D. L. TOPPAN.

Planing-Machine.

No. 161,995. Patented April 13, 1875.

Fig. 1.

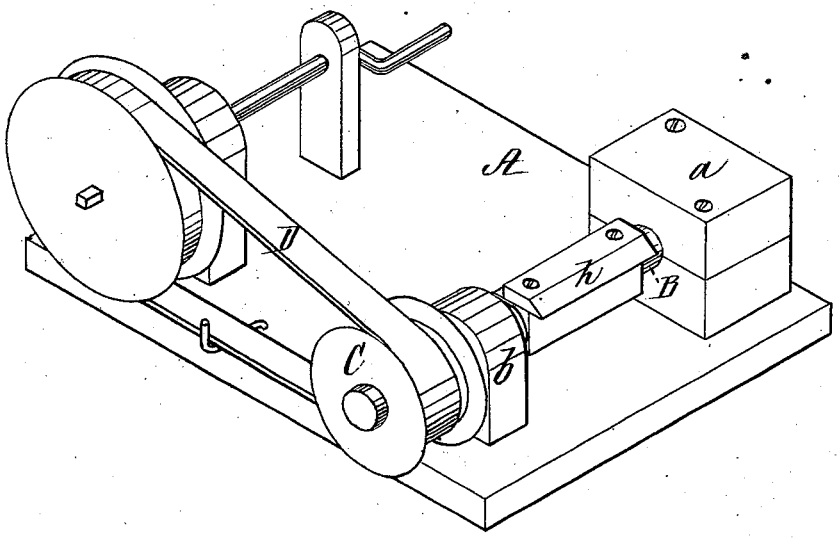


Fig. 2.

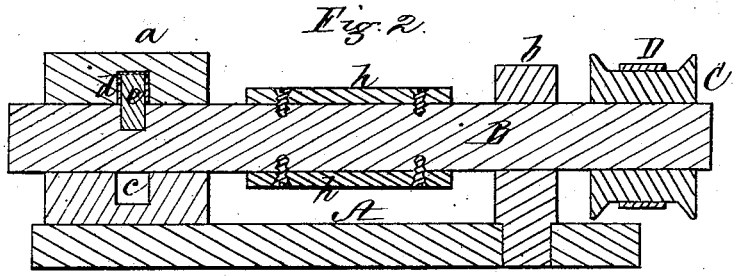
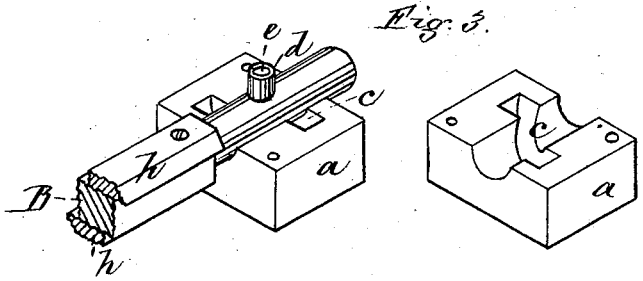


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL L. TOPPAN, OF SOMERVILLE, ASSIGNOR TO HIMSELF, DAVID C. MELOON, AND HOPKINS H. MELOON, OF EAST CAMBRIDGE, AND GARDNER B. CHAPIN, OF MEDFORD, MASSACHUSETTS.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **161,995**, dated April 13, 1875; application filed February 23, 1875.

To all whom it may concern:

Be it known that I, DANIEL L. TOPPAN, of Somerville, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Planing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view, representing my improvement applied to a planing-machine. Fig. 2 is a longitudinal section through the center of the cutter-shaft and its bearings. Fig. 3, detail in perspective.

In planing knotty and cross-grained lumber in machines of the present construction, the knots are often broken and thrown out, and the fibers of the cross-grained portions are displaced, thus leaving the surface rough and uneven.

To overcome these difficulties is the object of my invention, which consists in imparting to the cutter-shaft a simultaneous lateral and rotary motion, whereby the knives are caused to revolve in constantly changing vertical planes, thus producing a shearing cut, the effect of which is to prevent the knots from being removed, and to give the cross-grained portions a smooth and even surface.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the bed of a planing-machine, and B the cutter-shaft, which revolves in bearings *a b*, and is provided at one end with a pulley, C, over which passes a belt, D, by which it is revolved. Within the two portions of the bearing *a* is formed a continuous cam-groove, *c*, into which fits a friction-roll, *d*, on a stud, *e*, projecting out at right angles from the cutter-shaft B, by which construction, as the latter is revolved, it simultaneously receives a lateral motion, causing the cutters *h* secured thereto to move transversely across the surface of the board being planed, a shearing or drawing cut being thus produced, which reduces the knots and cross-grained portions of the lumber, and leaves a smooth and even surface, as desired, which cannot be accomplished where the cutters revolve in the same vertical plane, as heretofore.

Instead of a cam-groove within the bearing *a*, for the reception of a stud or pin on the cutter-shaft, the latter may be provided with a cam-groove for the reception of a stationary pin or projection; or the cutter-shaft may receive its lateral motion by means of any other suitable mechanical device.

What I claim as my invention, and desire to secure by Letters Patent, is—

The cutter-shaft B, provided with the stud *e*, in combination with the boxes *a a*, provided with cam-grooves *c c*, and bearing *b*, substantially as described.

Witness my hand this 18th day of February, A. D. 1875.

DANIEL L. TOPPAN.

Witnesses:

P. E. TESCHEMACHER,

N. W. STEARNS.