No. 885,611. PATENTED APR. 21, 1908.

A. GWOREK.

PLANER.

APPLICATION FILED AUG. 21, 1907.

2 SHEETS—SHEET 1.

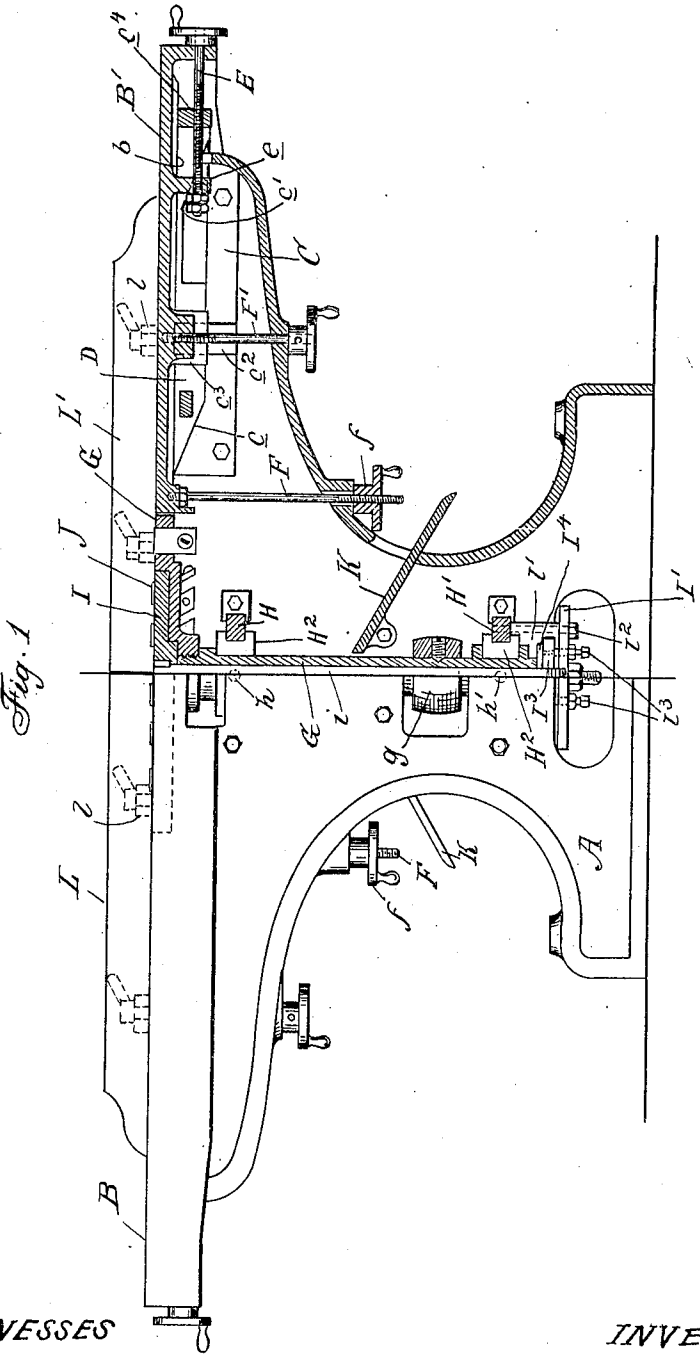


Fig. 1

WITNESSES

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2 SHEETS—SHEET 2.

