

(No Model.)

2 Sheets—Sheet 1.

S. C. ELLIS.
BLIND SLAT TENONING MACHINE.

No. 300,314.

Patented June 10, 1884.

Fig. 2.

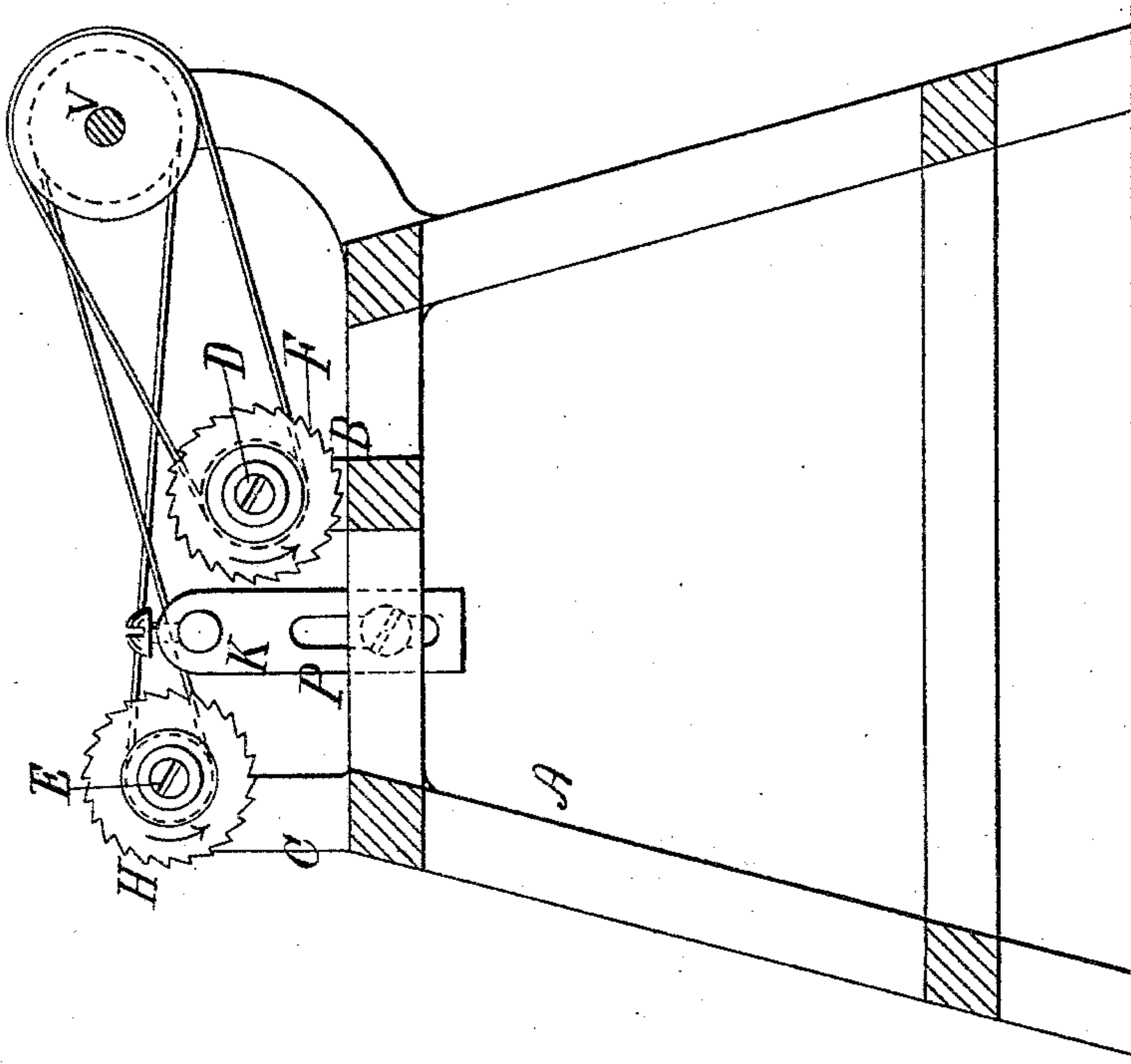
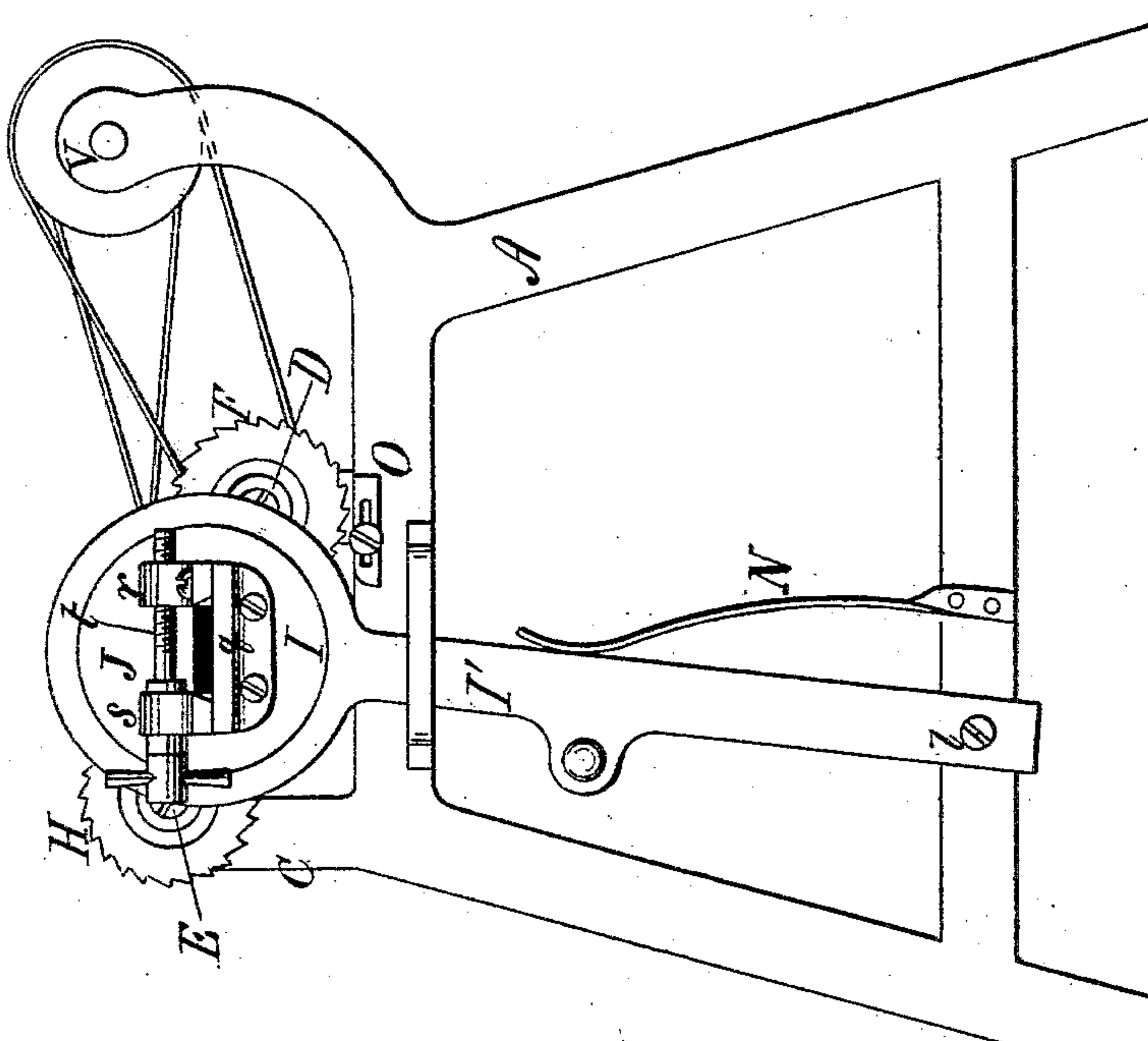


