L. HOUSTON.

PLANING-MACHINE.

No. 171,480. Patented Dec. 28, 1875.

Fig. 1.

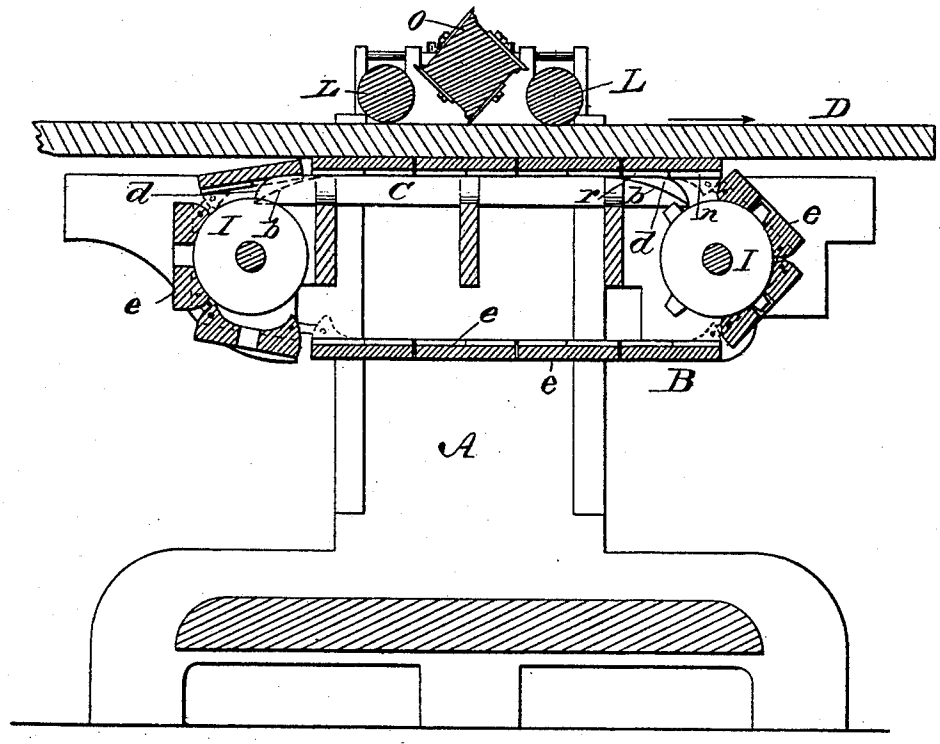



Fig. 2.

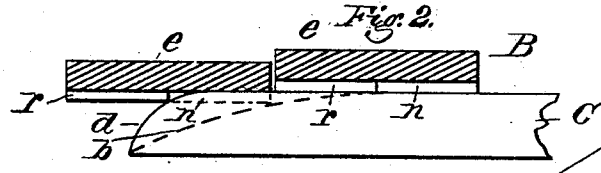



Fig. 3.

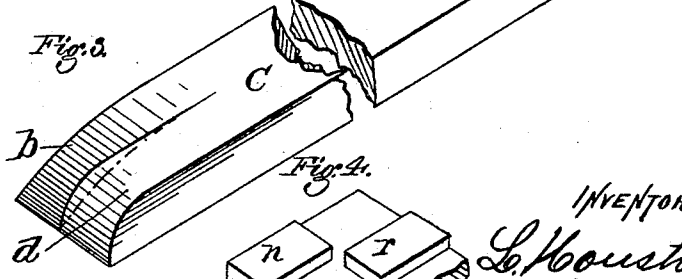
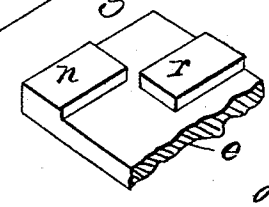



Fig. 4.

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# UNITED STATES PATENT OFFICE.

LEVI HOUSTON, OF MONTGOMERY, PENNSYLVANIA.

## IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **171,480**, dated December 28, 1875; application filed November 5, 1875.

*To all whom it may concern:*

Be it known that I, LEVI HOUSTON, of Montgomery, in the county of Lycoming and State of Pennsylvania, have invented certain Improvements in Planing-Machines, of which the following is a specification:

My invention consists of a novel construction of the lags of an endless bed, and of the ways for such bed, in planing-machines, whereby said bed is made to feed the lumber along without bruising or marking the same, as hereinafter more fully described.

