S. C. ELLIS.

Improvement in Machines for Boring Blind-Stiles.

No. 132,646. Patented Oct. 29, 1872.

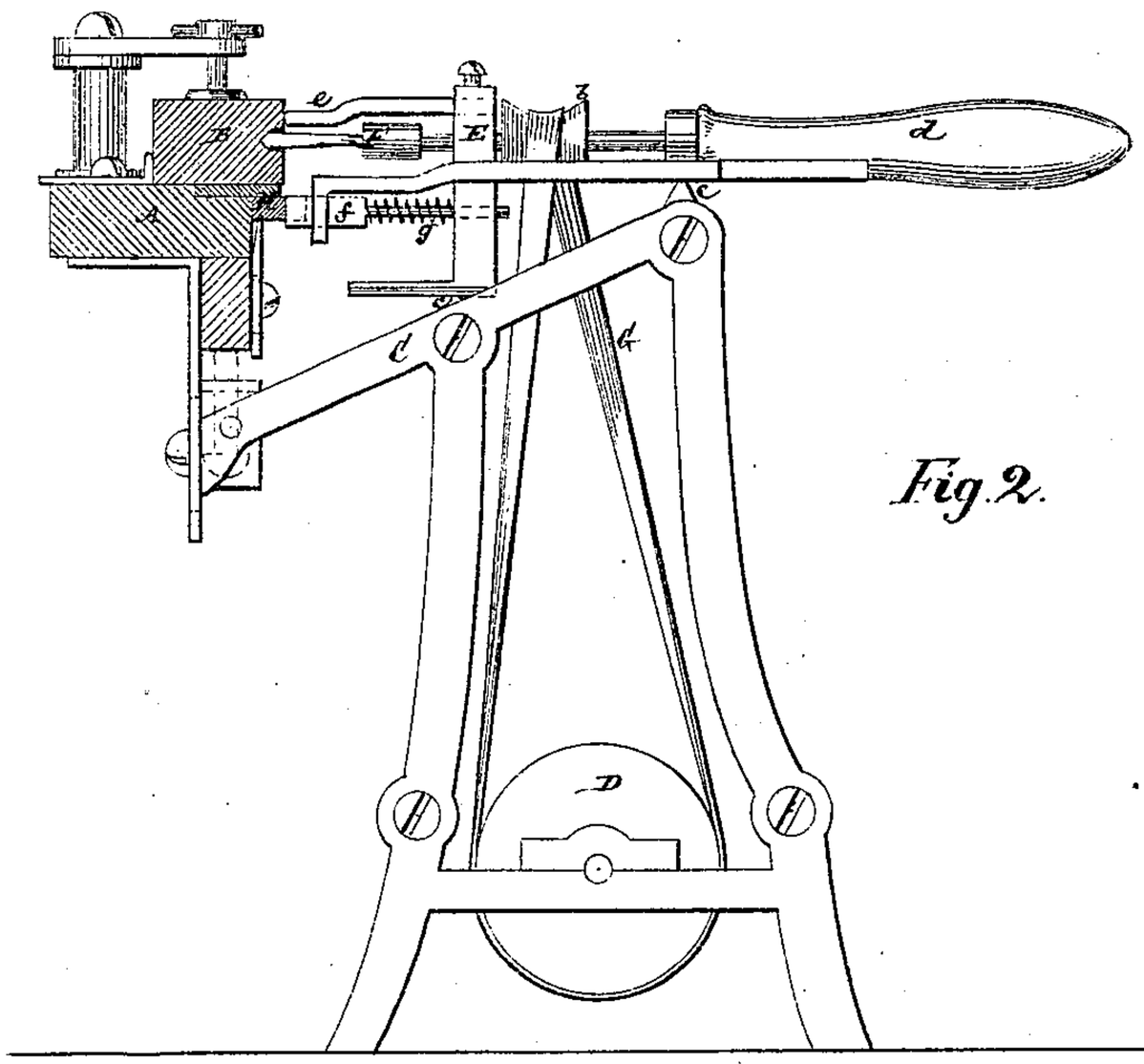

Fig. 2.

