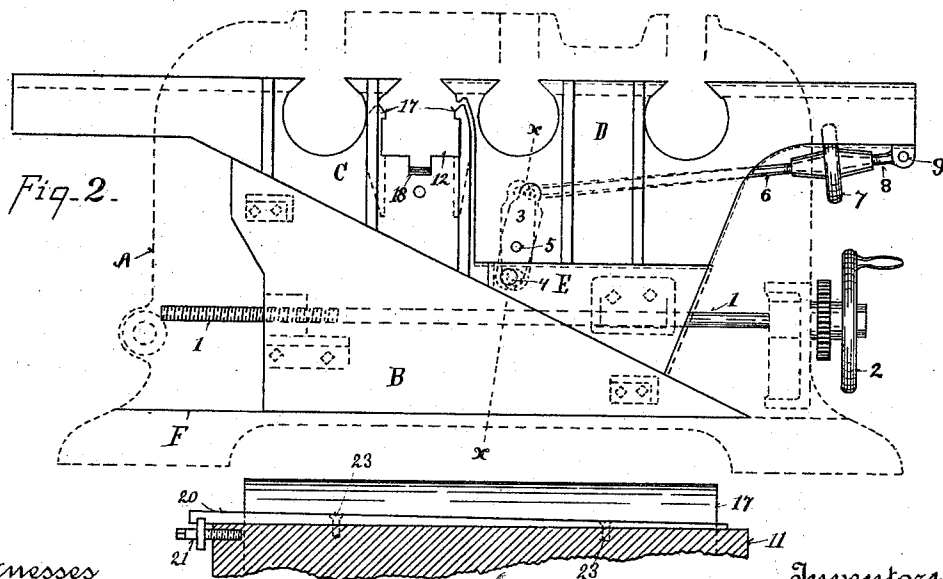
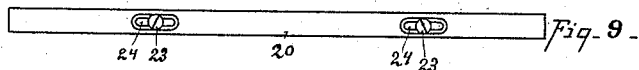
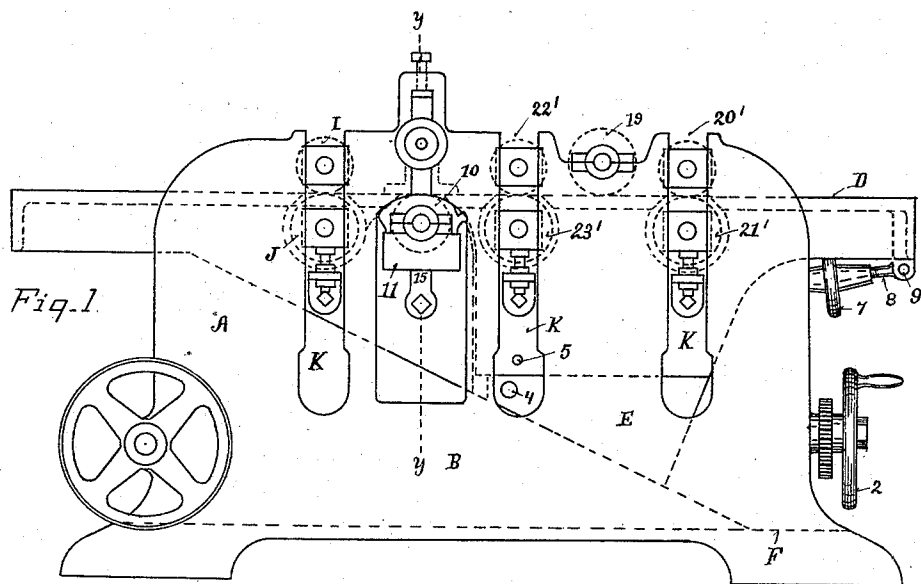


G. W. BUGBEE & F. DANNER.
PLANING MACHINE.

No. 470,359.

Patented Mar. 8, 1892.



