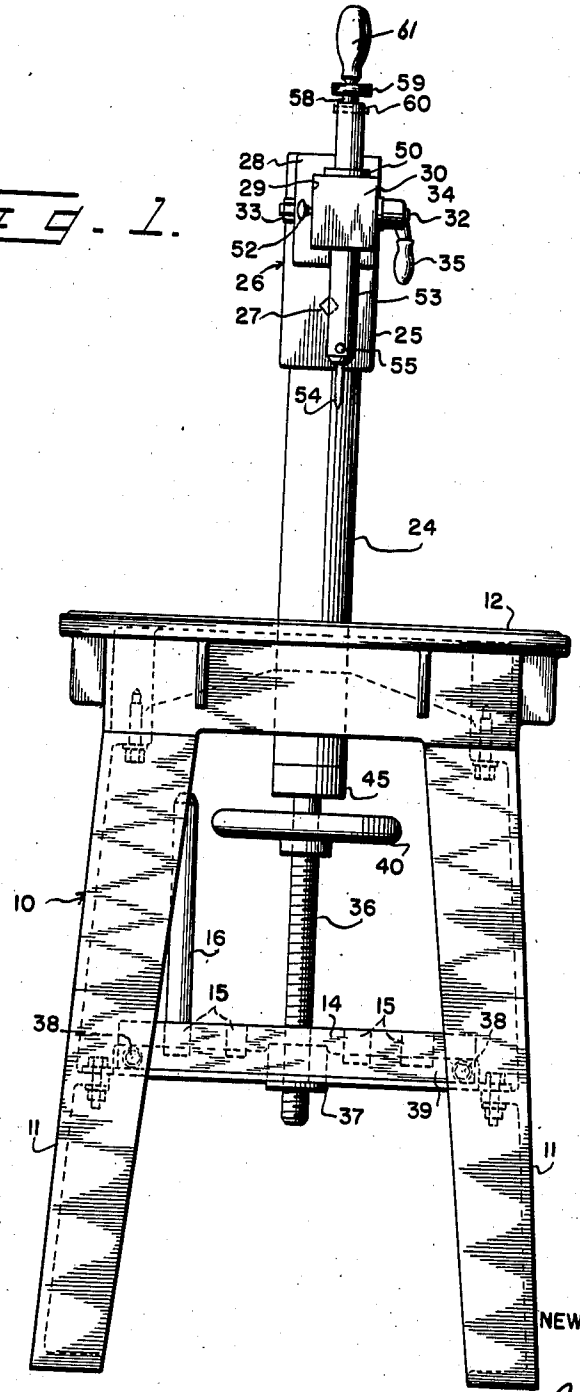
Dec. 14, 1943. N. M. MARSILIUS 2,336,947

MANUAL TAPPING DEVICE

Filed April 20, 1943 4 Sheets-Sheet 1

Fig. 1.



