

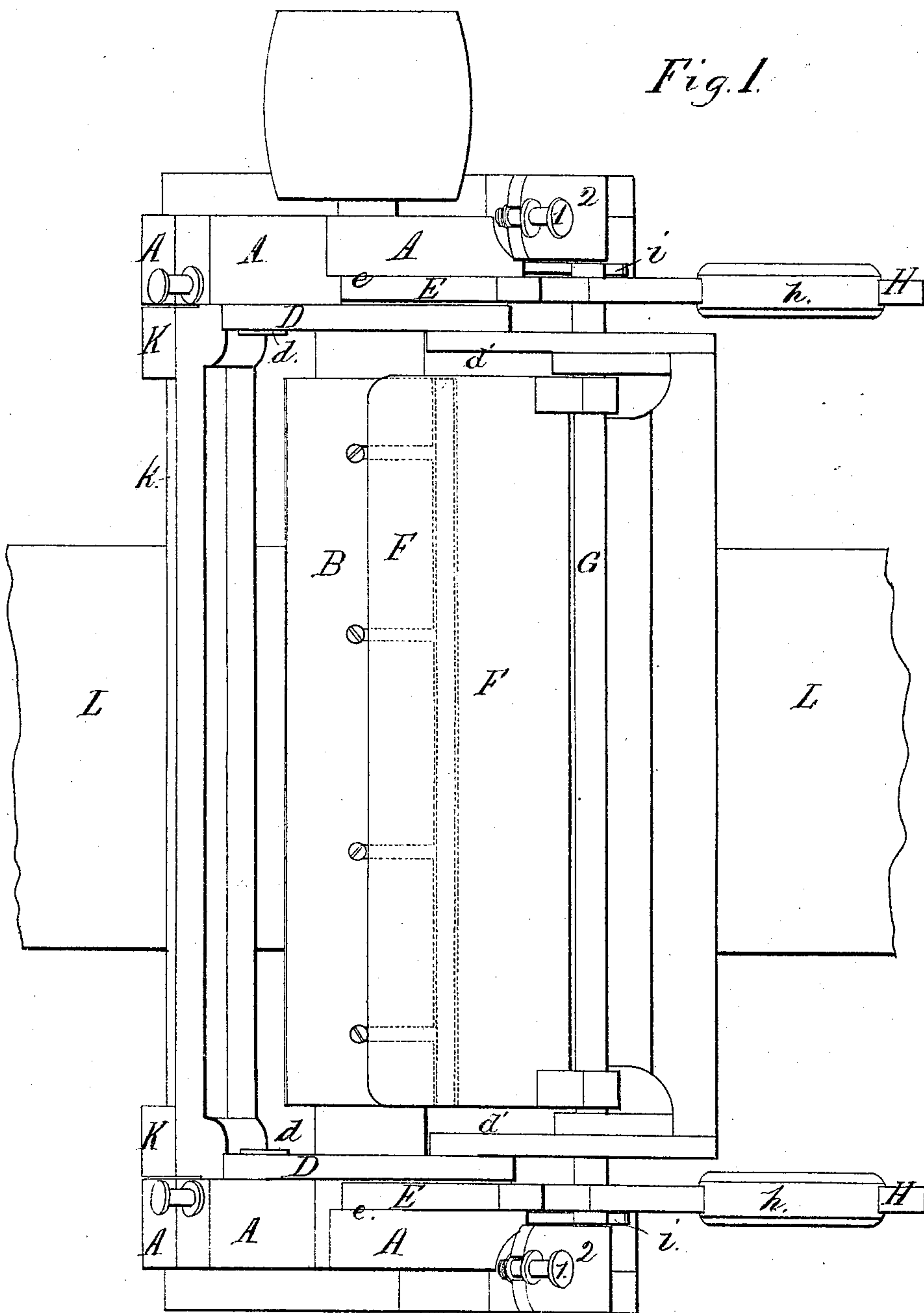
S. A. WOODS & W. H. GRAY.

Planing-Machines.