Witnesses

C. W. Miles
P. Simmons

Inventors:

George W. Bugbee & Frederick Danner
By their Attorneys *W. B. Bond*

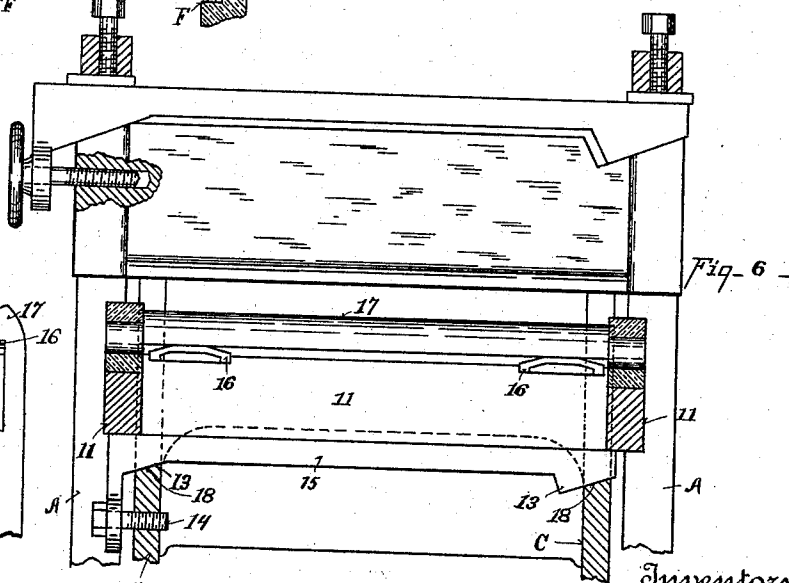
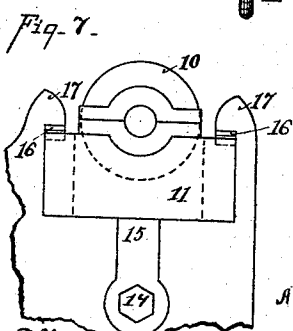
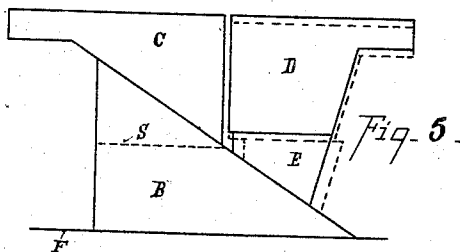
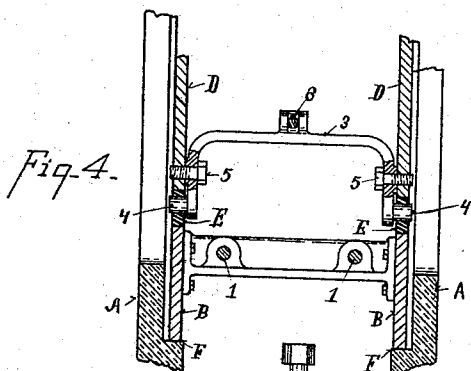
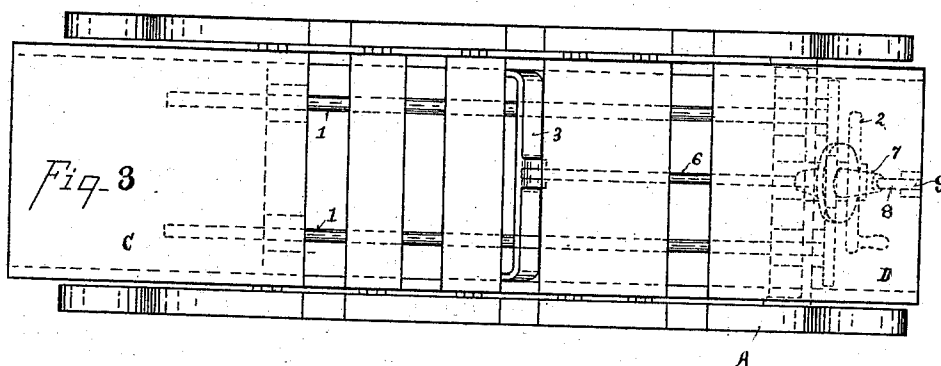
(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

GEORGE W. BUGBEE AND FREDERICK DANNER, OF CINCINNATI, OHIO,
ASSIGNORS TO THE EGAN COMPANY, OF SAME PLACE.

