

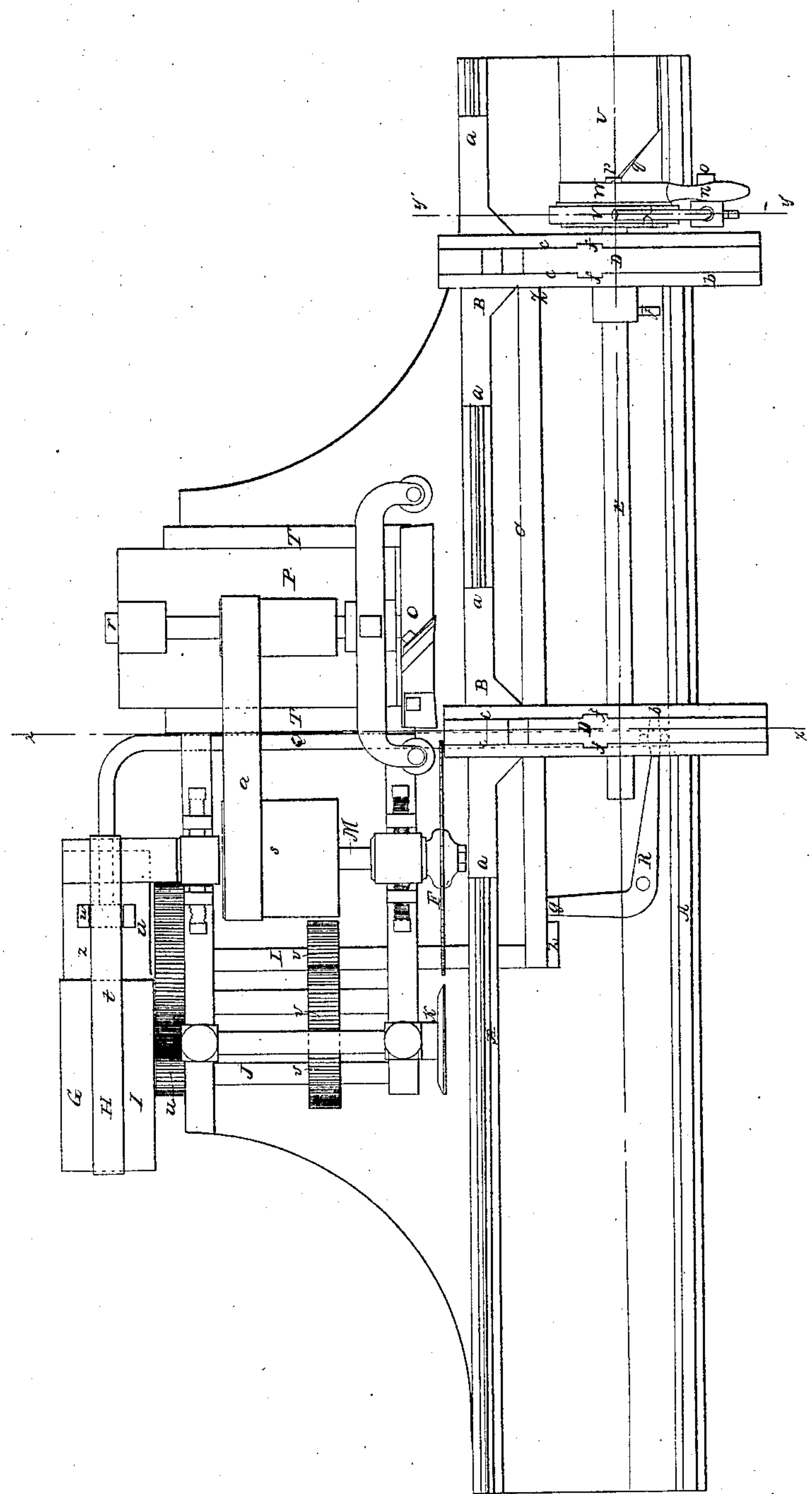
A. S. Walbridge,

Sawing, Planing and Jointing Machine,

No 16,034,

Patented Nov. 4, 1856.