No. 151,675.

Patented June 2, 1874.

Fig. 1.



Witnesses
Chas. R. Bell.
Geo. I. Smallwood, Jr.

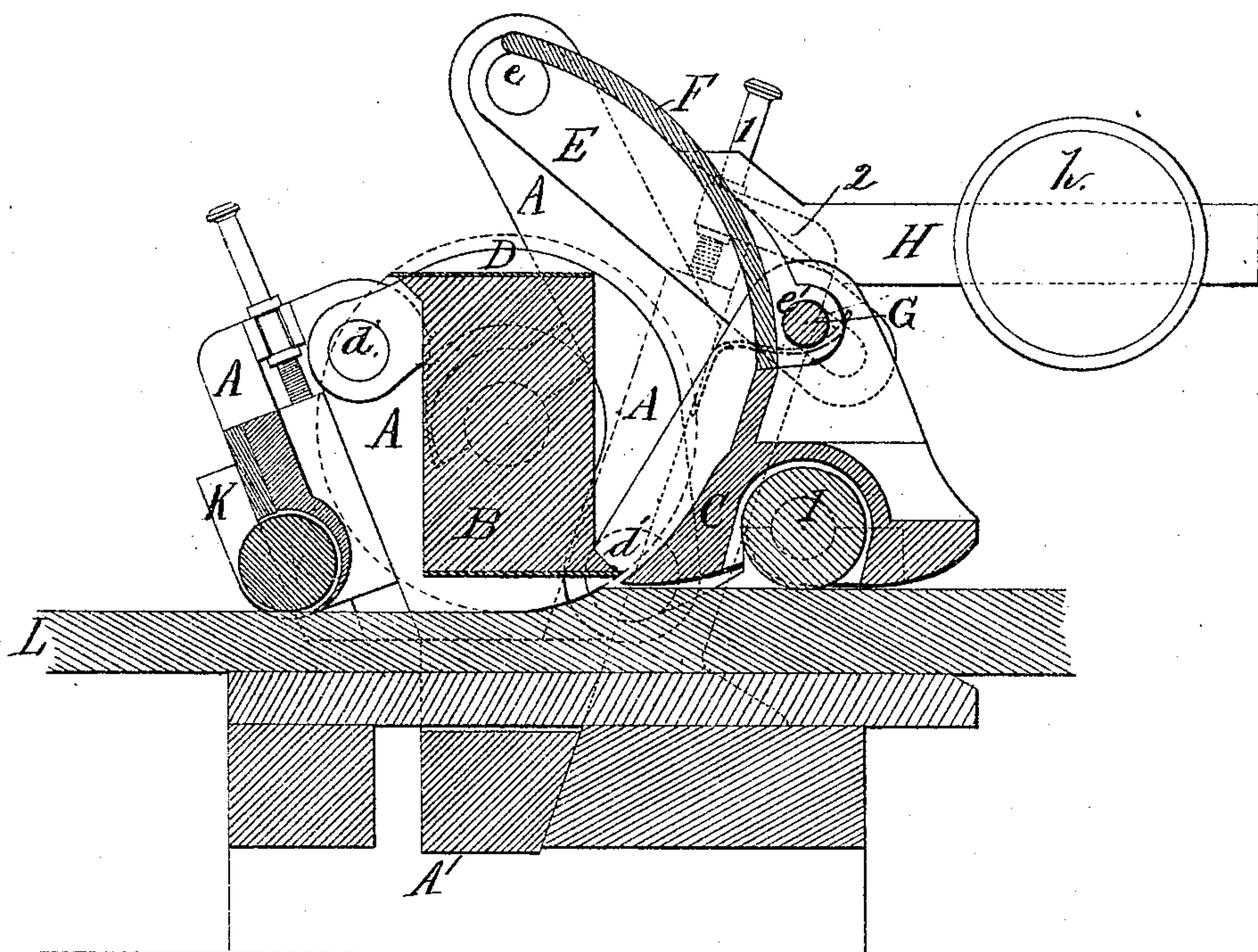
Inventors.
 Solomon A. Woods.
 William H. Gray.
 per *John J. Halsted.*
 Atty.