PLANING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 470,359, dated March 8, 1892.

Application filed April 9, 1891. Serial No. 388,283. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. BUGBEE and FREDERICK DANNER, citizens of the United States, and residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Planing-Machines, of which the following is a specification.

Our invention relates to an improvement in double-surface planers.

One of the objects of the invention is to provide means for adjusting tables to the respective cutting-cylinders independent each of the other.

Another object of the invention is to provide a yielding pitman for the table of the lower cylinder to adjust against, so that it may be made to yield by undue strains and accommodate itself to the wear of the knives.

The various features of our invention will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side-elevation of our improvement. Fig. 2 is a similar elevation with the side of the frame removed. Fig. 3 is a top plan view of Fig. 1. Fig. 4 is a section on line *x x*, Fig. 2. Fig. 5 is a diagram illustrating the adjustment of the two cylinder-tables. Fig. 6 is a sectional elevation on line *y y*, the cylinder being removed. Fig. 7 is an end elevation of the lower cylinder and its supporting-frame. Fig. 8 is a sectional elevation showing a modification of Fig. 6. Fig. 9 is a top plan view of Fig. 8.

A represents the frame of the machine. In Fig. 2 it is indicated in dotted lines, the full lines representing the various parts of the sub-frame for adjusting the tables.

B represents an incline for raising and lowering the entire planer-table. This movement is accomplished by the through-shafts 1 and hand-wheel 2 in the ordinary manner, so as to slide the inclines B back and forth, and thereby adjust both tables C and D. In our construction we provide a separate means for raising and lowering the front table D, as illustrated in the diagram, Fig. 5. Table D rests upon a separate incline E, so that when the incline E is moved upon the incline B the table D is adjusted either upward or downward.

We provide independent means for operating the incline E, so that the front table D may be raised or lowered independent of the table C, which is accomplished as follows:

3 represents a yoke provided with studs 4 on the lower end of said yoke, which swivel into the incline E, which is a shell-shaped frame, as indicated in Fig. 4. Likewise the incline B and tables C D are of the ordinary shell shape, said yoke-journals upon the studs 5 tapping into the sides of the table D.

6 represents connecting-rod hinged to the yoke 3, tapping into the hub of the hand-wheel 7.

8 represents a sectional shaft likewise tapping into the opposite end of the hub of said wheel and swiveled to the ear 9.

The parts 6 and 8 make a sectional connecting-rod, so that as the wheel 7 is turned the said connecting-rod may be lengthened or shortened, thereby rocking the yoke 3 upon its center and pulling the incline E forward or backward, as represented in dotted lines, Fig. 2. By this means the table D is independently adjusted up or down as the incline E is driven forward or backward. The incline B travels upon guides F, formed in the base of the frame A, as shown in Fig. 4. The incline E travels upon similar ways on the incline B, and the table C also upon similar inclines on said table.

10 represents the lower cutting-cylinder, which is journaled upon a detachable block 11, which slides in the seat 12 on the table C, a wedge-bar 15 being provided for adjusting the said block 11 in its seat. The table is raised or lowered by the movement of the incline B, thereby adjusting the cylinder up or down by the movement of said table, which raises the stuff or lowers it. The stuff is suspended upon the feeding-rollers I J, supported in the standards K, supported on the main frame. It is desirable, however, to have an independent adjustment of said cylinder on the table C, so as to compensate for the wear of the knives. This is accomplished by means of the taper-key 20, (see Figs. 8 and 9,) which is interposed between the hook-bars 17 and the journal-block 11.

