S. A. WOODS.

Planing-Machines.

No. 146,500. Patented Jan. 13, 1874.

Fig. 1.

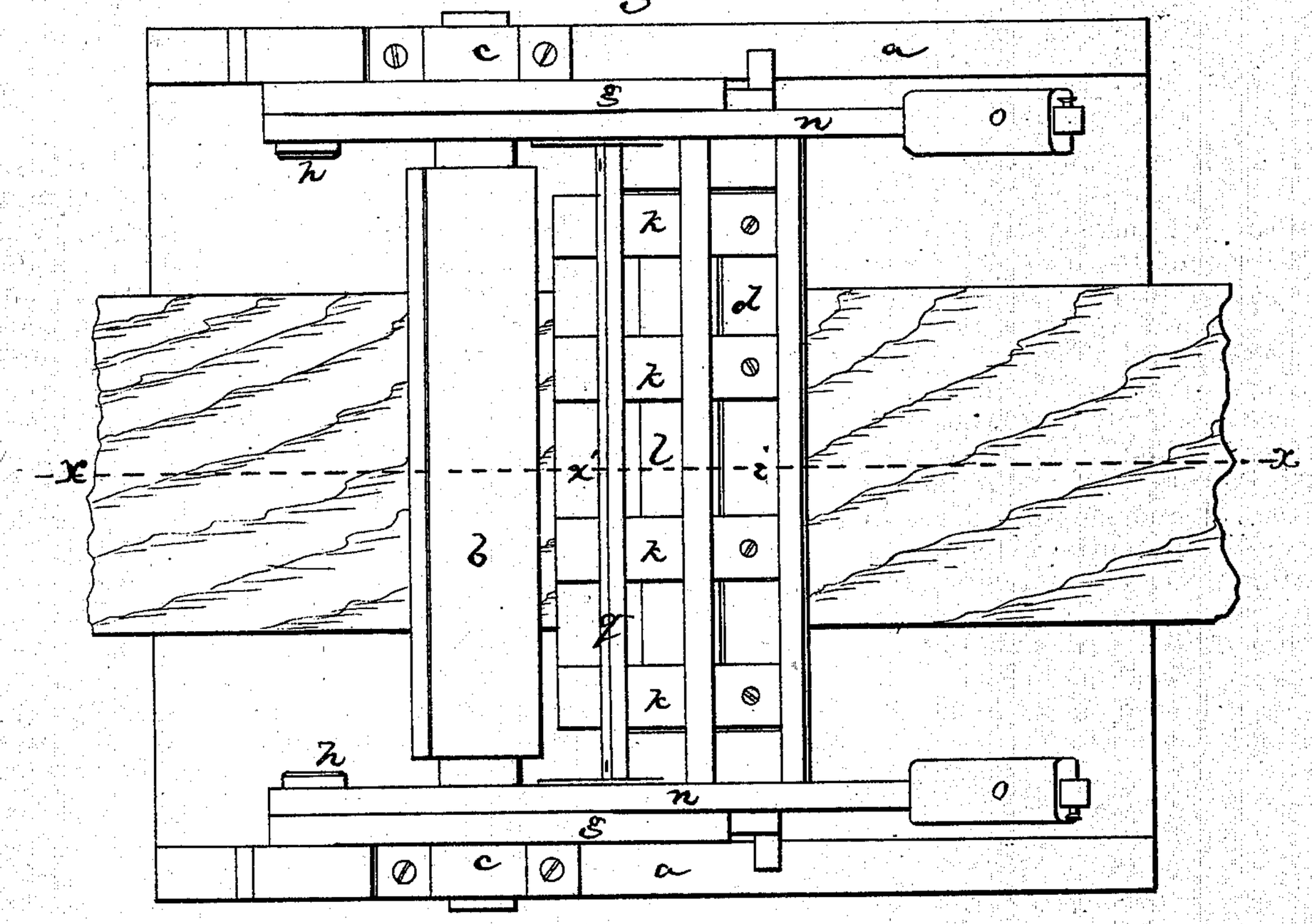
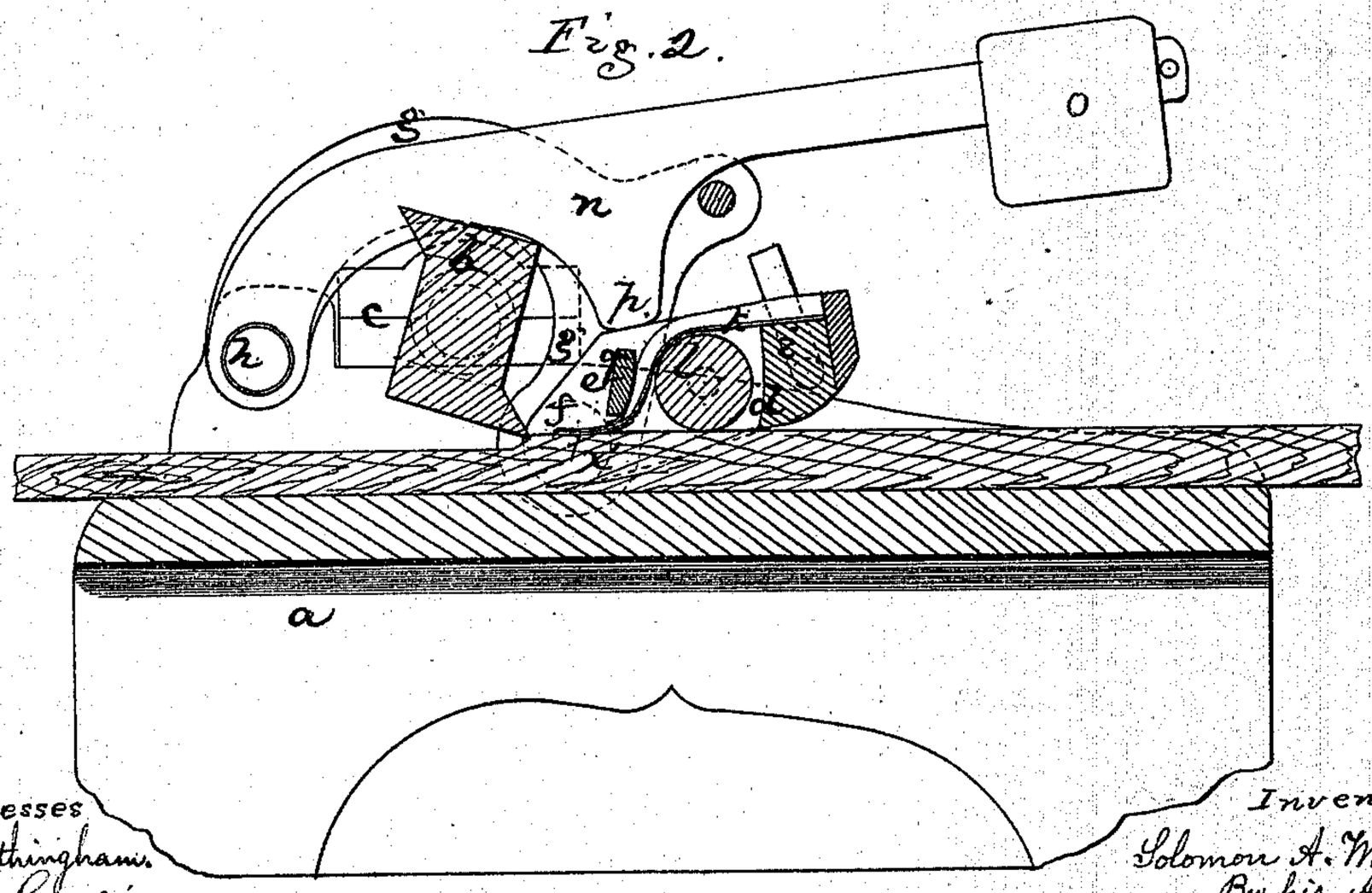


