No. 878,911. PATENTED FEB. 11, 1908.

J. R. THOMAS.

HAND PLANING MACHINE.

APPLICATION FILED AUG. 24, 1907.

3 SHEETS—SHEET 1.

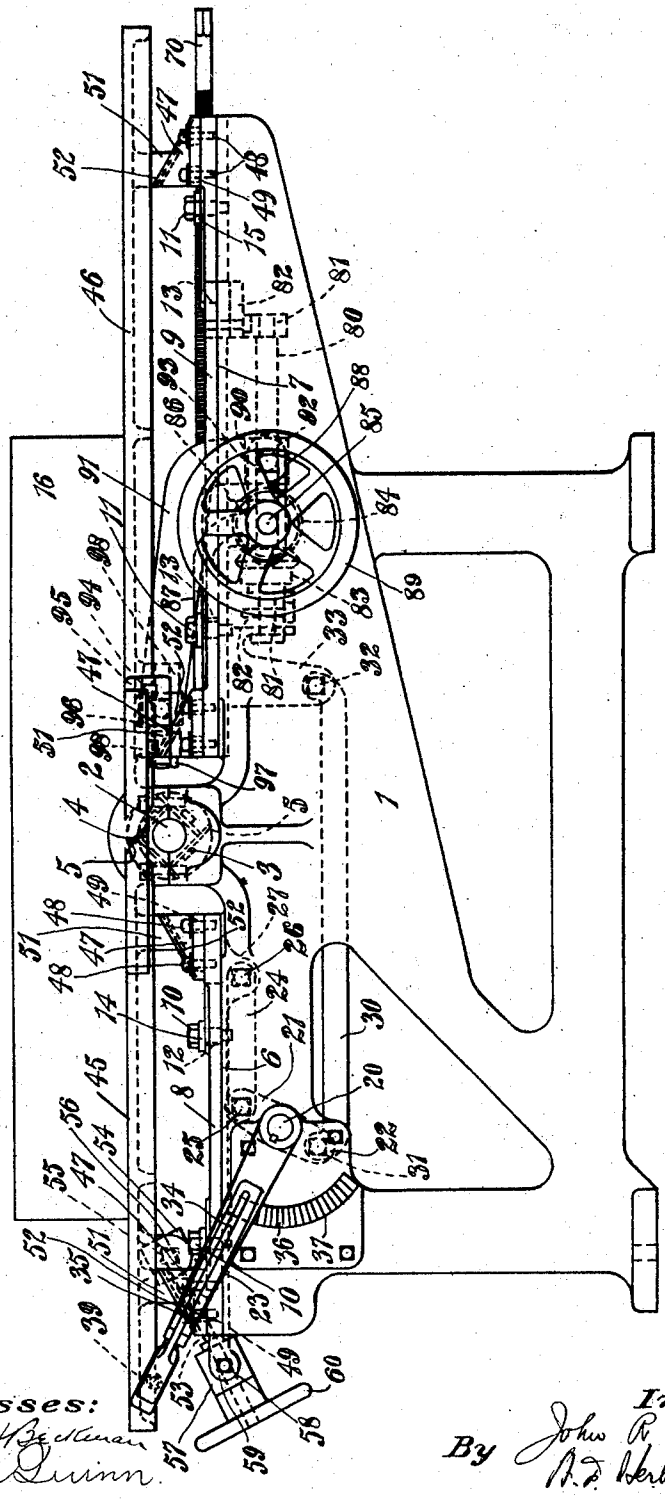


Fig. 1.

Witnesses:
Virgil X. Beckham
Florence Quinn

Inventor
John R. Thomas
By B. F. Herbert,
Attorney

No. 878,911. PATENTED FEB. 11, 1908.

J. R. THOMAS.

HAND PLANING MACHINE.

APPLICATION FILED AUG. 24, 1907.

