June 2, 1925. 1,540,132

C. G. JOHANNESMEYER ET AL

TABLE CLAMP

Filed July 1, 1924

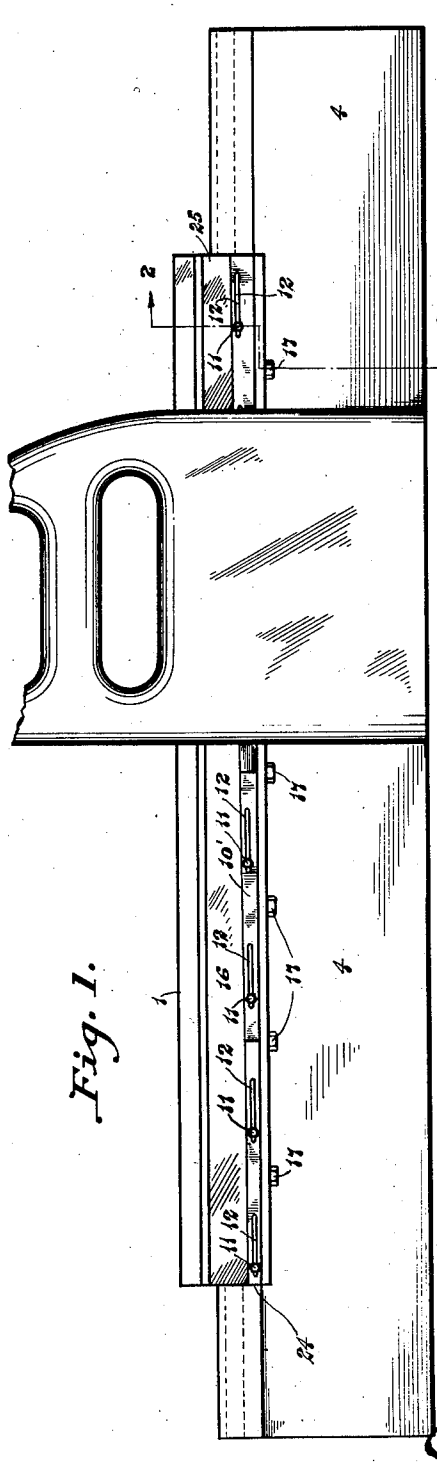


Fig. 1.

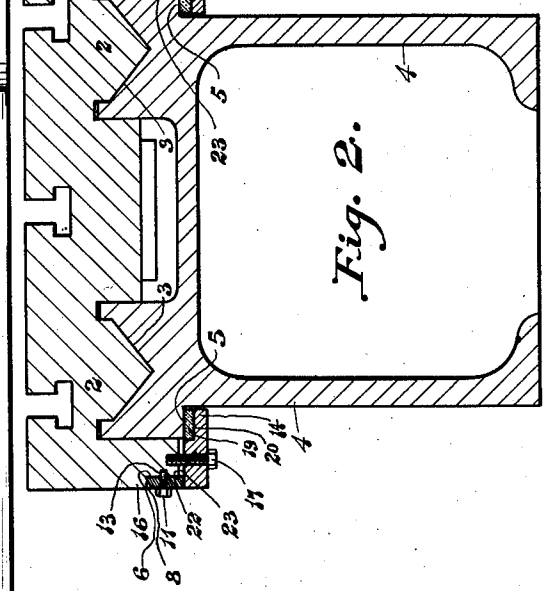


Fig. 2.

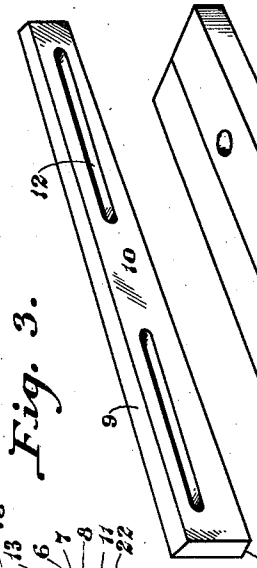


Fig. 3.