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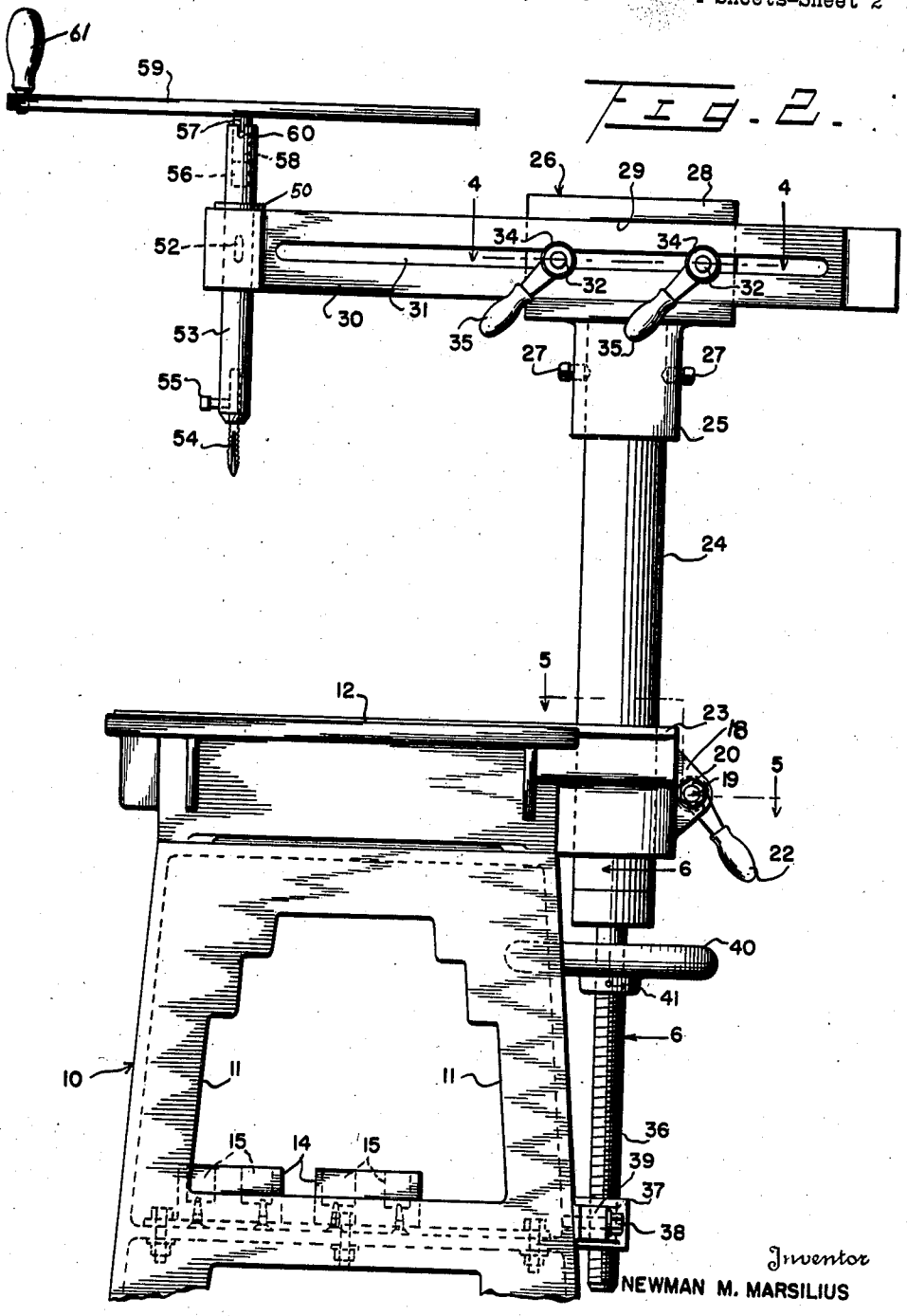
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MANUAL TAPPING DEVICE

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Fig. 2.



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MANUAL TAPPING DEVICE

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Fig. 3.