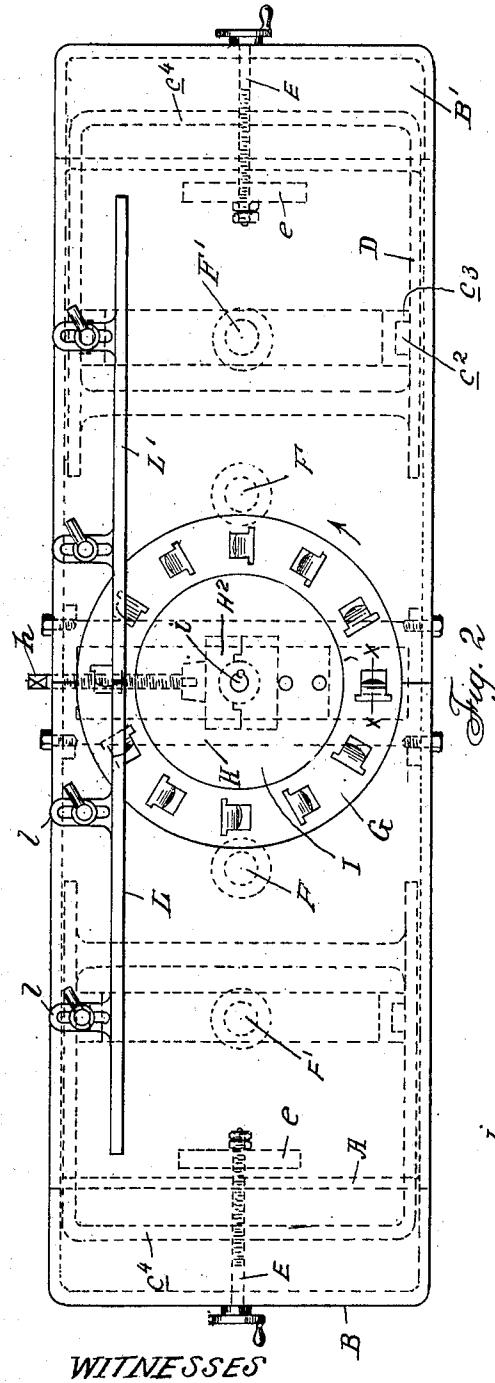


Fig. 2

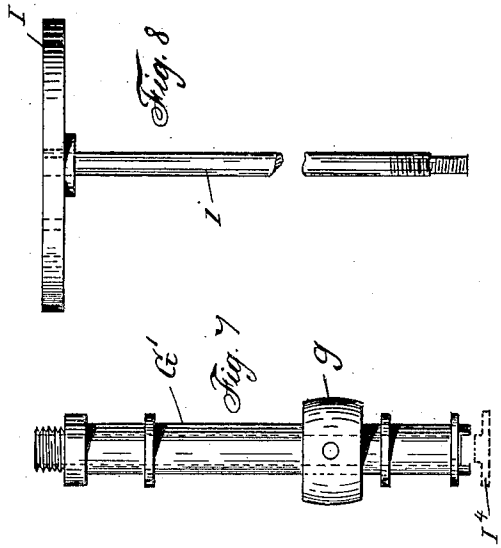


Fig. 8

Fig. 7

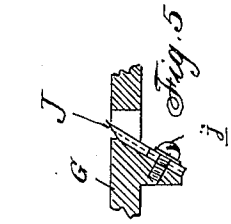


Fig. 5

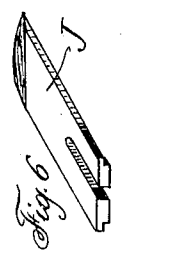


Fig. 6

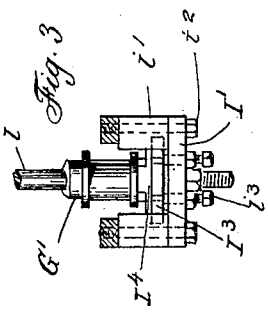


Fig. 3

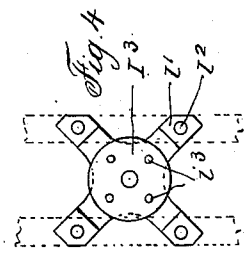


Fig. 4

WITNESSES

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# UNITED STATES PATENT OFFICE.

ANTONI GWOREK, OF AURORA, ILLINOIS.

## PLANER.

No. 885,611. Specification of Letters Patent. Patented April 21, 1908.

Application filed August 21, 1907. Serial No. 389,486.

*To all whom it may concern:*

Be it known that I, ANTONI GWOREK, a subject of the Emperor of Austria-Hungary, and residing at Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Planers, of which the following is a complete specification.

This invention relates to improvements in planers, and more particularly to a wood planer adapted to be adjusted to simultaneously cut at varying depths.

The object of this invention is to provide a planer adapted to be so adjusted that if desired the same set of knives will make one depth of cut as the board enters the machine and another depth as it leaves the machine, thereby making a finishing cut after the first or deep cut has been completed.

It is also an object of the invention to provide a planer in which the knives revolve in a horizontal plane, so that the knives enter the material from the side and cut a shaving of uniform thickness, thereby considerably reducing the power required for operation.

It is also an object of the invention to provide a planer having a bed or table section at each end which are independently adjustable, so that the work may be adjusted to receive a different depth of cut at one end of the machine than it does at the other.