3 SHEETS—SHEET 2.

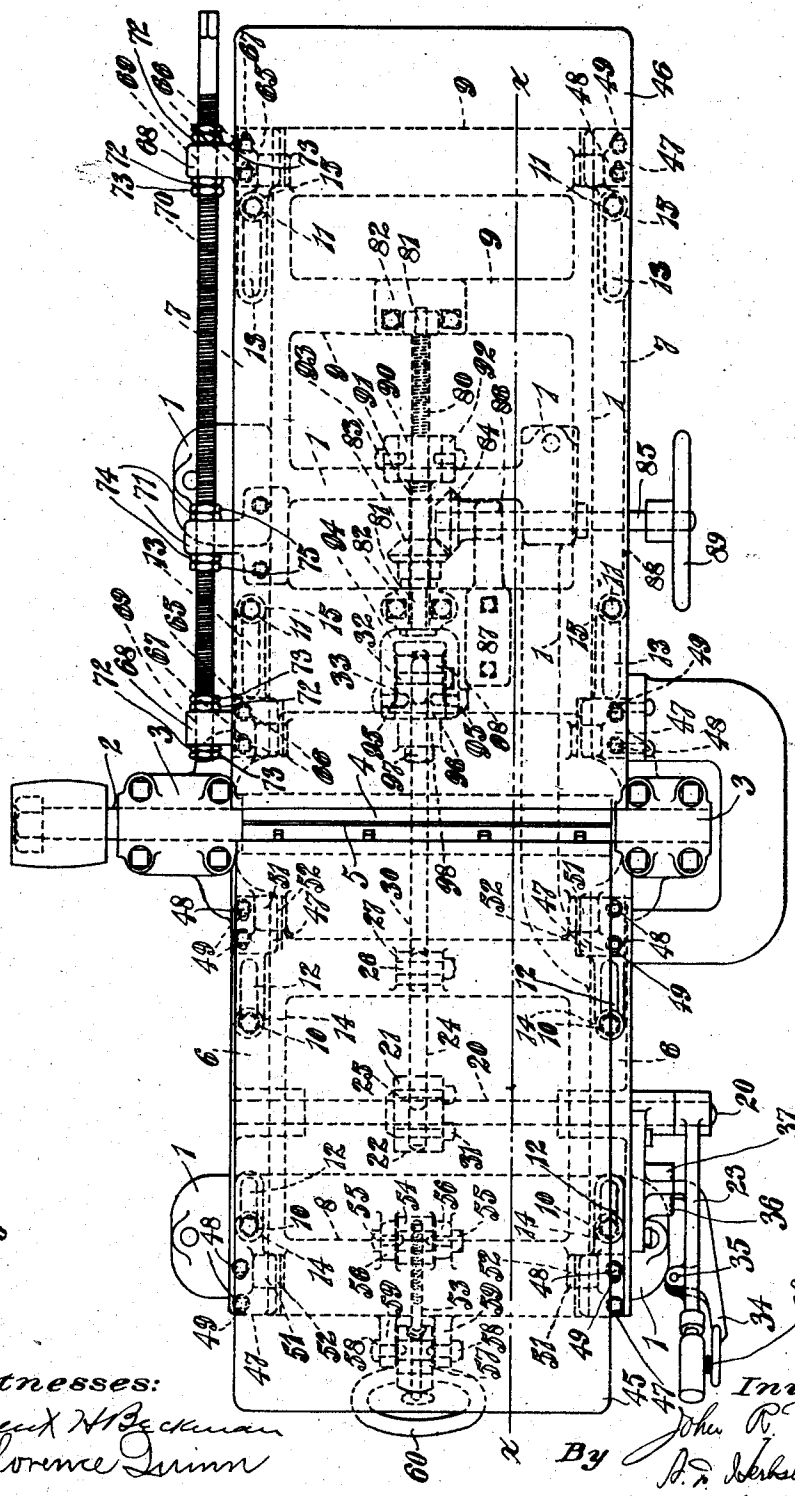


Fig. 2.