Fig. 1.



WITNESSES:

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Seth C. Ellis

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Fig. 4.

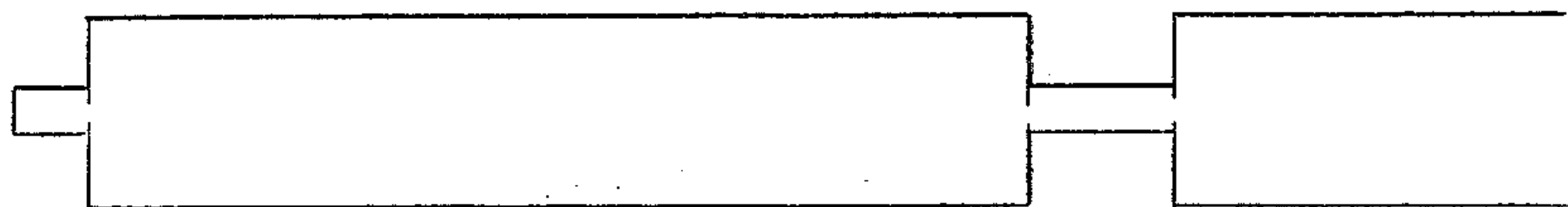
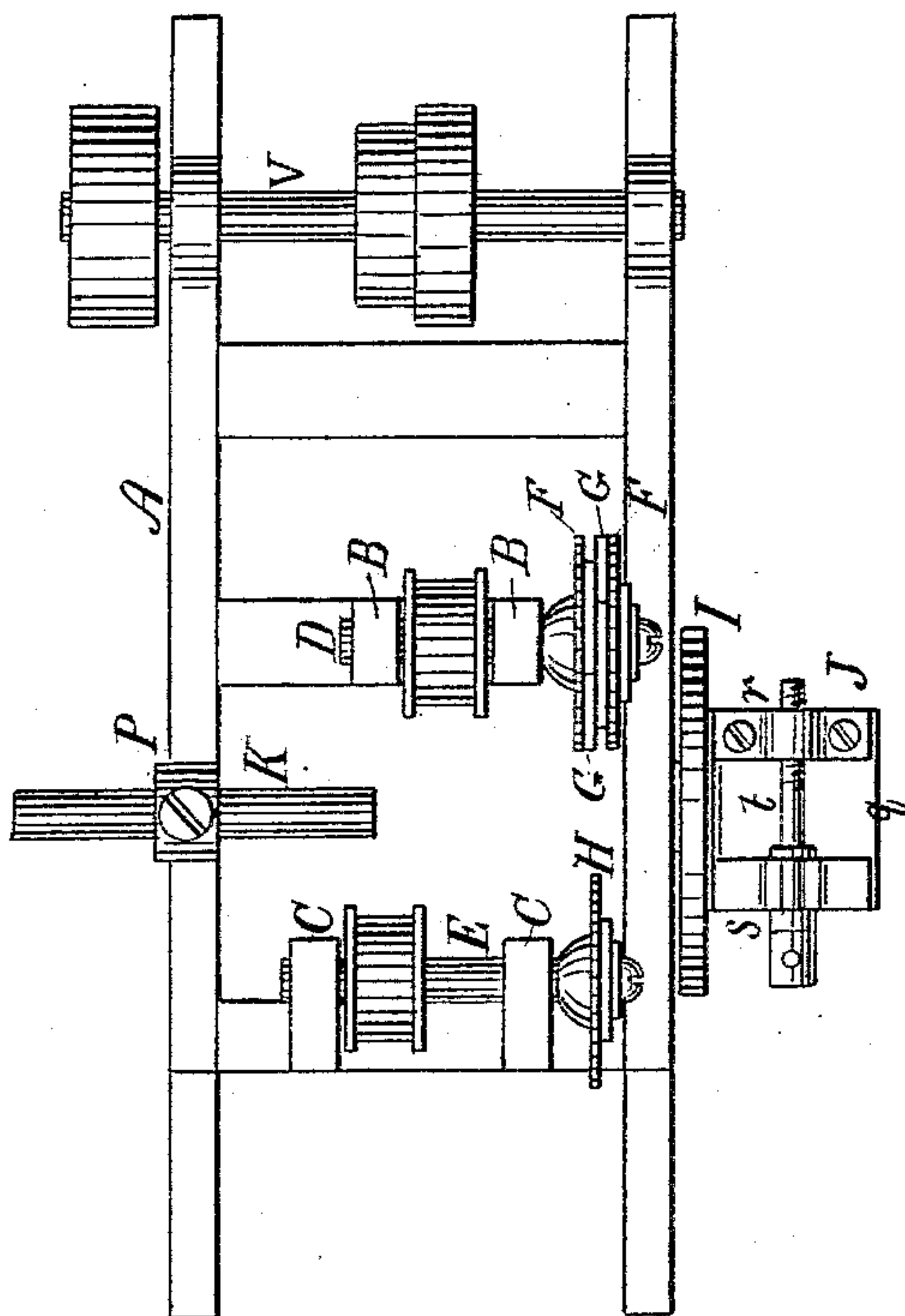


Fig. 3.



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UNITED STATES PATENT OFFICE.

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

BLIND-SLAT-TENONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 300,314, dated June 10, 1884.

Application filed March 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, SETH C. ELLIS, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Blind-Slat-Tenoning Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention in blind-slat-tenoning machines consists in the novel features of construction hereinafter described, whereby a double tenon, comprising one of the tenons of each of two slats, may be properly shaped and then crosscut at the mid-length for separating the tenons, together with the slats, the slat-blank then being advanced to be retensioned, and so on until the blank is consumed.

In the accompanying drawings, Figure 1 is a longitudinal section of a machine embodying my invention. Fig. 2 is a side view thereof. Fig. 3 is a plan or top view of the same. Fig. 4 shows the tenoned slat-blank.

Similar letters indicate similar parts.

The letter A designates the machine-frame supporting the bearings B C of shafts D E, on one of which are mounted two saws, F, and intermediate clearers, G, composing a cutter-head for shaping the double tenon, while on the other shaft is mounted a single saw, H, which is a medium for separating the tenon. A feather-key or any other suitable means may be employed for holding the clearers G in proper relation to each other on the proper shaft.

I designates a revolving disk having a central opening for the passage of the slat-blank; J, a clamp for holding the blank in the disk; K, an end gage for determining the position of the blank, and I' a carrier for the revolving disk.

