictionally engage the curved rest 8 of the block.

Slidingly mounted on the upper portion of the body-member 6 for movement in a direction parallel to its longitudinal axis are two members which coöperate to rigidly secure the gage in its proper position on the plane, in which the seat 7 engages the sole of the same as shown in the drawings. One of these members consists of a longitudinally slotted plate 16 of channel section which is slidably fitted over an elongate ridge 17 formed on the plate 6, and which has at its lower end an outwardly extending projection 18 to engage the edge of the side of the plane at which the gage is applied. A headed screw 19 projecting through the slot of the plate 16 into a threaded nut 20 fixed in the depression formed by the ridge 17 at the opposite surface of the plate 6, serves to guide it in its longitudinal movement on the ridge 17 and to firmly clamp it in its adjusted positions. The other fastening member consists of a longitudinally slotted bar 21 the lower end of which is bifurcated to straddle the rib of the plane. It is guided for longitudinal movement on the body-member 6 by means of two screws 22 and 23 which extend through its slot, into threaded nuts 24 and 25 which are fixed in depressions formed in the rear surface of the plate 6. Washers 26 placed around the upper screw between the bar and the plate hold the two parts in spaced relation to each other, and a spring 27 coiled around the other screw between the two parts, serves the same purpose while permitting of a variation in the distance between the parts to adapt the gage for use on planes of different sizes. The screw 23 has a thumb head to facilitate its rotation for securing the bar in its adjusted positions on the body-member, and the upper end of the bar is milled to provide a finger hold for its longitudinal adjustment. The rearward surface 28 of the slit 29 formed in the lower extremity of the member 21 to provide its bifurcation, slants from the perpendicular to a greater degree than the corresponding side of the rib of the plane, so that when the member is lowered to secure the gage in place on the tool, the engagement of the said surface with the upper edge of the rib, as shown in Fig. 1, will draw the gage rearwardly until the side 4 of the plane is firmly wedged between the seat 7 of the member 6 and the projection at the lower end of the member 16, after which the gage is firmly secured in its adjusted position by tightening the thumb-screw 23. It will thus be seen that after the member 16 has been fixed in place, the member 21 will serve to automatically insure the proper position of the body-member of the gage on the tool, and after the thumb-screw 23 has been tightened will lock the same against displacement in either direction. The rearward part of the bifurcated portion of the bar 21 is shorter than the other part, in the form shown in Fig. 1, to reduce the upward movement of the said member necessary to pass the said rearward part over the upper edge of the rib of the plane when the gage is placed on the tool.

While for the purpose of securely fixing the attachment on the plane against movement in either direction, the bifurcation of the lower end of the member 21 is preferable, the object of securing the gage on the tool and drawing it to its proper position may be accomplished by merely beveling the lower edge of the bar, to an angle differing from that of the side of the rib, as shown at 30 in Fig. 3.

To adapt the gage for its application to a plane, the screws which normally secure the adjustable members 16 and 21, are loosened and the body-member 6 is placed against the outer surface of one of the sides of the tool with its seat 7 in engagement with the sole of the same, and so that the member 16 rests upon the slanting edge of the said side while the slanting end of the bar 21 engages the upper edge of the cross-rib of the plane. The members 16 and 21 are now clamped in their adjusted positions by tightening the screws 19 and 23, and the gage is thereby securely fastened to the plane with the surface of the member 9, when in its normal position, as shown in full lines in Fig. 2, at right angles to the sole of the tool for engagement with the side of the work the edge of which is being planed. When it is desired to cut the said edge at an angle to the side of the work engaged by the member 9, other than 90 degrees, the said member is adjusted to the desired angle by loosening the nut 13 on the bolt 12, as indicated in broken lines in Fig. 2.

To remove the gage from the plane, it is but necessary to loosen the bar 21 and move it upwardly to disengage the rib 5 and by leaving the other member 16 in the position to which it was priorly adjusted, the gage may be immediately replaced in its proper position on the plane, by merely sliding the member 6 along the side thereof until its progress is arrested by the engagement of the lower end of the member 16 with the sloping edge of said side when by engagement of the slanting edge at the end of the member 21 with the upper edge of the rib, the member is as hereinbefore described, drawn rearwardly until it has reached the

same point it formerly occupied, when by means of the set screw it is again securely fastened to the tool.

When the rest 8 formed by the enlargements of the side flanges of the member 6 is flat instead of curved as shown in Fig. 1, the adjustment of the member 9 for engagement therewith, may be accomplished by elongating the openings in the flanges of the plate through which the bolt extends as indicated at 31 in Fig. 7. In this construction the enlargements 6^d of the side flanges of the member 6, are reduced in width, inasmuch as the connection of the plate therewith, permits of independent adjustment of the latter to engage the rest.