The invention consists of the matters hereinafter described in the specification and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a view partly in side elevation and partly in vertical section of a device embodying my invention. Fig. 2 is a top plan view of the device. Fig. 3 is an enlarged detail of the adjustable bearing for the knife carrier. Fig. 4 is a plan view of the bracket for said bearing. Fig. 5 is a fragmentary section of the knife carrier taken on line $x$—$x$ of Fig. 2. Fig. 6 is an enlarged perspective view of one of the knives. Fig. 7 is a side elevation of the drive shaft. Fig. 8 is a fragmentary side elevation of the attaching means for the drive shaft and knife carrier.

As shown in said drawings: a frame A of any desired form, construction and material is provided, and on its top are the bed or table sections B and B′, each of which forms one half of the table. Said sections are independently adjustable vertically of the machine, and any preferred means may be provided to accomplish the adjustment. As shown however the frame is provided at each side and near each end thereof with track rails C, each of which is provided with two inclined surfaces $c$ and $c'$ which incline upwardly and towards the center of the machine. Each of said rails is provided intermediate said inclined surfaces with a post $c^2$, the upper end of which fits in a suitable socket $c^3$ on the under side of the table section and acts to prevent longitudinal movement of the section while permitting vertical movement thereof. An adjusting frame, indicated as a whole by D, is slidably engaged on said rails at each end of the machine, and the top thereof engages against bearing surfaces $b$ on the under side of the table section. The side members of said adjusting frame are provided on their under sides with inclined surfaces complemental with the inclined surfaces $c$ and $c'$, and are adapted to slide thereon, so that as said adjusting frame is moved longitudinally of the machine it acts to raise or lower the table section, dependent upon its direction of movement. Any preferred means may be employed to operate said frames, but as shown, adjusting screws E are journaled at their outer ends in the end flanges of the table sections and at their inner ends are journaled in flanges or lugs $e$ on the under side of each section. Said screws have threaded engagement in the end members $c^4$ of said adjusting frames and when rotated act to move the frames longitudinally of the machine.

For the purpose of locking the table sections in adjusted position each is provided with locking shafts F and F′, the former of which is engaged at its upper end to the under side of the section near the inner end thereof and extends down through the frame A, and is provided with a nut $f$ beneath said frame. The latter F′ extends upwardly through the bottom of said frame A and has threaded engagement with the section intermediate the sockets $c^3$. Said table sections are each provided at their inner or contiguous ends with a central, semi-circular aperture for the knife carrier G which is adapted to rotate therein in a horizontal plane. Beneath said aperture are upper and lower pairs of transverse beams indicated respectively by H and H′, and on said beams, in axial alinement with said aperture, are the split bearings $H^2$ and $H^3$, one half of each of

which is slidable on the beams to and from the other half, and screw shafts $h$ and $h'$ have threaded engagement in the side of the frame and act to move said movable parts of the bearings to and from the fixed parts thereof, as is usual in such constructions. A tubular shaft G′ is journaled in said bearings and is engaged at its upper end to the knife carrier G in any preferred manner, as by threading it into the carrier. Said knife carrier is provided in its top with a circular recess and seated therein is a retaining plate I, which is provided at its center with a shaft $i$ extending downwardly through and beneath the shaft G′, and is provided on its lower end with a right and left hand thread. A bracket I′ having four radially directed arms $i'$ which turn upwardly at their ends, as shown in Figs. 3 and 4, is engaged beneath the beams H′ by means of bolts $i^2$ extending therethrough and into said beams and by means of the shaft $i$ which is threaded therein and is provided with a nut beneath the same. A bearing plate $I^3$ is supported on said bracket by means of set screws $i^3$ and is provided with an aperture therethrough in axial alinement with the bore of the shaft G′ and through which the shaft $i$ extends. The lower end of the shaft G′ is shaped to form one member of a clutch and seated on said bearing plate is a rotative bearing plate $I^4$ which is also shaped to form one member of a clutch and is engaged to the lower end of the shaft G′ so as to rotate therewith. The knives J are arranged on the knife carrier near its periphery and extend therethrough a sufficient distance to give the required cut. Said knives as shown more clearly in Figs. 5 and 6 are slotted at their lower ends and engaged to the carrier in a forwardly inclined position by means of set screws $j$. The shavings fall through the knife apertures in said carrier and are carried outwardly from the machine by the inclined slides K. On said table sections B and B′ are the abutments L and L′ which act as guides for the boards or other timbers being operated upon and hold them in place for the knives to act against. Said abutments are provided with laterally directed slotted lugs $l$ which are bolted to the sections and permit adjustment of the abutments to and from the carrier.

