No. 806,675. PATENTED DEC. 5, 1905.

E. JUDD.

ADJUSTABLE BED PLATE FOR WOOD PLANERS.

APPLICATION FILED JULY 11, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

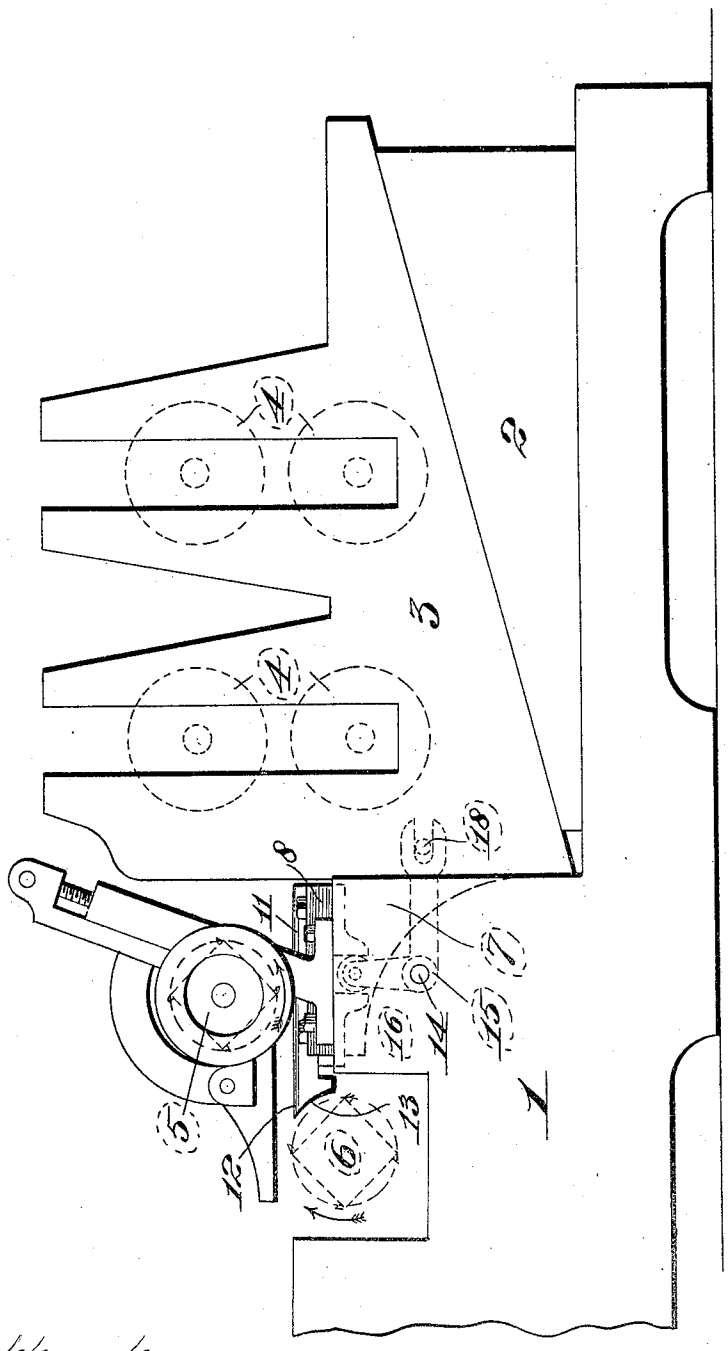

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Fig. 3.

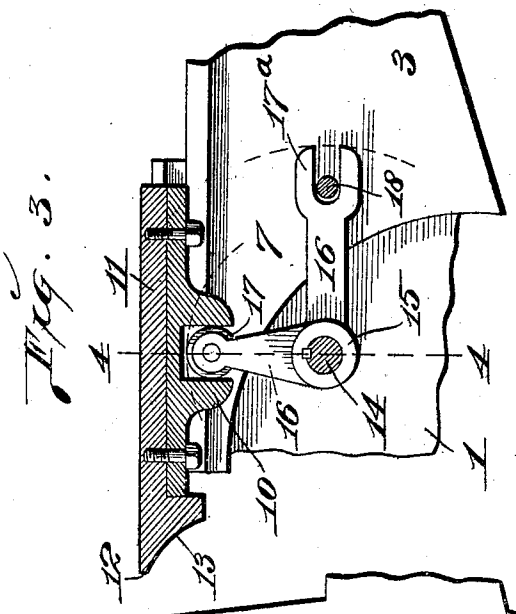


Fig. 4.

