This invention relates to a wood planer of the double cylinder type in which a separate electric motor is provided for each of the two cylinders. In such planers, it is necessary to provide means for raising and lowering one of the cylinders with the work table for different sizes of work, and it is also sometimes necessary to adjust the lower cylinder relatively to the work table to vary the thickness of cut, and also to slightly adjust the cylinder angularly in a vertical plane to produce an even thickness in the finished stock throughout its width. It is one object of my invention to provide an improved construction for supporting and adjusting the motor for the lower cylinder, so that the motor may be conveniently aligned with the cylinder in any operative position thereof. I have also provided improved means for adjusting the cylinder angularly, and an improved presser bar construction by which the work is supported as it passes from the revolving cutter.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings in which:

Fig. 1 is a plan view of a portion of my improved planer;
Fig. 2 is a front elevation, looking in the direction of the arrow 2 in Fig. 1;
Figs. 3 and 4 are partial side elevations, looking in the directions of the arrows 3 and 4 respectively in Fig. 2;
Fig. 5 is a plan view of my improved presser bar, looking in the direction of the arrow 5 in Fig. 4;
Fig. 6 is a side elevation of the presser bar, partly in section, and looking in the direction of the arrow 6 in Fig. 5;
Fig. 7 is an end view of the presser bar, looking in the direction of the arrow 7 in Fig. 5; and
Fig. 8 is a similar view with certain parts omitted.

Referring to the drawings, I have shown a base or frame 10 in which a table frame 11 (Fig. 4) is slideable vertically by means of a pair of operating wedges 12. Power actuated means (not shown) is commonly provided for moving the wedges 12 to raise or lower the table frame 11. The base or frame 10 is extended upwardly at each side of the table, as indicated at 13 in Figs. 3 and 4, and supports the upper presser rolls 14 and also the upper cylinder and knives (not shown), together with the motor for driving the same. All of these parts are of the usual construction and in themselves form no part of my present invention.

The lower cylinder 15, which carries the knives 16, (Fig. 4) is supported in suitable bearings 17 preferably of the anti-friction type, mounted on a plate or stand 18 which is slideable in guide-ways 19 in a cylinder base 20. At its left hand end as viewed in Fig. 2, the stand 18 rests pivotally upon a cross bar 21 fixed to the cylinder base 20, and at its right hand end the stand 18 rests upon a wedge 22 (Fig. 4) supported on an inclined surface of the cylinder base 20 and adjustable to raise or lower the end of the cylinder stand 18 by means of nuts 23.

A clamping device 24 is provided for firmly retaining the stand 18 in the guide-ways 19. When the clamping device 24 is loosened, the stand 18, together with the cylinder 15 and its bearings 17, may be removed as a unit from the planer for inspection or repairs. The cylinder base 20 also supports a presser roll 25 mounted in yielding bearings 26, and a presser bar 27 to be described.

The cylinder base 20 is supported upon wedges 28 (Fig. 4) slideable upon inclined surfaces 29 of the table frame 11. Threaded shafts 30 (Figs. 3 and 4) are provided for simultaneously moving the wedges 28 at the two sides of the planer, and these shafts are provided with worm wheels 31 (Fig. 2) engaged by worms 32 on a worm shaft 33 which may be rotated manually by a hand wheel 34.

The cutter cylinder, together with its presser roll and presser bar, may thus be adjusted vertically relatively to the table frame 11 by manual movement of the hand wheel 34 and the cutter cylinder may be slightly
adjusted angularly relatively to the table frame by means of the wedge 22.

The driving motor M (Fig. 2) for the lower cutter cylinder 15 is mounted on a bracket 33 which is vertically adjustable in guide-ways 36 (Fig. 1) in a U-shaped stand or framework 37 provided with feet 38 which are securely bolted to the table frame 11.

The frame or stand 37 is also provided with a depending angle portion 40 secured thereto and having a vertical surface 41 slidable against the end of a bracket 42 rigidly secured to the base or frame 10 of the planer. As the table frame 11 is raised or lowered to accommodate different sizes of stock, the angle 40 slides vertically relatively to the bracket 42 but in every position it is adapted to assist in the firm support of the overhanging weight of the motor M.

A screw 44 (Fig. 2) is rotatably mounted on a depending projection 45 of the bracket 37 and is held from axial movement relative thereto. The screw 44 is threaded into the motor bracket 33 and provides means for conveniently adjusting the motor vertically. The screw 44 is preferably provided with a bevel gear (Fig. 3) meshing with a bevel gear 47 on a shaft 48 rotatable in a bearing 49 supported by the frame 37 and provided with a hand wheel 50 adjacent the hand wheel 34 previously described. The screw 44 may be rotated by use of the hand wheel 50 to raise or lower the motor M.