Fig. 2

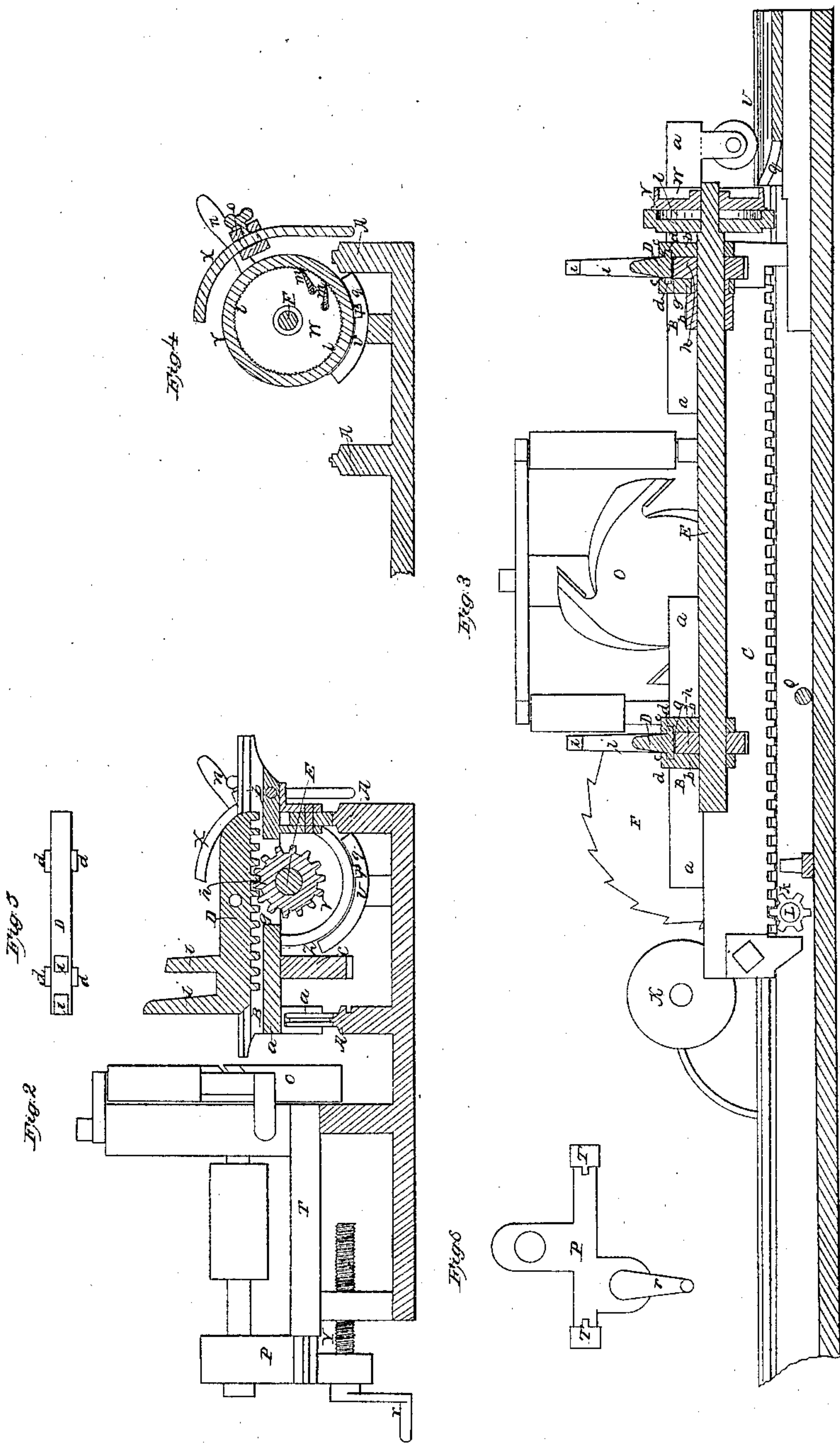


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UNITED STATES PATENT OFFICE.