Witnesses:
Vincent H. Beckman
Florence Quinn

Inventor
John R. Thomas
By D. D. Herbert
Attorney

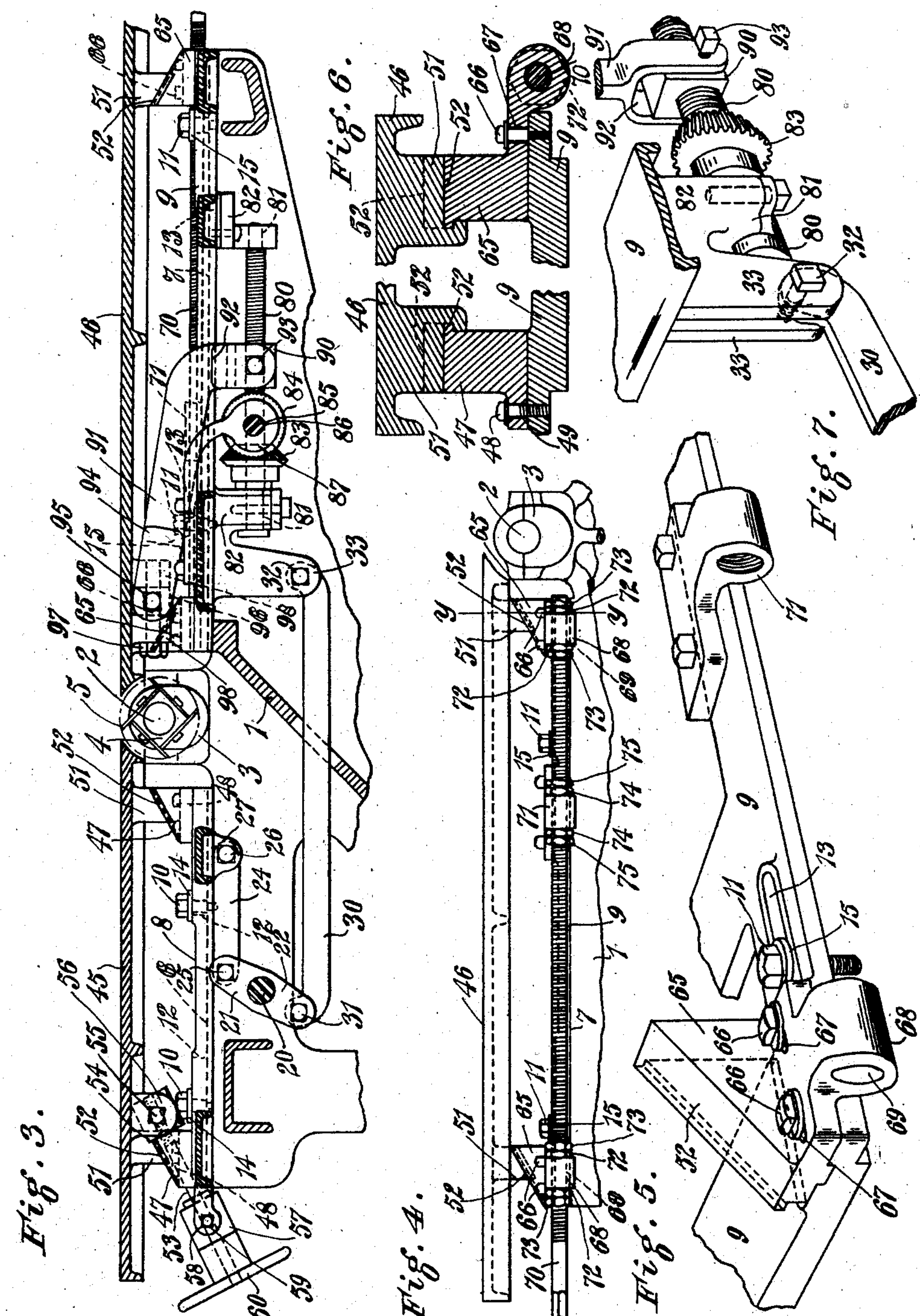
No. 878,911. PATENTED FEB. 11, 1908.

J. R. THOMAS.

HAND PLANING MACHINE.

APPLICATION FILED AUG. 24, 1907.

3 SHEETS—SHEET 3.



Witnesses:
Vincent H Beckman
Florence Quinn

Inventor
John R. Thomas,
By A. F. Herbsleb,
Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN R. THOMAS, OF CINCINNATI, OHIO, ASSIGNOR TO J. A. FAY & EGAN COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF WEST VIRGINIA.

HAND PLANING-MACHINE.

No. 878,911. Specification of Letters Patent. Patented Feb. 11, 1908.

Application filed August 24, 1907. Serial No. 389,935.

To all whom it may concern:

Be it known that I, JOHN R. THOMAS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Hand Planing-Machines, of which the following is a specification.

My invention relates to that character of hand planing machines in which there is a horizontally disposed cutter-head to the sides of which stock-supporting tables are located, the stock being adapted to be pushed from one table across the cutter-head on to the other table.

It is the object of my invention to provide means whereby the tables may be separated while maintained in their respectively adjusted horizontal planes with relation to the horizontal plane of the axis of the cutter-head for providing a wide gap at the cutter-head to permit attention to the cutter-head and the knives thereon, for instance, for the purpose of changing the knives, or fastening or sharpening the knives, the means being so constructed that assurance may be had that the tables be brought back definitely to original position after such attention has been given the knives, further, to provide means whereby this initial position may be regulated for forming a wider or narrower normal gap between the tables at the cutter-head, further, to provide means whereby the respective tables may be adjusted to height at the various normal locations in which the tables may be set as aforesaid; and further, to provide novel means whereby the front table may be set at an angle crosswise for the purpose hereinafter explained.