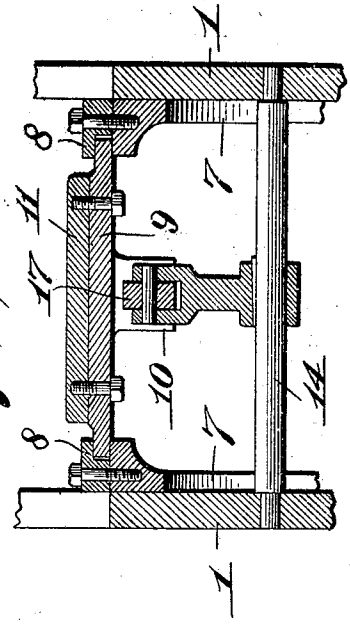
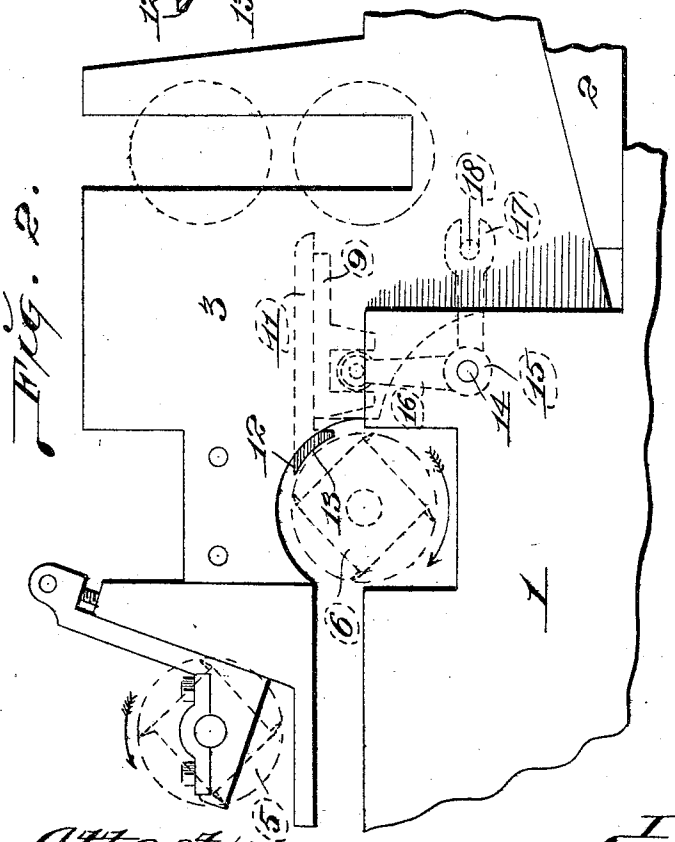


Fig. 2.



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE BED-PLATE FOR WOOD-PLANERS.

No. 806,675. Specification of Letters Patent. Patented Dec. 5, 1905.

Application filed July 11, 1905. Serial No. 269,254.

To all whom it may concern:

Be it known that I, EDWIN JUDD, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Adjustable Bed-Plates for Wood-Planers, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an adjustable bed-plate for wood-planing machines and planers and matchers; and the object of my invention is to provide improved means whereby the depth of cut of the cutter-heads of wood-planers is more accurately regulated.

The further object of my invention is to provide means whereby the forward end or the chip-breaker of the bed-plate is always maintained in a close position to the cutter-heads regardless of the depth of cut of said cutter-heads, thus insuring a smoother finish to the product that is being passed through the planer.

I attain these objects by a mechanism consisting of a wedge-frame adapted to move the feed-rollers of a planer vertically and a bell-crank which is so arranged as that when the feed-rollers are moved vertically it will move the bed-plate horizontally, so that the forward end of said bed-plate will maintain the same relative position with the lower cutter-head.

My invention consists in certain new and novel features of construction and arrangement of parts that will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a wood-planer equipped with my improved adjustable bed-plate. In this type of planer the upper cutting-head is in front of the lower cutting-head, and said upper head therefore first engages the material passing through the planer and makes the first cut. Fig. 2 is a side elevation similar to Fig. 1 and showing the lower cutting-head making the first cut. Fig. 3 is a detail section taken on a vertical line through the center of my improved adjustable bed-plate and showing the bell-crank that actuates said bed-plate. Fig. 4 is a vertical section taken on the line 4 4 of Fig. 3.

Referring by numerals to the accompanying drawings, 1 indicates the body of the main frame of the planer, and arranged for horizontal movement on the right-hand end thereof is a wedge-frame 2. Positioned on top of this wedge-frame is a frame 3, that carries the feed-rollers 4 of the planer, and which frame 3 and feed-rollers are adapted to move vertically as the wedge-frame 2 is moved inwardly and outwardly.

5 indicates the upper cutting-head, and 6 the lower cutting-head.

All of the parts just described are of ordinary construction and therefore will not be explained in detail.