21 represents a screw for adjusting the taper-key in or out. 23 represents set-screws for holding it in position laterally. The set-

screws pass through slots 24, which allow a longitudinal adjustment of the key and yet hold it in position laterally. A very slight adjustment is only necessary to compensate for the wear of the knives.

5 The cutting-cylinder 10 is adjusted generally by means of the incline 13 and the set-screw 14 and slot 18. In Fig. 6 is an inferior modification showing arch-keys 16 interposed
10 between the hook-bars 17 and the journal-block; but the taper-key is the preferred form of construction.

19 represents the upper cutting-cylinder; 20' 21' 22' 23', two series of feeding-rollers supported in the standards K in the ordinary manner. The upper cutting-cylinder 19 is stationary and the front table D adjusted to or from the same, and this table D is independently adjusted by the incline E and through
20 the intervention of the hand-wheel 7, connecting-rod 6, and yoke 3. Hence by our construction the hand-wheel 2 may be turned to adjust both tables vertically to bring the knives into the desired position for cutting,
25 and the hand-wheel 7 may be turned to adjust the front table independent of the adjustment of the rear table. It is obvious that this double adjustment could be obtained by a separate adjustment of the rear table C instead of the front table D, as illustrated in dotted lines S, Fig. 5. Thus if inclines B were bisected on the dotted lines S and the yoke connected to the section above said dotted lines in the same manner as connected to the section E, said
30 upper section of the incline B could be moved out and in and adjust the table C up and down without adjusting the table D, and thus the same result be accomplished.

Having described our invention, what we
40 claim is—

1. In a double-surface planing-machine, the combination of a main frame, a lower incline, a screw-shaft for adjusting the same, inclined frames mounted thereon, a secondary frame
45 mounted on one of the inclined frames, a yoke journaled in the secondary frame and swiveled to the inclined frame, on which the latter is supported, adjusting mechanism for the yoke, a lower cutting-cylinder, a frame in

which the same is mounted, laterally-movable 50 inclined ways under the same, and an adjusting-screw for the ways, substantially as specified.

2. In a double-surface planing-machine, the combination of a main frame, a lower incline, 55 a screw-shaft for adjusting the same, a pair of upper inclined frames thereon, a feeding-out roll and lower cutting-cylinder mounted in the rear inclined frame, a secondary frame mounted on the forward inclined frame, feed- 60 ing-in rolls journaled therein, a yoke journaled in the secondary frame and swiveled to the forward inclined frame, and a screw-shaft for adjusting the yoke, whereby the secondary frame carrying the feeding-in rolls is raised 65 or lowered, substantially as specified.

3. In a double-surface planer, the combination of the main incline B, the table C, mounted directly on said incline, the lower cutting-cylinder 10, carried by the table C, the 70 upper cutting-cylinder 19, the secondary incline E, mounted on the main incline B, and the table D, supported on the incline E beneath the upper cutting-cylinder and adjustable toward and from said upper cutting-cyl- 75 inder, substantially as described.

4. The combination of the inclines B and E, the table D, the yoke 3, provided with studs 4, swiveled to the incline E, studs 5, engaging the table D, the rod 8, swiveled to said 80 table, the rod 6, pivoted to the yoke 3, and the hand-wheel 7, having a hub that connects said rods, substantially as described.

5. The combination of the incline B, the table C, having in its upper end the seat 12, 85 the detachable block 11, adapted to slide in said seat, wedge-bar 15, the hook-bars 17, adjusting-keys inserted between said block and the hook-bars, and the cutting-cylinder 10, mounted in said block, substantially as de- 90 scribed.

In testimony whereof we have hereunto set our hands.

GEORGE W. BUGBEE.
FREDERICK DANNER.

Witnesses:

C. W. MILES,
T. SIMMONS.