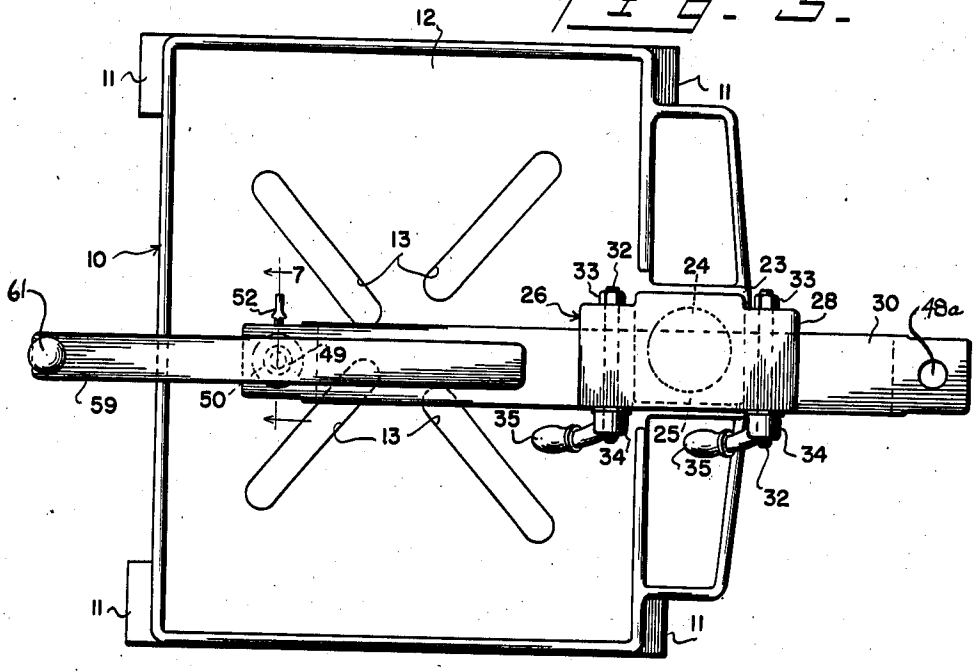
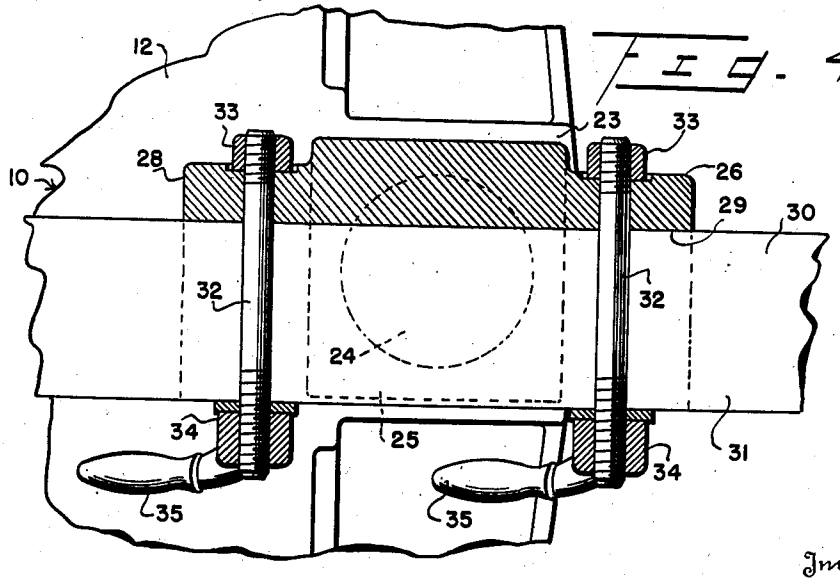


Fig. 4.



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MANUAL TAPPING DEVICE

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Fig. 5.

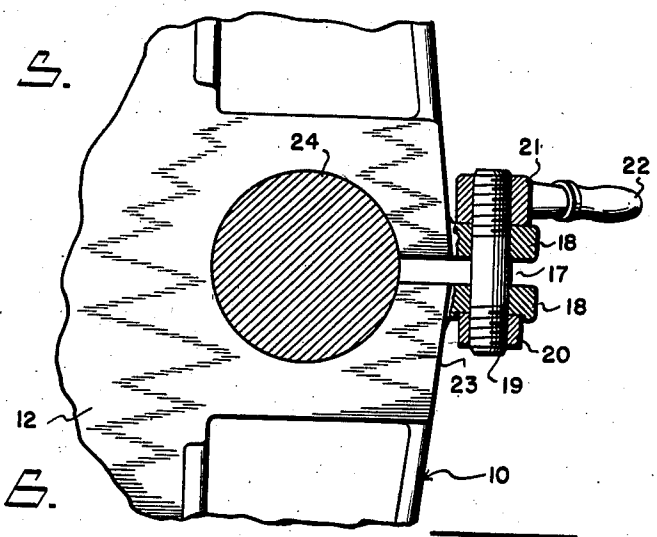


Fig. 6.

