(No Model.)

W. H. DOANE.

PLANER PRESSURE ROLL.

No. 306,325. Patented Oct. 7, 1884.

Fig. 1

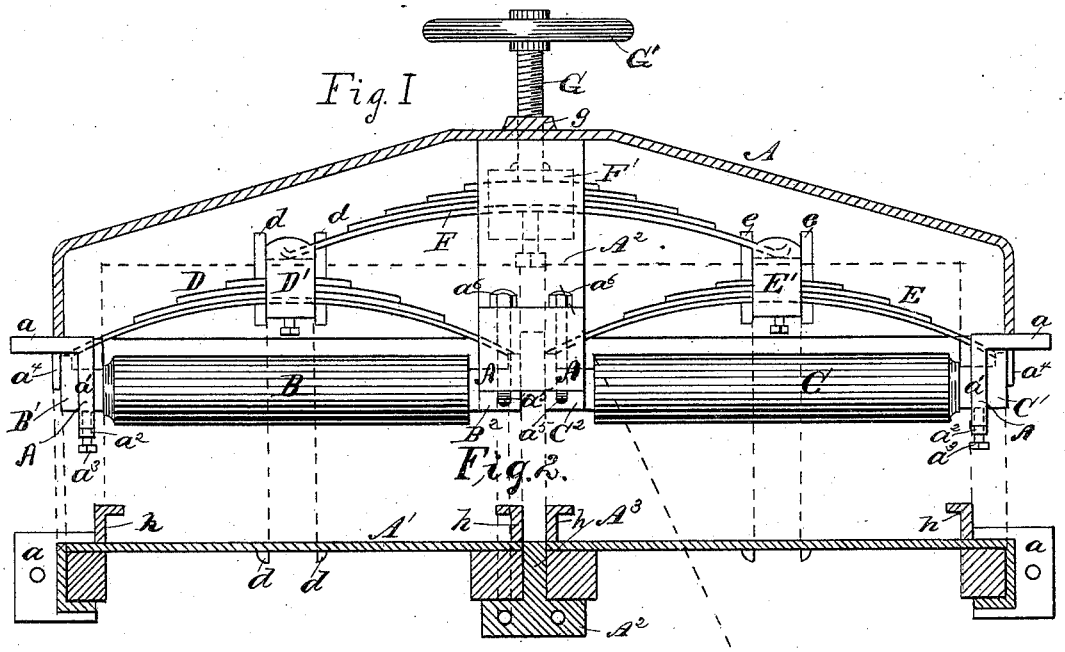


Fig. 2.

Fig. 5

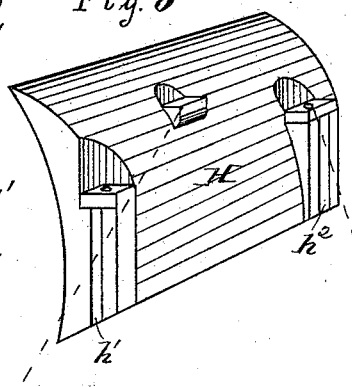


Fig. 4

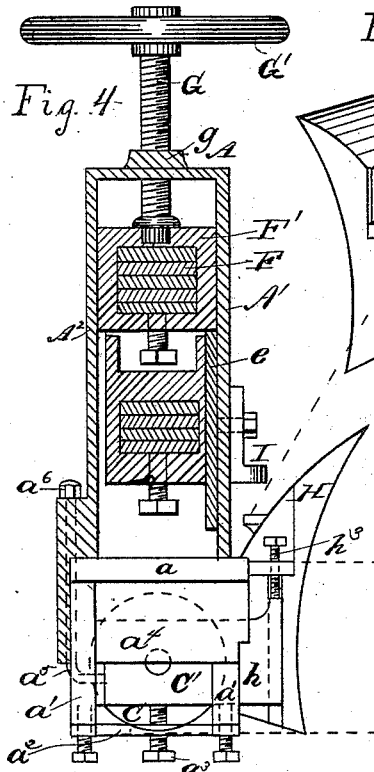
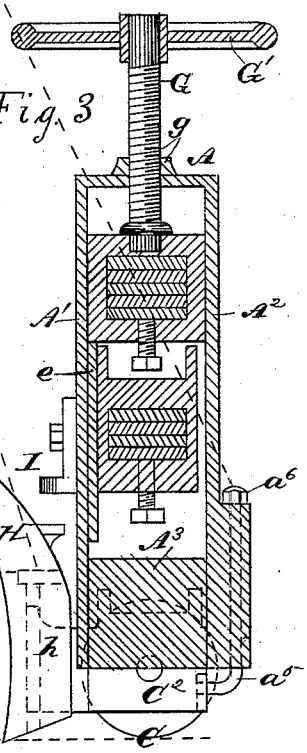


Fig. 3



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WILLIAM H. DOANE, OF CINCINNATI, OHIO.

PLANER PRESSURE-ROLL.

SPECIFICATION forming part of Letters Patent No. 306,325, dated October 7, 1884.

Application filed July 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DOANE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Pressure Mechanism for Planing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the pressure mechanism of that style of planing-machines capable of simultaneously reducing two boards to a thickness regardless of their relative thicknesses before planing. In these machines two independent pressure-rollers and two independent pressure-bars are employed, so organized, in conjunction with springs, that each pressure-roller and the corresponding pressure-bar may accommodate itself to the thickness and variations in the thickness of the board on which it operates.