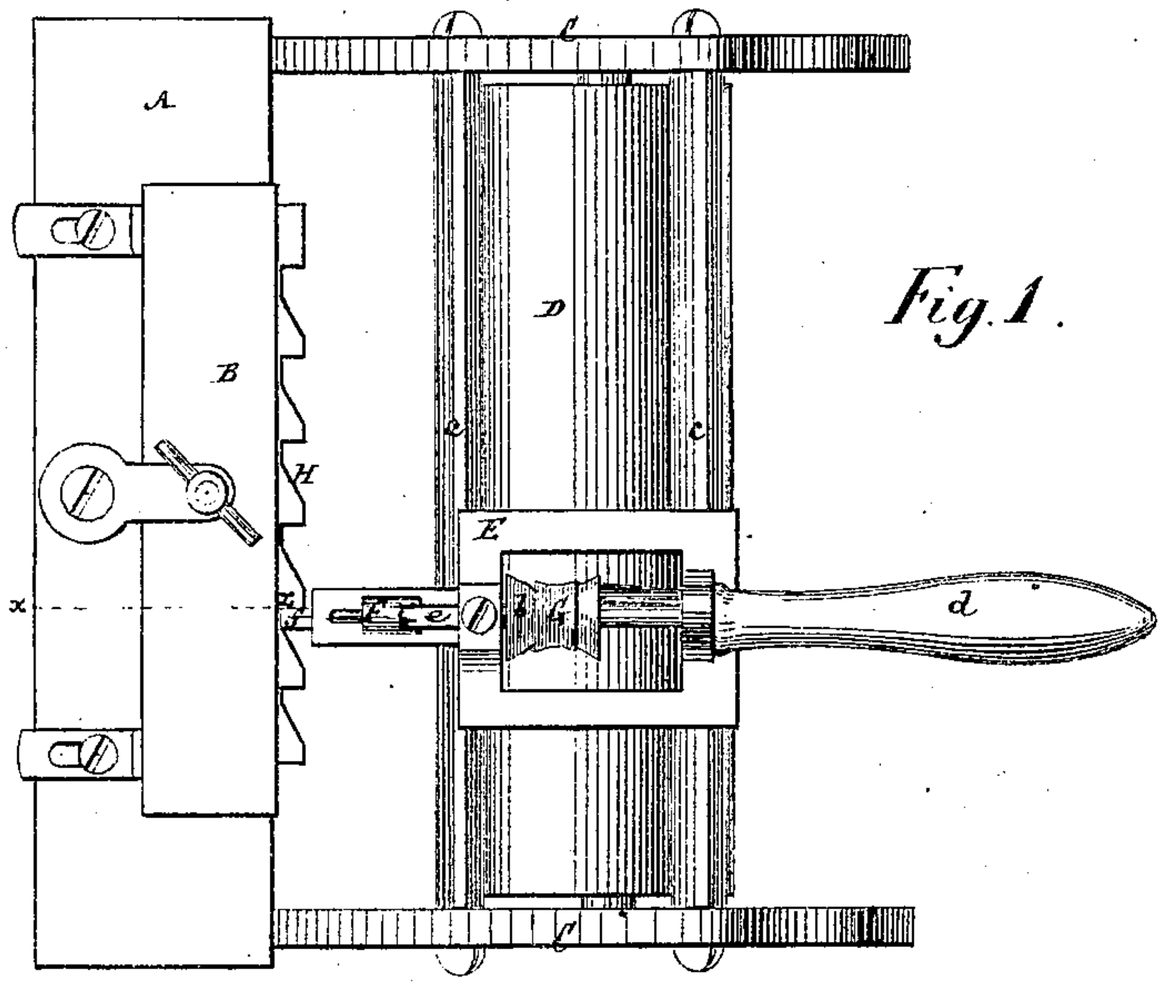

Fig. 1.