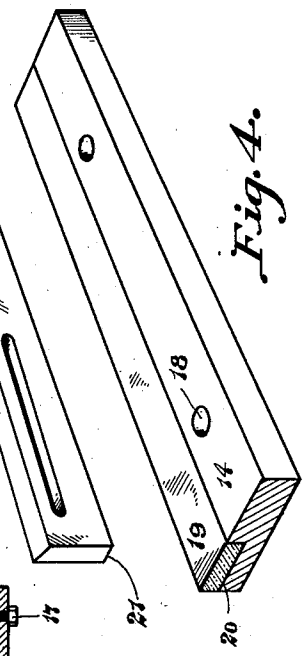


Fig. 4.

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UNITED STATES PATENT OFFICE.

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TABLE CLAMP.

Application filed July 1, 1924. Serial No. 723,511.

To all whom it may concern:

Be it known that we, CHARLES GEORGE JOHANNESMEYER and ALFRED R. McCANN, citizens of the United States, and residents, respectively, of Glendale, in the county of Hamilton and State of Ohio, and Hamilton, in the county of Butler and State of Ohio, have invented certain new and useful Improvements in Table Clamps, of which the following is a specification.

Our invention relates to a novel table clamp more particularly adapted for use on metal planers.

It is well known that slidable engagement of the V-runners and V-tracks, respectively, of the table and bed of a metal planer wears the metal of the contacting surfaces thereby causing particular disadvantages in the operation of the planer resulting in the finished work or product having undesirable qualities as well as producing damaging effects upon the mechanism comprising the planer. A table clamp is usually located under the table for the purpose of maintaining the table against upward movement when the metal cutting tool engages the work. After the contracting surfaces of the V-runners and V-tracks are considerably worn lost motion exists in the clamping device between the table and bed whereby the table is permitted to rise a distance from the bed dependent upon the extent of the worn surfaces. Lost motion between the table and bed is especially disadvantageous for the reason that the usual metal cutting tool, suitably secured to parts connected with the table, is unable to take a usual heavy "cut" from the work, suitably secured to the bed, without resulting in "chatter" of the tool thereby causing vibration which is damaging to the complete planer as well as producing a finished product having indented and roughened surface. It is, therefore, advantageous to provide sufficient stability of the table relative to its upward movement with relation to the bed so that the tool has minimized adaptability to "chatter" when a heavy "cut" is taken from the work.

The objects of our invention are to provide means whereby the wear caused by slidable engagement of the V-runners and V-tracks respectively of a metal planer table and bed may be taken up; to provide adjustable means adapted to maintain the table against upward movement when a heavy "cut" is taken from the usual work fixed to said bed; to provide means adapted to eliminate vibration whereby the tool is capable of taking a "cut" of considerable depth in the material without developing "chatter", thereby producing a smooth surface on the work and reducing the number of operations required to complete the work.

Our invention consists in providing a wedge shaped groove in the lower outer edge of each side of a metal planer table and longitudinally thereof, said table having a plurality of threaded holes positioned in said grooves having an upper angular surface and adapted to receive a similarly formed sectional wedge having a plurality of longitudinal slots therethrough; in providing a horizontal shoulder longitudinally of each side of said bed and below the V-tracks therein; in providing a pair of longitudinal plates fixed to the lower edges of said table and respectively in engagement with said wedges, each of said longitudinal plates having a longitudinal offset therein adapted to receive a longitudinal bar in engagement with said shoulders, respectively, said slots in said wedges adapted to register with said threaded holes in said table for receiving bolts adapted to adjustably fix said wedge to said table for maintaining the outer edge of said longitudinal plates in horizontal position relative to said bar.

Our invention also consists in the construction, combination and arrangement of parts as herein set forth and claimed.

In the drawing:

Fig. 1 is a side elevation of a metal planer showing the side arm support partly broken away and showing our invention;

Fig. 2 is a section taken on a line corresponding to 2—2 of Fig. 1;

Fig. 3 is a perspective view of a section of our wedge; and

Fig. 4 is a perspective view of our longitudinal plate and hardened longitudinal bar fixed thereto.