To securely hold the guide member 9 in its adjusted positions, I place around the bolt 12 between the flanges of the member 9 and the enlargements 6^d of the flanges 6^b on the body member, washers 32, one of which has been shown in detail in Figs. 8 and 9 of the drawings. The washers are provided with peripheral teeth which are swaged to engage the parts between which the washers are disposed when the nut 13 is screwed upon the bolt.

Having thus described my invention what I claim and desire to secure by Letters-Patent is:

1. In a gage attachment for planes having a transverse rib, a body part having a seat to engage the sole of a plane, and an abutment for engagement with the side of the plane, a member on said body-part for engagement with the edge of said side, and an adjustable member on said body part having at one of its ends a slanting edge to engage the upper edge of the said rib.

2. In a gage attachment for planes having a transverse rib, a body part having a seat to engage the sole of a plane, and an abutment for engagement with the side of the plane, a member on said body part for engagement with the edge of said side, and an adjustable member on said body part having at one of its ends an edge which slants from the perpendicular to a greater degree than one of the sides of the said rib, to engage the upper edge of the same.

3. In a gage attachment for planes having a transverse rib, a body part having a seat to engage the sole of a plane, and an abutment for engagement with the side of the plane, a member on said body-part for engagement with the edge of said side, and an adjustable member on said body part having at one of its ends a slit adapted to receive the said rib of the plane, the part of the said member at one side of the said slit being longer than the part at the opposite side of the same.

4. In a gage attachment for planes having a transverse rib, a body part having a seat to engage the sole of a plane and an abutment for engagement with the side of the plane, a member on said body part for engagement with the edge of said side, an adjustable member on said body part for engagement with the said rib of the plane, and a spring between the last-mentioned member and the said body part, for maintaining said member in spaced relation thereto.

5. In a gage attachment for planes having a transverse rib, a body part having a seat to engage the sole of a plane, and an abutment for engagement with the side of the plane, a member on said body-part for engagement with the edge of said side, a longitudinally slotted member in spaced relation to said body part, for engagement with the said rib of the plane, screws extending through said slot to guide said member for longitudinal movement and to secure the same in its adjusted positions, and a spring coiled around one of said screws between the said member and the said body part.

6. In a gage attachment for planes having a transverse rib, a body part having a seat to engage the sole of a plane, and at one side of said seat, an abutment surface for engagement with the side of the plane, a member on said body part for engagement with the edge of said side, an adjustable member on said body part for engagement with the said rib of the plane, a guide member on the body part at the opposite side of said seat, composed of a plate having at its opposite sides rectangular flanges, a bolt passing non-rotatably through openings in the said flanges and rotatably through a bore in the said body part, for the pivotal connection of said guiding member with the latter, and a nut on said bolt for clamping said member in its adjusted positions.

7. In a gage attachment for planes, a body part having a seat to engage the sole of a plane, and adjacent said seat, a rest for the end of a guiding member, means for securing said body part to a plane, and a guiding member having a pivotal connection with said body part to engage the work at a selected angle, and having a resilient end portion to frictionally engage said rest.

8. In a gage attachment for planes, a body part having a seat to engage the sole of a plane, means for securing said body part to a plane, and a guiding member normally at right angles to said seat and having a pivotal connection with said body part to engage the work at a selected angle, said body part having adjacent said seat a rest for the support of an end of the said member in its adjusted positions.

9. In a gage attachment for planes, a body part having a seat to engage the sole of a plane, a guiding member normally having its working face at right angles to said seat and composed of a plate having at its oppo-

site sides, rectangular flanges which engage the sides of the body part, and a bolt inserted through corresponding openings in said flanges and said body part for the pivotal connection of the said guiding member with the latter.

10. In a gage attachment for planes, a body part having a seat to engage the sole of a plane, means for securing said body part to a plane, a guiding member having flanges in engagement with the sides of the body part, at one side of its seat, a bolt inserted through corresponding openings in the said flanges and said body part for the pivotal connection of the guiding member with the latter, and a nut on said bolt for clamping said member in its adjusted positions, the upper ends of the flanges being resilient for the purpose specified.

11. In a gage attachment for planes, a body part having a seat to engage the sole of a plane, means for securing said body part to a plane, a guiding member having flanges in engagement with the sides of the body part, at one side of its seat, a bolt inserted through corresponding openings in the said flanges and said body part for the pivotal connection of the guiding member with the latter, and a nut on said bolt for clamping said member in its adjusted positions, the upper ends of the flanges being rendered resilient for the purpose specified, by slits adjacent the lines at which they adjoin the body portion of the member.

In testimony whereof I have affixed my signature in presence of two witnesses.

THEODORE J. KINTNER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."