2. Sheets. Sheet. 1.

Goodrich & Colburn,

Planing Mach.

No. 111,632. Patented Feb. 7. 1871.

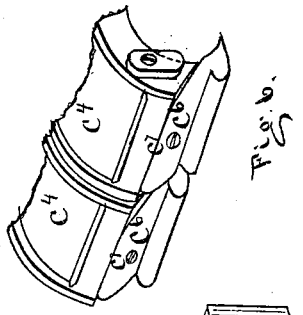

Fig 2

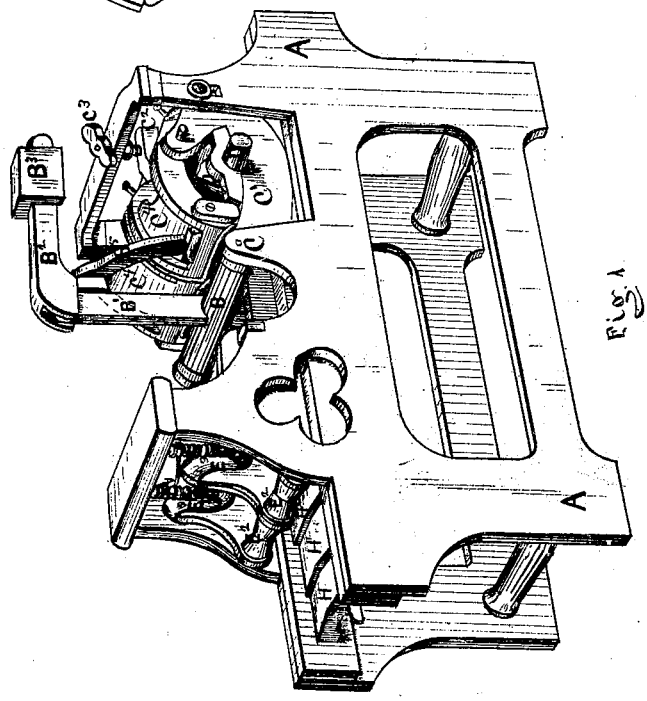

Fig 1

Witnesses { E. B. Spaulding
Edward Jewett

Inventors
James Goodrich
H. J. Colburn

2 Sheets. Sheet 2.

Goodrich & Colburn,

Planing Machine.

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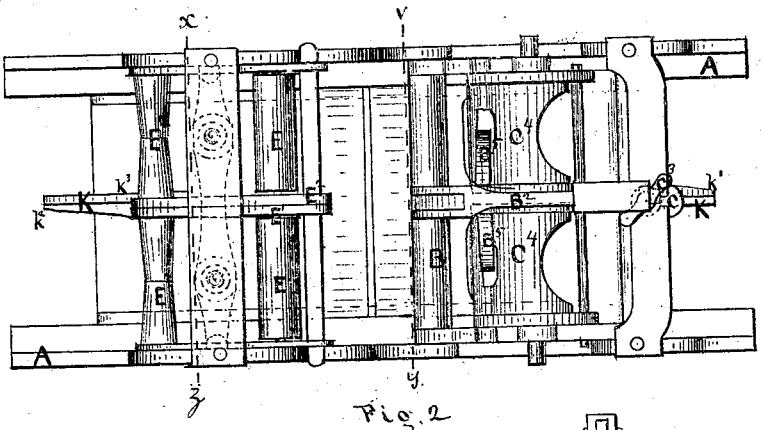

Fig. 2

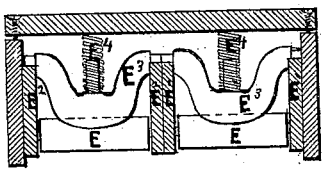

Fig. 4

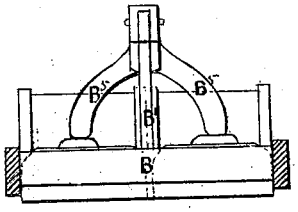

Fig. 5

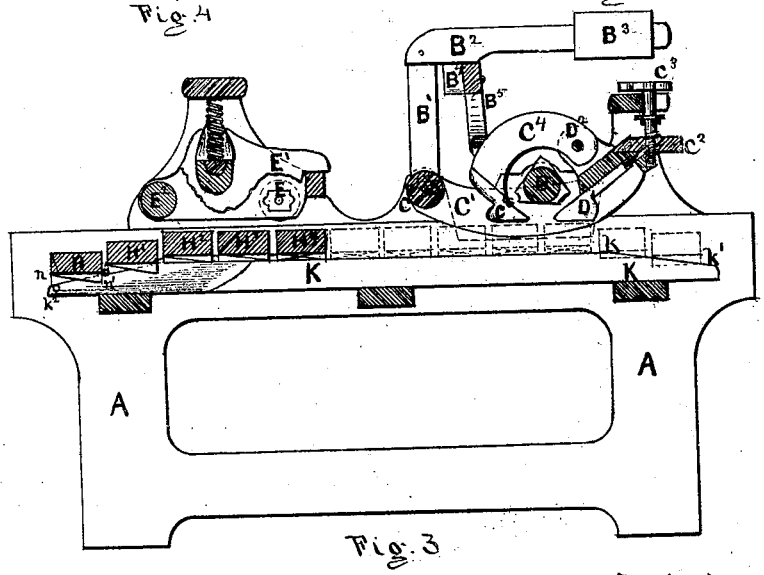

Fig. 3

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Edward Jewett

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James Goodrich.
H. J. Colburn.