The separating-saw H is arranged in the plane of the tenoning-saws F at a point midway between them, and opposite thereto in relation to the disk I, which is arranged laterally to the saws in the plane thereof, and when the machine is applied to use the slat-blank is first presented to the tenoning-saws and clearers by moving the disk-carrier I' in the proper direction. The blank having previously been clamped in the disk, and the disk now being turned in its carrier, the tenon is cut to the proper shape—that is to say, a portion of the

blank is cut away, as shown in Fig. 4, leaving an axial cylindrical bar, which I denominate a "double tenon," it being of the length of two tenons. The tenoning-saws F operate to cut the ends of the double tenon and the clearers to remove the wood between such ends. The double tenon is now presented to the separating-saw H by moving the disk-carrier in its direction, and by the action of this saw the tenon is crosscut at about the mid-length to form one of tenons of each of two slats. It will be noticed that the distance between the tenoning-saws F determines the length of the double tenon, and by making these saws adjustable on the proper shaft the length of the tenon may be varied, while by making the separating-saw H adjustable the correct position thereof may be preserved. The slat end gage, K, is a horizontal bar adjustably secured in a standard, P, which in turn is adjustably secured to the machine-frame, and as the slat-blank is advanced in the revolving disk the leading end thereof comes in contact with one end of the gage-bar, so that the latter operates to gage the length of the slats, causing them to take one and the same length, which may be varied. Said bar or gage K should be so adjusted that when the disk I is at rest the bar is axial thereto, as shown in Fig. 3. In the example shown the disk-carrier I' swings on a pivot, L, of the machine-frame; but it is evident that the same may also slide on the frame. In its normal position said carrier I' rests in an inclined position against a supporting-spring, N, and retains the disk I in a position intermediate of the tenoning-saws F and the separating-saw H, so that the slat-blank may be properly introduced into the disk; and when the carrier is moved toward the tenoning-saws it comes in contact with a stop, O, of the machine-frame, which regulates the position of the carrier, together with the slats, in relation to the tenoning-saw, and thereby determines the diameter of the tenon. By making the stop O adjustable the diameter of the tenon may be varied.

The slat-clamp J of the revolving disk is composed of a ledge, q, and two jaws, r s, which are preferably dovetailed, as shown in Fig. 1, and one of which is stationary, while the other is movable to and from the station-

ary jaw, it being guided in suitable ways on the ledge, and being connected to a screw, *t*, which works in the stationary jaw, so that the slat-blank may be readily clamped between the jaws. The stationary jaw *r* is made adjustable to and from the movable jaw *s*, and consequently the clamp is adapted to blanks of different width, the proper adjustment of the stationary jaw insuring the correct position of the blank in relation to the axis of the disk.

For the purpose of giving motion to the tenoning-saws *F*, together with the clearers *G* and separating-saw *H*, the shafts *D E* are connected to a driving-shaft, *V*, by suitable belts and pulleys, and to leave a clear space for the slat-blank as well as the slats cut therefrom, the shaft *E* of the separating-saw is arranged a sufficient distance above the shaft *D* of the tenoning-saws, as shown in Fig. 1, the tenoning-saws thus cutting above and the separating-saw below the axis thereof.

Each of the clearers *G* is composed of a wheel having suitable teeth, the teeth of one clearer alternating with those of the other, and in order to obviate a crowding of the chips cut by the clearers against the saws the cutting-edges of the clearer-teeth may be beveled inwardly or away from the same.

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

1. The combination of the revolving disk *I*, having a central slat-opening and slat-clamp,

the disk-carrier *I'*, the tenoning-saws *F F*, and intermediate clearers, *G*, and the separating-saw *H*, the whole adapted to operate substantially as described.

2. The combination of the revolving disk *I*, having a central slat-opening and slat-clamp, the slat end gage, *K*, the disk-carrier *I'*, the tenoning-saws *F F*, and intermediate clearers, *G*, and the separating-saw *H*, the whole adapted to operate substantially as described.

3. The revolving disk *I*, having a central slat-opening and slat-clamp, the disk-carrier *I'*, having a swinging motion, the spring *N*, for supporting the disk-carrier, and the stop *O*, for regulating the position of the carrier in relation to the tenoning-saws, in combination with the tenoning-saws and intermediate clearers, and the separating-saw, the whole adapted to operate substantially as described.

4. The revolving disk *I*, having a central slat-opening and a slat-clamp consisting of the ledge *q*, the adjustable stationary jaw *r*, the movable jaw *s*, and the screw *t*, acting on the movable jaw, in combination with the tenoning-saws and intermediate clearers and the separating-saw, the whole adapted to operate substantially as described.

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

SETH C. ELLIS.

Witnesses:

FRANCIS C. BOWEN,
JAS. S. EWBANK.