The invention will be readily understood from the following description and claims, and from the drawings, in which latter:

Figure 1 is a side elevation of my improved device. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section of my improved device taken on the line *x*—*x* of Fig. 2. Fig. 4 is a rear side elevation showing the means for setting the front table cross-wise at an angle to the horizontal. Fig. 5 is a perspective detail of portions of the same. Fig. 6 is a detail in section on the line *y*—*y* of Fig. 4; and, Fig. 7 is a detail in perspective of the link and screw connections for respectively shifting the front saddle and the front table.

1 represents the main frame or base in which a cutter-head shaft 2 is journaled in bearings 3, the cutter-head shaft carrying a cutter-head 4 on which knives 5 are suitably secured. Slide-ways 6 7 are at the top of the base upon which saddles 8 9 are adapted to be adjusted longitudinally. Bolts 10 11 pass through slots 12 13 on the respective saddles and are threaded into the base, washers 14 15 being interposed between the heads of the bolts and the saddles. These bolts are shoulder bolts for holding the saddles firmly to the base but with sufficient play for permitting the movement of the saddles upon the base by the means which will now be described.

16 represents an ordinary fence.

20 is a rock-shaft, which carries arms 21 22, and a lever-arm 23, the construction constituting a double-throw lever. A link 24 is articulated with the arm 21, as on a bolt 25, and with the saddle 8, as on a bolt 26 passing through lugs 27 on the saddle. A link 30 is articulated with the arm 22, as on a bolt 31, and with the saddle 9, as on a bolt 32 passing through lugs 33 on said saddle. The lever-arm 23 is secured to the rock-shaft and has a detent 34 pivoted at 35 thereon, the detent being adapted to engage any of a series of notches 36 of a segment 37, the detent being spring-pressed by a spring 39.

45 is a rear table and 46 is a forward table, which tables are adjustable to height on the respective saddles 8 9, irrespective of the locations into which the saddles may have been placed by the manipulation of the lever 23. The rear saddle 8 is provided at its respective corners with incline-pieces 47, which are adjustably secured to the saddle by bolts 48 passing through slots 49 in the incline-pieces and into threaded apertures in the saddle. The bottom of the rear table 45 is provided with depending lugs 51, between which and the incline-pieces 47 incline ways 52 are provided, along which the rear table is adapted to slide when adjusting the same to elevation. The movement of the table for this adjustment is accomplished by means of a screw-rod 53 threaded into a swivel-nut 54 pivoted on bolts 55 threaded in lugs 56 at the bottom of the rear table 45, the screw-rod being journaled in a swivel-bearing 57 pivoted on bolts

58 threaded in lugs 59 on the rear saddle 8. This screw-rod has a hand-wheel 60 thereon for turning the same and thereby raising or lowering the table on the incline-ways, this adjustment being permitted in the various locations to which the rear saddle may have been set by the adjusting lever 23.

The forward saddle 9 is provided at one side thereof with similar incline-pieces 47 similarly secured thereto, and at its other side it is provided with incline-pieces 65 adjustable on the saddle and arranged to be secured to the saddle in adjusted positions, as by means of bolts 66 passing through slots 67 in the incline-pieces and threaded into the saddle for holding the incline-pieces securely to the saddle. These bolts are preferably shoulder-bolts for holding the incline-pieces firmly to the saddle but permitting their movement. The incline-pieces 65 and their means of adjustment are provided for the purpose of setting the upper surface of the table cross-wise at an angle to the rotary axis of the cutter-head, so that a deeper or shallower cut may be taken off of one side or edge of the stock being planed than off of the other. This is especially useful in so-called pattern work, in which it is desired to give the pattern a slight draft for permitting the pattern to be readily withdrawn from the sand in the molding operation. For accomplishing this adjustment quickly and accurately, I provide the incline-pieces 65 with lugs 68 through apertures 69 of which a threaded rod 70 is arranged to pass, the threaded rod being threaded into a lug 71 secured to the saddle. The threaded rod is threaded into the lug 71, but is preferably loose in the lugs 68. At either side of the lugs 68 the threaded rod is provided with set-nuts 72 and jam-nuts 73, and at either side of the lug 71 the threaded rod is provided with set-nuts 74 and jam-nuts 75. These set-nuts and jam-nuts are normally so positioned as to set the upper surface of the front table parallel with the rotary axis of the cutter-head.

