

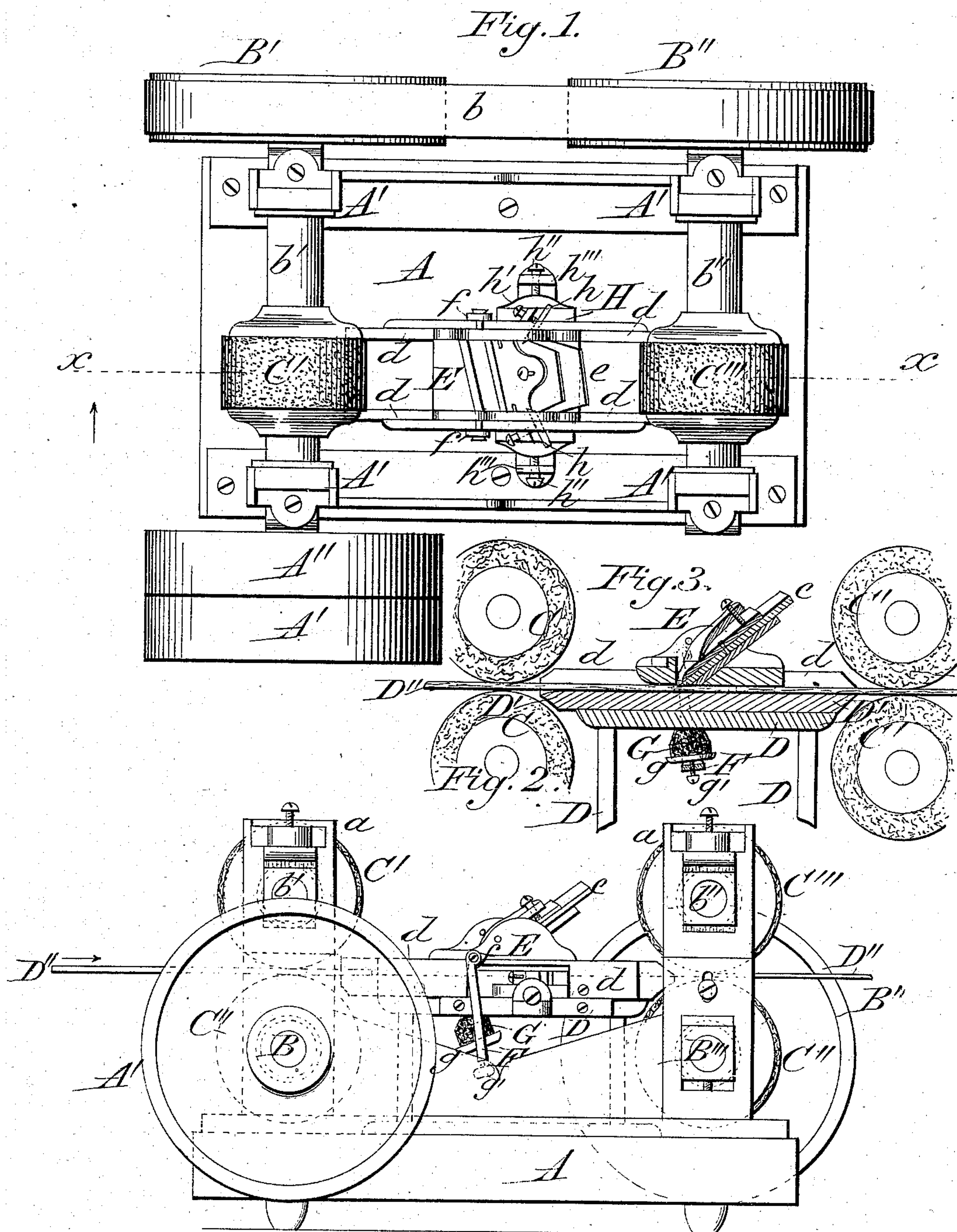
(No Model.)

W. S. HOLLAND.

PLANING MACHINE FOR PLANING THIN PIECES OF WOOD.

No. 255,787.

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Attest:

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UNITED STATES PATENT OFFICE.

WALLACE S. HOLLAND, OF BURLINGTON, VERMONT.

PLANING-MACHINE FOR PLANING THIN PIECES OF WOOD.

SPECIFICATION forming part of Letters Patent No. 255,787, dated April 4, 1882.

Application filed August 31, 1881. (No model.)

To all whom it may concern:

Be it known that I, WALLACE S. HOLLAND, a citizen of the United States, residing at Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Planing-Machines for Planing Thin Pieces of Wood; 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, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

The object of this invention is to produce a machine that will smoothly plane thin pieces of wood—such as lath and slats for blinds or thin pieces for other purposes—and have the surfaces free from transverse ridges or corrugations caused by the upward springing of the thin wood while the surface is being planed in the ordinary way and by the common means; and the invention consists in the construction of certain parts of the machine and their combination and arrangement with other parts to complete the invention.

In the drawings, Figure 1 represents a top view of the machine. Fig. 2 represents an upright side view, and Fig. 3 represents a longitudinal sectional view on line *xx* of Fig. 1.

A represents the support or frame upon which the actuating parts of the machine rest.

A' A' represent four posts or uprights, one at each or near each corner of the bed or support A, and in which the shafts B and B''' revolve in proper adjustable bearings.

A'' is a driving-pulley fast on shaft B, and is revolved by any convenient power and belt.

A''' is a loose or idle pulley on shaft B, upon which the driving-belt to pulley A'' may be shifted when the machine is not in operation.

B' is a pulley fast to and revolves with shaft B, and B'' is a pulley fast on and to revolve shaft B''', and is put in revolution by belt *b*, which is around pulley B', thence to and around pulley B'''. The pulleys A'', B', and B''' are all of the same diameter. Consequently they all revolve at the same speed.

