2 Sheets--Sheet 1.

# D. H. RICE & J. W. MURKLAND

## Planing Machine.

No. 168,529. Patented Oct. 5, 1875.

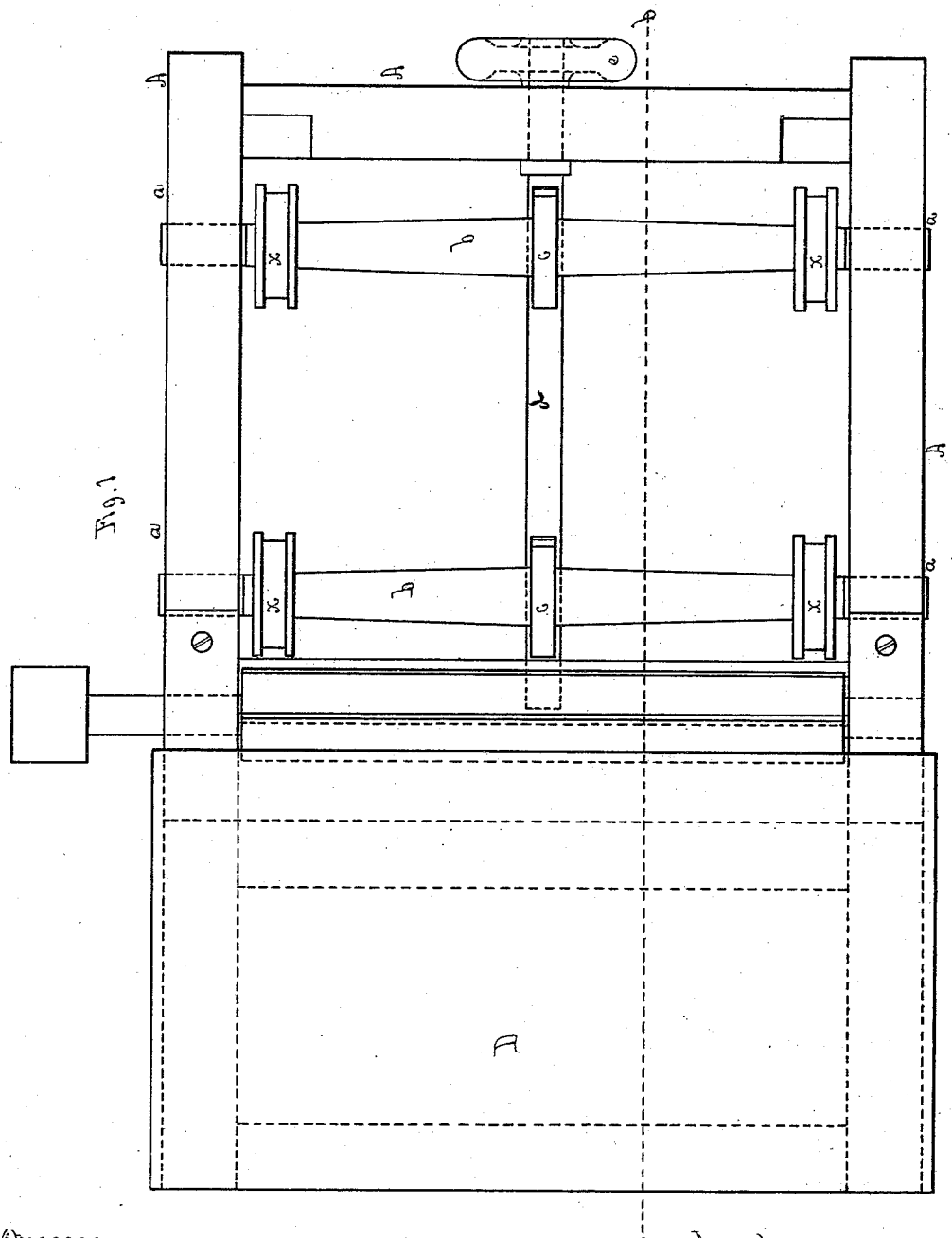

Fig. 1.

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Charles E. Pratt
George S. Tubman

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2 Sheets--Sheet 2.

# D. H. RICE & J. W. MURKLAND.

## Planing Machine.

No. 168,529. Patented Oct. 5, 1875.