Fig. 2.



Witnesses
W. W. Frothingham.
L. H. Latimer.

Inventor
Solomon A. Woods.
By his Attys.
Crosby & Gould.

UNITED STATES PATENT OFFICE.

SOLOMON A. WOODS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **146,500,** dated January 13, 1874; application filed October 30, 1873.

To all whom it may concern:

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

The invention relates to the disposition of a presser-roll and chip-breaker spring, with reference to the cutter-cylinder, and means for creating pressure upon said roll and spring, to force them against the lumber upon which the cutter-cylinder is to operate.

In my invention the presser-roll is journaled in a loose frame hung upon arms pivoted to the main frame, and to a cross-bar of the presser-roll frame I fasten plate-springs, to the opposite ends of which is fixed the chip-breaker spring or flexible bar, which acts against the board between the roll and cutter-cylinder. Pressing upon each head of this presser-roll frame is a weighted lever, and the two levers, by adjustment of their weights, are caused to bear down the roll with such force as is necessary to hold the board to its bed and take out the warp, while the spring chip-breaker has sufficient strength to insure the smooth surfacing of the board.

The invention consists primarily in the combination, with the cutter-cylinder, of a presser-roll and a spring chip-breaker, located and arranged as thus generally described, the frame preferably having the weighted levers arranged to press down the frame that bears such presser-roll and chip-breaker.

The drawing represents an organization embodying the invention.

Figure 1 shows the mechanism in plan. Fig. 2 is a vertical section on the line *x x*.

a denotes the main frame; *b*, the cutter-cylinder, having its gudgeons journaled in the bearings *c* on the main frame *a*. In rear of the cutter-cylinder is the presser-roll frame *d*. The heads *e* of this frame are pivoted, as seen at *f*, to the ends of curved arms *g*, which arms extend over the cutter-cylinder journals, and are pivoted, as seen at *h*, to the main frame *a*. Connecting the heads *e* of the frame *d*, in rear of the presser-roll, is a bar, *i*, and from this bar extend metal springs *k*, that, reaching over toward the cutter-cylinder, bear at their ends a metal or chip-breaker spring, *x'*. Between this spring *x'* and the bar *i* is located the presser-roll *l*, the gudgeons of which roll are journaled in the heads *e*. *n n* denote the weighted levers. These levers are pivoted at *h*, and, extending over the cutter-cylinder journals, and, over the heads of the presser-roll frame, have upon their outer ends adjustable or sliding weights *o*, and from each lever, between the weight and the pivot, extends a short arm, *p*, that rests and bears down upon the head *e* beneath it. The pressure of the weighted levers is preferably exerted between the presser-roll and the chip-breaker spring, and insures the holding of the board to the bed by the pressure of the roll, while the protection of the surface of the board (from the lifting action of the knives of the cutter-cylinder upon the grain of the wood) is insured by the chip-breaker. The pressure of the weighted levers upon the frame bears down the presser-roll, and insures the holding of the board to the bed, and the removal of its warp, and the spring has no agency in this pressure, but simply acts as a yielding resistance to the lifting action of the cutter-cylinder, while by its spring it thus acts at any part of its length, and without necessarily raising the whole spring. The spring *x'* may be formed by the edge of one long plate-spring, or may be fixed to the edge of one long spring, instead of to the ends of the several springs *k;* and to prevent its being unduly raised in the frame, or with relation to the presser-roll, a protector or gage-bar, *q*, is placed over it, which bar is rigid in the frame, and acts as a stop to the spring, if the spring at any part rises too high, in which rise it might otherwise extend into the path of rotation of the edges of the cutter-cylinder knives.

Instead of the weighted levers, other means may be used for creating the downward pressure upon the presser-roll frame; but I prefer the levers.

I do not herein claim the construction shown in the English Patent No. 7,926, nor that

sl own in my application for a United States Patent, filed June 19, 1873, and recently allowed.

I claim—

1. In combination with the cutter-cylinder, the presser-roll *l* and spring chip-breaker *x'*, relatively arranged in the same pivoted frame, and operating substantially as shown and described.

2. The pivoted frame *d*, carrying the presser-roll and the spring chip-breaker, combined with a pressure device to press the roll against the board, substantially as described.

3. In combination with the pivoted frame *d*, roll *l*, and chip-breaker spring *x'*, the stop-bar *q*, arranged substantially as shown and described.

SOLOMON A. WOODS.

Witnesses:

FRANCIS GOULD,

M. W. FROTHINGHAM.