Shaft B has a feed-roller, C, fast on and revolving with it, and C' is an idle feed-roller above

roller C and fast on short shaft, *b'*, that revolves in adjustable bearings in posts or uprights A' and above shaft B.

C'' is a delivery-roller on shaft B''', and revolves with it through pulley B'', band *b*, and pulley B'.

C''' is an idle delivery-roller fast on short shaft *b''*, that revolves in adjustable bearings in uprights and over roller C''. Rollers C' and C''' do not revolve except when a lath or slat is passing through the machine to be planed. Then they are adjusted to be a trifle nearer to the revolving rollers C and C' than the lath or slat between them is thick, so as to be sure that the lath or slat will be forced through the machine. The faces of these rollers which come in contact with the lath or slat may be faced with india-rubber or other elastic material that will not crimp the fiber of the wood in presenting it to the plane-bit in planing.

D is a frame to support the bed-plate or platen of the planer, which by preference is iron; but it may be of any other suitable material.

D' is the bed-plate or platen upon which the thin lath or slat D'' to be planed is made to slide over and be supported thereon while being planed. Slat D'' is first to be truly sawed a trifle thicker than it is to be when finished—as much so as the thickness of the shaving planed off from each side to smooth it would be. The top of the bed-plate is a trifle below the top of rollers C and C'', and to such position the rollers will always be adjusted. At each side of the bed-plate rise upright side pieces, *d d*, which act as guides to the passing slat and as a support to the plane-stock that contains the bit or knife that planes the surface of the slat as it is forced by the feed and delivery rollers over the bed-plate and against the plane-bit.

E is the plane-stock that contains and holds the plane-bit *e*, that planes the surface of the slat, and is placed or sunk in the top edges of the guides or side pieces, *d*, to be at the proper height above the bed-plate, and so that it cannot reciprocate horizontally, but may, when necessary, rise or fall slightly, parallel with the face of the bed-plate, as the thickness of the slat may vary, and at the same time act

as a presser-bar to hold the slat firmly upon the bed-plate by bearing upon the slat immediately before and close to the cutting-edge of the plane-bit, and also upon the smooth face of the slat after the shaving has been sliced off, as seen in Fig. 3. Plane-bit *e* may be straight across the stock or placed obliquely, as seen in Fig. 1, and is held in the stock and adjusted therein by any known means, such as wedges or clamp plate and screw.

F is a yoke. The two upright sides or limbs are wide enough apart to just admit the side pieces, *d d*, between them, and at their top ends are eyes *f f*, by which the yoke is pivoted to the plane-stock E, as seen in Figs. 1 and 2.

G is a spring of india-rubber or other yielding material placed between the horizontal part of yoke F and the under side of the bed-plate, against which its upper part bears, while its base is in a cup or plate of metal, *g*.

g' is a temper-screw turning in a screw-threaded hole centrally between the upright limbs and through the horizontal part of the yoke F, up and against the cup or plate *g*, which gives to the plane-stock and presser-bar a yielding motion parallel with the face of the bed-plate when the slat is of uneven thickness, and at the same time holds the slat firmly upon the bed-plate, and the plane-bit will cut its shaving even and truly, while the temper-screw controls the amount of pressure the plane-stock or presser-bar shall have upon the slat as it is being planed.

H is a parallel yielding plane-stock, held within the guides or side pieces, *d*, and on the side thereof, to round the edge of the slat by the bit *h* held therein, and projecting inward through the side piece, *d*, far enough to take hold of and round the edge of the slat as it passes by it. This stock yields equally at both ends, the same as stock E. The bit *h* has a concave or half-round cutting-edge. There may be two of these edge-rounding planes, one on each side of the passing slat, so as to round both edges of the slat as it passes by them in being planed, and so there may be an auxiliary plane-stock E, with its spring or yielding device placed over the passing slat, so that a slat will be planed on its two sides and its two edges at one passage through the planer.

h' is a spring bearing upon the plane-stock H; and *h''* is a temper-screw working through

an upright lug, *h'''*, which lug is attached to platen D or other firm part of the device and bears upon spring *h'*.

A planer constructed as above described effectually prevents any ridges being made in the planed surfaces, as the pressure upon the slat by the plane-stock is so near the cut of the plane-bit that the thin slat or lathe cannot spring up from the bed-plate or change its position relatively to the cutting-edge of the plane-bit as the slat is forced past the same. Hence a smooth surface is produced on the slat that is not obtained by any other known machine.

I am aware that stationary plane-bits or cutters have heretofore been used in planing wood, and I do not claim such fixed plane-bit or cutter; nor do I claim the forcing the stuff to be planed against a stationary or fixed plane or cutter, as such devices are known to be in use.

I am also aware that plane-stocks in planing-machines have been hinged to an axle at their forward ends, so that the rear ends of such stocks will be free to rise. Such construction I do not claim; but,

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The parallel yielding plane-stock E, having plane-bit *e*, the yoke F, pivoted to the plane-stock having temper-screw *g'*, and spring G, in combination with the bed-plate or platen D' of a planing-machine constructed to operate in the manner substantially as described.

2. In a planing-machine such as above described, the combination of a parallel yielding plane-stock, E, having a plane-bit, *e*, and a parallel yielding edge-plane stock, H, having the edge-rounding bit *h* constructed and operating in the manner substantially as described.

3. In a planing-machine such as above described, the parallel yielding plane-stock E, as a plane-bit holder, and a presser-bar to hold the stuff being planed firmly upon the bed-plate, when combined in a single part and operated by mechanism substantially as described.

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

WALLACE S. HOLLAND.

Witnesses:

U. H. LANG,
ANDREW J. HOWARD.