The operation is as follows: When the section B′ at the feed end of the table is below the edges of the knives, and the other section is flush with the knives the cut will be all at the feed end of the machine. When it is desired to make a shallow or finishing cut at the other end of the machine the section B is slightly lowered so that the edges of the knives project slightly above the same and by reason of the board springing down onto the same the knives will produce a slight cut. When either of the sections is to be adjusted it is released by means of the shafts F and F′ and the frame D beneath the section is adjusted by means of the shaft E to raise or lower said section as desired. When the proper adjustments have been made the sections are again secured by the shafts F and F′. The knife carrier is rotated by means of the belt pulley $g$ on the shaft G′ in the direction of the arrow in Fig. 2 and its weight is supported upon the bearing plate $I^3$ so that the wear is taken from the bearings H and H′.

Obviously many details of construction may be varied without departing from the principles of my invention.

I claim as my invention:

1. The combination with a main frame, of independently adjustable table sections thereon, a knife carrier adapted to revolve in a horizontal plane, a plurality of knives projecting upwardly therethrough, a tubular shaft projecting downwardly from said carrier, a removable bearing plate on the end of said shaft, an adjustable bearing beneath said plate, a bracket supporting said bearing and means extending through said shaft and bracket adapted to hold the shaft firmly on the bearing.

2. The combination with a main frame, of table sections thereon, means for independently adjusting said sections, a vertical, tubular drive shaft, a knife carrier on the top thereof adapted to revolve in a horizontal plane, a bracket beneath said shaft, an adjustable bearing thereon for said shaft and means extending through said shaft and bracket adapted to hold the shaft on said bearing.

3. The combination with a main frame of vertically adjustable table sections thereon, a knife carrier between said sections, a tubular shaft extending downwardly from said carrier, bearings on said frame for said shaft, a bracket beneath said shaft, set screws in said bracket, a bearing plate supported on said screws beneath said shaft, a retaining plate on the carrier and a shaft connected with said plate and extending downwardly through said carrier, tubular shaft and bracket.

4. The combination with a main frame, of a vertical, tubular drive shaft journaled therein, a removable, apertured bearing plate on the lower end of said shaft, an apertured bracket beneath said shaft, adjusting screws in said bracket, an apertured bearing plate supported on said screws and adapted to support the aforesaid bearing plate, a retaining plate on said carrier and a shaft on said plate extending downwardly through said drive shaft, bearing plates and bracket.

5. The combination with a main frame having cross beams thereon, of a tubular drive shaft journaled in said cross beams, a bracket supported from one of said beams beneath the drive shaft and provided with an aperture registering with the bore of said

shaft, a recessed knife carrier on the upper end of said shaft, a retaining plate therein, and a shaft engaged on said retaining plate and extending downwardly through said shaft and bearing plates and having threaded engagement in said bracket.

6. The combination with a main frame, of a vertical drive shaft journaled thereon, a vertically adjustable bearing plate beneath the lower end of said shaft, a bracket adapted to support said plate, a knife carrier on the upper end of said shaft, means extending axially of said shaft and connecting said carrier with said bracket, and vertically adjustable table sections on said frame.

7. The combination with a main frame, of cross beams thereon, bearings on said beams, a vertical tubular shaft journaled in said bearings, a bracket engaged on the beams beneath said shaft, a vertically adjustable bearing plate thereon adapted to support the shaft from beneath, a knife carrier on the upper end of said shaft, a retaining plate thereon, a shaft on said plate extending downwardly through said tubular shaft and engaged to said bracket, and table sections on said frame adjustable with respect to said carrier.

8. The combination with a main frame of a pair of table sections thereon having a circular opening at their inner ends, of transverse beams on said frame, bearings on said beams, a tubular shaft journaled in said bearings, a bracket supported beneath said beams, a plurality of set screws in said bracket, a plate thereon, a bearing plate removably engaged on the lower end of said shaft and revolubly engaged on said plate, a knife carrier on the upper end of said shaft, a retaining plate thereon and a shaft extending downwardly from said plate through said tubular shaft and having threaded engagement in said bracket.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

ANTONI GWOREK.

Witnesses:
AUG. GOODALL,
M. L. ROSENONE.