The motor is preferably connected to the cutter cylinder by a detachable connection comprising clutch members 51 and 52 (Fig. 2) which permit the parts to slide vertically relative to each other during the adjustment of the cutter cylinder.

In the operation of the machine, the usual table wedges 53 (Fig. 4) are used for raising or lowering the table to adjust the machine for different sizes of work. At occasional but infrequent intervals it may be necessary to adjust the cutter cylinder slightly relatively to the table, to vary the depth of cut, which adjustment may be easily accomplished by means of the hand wheel 34 acting through the small wedges 28.

After the cutter cylinder is thus adjusted, it is a very simple matter to slightly raise or lower the motor M by the hand wheel 50 to bring the two parts 51 and 52 of the clutch into axial alignment, which may be readily determined by touch, as the two parts of the clutch are of the same diameter.

If the cutter cylinder requires adjustment angularly to vary the depth of cut at either edge of the work, this adjustment may be accomplished by means of the wedge 22 but this adjustment never amounts to more than a few thousandths of an inch and does not cause a perceptible change in alignment between the motor and the cutter cylinder. The motor M is at all times very firmly supported by the bracket or frame work 37 which is secured to the heavy table frame 11 at widely spaced parts.

I will now describe my improved presser bar construction as best shown in Figs. 5 to 8. This presser bar 57 is designed to fit closely to the cutter cylinder 15, just clearing the knives 16 thereon. The particular function of the presser bar is to support the extreme rear end of a piece of stock as it passes from the cutter cylinder, preventing the rear end from being depressed and receiving a deeper cut than the remaining portion of the stock.

My improved presser bar consists of an arc-shaped or segmental body portion 58 (Fig. 8) extending across the machine parallel to the cutter cylinder 13 and provided with offset arms 57 at its ends, pivoted at 58 (Fig. 6) in a frame member or stand 39. The stand 59 has a connecting portion 60 (Fig. 8) joining the two ends thereof and is also provided with outwardly projecting flanges 61 (Fig. 6) having inclined lower surfaces resting upon corresponding inclined surfaces 62 of a double wedge member 63 slidable transversely in guide-ways in the cylinder base 20.

An adjusting screw 64 is provided for moving the wedge 63 longitudinally to raise or lower the presser bar 57, and bolts 65 are provided for clamping the flanges 61 of the frame 59 in adjusted position, the bolts 65 extending through slots in the wedge member 63.

The arms 57 of the presser bar are provided with lugs or ears 66 through which extend threaded studs 67 secured in the flange 61 of the support 59. Nuts 68 on the studs 67 limit upward movement of the presser bar relative to its support. The projections 61 are also provided with pockets 70 to receive springs 71 having buttons 72 fitted in their open ends and engaged by screws 73 threaded in the lugs or ears 66.

The presser bar 27 is thus held yieldingly in the raised position which is determined by the adjusting nuts 68, and the upward pressure of the bar may be regulated as desired by means of the screw 73. I have thus provided a firm and rigid construction of presser bar which is very easily adjustable to height relatively to the connecting portion 60 of its support 59, and which may also be adjusted bodily with said connecting portion by means of the double wedge member 63. The tension of the presser bar is also conveniently adjusted by means of the screws 73, all of which constitute marked improvements over the previous practice.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. In a wood planer, a work table, a cutter cylinder, a presser bar for said cylinder, a
stand on which said bar is pivoted, means
to press said bar yieldingly upward in said
stand, means to limit such upward move-
ment, and means to adjust said stand verti-
cally relatively to said work table, said lat-
ter means comprising a double wedge member
slidable beneath said stand.

2. In a wood planer, a work table, a cut-
ter cylinder, a presser bar mounted in said
table adjacent said cylinder, said bar having
a body portion with rearwardly extending
offset arms at the rear thereof, a pivot in the
rear end of each arm, and pivot bearings car-
ried by the table for said arms, adjustable
means beneath said bar and forwardly of
said arms to press said bar yieldingly up-
ward, and means to adjust said arms, bear-
ings and pressing means vertically of said
table.

3. In a wood planer, a work table, a cut-
ter cylinder, a presser bar for said cylinder,
a stand on which said bar is pivoted, adjust-
able means to press said bar yieldingly up-
ward in said stand, means to limit such up-
ward movement, and means independent of
said adjusting means to vary the vertical position of said stand relatively to said work
table, said latter means comprising a double
wedge member slidable beneath said stand.

In testimony whereof I have hereunto af-
fixed my signature.

WALTER H. HALL.