In the preferred construction of our invention as exemplified on a usual metal planer which may comprise table 1 provided with usual V-runners 2 adapted to slidably travel in usual V-tracks 3 formed in bed 4, we provide longitudinal shoulders 5 formed

below V-tracks 3 of the bed. Longitudinal wedge shaped grooves 6 in the lower outer edges 7 of table 1 respectively have angular top 8 for receiving angular tops 9 of wedges 10 received in the grooves and retained in adjusted position by bolts 11 received through spaced apart slots 12 in the wedges and threaded in holes 13 in table 1.

Wedges 10 are preferably formed in section 10' for convenience in handling.

Longitudinal plate 14 is fixed to the bottom of each side 16 of the table by bolts 17 projecting through holes 18 in the plates and threaded to the table. Longitudinal bars 19 respectively in engagement with shoulders 5 are received in offsets 20 of longitudinal plates 14 and fixed thereto.

Longitudinal plates 14 each having bar 19 fixed in offset 20 are respectively secured to bottoms 15 of sides 16 of table 1 by bolts 17 received through the plate and threaded to the table. Bars 19 are in slidable engagement with shoulder 5, respectively, formed in bed 4, below V-tracks 3. Each of longitudinal grooves 6, formed in the lower outer edges 7 respectively of table 1, has upper angular surface 8 for receiving angular tops 9 of wedges 10 and has a depth substantially equal to the thickness of the wedge for maintaining the wedges flush with the table sides. Bottoms 21 of wedges 10 project below bottom 22 of the table and engage longitudinal plates 14 respectively thereby forming spaces 23 between the bottoms 22 of sides 16 and longitudinal plates 14. Bolts 11 received through slots 12 in the wedges are threaded in holes 13 in the table and maintain the wedges in fixed position.

In operation usual V-runners 2 integral with table 1 slide in V-tracks 3 in bed 4 and gradually wear away the surface of the V-runners and V-tracks thereby lowering bars 19 and in disengagement with shoulders 5 and permitting table 1 to be forced upwardly when a usual cut is taken from work fixed to bed 4. Thus when the table is forced upwardly V-runners 2 leave contact engagement with V-tracks 3, thereby producing considerable vibration and other disadvantageous and injurious effects resulting in damage to the mechanism of the planer and in imperfectly finished work caused by "chatter" of the tool which produces a waived or roughened surface on the finished product.

When V-runners 2 and V-tracks 3 are sufficiently worn to prevent bars 19 contacting shoulders 5 in the bed, bolts 4 are loosened from threaded engagement with holes 13 in the table and ends 24 of wedges 10 are moved toward end 25 of the table thereby causing bottom 21 of the wedge to move upwardly from engagement with longitudinal plates 14 whereby bolts 17 engaging the longitudinal plate may be tightened thereby forcing bars 19 upwardly in engagement with shoulders 5 and closing the space between shoulders 5 and longitudinal bar 19 thereby preventing upward movement of the table.

Slots 12 extend longitudinally of wedges 10 having upper angular surface 9 in engagement with upper angular surface 8 formed in longitudinal grooves 6. Slots 12 extend in parallel relation with the upper edge of wedges 10 whereby bottoms 22 of the wedges are adapted to move upwardly or downwardly when the wedges are slid in longitudinal grooves 6. Angular or beveled edge 9 of the wedge remains in engagement with angular surface 8 of the groove thereby securing the wedge in substantial relation with table 1, whereby upward pressure of longitudinal bar 14 in contact with the wedge is provided for by direct contact between the wedge and the table thereby relieving bolt 11 of considerable strain.

We have, therefore, invented a simple, efficient and effective device for the purposes intended and which invention when applied to a metal planer materially increases the value of the work produced, as well as materially reducing the cost of manufacture thereof for various reasons among which is that heavy cuts may be taken from the work without the disadvantage of the usual "chatter" of the tool. The work is thus finished with few cutting operations and having a smooth surface possessing a high gloss which adds materially to the appearance and value of the finished product.

While we have shown and described our invention as embodying a preferred construction it is apparent that it is capable of modification without departing from the scope or spirit thereof as defined in the claims.