Formed integral with or fixed to the left-hand end of the movable frame 3 is a pair of brackets 7, that extend forwardly inside the side walls of the frame 1 and beneath the upper cutter-head 5. Bolted to the top edges of these brackets 7 are gibs or retaining-strips 8, and a plate 9 is so arranged as that its side edges slide on top of the brackets 7, beneath the gibs 8, which plate 9 is provided at its center with a pair of downwardly-pending ears 10. Removably positioned upon the plate 9 and held thereon by means of bolts or any suitable fastening devices is the bed-plate 11, having a pointed forward end 12, the under side of which curves downwardly and rearwardly, as indicated by 13. This pointed and curved forward end of the bed-plate is known as the "chip-breaker," and it overhangs and is intended to occupy a position very close to the lower cutter-head.

Transversely arranged beneath the brackets 7 is a shaft 14, its ends being mounted in the side walls of the frame 1, and arranged on said shaft is a bell-crank 15. The vertical arm 16 of this bell-crank extends upwardly to a point between the ears 10, and it is there provided with an antifriction-roller 17, which bears against the inner faces of the ears 10. The horizontal arm 16 of the bell-crank extends toward the frame 3, and its outer end is bifurcated, as indicated by 17^a, and passing through said bifurcated end is a rod 18, the ends of which are seated in the left-hand ends of the side walls of the frame 3.

In the construction shown in Fig. 2 the left-hand end of the frame 3 is extended so as to carry the upper cutter-head, and in this construction the bed-plate is arranged to slide between suitable bearings formed on the inner faces of the side walls of the frame 3.

The operation of my improved adjustable bed-plate is as follows; When it is desired to lower the bed-plate, the wedge-frame 2 is moved toward the right, and by so doing the frame 3 lowers correspondingly. The bed-

plate 11 also lowers as it is carried by the brackets 7 at the left-hand end of the frame 3, and at the same time it lowers it is shifted or moved slightly to the right in order that the chip-breaker end of said bed-plate will be moved to the proper position relative the path of travel of the knives carried by the lower cutter-head, for if the bed-plate moved only in a vertical line then the chip-breaker end would be moved directly into the path of travel of the knives of the lower cutter-head when the frame 3 is lowered. This horizontal shifting of the bed-plate is accomplished by means of the bell-crank 15 and its connections, as when the frame 3 is lowered the rod 18 correspondingly lowers and the outer end of the horizontal arm 16 of the bell-crank is moved downwardly a short distance. This movement rocks the bell-crank 15 and the shaft 14 and correspondingly moves the upper end of the vertical arm 16 slightly to the right. This movement is in turn imparted to the plate 9, and as a result the bed-plate 11, carried by said plate 9, is moved to the right or away from the lower cutter-head simultaneous with its vertical movement, and as a result the chip-breaker end of said bed-plate occupies the same position relative the path of travel of the knives of the lower cutter-head as it did previous to the lowering of the frame 3. When the wedge-frame 2 is moved inwardly to elevate the frame 3, the movements just described are reversed and the bed-plate 11 is moved to the left toward the lower cutter-head simultaneously with the upward movement of the frame 3.

The mechanism herein described is very simple in construction and operation, can be applied to all forms of wood planers and matchers, and it provides means whereby the bed-plate is automatically shifted to and from the lower cutter-head simultaneous with its vertical movement.

I claim—

1. The combination with a wood-planer and a movable frame carried thereby, of brackets formed integral with one end of the movable frame and extending toward the lower cutter-head, a bed-plate arranged to slide on the said brackets, and a bell-crank fulcrumed to the frame of the planer and having one end loosely connected to the bed-plate, and having its opposite end loosely connected to the movable frame; substantially as specified.

2. The combination with a wood-planer having a wedge-frame and a movable frame carried by said wedge-frame, of a pair of brackets formed integral with one end of the movable frame, and extending toward the lower cutter-head, a bed-plate arranged to slide upon the brackets, a shaft mounted in the frame of the planer below the brackets, a bell-crank mounted upon said shaft, and the upper end of the vertical arm of said bell-crank engaging the under side of the bed-plate, and the outer end of the horizontal arm of said bell-crank being loosely connected to the movable frame; substantially as specified.

3. The combination with a wood-planer having a wedge-frame and a movable frame carried thereby, of brackets carried by the movable frame and extending toward the lower cutter-head, a bed-plate arranged to slide on said brackets, and a bell-crank so fulcrumed and connected to said bed-plate and movable frame as to move the bed-plate horizontally when the movable frame is moved vertically; substantially as specified.

4. The combination with a wood-planer having a wedge-frame and a movable frame carried thereby, of brackets fixed to the movable frame and extending toward the lower cutter-head, gibs mounted on top of said brackets, a plate having its ends arranged to slide beneath the gibs, a pair of lugs integral with the under side of said plate, a bed-plate mounted on top of said plate, a shaft transversely arranged in the frame of the planer, a bell-crank carried by said shaft, the upper end of the vertical arm of which bell-crank is arranged between the lugs of the plate, and the outer end of the horizontal arm being bifurcated, and a rod carried by the movable frame and which passes through the bifurcated end of the bell-crank; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

EDWIN JUDD.

Witnesses:
M. P. SMITH,
E. M. HARRINGTON.