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Fig. 2.



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UNITED STATES PATENT OFFICE.

SOLOMON A. WOODS AND WILLIAM H. GRAY, OF BOSTON, MASSACHUSETTS,
ASSIGNORS TO SOLOMON A. WOODS.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 151,675, dated June 2, 1874; application filed
April 25, 1874.

To all whom it may concern:

Be it known that we, SOLOMON A. WOODS and WILLIAM H. GRAY, both of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Planing-Machines; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

Our invention consists, primarily, in combining, with a shaving-guard or chip-breaker, a presser-roll supported in bearings at each end of the chip-breaker, the latter being arranged to raise and lower with the roll, and thus preserve a parallelism with the cutter-bed, and being also hung on two arms of equal length at each end of the chip-breaker, in such a manner that the lower edge may be in near proximity to the cutting-cylinder, and free to move concentrically, or nearly so, to such cylinder. It also consists in combining these features with an adjustable cutter-head frame.

In the drawings, Figure 1 is a plan, and Fig. 2 a vertical cross-section, of a planing-machine embodying our invention.

A is the adjustable cutter-head frame, arranged to be adjusted higher or lower, for planing different thicknesses of lumber, by means of the adjusting-screws 1 in the fixed standards or supports 2 2, on the inclined front face of which the frame is arranged to be slid or shifted. This frame supports all the operative parts of the mechanism, namely, the cutter-head B, the shaving-guard or chip-breaker C, the radial or concentric arms D D, hung at *d d* on the frame, and connected to the chip-breaker frame at *d' d'*, the slotted lever arms or links E E, hung at *e e*, and connected to the chip-breaker frame at *e'*, the swing-bonnet F, hinged at *e'* on the rod G, the weighted arms H, projecting from the arms E, the presser-roll I, and the adjustable front roller-frame K and roller *k*. L represents a piece of lumber being planed.

By means of the arms D D and the slotted lever arms or links E E, hung as shown, the lower edge of the chip-breaker is brought into close proximity to the path of the cutter, and yet is free to move in an arc practically concentric therewith, and at the same time pre-

serve the given relative distance of the under surface of the chip-breaker or shaving-guard from the lumber, whether the cutter be reducing the lumber one-sixteenth or three-quarters of an inch, or more or less, while the roller, by means of the weights *h h*, presses on the surface of the lumber to hold it firmly to the bed while being acted upon by the rotary cutter. The slotted lever-arms E E, to which the upper part of the chip-breaker frame is hung, also permit all the freedom of movement required for the chip-breaker, and aid the arms D D in such movements.

The swing bonnet or head F is of concave form, and although arranged to be swung back when desired, yet when the machine is working, it occupies the position shown in Fig. 2, forming, with the concave of the chip-breaker, a continuous gradual curved path for the chips, reaching up and over the top of the cutter, so as to convey them forward out of the way, and prevent their flying about or obstructing the operations of the cutting-cylinder.

When the roll presses on the lumber, the under side of the guard or chip-breaker is near the lumber, but does not press upon it.

At each end of the presser-roll frame are inclined stop-pieces *i i*, (which may, if desired, have a slight spring or yield,) to hold the frame from dropping too low when the board passes from under the roll.

The links, being attached to the cutter-head frame, are moved up and down with it, when the latter is adjusted to plane lumber of different thicknesses.

We claim—

1. The shaving-guard or chip-breaker C, in combination with the presser-roll I, hung on the parallel radial arms D D and E E, and operating as shown and described.

2. The adjustable cutter-head frame A and the radial arms affixed thereto, in combination with the presser-roll and shaving-guard or chip-breaker, as shown and described.

Executed this 23d day of April, A. D. 1874.

SOLOMON A. WOODS.
WM. H. GRAY.

Witnesses:

M. W. FROTHINGHAM,
C. WARREN BROWN.