What we claim as new and desire to secure by Letters Patent is:

1. In a metal planer table clamp, a bed having a horizontal longitudinal shoulder thereon, a table having a wedge shaped groove longitudinally thereof, a longitudinal plate fixed to the bottom outer edge of said table and in engagement with said shoulder, a wedge in said groove and having its lower edge in engagement with the upper side of said plate and means for adjustably securing said wedge in engagement with said table.

2. In a metal planer table clamp, a bed having a horizontal longitudinal shoulder thereon, a table having a groove longitudinally thereof, a longitudinal plate fixed to the bottom outer edge of said table and in engagement with said shoulder, a member in said groove and having its lower edge

in engagement with the upper side of said plate and means for adjustably securing said member in engagement with said table.

3. In a metal planer table clamp, a bed having a longitudinal V-shaped track at the top thereof and having a horizontal longitudinal shoulder formed in the side thereof and below said V-track, a table having a longitudinal wedge shaped groove in its lower outer edge thereof and having a plurality of spaced apart threaded holes therein, bolts threaded in said holes, said wedge shaped groove having an upper angular surface, a longitudinal plate fixed to the lower side of said table and having a longitudinal offset, therein, a longitudinal bar fixed in said offset and adapted to slidably engage said shoulder, a wedge having an angular top and adjustably received in said longitudinal wedge shaped groove and having a plurality of spaced apart slots therein adapted to receive said bolts for securing said wedge in adjusted position whereby said longitudinal bar may be adjusted relative to said shoulder for the purpose of taking up wear of said slidable parts comprising said V-shaped track and said V-shaped runner.

4. In a metal planer table clamp, a bed having a horizontal longitudinal shoulder formed on each side thereof, a table having a wedge shaped groove longitudinally of each side thereof, a longitudinal plate fixed to the bottom of each outer edge of said table and in engagement with said shoulders, respectively, a longitudinal wedge in each of said grooves and having their lower edges in engagement with the outer side of said plates, respectively, and means for securing said wedges in adjusted position.

5. In a metal planer table clamp, a bed having a horizontal longitudinal shoulder formed on the underneath side thereof, a table having a wedge shaped groove longitudinally in the lower side thereof, a longitudinal plate fixed to the bottom outer edge of said table and in engagement with said shoulder, a sectional wedge in said grooves and having its lower edge in engagement with said plate and means for securing said wedge in adjusted positions.

6. In a metal planer table clamp, a bed having a horizontal longitudinal shoulder thereon, a table having a wedge shaped longitudinal groove in its lower outer side thereof, a longitudinal plate fixed to the bottom outer edge of said table and having a longitudinal offset therein, a longitudinal bar fixed in said offset and in engagement with said shoulder, a wedge fixed in said groove and having its lower edge in engagement with said plate and means for securing said wedge in adjusted position whereby the pressure of said longitudinal bar in engagement with said shoulder is regulated.

7. In a metal planer table clamp, a bed having a horizontal longitudinal shoulder on each side thereof, a table having a wedge shaped groove longitudinally of each side thereof, a longitudinal plate fixed to each bottom edge of said table and each having a longitudinal offset therein, a longitudinal bar fixed in each of said offsets and in engagement with said shoulders, respectively, a wedge adjustably fixed in each of said grooves and having their lower edges, in engagement with said plates, respectively, and means for securing said wedges in longitudinally adjusted positions.

8. In combination with a metal planer comprising a table having a wedged shaped longitudinal groove in each of its outer lower edges and having a pair of V-runners integral therewith, a bed having a pair of longitudinal shoulders and having a longitudinal V-track in each side thereof and adapted to slidably receive said V-runners, a longitudinal plate fixed to each lower edge of said table and in engagement respectively with said shoulders, a wedge in each of said grooves and adjustable means for fixing said wedges to said table and in engagement with said plates.

9. In combination with a metal planer comprising a table having a longitudinal groove in each lower edge thereof, each of said grooves having a longitudinally angular surface, a bed having shoulders thereon and having a track thereon for slidably receiving said table, a longitudinal plate fixed to each side of said table and respectively in slidable engagement with said shoulders, a wedge in each of said grooves and respectively in engagement with said plates and adjustable means for mounting said plates in engagement with said shoulders.

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