My improvements will be specifically pointed out in the claims at the close of this specification, and in order that they may be clearly understood I have illustrated in the annexed drawings, and will proceed to describe, a form thereof which has been successfully used in practice.

Figure 1 is a front elevation of my improved pressure-mechanism attachment. Fig. 2 is a horizontal section. Fig. 3 is a vertical transverse section at the center of the attachment. Fig. 4 is also a transverse section showing the lower end of the attachment in elevation. Fig. 5 is a perspective view of one of the pressure-bars. Figs. 3, 4, and 5 are drawn on a larger scale than Figs. 1 and 2.

The same letters of reference indicate identical parts in all the figures.

My pressure mechanism is an entirely self-contained attachment that can be fitted up independently and subsequently attached as a whole to the planing-machine. The various parts of the attachment are mounted on a frame or housing, A, provided with flanges *a*, one at each end, for securing it to the framework of a planing-machine. The housing has a web, A′, at one side, but none at the other side, except at the center, where it has a narrow vertical web or plate, A^2, which, in conjunction with the web A′, forms a guideway. The pressure-roller B is journaled at its outer end in a box, B′, and at its inner end in a box, B^2. The pressure-roller C is similarly journaled in the boxes C′ and C^2, which are constructed just like the boxes B′ and B^2. The outer boxes, B′ and C′, are fitted in guides formed, respectively, of parallel bars a' a' of the housing, and are prevented from falling out of these guides by a cross-bar, a^2, which carries a set-screw, a^3, to arrest the descent of the boxes at any desired point. The housing is also constructed with a downwardly-projecting plate or guard, a^4, at each end, to confine the boxes B′ and C′ so that they cannot escape endwise from the roller-journals. The inner boxes, B^2 and C^2, are fitted between the web A′ and the plate A^2, and are separated by a cross-web, A^3, of the housing. The inner boxes are prevented from falling out of their guides by hook-ended bolts a^5 a^5, the hooks of which project into grooves on the boxes. The bolts a^5 pass up through holes in an enlargement of plate A^2, and are suspended by nuts a^6, so that they may be raised or lowered. By adjusting the set-screws a^3 and hook-ended bolts a^5 the rollers B and C may be properly adjusted. A semi-elliptical spring, D, bears with its ends on the boxes B′ and B^2 of roller B. The leaves of the spring are embraced by a clip, D′, which is fitted between vertical guide-bars *d d* on the web A′. A similar semi-elliptical spring, E, the clip E′ of which is fitted between guide-bars *e e* on web A′, bears with its ends on the boxes C′ and C^2 of roller C. Springs D and E, I term the "distributing-springs." A third semi-elliptical spring, F, which I term the "main spring," bears with its ends on the clips D′ and E′ of the distributing-springs. The leaves of the main spring are embraced by a clip, F′, which is fitted to move vertically between the web A′ and the plate A^2 of the housing. The foot of a screw, G, which turns in a nut, *g*, cut in the top of the housing, bears on the clip of the main spring, and is provided with a suitable hand-wheel, G′, by which it may be conveniently turned. It will be observed that by turning

the screw G the pressure of the springs on all the roller-boxes can be simultaneously adjusted; also, that each roller may adjust itself to the thickness and contour of the board on which it operates without affecting the adjustment or pressure of the other roller; also, that the margin between the respective thicknesses of two boards to be planed may be comparatively great without danger of overstraining the springs, because the strain is divided, being borne in part by the main spring and in part by the distributing-springs. A pressure-bar, H, of the usual curved contour, is arranged in front of each pressure-roller. This pressure-bar is slipped on vertical angle-guides *h h*, formed, respectively, on the outer and inner boxes of the roller, a straight slot, *h'*, being formed in one end of the pressure-bar for the reception of one of the guides, and an L-slot, h^2, near its other end for the reception of the other guide. Set-screws h^3 extend down into the top of the slots *h'* and h^2 to limit the descent of the pressure-bar. By suitably adjusting these set-screws the lower edge of the pressure-bar may be readily leveled with reference to the pressure-roller behind it. Since the pressure-bar is supported on the boxes of the roller behind it, the same relation between them is always maintained under all variations of the roller due to variations in the thickness or contour of the board on which it operates. An adjustable stop, I, is attached to the web A of the housing, above each pressure-bar H, which stop prevents the pressure-bar being accidentally thrown off its guides. These stops are detachable, and are applied after the pressure-bars have been slipped on their guides.

I claim as my invention—

1. The combination, substantially as before set forth, with a suitable supporting-frame, of two independent pressure-rollers, two independent distributing-springs bearing one on each roller, and one main spring bearing on the distributing-springs.

2. The combination, substantially as before set forth, with a suitable supporting-frame, of two independent pressure-rollers, two independent distributing-springs bearing one on each roller, one main spring bearing on the distributing-springs, and a screw acting on the main spring.

3. The combination, substantially as before set forth, of two independent pressure-rollers, two independent distributing-springs bearing one on each roller, one main spring bearing on the distributing-springs, and a housing, constructed substantially as described, for retaining and guiding said springs, as well as the journal-boxes of the said rollers.

4. The combination, substantially as before set forth, of the housing carrying the pressure-rollers, and constructed with angle-guides at the side in advance of said rollers, the pressure-bars fitted in said angle-guides, and the set-screws for limiting the descent of the pressure-bars.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. DOANE.

Witnesses:
W. E. STEVENS,
HOWARD FERRIS.