If it is desired to raise or lower the rear edge of the front table for setting the upper surface of that table to an angle with relation to the rotary axis of the cutter-head, the set-nut 74 and jam-nut 75 at one side of the lug 71 on the saddle are set on the threaded rod at a distance from the lug according to the adjustment it is desired to give the front table. The threaded rod is then turned until the set-nut thus shifted strikes said lug 71, which will cause the threaded rod to move longitudinally and carry the incline-pieces 65 with it in its movement, thereby adjusting the rear edge of the table to height. After the work has been finished, the threaded rod is again turned until the set-nut at the other side of the lug 71 strikes said lug, thereby again definitely positioning the upper surface of the table parallel with the rotary axis of the cutter-head, after which the set-nut and jam-nut which have been moved are again forced up against the lug 71 in original position for locking the table in place and serving as a definite stop for positioning the upper surface of the table in horizontal position if a reverse movement of the rear edge of the table is required at the next adjustment thereof.

It is, of course, obvious that the threaded connection of the threaded rod may be had with the lugs on the incline-pieces and the loose connection thereof with the lug on the saddle; or the incline-pieces may be adjustable on the table and the intermediate lug be secured to the table, without departing from the spirit of my invention. This connection permits a cross-wise slant to be given the forward table from end to end of the cutter-head, as the pivoted point of the table is at one side thereof, namely, upon the slide-ways at the forward side of the table, there being sufficient play in these slide-ways to permit this, and the adjustment is accomplished from the other or rear side of the table. This allows the forward side of the table to remain at normal height during adjustment for cross-wise slant. Assuming therefore that the forward table has been adjusted to height and it is desired to give a piece of stock a draft, all that is necessary is to lower the rear edge of the table without disturbance of other adjustments for imparting a slant to the table throughout its width.

80 is a screw-rod journaled in bearings 81 in lugs 82 depending from the forward saddle. This screw-rod has a bevel-gear 83 fast thereon which meshes with a bevel-gear 84 on a shaft 85 journaled in a bearing 86 of a hanger 87. The shaft 85 projects sidewardly and outwardly of the frame through a slot 88 in the side of the frame, and has a hand-wheel 89 thereon for manipulating the screw-rod 80. The screw-rod 80 has a nut 90 thereon. 91 is a link which has swiveling connection with said nut and with the forward table for permitting the forward table to be tilted sidewardly without binding the adjusting parts. This link has a fork 92 at one end thereof, through the tines of which pivot-bolts 93 are threaded, the nut 90 being pivoted on these bolts. At its other end the link is provided with a fork 94, in which pivot-bolts 95 for a collar 96 are secured, the collar being on a bolt 97 secured in lugs 98 at the bottom of the forward table.

In my improved device the tables may be separated while maintaining their height or level for providing a wide gap or throat through which the cutter-head or its knives may be given attention, and the tables may be returned to initial position without danger of disturbance of the previous adjustments thereof, or the width of normal gap may be regulated by the engagement of the detent

with specified notches of the segment, and adjustments of the tables may be made while the saddles are located in any of their assumed positions.

My improved device forms a compact construction of few parts not liable to get out of order.

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

1. In a hand planing machine, the combination, with the main frame, and cutter-head of a pair of saddles slidable with relation thereto, a table on each of said saddles, and a double-throw lever having connection with each of said saddles for simultaneously moving the same in opposite directions, and moving said tables thereon toward and from said cutter-head substantially as described.

2. In a hand planing machine, the combination, with the main frame, and cutter-head, of a pair of saddles slidable with relation thereto, a table on each of said saddles, a double-throw lever having connection with each of said saddles for simultaneously moving the same in opposite directions, and moving said table thereon toward and from said cutter-head and a detent-lever and rack therefor for positioning said saddles, substantially as described.

3. In a hand planing machine, the combination, with the main frame and cutter-head, of a saddle at each side of said cutter-head, the said saddles and frame having horizontal guide-ways between them, a table on each saddle adjustable to elevation thereon, a double-throw lever, a link for each of said saddles, said links respectively connected with said saddles and said lever at opposite sides of the rocking axis of the latter, substantially as described.