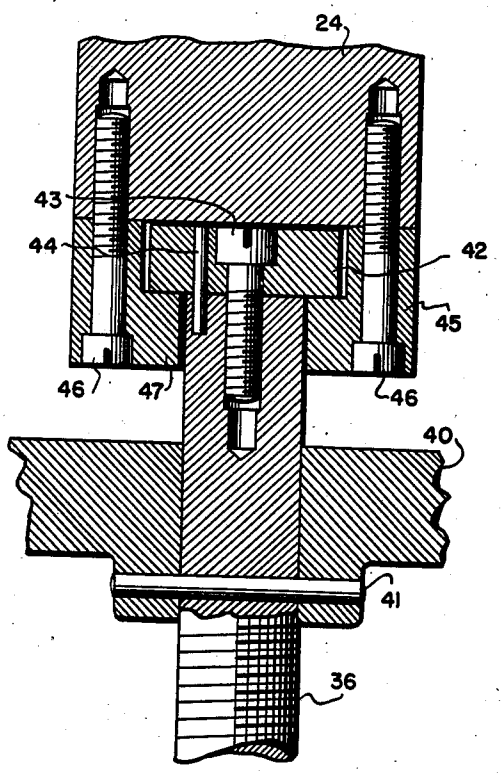
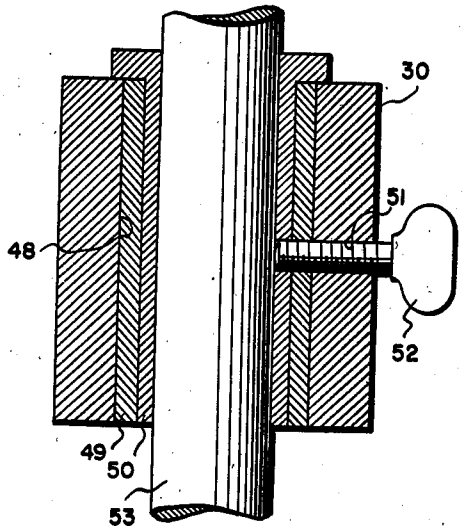


Fig. 7.



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2,336,947

UNITED STATES PATENT OFFICE

2,336,947

MANUAL TAPPING DEVICE

Newman M. Marsilius, Bridgeport, Conn.

Application April 20, 1943, Serial No. 483,727

4 Claims. (Cl. 10—129)

This invention relates to new and useful improvements in tapping means and has particular relation to a manual tapping device.

An object of the invention is to provide a manual tapping device including a table or work support and adjustable tap supporting means whereby the tap may be disposed over any selected portion of the table or work support thereby eliminating any necessity for the moving of the work about on the table or support.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawings:

Fig. 1 is a front elevational view of the present manual tapping device;

Fig. 2 is a side elevational view thereof, a portion of the supporting legs being broken off, and the view being on a slightly larger scale;

Fig. 3 is a top plan view of the device on the scale of Fig. 2;

Fig. 4 is an enlarged sectional view taken as along the line 4—4 of Fig. 2;

Fig. 5 is an enlarged detail sectional view taken as along the line 5—5 of Fig. 2;

Fig. 6 is an enlarged detail sectional view taken as along the line 6—6 of Fig. 2; and

Fig. 7 is an enlarged sectional view taken as along the plane of the line 7—7 of Fig. 3.

Referring in detail to the drawings the improved manual tapping device of the invention includes a stand generally designated 10 and comprising legs 11 and a table or work support 12 which may be provided with slots 13 or the like for the passage of a tapping tool should one pass entirely through a piece of work or which may be used for the securing of work or wood blocks or the like in place and into which a tap may pass. Below support 12 the stand 10 may support blocks of wood or the like 14 having sockets 15 therein for the reception of extra and various sizes of tapping spindles as suggested at 16 in Fig. 1.

The rear of the table portion or support of the stand 10 is split as at 17 and provided with ears or lugs 18 through which pass a bolt or stud 19 threaded at the outer side of one ear into a nut 20 and at the outer side of the other ear into a nut 21 having a handle or lever portion 22 rigid or integral therewith. Passing through the split portion of the table, and which portion is designated 23, is a vertical post 24 the upper end of which is received in a tubular portion 25 of a bracket generally designated 26. Set screws or the like 27 serve to secure the bracket on the upper end of the post.