United States Patent Office.

JAMES GOODRICH AND HENRY J. COLBURN, OF FITCHBURG, MASSACHUSETTS.

Letters Patent No. 111,632, dated February 7, 1871.

IMPROVEMENT IN PLANING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

We, JAMES GOODRICH and HENRY J. COLBURN, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Planing-Machines, of which the following is a specification.

Nature of the Invention.

The nature of our invention consists in certain improvements relating to the more complete adjustment of the knife-cylinder, the pressure-feet, and the feeding-apron to the article being worked, and are such as can only be understood by reference to the complete specification and drawing.

Description of the Accompanying Drawing.

Figure 1 is a perspective view, showing my invention embodied in a complete planing-machine.

Figure 2 is a plan of the same.

Figure 3 is a vertical section of the same.

Figure 4 is a vertical cross-section on the line $x\ z$, fig. 2.

Figure 5 is a vertical section on the line $v\ y$ of fig. 2.

Figure 6 is a perspective, showing the pressure-feet in detail.

General Description.

In the drawing—

A A represents the frame of our machine, to which the operating parts are attached.

This frame has attached, internally, to its sides guide-rails, not shown in the drawing, upon which the lags H H^1 H^2 H^3, figs. 1 and 3, of the endless feed-apron run.

Under the center of these lags double inclines, $o\ o'$ and $n\ n'$, are attached, and so arranged in connection with the central guide-rail K K (which is inclined at each end, as shown in figs. 2 and 3) that the upper face of the lag will assume a horizontal position as soon as the lag comes in contact with the central rail K K.

By this arrangement no part of the lag, as it comes up onto the straight part of the guides, will project beyond the proper level.

The inclines $k^2\ k^3$ and $k\ k^1$, figs 2 and 3, are not in the same vertical plane, so that the incline $o\ o$ of the lag will come in contact with the incline $k^2\ k^3$ of the center guide K, while the incline $n\ n'$ of the lag will come in contact with the incline $k\ k^1$ of the guide K. Thus the lags will maintain the level position while entering upon and leaving the guide K.

The object of the arrangement of the inclines $n\ n'$ $o\ o'$ on the under side of the lags, and the inclines k k^1 k^2 k^3 on the central guide K, is to cause the lags H H^1, &c., to gradually assume a horizontal position before their upper faces reach the general level of the apron.

The advantage of this is, that as the lags pass up onto the straight part of the guide the advancing edge will not extend above the general level, as it would in case there were no inclines on the under side of the lags.

If desirable, the inclines K K^1 K^2 K^3 may be curved.

C^1, figs. 1 and 3, is a swinging frame, pivoted at C.

To this frame the cutter-head D and the adjustable weights C^4 C^4 and pressure-bars D^1 are attached. The bars D^1 are attached to the swinging frame in the ordinary manner.

C^3 is an adjusting-screw, by means of which the swinging frame C^1 is adjusted to the work.

C^4 C^4 are swinging weights, pivoted to the swinging frame C^1 at D^2.

C^6 C^6 are adjustable pressure-feet, connected by pivots C^7 C^7 to the swinging weights C^4 C^4.

B^5, figs. 1 and 5, is a pressure-arc, the ends of which rest on the swinging weights C^4 C^4.

This pressure-arc is pivoted to the weighted lever B^3, so that the pressure of the weight B^3 will act equally upon the swinging weight C^4 C^4.

The rocker-shaft B and arc B^1 serve to connect the lever B^2 to the frame of the machine.

The pressure-rollers E E, figs. 2, 3, and 4, are connected to independent swinging arms E^1 E^1 E^2 E^2, so that they are free to follow the surface of the article to be planed, the journals of the rollers having boxes so arranged that this action can take place.

E^3 E^3, fig. 4, are yokes, the ends of which rest upon the arms E^1 E^1 E^2 E^2.

Upon the middle of these yokes springs E^4 E^4 press, so that the arms E^1 E^1 E^2 E^2, and consequently the rollers E E, are pressed constantly downward against the work.

What we claim as our invention is—

1. The combination of the lags H H^1 H^2, &c., having inclines $n\ n'$ and $o\ o'$, with the guide-rail K, having inclines $k\ k^1\ k^2\ k^3$, as described, and for the purpose set forth.

2. The combination of the adjustable frame C^1 with the cutter-head D and pressure-bar D^1, as herein described, and for the purpose set forth.

3. The combination of the lever B^2 with the arc B^5, adjustable weights C^4 C^4, and pressure-feet C^6, substantially as described and for the purpose set forth.

4. The combination of the springs E^4 E^4 with the yokes E^3 E^3, the frames E^2 E^2 E^1 E^1, and the rollers E E, as herein described, and for the purpose set forth.

JAMES GOODRICH.
HENRY J. COLBURN.

Witnesses:
FRANK G. PARKER,
E. A. NICKERSON.