Figure 1 is a longitudinal vertical section of an endless-bed planer embodying my improvements. Figs. 2, 3, and 4 are views of portions shown in detail to more fully illustrate the invention.

For many purposes endless-bed planers are preferred; but as heretofore constructed they have been objectionable, for the reason that the edge or corners of the lags composing the endless bed, as they pass over the rolls or wheels, are caused to project slightly above the surface of the bed, thereby creasing and marring the under surface of the lumber, thereby rendering it unfit for use, and, consequently, depreciating its value.

The object of my present invention is to overcome this difficulty by so constructing the machine as to prevent its occurrence, which I accomplish as follows:

Referring to the drawings, A represents the frame, and B the endless bed of the machine, I I being the rollers or wheels, around which the endless bed passes. The machine is to be provided with a cutter-head, O, and pressure-rolls L L, in the usual manner. Underneath the upper portion of the endless bed B is arranged a series of rigid bars, C, which serve as ways upon which the bed slides, and which support it firmly and evenly where the board D rests upon it—directly under the cutter-head and rollers, as shown in Fig. 1. These ways C, at each side of the machine, have their ends divided longitudinally into two separate inclines, *b* and *d*, as represented in Fig. 3, and as shown by dotted lines in Figs. 1 and 2. It will be observed that one of these inclines, *d*, is much more abrupt than the other, the object of which will be hereinafter explained. The lags *e*, which are linked together in the usual manner to form the endless bed B, I provide on their under or inner faces with two projections, *n* and *r*, arranged diagonally to each other at each end of the lag, as shown in Fig. 4, which represents one end of a lag inverted for the purpose of showing the projections and their arrangement.

Now, it will be seen that when an endless bed is composed of a series of these lags, and it is applied in connection with the ways C, provided with the double inclines *b d*, the projections will come into bearing on the inclines in such a manner as to cause the lag to assume a horizontal position before it has risen to the level of the bed, as represented in Fig. 2; and that at no time during its movement to the top or horizontal position of the ways will its corner or edge project at all above the level of the bed, and, consequently, the lumber will not be bruised or marked thereby. The manner in which this is done is shown clearly in Figs. 1 and 2. In the latter it will be seen that the projection *n* strikes the incline *b* at the same time that the projection *r* strikes the incline *d*, and that at the time that both projections come to a bearing on their respective inclines the lag *e* is in a horizontal position, but below the level of the one next in front of it, and which latter is already at its highest point. From this it follows that as the bed advances the rear or lower lag *e*, while rising to the level of the bed, will be held in a horizontal position, and thereby caused to rise with its upper face flat against the board D, thus preventing any injurious marking or bruising of the same. As, of course, the lug *n*, which is in advance, will pass from the ways first at their opposite end, it becomes necessary to reverse the order of the inclines *b d* at that point, in order to produce the like effect at that end. This is clearly shown in Fig. 3; and the bearing of the lugs upon these reversed inclines is shown in Fig. 1. The length and inclination of the inclines must, of course, be proportioned to the width of the lags, and location of the projections thereon.

In the drawings I have represented each projection as extending half-way across the lag, and which I find to operate well in practice; but it is obvious that they may be varied in size or width, provided the inclines be made

to correspond. It is obviously immaterial whether the foremost projection be placed at the inner or outer side, so the inclines be correspondingly arranged. So, too, it is obvious that there may be more than two projections on the lags, and a corresponding number of inclines on the ways; but two are found to be sufficient in practice, and whatever the number used the principle will be the same. It is further obvious that rollers may be substituted for the inclines, and made to operate the same, it being only necessary to locate them at the proper points, which any one skilled in the art will readily be able to do.

By this method of construction I am enabled to produce an endless-bed planing-machine that entirely obviates the difficulty heretofore existing in this class of planers, and on which lumber can be dressed without being bruised, marked, or injured by the lags composing the bed.

Having thus fully described my invention, what I claim is—

1. The combination, in a planing-machine, of the lags *e*, provided with the projections *n r*, and the ways C, provided with the inclines *b d*, or their equivalents, said parts being constructed to operate substantially as and for the purpose set forth.

2. An endless-bed planing-machine having the lags which compose its moving bed constructed and arranged to operate substantially as described, whereby they will assume a horizontal position before arriving at their highest point, and so that their edges or corners shall not come in contact with the lumber while turning to the horizontal position, as set forth.

LEVI HOUSTON.

Witnesses:
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