Witnesses:

Frei Haynes

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UNITED STATES PATENT OFFICE.

SETH C. ELLIS, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR BORING BLIND-STILES.

Specification forming part of Letters Patent No. **132,646,** dated October 29, 1872.

To all whom it may concern:

Be it known that I, SETH C. ELLIS, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Machines for Boring Blind-Stiles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a plan of a machine having my invention applied; and Fig. 2 a partly-sectional end elevation, the section being taken as indicated by the line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention consists in certain combinations or arrangements of parts whereby increased facility is afforded for manipulating the cutter-stock longitudinally in relation with the stile to effect the spacing and shifting generally of the stock; also, for projecting the boring-tool into the stile, and insuring its rotation by belt when being projected.

Referring to the accompanying drawing, A represents the bed or table on which the blind-stile B to be spaced and bored for reception of the slat-tenons is placed and secured in the usual or any suitable manner, said bed being attached in a vertically-adjustable manner to the back of the main frame C of the machine. D is the usual drum for rotating the boring-tool of the cutter stock or carriage E, the motion being communicated to the tool, as usual in machines for a like purpose, by a belt free to slide along the drum in common with the longitudinal movement of the cutter-stock relatively with the stile; but the arrangement of parts for manipulating the cutter stock or carriage E and for operating the boring-tool F essentially differs from other arrangements for the like purpose. Thus the pulley *b* of the boring tool or bit, which is rotated by a belt, G, from the drum D, is not confined to a fixed center over the drum in the plane of the latter's rotation, but is free to be moved toward or from the stile B, so that the belt is tightened when projecting the cutter into the stile and slackened or relieved when moving it back again. This prevents slip of the belt and insures the bit's rotation when boring, and facilitates the longitudinal adjustment of the cutter stock or carriage by the freedom with which the belt is at liberty to move along the drum after the cutter has been drawn out of the stile. Such projection and back movement of the pulley *b*, along with the bit F, may be effected by the free or loose manner in which the carriage E is fitted to move on and along the main frame C, which freedom of action has an independent and important bearing upon the manipulation of the cutter stock or carriage E. Ordinarily said carriage is fitted to travel along longitudinal slides or guides without any freedom of adjustment transversely to said slides. This induces binding of the carriage when shifting it longitudinally to effect the spacing of the stile or running of the carriage back and forth parallel with the stile, and affords no relief to the driving-belt when thus moving the carriage. To obviate this I arrange the carriage E loosely upon longitudinal ways *c c* of the main frame, so that upon taking hold of the handle *d* of the carriage the latter may not only be moved longitudinally to effect spacing or otherwise, but may be twisted on the ways *c c* to slacken or tighten the belt G, accordingly as it is required to rotate the bit F when boring the stile or to relieve the belt of driving strain. In this way or by these means the manipulation of the cutter stock or carriage E is greatly facilitated, and such loose arrangement of the carriage admits of the pulley *b*, along with the carriage and boring-bit F, being projected toward or drawn back from the stile B, as and for the purposes hereinbefore described. The carriage E is fitted with an adjustable gage, *e*, for determining the depth of the cutter's insertion into the stile; also, with a sliding dog, *f*, controlled by a spring, *g*, for entry within the teeth of the gage H, by which the spacing of the tenon-holes in the stile is effected, said dog *f* being arranged directly under the boring-tool F, so that no matter how the carriage E is twisted or adjusted upon its ways *c c* the joint of the tool will always strike its proper place on the stile in accordance with the teeth or divisions of the gage. The dog *f* yields, by its opening *g*, when projecting the whole carriage forward to accomplish the boring of a hole in the stile.

What is here claimed, and desired to be secured by Letters Patent, is—

The free or loose cutter-carriage E, made capable of varied adjustment, as described, in combination with the pulley *b* of the boring-tool, the drum D, the belt G, and the stile bed or table A, when the whole are arranged for operation in relation with each other and with the spacing-gage H, essentially as specified.

SETH C. ELLIS.

Witnesses:

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