In addition to the tubular portion 25 the bracket 26 includes a head-like portion 28 having a horizontally disposed groove 29 opening through one side thereof and adjustably receiving a horizontal arm 30. Arm 30 has a longitudinally extending slot 31 passing therethrough from side to side and extending through such slot are a pair of bolts 32 each passing entirely through the head-like portion 28 and each at one side thereof threaded into a nut 33. On the other ends of bolts 32, at the outer side of the arm 30, nuts 34 are threaded and such nuts are provided with rigid and preferably integral handles 35 whereby the nuts may be conveniently loosened and tightened for adjustment of the arm 30 as will appear.

On loosening of nut 21 the vertical post 24 may be rotated about its longitudinal axis to dispose the forward end of arm 30 in the desired location over the table 12 and in addition means are provided for raising and lowering said post while the clamp comprising the split table portion is loose. For the purpose of such vertical adjustment a heavy jack screw 36 is provided below and in vertical alignment with the lower end of the post and such screw is threaded through a nut 37 secured to the rear mid-portions of the legs 11 of stand 12 as by bolts 38 passing through end portions of a bar 39 carrying said nut.

A hand wheel 40 is secured to the screw 36 toward the upper end of the latter as by means of a pin 41 or the like. A swivel connection is provided between the lower end of post 24 and the upper end of screw 36 whereby the post may be adjusted about its vertical axis independent of any movement of the screw and whereby the latter may be rotated without imparting rotary movement to the post. To the desired end (see Fig. 6) a disc 42 is secured to the upper end of the screw 36 by means of a screw 43 and a pin 44 has a tight fit in said disc, through which it passes and in the upper end of screw 36 whereby the said disc is fixed in position.

A collar 45 is fastened to the lower end of the post 24, as by screws 46, and this collar includes

a lower internal flange portion 47 disposed about the upper end of screw 36 and below the disc 42 which latter comprises a head-like portion on the screw. Clearly the screw 36 and disc 42 may turn relative to the post 24 and collar 45 and it is equally clear that said post and collar may be turned relative to screw 36. However, the post and screw are connected and when the wheel 40 is rotated to turn the screw 36 the latter is fed through the nut 37 and the post 24 and parts mounted thereon are fed up or down with the screw and hand wheel depending on the direction in which the latter is turned.

In the forward end portion of the arm 30 is a vertical opening or passage 48 having bushings 49 and 50 disposed therein with the bushing 50 within the bushing 49. (See particularly Fig. 7.) The bushings and one side of the arm 30 at the opening 48 have aligned openings and the opening 51 through the arm portion is tapped to receive a set screw 52. A suitable tap spindle 53 passes through the bushings and at its lower end is provided with a suitable socket to receive the shank of a tap 54 which may be secured in place as by a set screw 55. As shown in Fig. 7 the screw 52 passes through both bushings 49 and 50 and clearly such screw may be tightened against the spindle 53.

Normally this last is done only when the operator leaves the machine for a time or perhaps when inserting a new spindle or the like. Bushing 50 is of an inner diameter to receive the spindle 53 for turning movement in such bushing. It will be understood that the spindles are changed for different sizes of taps as one size of spindle does not accommodate all sizes of taps. Although a single spindle will take several different sizes of taps, when a size of spindle next larger than spindle 53 is to be used the bushing 50 is removed from the forward end of the arm 30 and the bushing 49 remains in place. This bushing 49 is of the correct internal diameter to receive the spindle next in size or diameter to the spindle which the bushing 50 is adapted to receive. A passage 48*a* may be provided in the other end of arm 30 for the reception of bushings and tap spindles of other sizes when the position of the arm is reversed as by rotating post 24 through a half turn.