Fig. 2

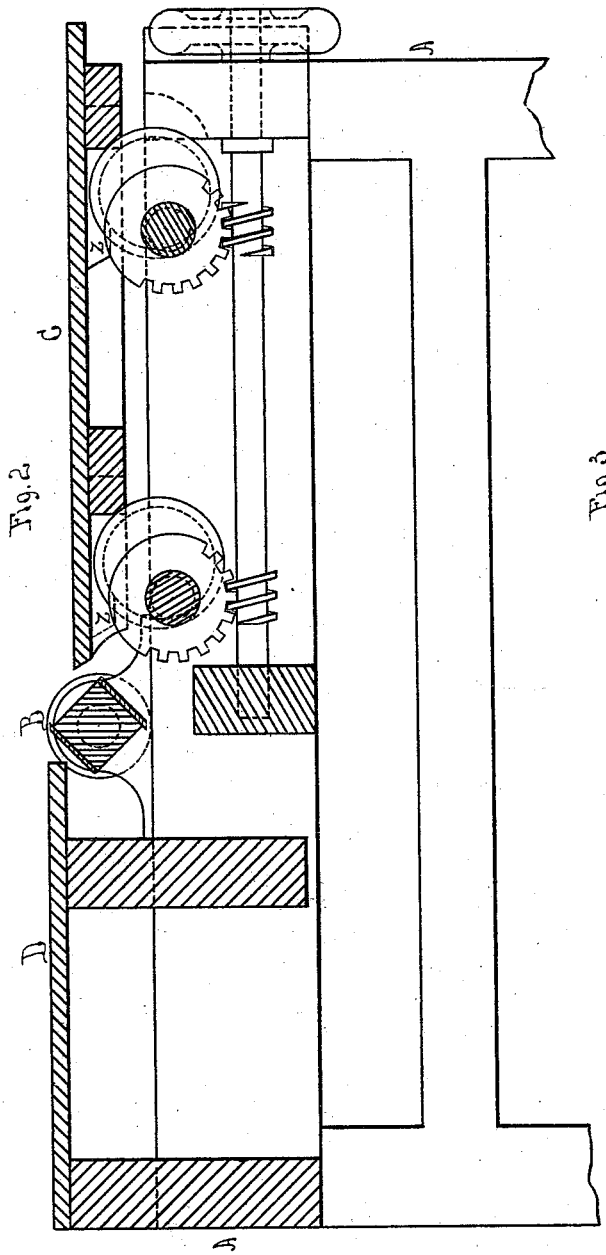
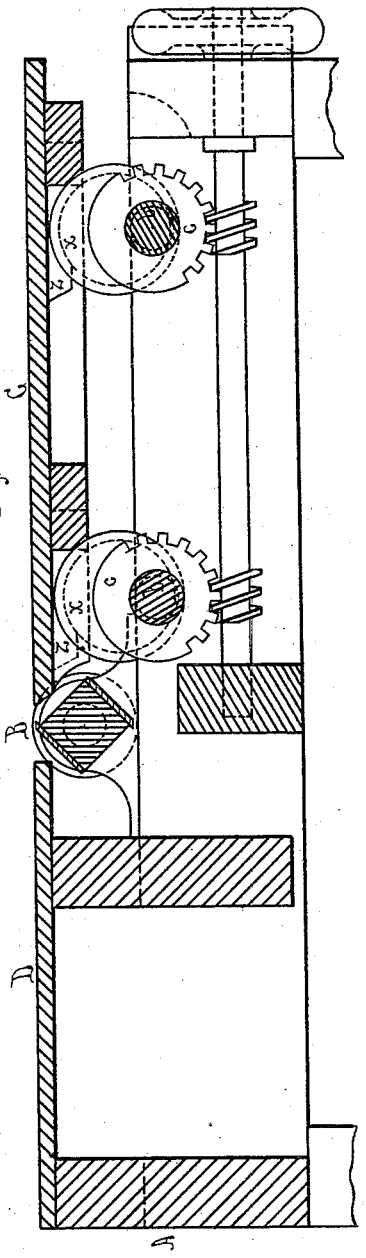



Fig. 3

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# UNITED STATES PATENT OFFICE.

DAVID HALL RICE AND JOHN W. MURKLAND, OF LOWELL, MASSACHUSETTS; SAID MURKLAND ASSIGNOR TO SAID RICE.

## IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **168,529**, dated October 5, 1875; application filed January 13, 1875.

*To all whom it may concern:*

Be it known that we, DAVID HALL RICE and JOHN W. MURKLAND, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Planing-Machines, of which the following is a specification:

Our invention relates to that class of planing-machines commonly known as buzz-planers; and consists of a novel method of raising and lowering the bed of the planer by means of power applied to the eccentrics upon which it is supported, so that the bed may always remain at the same distance from the revolving cutters when raised or lowered, while it rests upon, and is confined in place by the eccentrics, and is incapable of any play or motion from wear or imperfect construction of the parts, substantially as hereinafter described.

Heretofore the beds of this class of planers have been raised and lowered by means of screws, raising and lowering the bed in or upon slides, the screws working in lugs attached to the frame of the planer and its bed, and sometimes the sliding surfaces on which the bed is raised and lowered are made to revolve. The wear of the parts, or their imperfect fitting, unless great care is used, allows the bed, in these constructions of the planer, to move slightly, and sometimes to get out of level, thus seriously injuring the operation of the planer.

Our invention is intended to obviate these difficulties.

In the drawings, Figure 1 is a top plan of the planer with the movable part of the top removed, showing the eccentrics and worm-gears and hand-wheel. Fig. 2 is a vertical section with the bed lowered. Fig. 3 is a vertical section with the bed raised.

A is the frame of the planer. B is the revolving cutting-cylinder, with its knives attached in the usual way. C is the adjustable part of the planer top, which is raised and lowered. D is the fixed part of the planer top. In the frame A are placed four boxes, *a*, two on each side opposite to each other, and in these boxes the shafts *b b* rest and turn freely. To the center of each shaft is firmly attached a gear-wheel, *c*, on the outer circumference of which is cut a worm-gear. Under the gear-wheels *c c*, and at right angles with the shafts *b b*, is secured a shaft, *d*, which extends from outside the frame A entirely across the shafts *b b*. At its outer end the shaft *d* is provided with a hand-wheel, *e*, and where it comes in contact with the gear-wheels *c* it is provided with worms which mesh into the worm-gears on their circumference. By means of the hand-wheel *e* the shafts *b b* may be made to revolve simultaneously and equally, and will remain in the exact position in which they are left. Four eccentrics, X X, are attached to the shafts *b b* near the boxes *a*. These eccentrics are of the same size, and are attached to the shafts in precisely the same relative position. They are so placed as to support the four corners of the adjustable table C at the same level, and they are of the proper size and form to cause the end of the table C next the cylinder B to be carried by them in the arc of circle concentric with and just outside the arc described by the revolving knives when they raise and lower the table. The lower side of the table C is provided with saddles Z Z, which are fitted to the circumference of the eccentrics, either in grooves or outside them, so as to prevent the table from being moved laterally upon the eccentrics when in place. The saddles Z Z may be made to entirely surround the eccentrics, if desired, but they must be carried far enough around them to hold the table C securely in place. The table C being fitted to its place upon the eccentrics, by revolving the hand-wheel *e* in one or the other direction the shafts *b b* and eccentrics *x x* and the table C are raised or lowered as desired, and the end of the table is always at the same distance from the cutting-cylinder. The power to raise and lower the table is thus applied simultaneously and equally under its four corners, and it cannot bind or get out of level when raised or lowered. Furthermore, the table C rests directly and firmly and solely upon surfaces of the eccentrics, whose motion causes it to rise and fall in such a way that its weight prevents any movement or play of the parts, and the worm-gears *c c* are capable of being fitted more accurately than any other arrangement.

We are aware that the tables of planing-

machines have long been hitherto made to traverse a substantially vertical path up and down by the rotation of eccentrics supporting them beneath, and stops or guides attached to the table, and preventing its following a path concentric with the cylinder, and we disclaim such an arrangement and operation of the parts of a planing machine.

What we claim as new and our invention is—

The combination of the adjustable table C with the eccentrics X X, by means of the saddles Z Z embracing the eccentrics and carrying the table upward and forward toward the cutter in a curved path concentric, or nearly so, with its cut, substantially as described.

D. HALL RICE.
JOHN W. MURKLAND.

Witnesses:
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CHARLES E. PRATT.