4. In a hand planing machine, the combination, with the frame and cutter-head, of a saddle at each side of said cutter-head and slidable with relation to said frame, a table on each saddle, means for adjusting each table to elevation on its saddle, a double-throw lever having link connection with said respective saddles, a segment on the frame, and a detent on said lever arranged to engage the notches of said segment, substantially as described.

5. In a hand planing machine, the combination, with the main frame, and cutter-head, of a pair of saddles, and tables adjustable thereon, said saddles and frame having horizontal slide-ways between them, a detent-lever and a rack therefor, said lever having connection with said saddles for moving said saddles and the tables thereon in parallel lines toward and from said cutter-head, and means for adjusting said tables independently on said saddles, substantially as described.

6. In a hand planing machine, the combination, with the frame and cutter-head, of a saddle at each side of said cutter-head, said saddles and frame having horizontal guide-ways between them, a table on each saddle, a double-throw lever having connection with each saddle for moving said saddles with the tables thereon simultaneously toward or from the cutter-head with said tables maintained in their positions of height, and means for independently adjusting said tables to height on said saddles, substantially as described.

7. In a hand planing machine, the combination of a forward table and a support therefor, forming relatively adjustable parts incline-pieces at the side of said table adjustable between said table and support, for effecting crosswise tilting of said support and a threaded rod having connection with one of said relatively adjustable parts aforesaid and with said incline-pieces, one or more of said connections being threaded, substantially as described.

8. In a hand planing machine, the combination of a forward table and a support therefor, forming relatively adjustable parts incline-pieces at the side of said table adjustable between said table and support, and a threaded rod having connection with one of said relatively adjustable parts aforesaid and with said incline-pieces, for effecting crosswise tilting of said table one or more of said connections being threaded, there being adjustable abutments for said rod at each side of each of said connections, substantially as described.

9. In a hand planing machine, the combination, with a forward table, incline-pieces at one side of said table, said incline-pieces and forward table having incline guide-ways between them, a support for said table having a positioning lug, said incline-pieces having lugs thereon, and a threaded rod provided with end abutments for said lugs, said threaded rod having threaded connection with one or more of said lugs, substantially as described.

10. In a hand planing machine, the combination, with the main frame and cutter-head, of a saddle at each side of said cutter-head, a table at each side, of said cutter-head on said respective saddles, means for adjusting said saddles and the tables thereon simultaneously in opposite directions, said saddles and tables comprising a forward saddle and a forward table, a screw-rod journaled in said forward saddle, a nut adjustable longitudinally thereof, and a link having swiveling connection with said forward table and said nut, substantially as described.

11. In a hand planing machine, the combination with a frame and cutter-head, of a saddle at each side of said cutter-head, said saddles and frame having horizontal guide-ways between them, a table for each saddle

adjustable to height thereon, means for moving said saddles with the tables thereon simultaneously on said guide-ways toward or from said cutter-head in opposite directions, one of said tables being a forward table, incline-pieces at one side of said table between said table and its saddle, said last-named table and saddle constituting relatively adjustable parts a threaded rod having connection with one of said relatively adjustable parts aforesaid and with said incline-pieces, one or more of said connections being threaded and the other or others of said connections being limited longitudinally on said rod, substantially as described.

12. In a hand planing machine, the combination of a forward table, a support therefor, incline-pieces at the side of said table adjustable between said table and support for effecting crosswise tilting of said table, and a rod having connection with said table or support and with said incline-pieces, said connections comprising abutments for controlling the movement of said incline-pieces.

13. In a hand planing machine, the combination of a frame, a forward table, a saddle for the latter, incline-pieces at the side of the said table adjustable between said table, and saddle for effecting crosswise tilting of said table, a rod having connection with said table or saddle and with said incline-pieces, said connections comprising abutments for controlling the movement of said incline-pieces, means independent of said rod, for adjusting said table to height on said saddle, and means for moving said saddle longitudinally of said frame.

14. In a hand planing machine, the combination of a forward table and a support therefor, incline-pieces at one side of said table adjustable between said table and support, a threaded rod having connection with said table or support and with said incline-pieces, one or more of said connections being threaded, and means for adjusting said table to height on said support, said last named means comprising a screw-rod, a nut thereon, and a link having swivel-connection with said table and nut, substantially as described.

In testimony whereof, I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOHN R. THOMAS.

Witnesses:
VINCENT H. BECKMAN,
WILLIAM B. GRIESE.