When using the machine of the invention the operator sets up his work on the table 12 and clamps the work in any desired or suitable way. Thereafter the work need not be moved until all planned tapping operations have been completed when the work is removed and a new piece mounted on the table. On loosening of the nuts 34 the horizontal arm 30 may be moved or adjusted forwardly or rearwardly through the head portion 28 of the bracket 26 to dispose the tap 54 in the desired location forwardly and rearwardly of the table.

Somewhat similarly on loosening of nut 21 the split table portion is released from gripping relation with the vertical post 24 and the latter may be swung about its own vertical axis to dispose the tap over any chosen part of the table 12 from side-to-side of the latter. In addition on loosening of nut 21 the post 24 may be raised or lowered by proper turning of the wheel 40 and screw 36.

Thus the position of the tap over the table 12 may be adjusted for any particular job and the tap may be moved from place to place for different tapping operations on the same piece of work, the latter remaining stationary in all cases. By adjusting the arm 30 through the head portion 28 of bracket 26 the tap may be disposed over any part of work on the table and by vertical adjustment of the post the tap may be positioned for minimum vertical movement to and from the work. After any adjustments the nuts 34 and 21 are of course tightened.

The upper end of each spindle 53 is hollow or recessed as at 56 and in addition is notched as at 57. The recess 56 is to receive a pilot stud 58 on a crank arm 59 and the notch 57 (which preferably is at each side of the spindle) is to receive a cross pin 60 on the pilot stud 58. Arm 59 is provided with a handle 61 by means of which it may be used to rotate the spindle 53 and thus any tap mounted by the latter. The means for holding the work in position on the table 12 may be as desired and forms no particular part of the present invention and has not been illustrated. Screw 52 may be tightened against the spindle to maintain the latter in an elevated position when the operator leaves the machine or while work is being placed on and removed from the table 12 and the like. The relation of the diameters of the bushings 49 and 50 to the different diameters of spindles has been set forth above.

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

1. In a manual tapping device, a support for work, said support having a vertical opening therethrough toward an edge and slotted from said opening through said edge, ears on said slotted portion at each side of the slot thereof, a vertical post passing through said opening, a horizontal arm on said post above said support, a tap spindle bushing receiving opening in the forward end portion of said arm, means for drawing said ears toward one another to have said support grip said post, and said post turnable about its own axis in said vertical opening to adjust the position of said arm over said support when said means for drawing the ears toward one another is released.

2. In a manual tapping device, a support for work, a vertical post at one side of said support, a horizontal arm on said post above said support, a tap spindle bushing receiving opening in the forward end portion of said arm, a jack screw below and in vertical alignment with said post, means connecting said post and jack screw for relative turning movement but for vertical movement together, a fixed nut through which said screw is threaded whereby as the screw is turned in one direction it is raised and when turned in the other direction is lowered to raise and lower said post and the arm thereon, and means to turn said screw.

3. In a manual tapping device, a support for work, a vertical post at one side of said support, a horizontal arm on said post above said support, a tap spindle bushing receiving opening in the forward end portion of said arm, a jack screw below and in vertical alignment with said post, means connecting said post and jack screw for relative turning movement but for vertical movement together, a fixed nut through which said screw is threaded whereby as the screw is turned in one direction it is raised and when turned in the other direction is lowered to raise and lower said post and the arm thereon, and means to turn said screw, and means on said support to lock said post in the desired position of vertical adjustment.

4. In a manual tapping device, a support for

work, a vertical post at one side of said support, a bracket on the upper end portion of said post, said bracket including a head-like part having a horizontal groove opening through a side thereof and having an inner vertical wall and top and bottom walls angularly related to said inner wall, a horizontal arm mounted by said bracket and projecting therefrom over said support, said arm including an inner side surface and top and bottom surfaces angularly related to said side surface, said arm having a portion of its length disposed in said groove with its angularly related surfaces against the angularly related walls of the groove whereby the arm may not turn about its own horizontal axis while in said groove, said arm having a slot therethrough from said inner side thereof and extending for substantially the length thereof, and clamping bolts carried by said bracket and passing transversely through said slot and adapted on tightening to clamp a portion of said arm's inner surface against the inner vertical wall of the groove to lock the arm to said bracket.

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