A. S. WALBRIDGE, OF BURLINGTON, VERMONT.

SELF-ACTING HEAD AND TAIL BLOCK FOR SAWING-MILLS.

Specification of Letters Patent No. 16,034, dated November 4, 1856.

To all whom it may concern:

Be it known that I, A. S. WALBRIDGE, of Burlington, in the county of Chittenden and State of Vermont, have invented a new and Improved Machine for Sawing; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, Figure 1 being a plan of the machine; Fig. 2, a vertical section thereof, in the line *x, x*, Fig. 1; Fig. 3, a vertical section, in the line *y, y*, Fig. 1; Fig. 4, a vertical section, in the line *y', y'*, Fig. 1; Figs. 5 and 6, respectively top and end views of separate parts.

Like letters designate corresponding parts in all the figures.

Instead of the head and tail blocks, of the usual construction, I make use of two T-shaped blocks, B, B, the arms *a, a*, thereof, (being provided, if desired, with suitable wheels or trucks, to diminish friction,) running upon one of the tracks A, A; while the body *b*, extends across and rests on the other track. These blocks are secured to the side of a rack C, which connects them and thus constitutes the carriage, and by which the whole is fed up to the saw or run back. The motions of the carriage are made automatic in the following manner:—The carriage is immediately driven forward and backward, by the pinion *h*, (Fig. 3,) on the shaft L. The requisite alternate revolutions are given to said shaft, by means of a band *t*, passing from a pulley, on the saw arbor M, to which the power is directly applied, to a set of pulleys G, H, I, on a transferring shaft J. The middle pulley H, is a loose pulley; so that when the band is on that, the motion of the carriage ceases. The pulley G, is immovably secured to the shaft J; so that when the band *t*, is shifted thereto, the shaft J, turns and thereby communicates, through pinions *v, v, v*, the proper motion to the shaft L, for moving back the carriage. The pulley I turns freely on the shaft J, and by means of two pinions *u, u*, are united to the pulley I, and the other secured to the shaft L, when the band *t*, is shifted to said pulley I, the proper motion is communicated to the shaft L, to feed the carriage up to the saw F. The band *t*, is automatically shifted, at the proper moment, by means of a shifter *w*, which is attached to one end of a sliding rod Q, extending therefrom beneath the carriage.

The other end of said rod is connected with one arm of a bent, vibrating lever R, arranged substantially as represented in Fig. 1. A projection *g*, rises from the other arm of the lever, and is so situated, that as soon as the carriage has advanced far enough, a projection Z, on the hind end of the rack C, strikes said projection *g*, and moves the rod Q, sufficiently to shift the band *t*, to the pulley G, and thereby set the carriage to moving backward. Then, as soon as the carriage has been run back far enough, another projection Z, in the front end of the rack C, strikes the projection *g*; and thereby moves the rod Q, in the other direction far enough to shift the band *t*, back to the pulley I, and set the carriage to feeding up again. When it is required to stop the feed motion of the carriage, the shifter *w*, is moved by hand enough to transfer the band *t*, to the loose pulley H. A spring *z*, bearing against the shifter *w*, serves to tighten the band *t*.

The carriage blocks B, B, are provided with grooves *c, c*, in which slide the projections *d, d*, of the setting-off blocks D, D, shown most clearly in Fig. 5. On the under side of each block D, is a rack *g*, (Figs. 3, and 4,) into which a pinion *h*, on a shaft E, gears. By turning this shaft, the blocks D, D, will be moved equally and simultaneously on the blocks B, B, and thus move the logs, boards, or timber up to the saw F. The proper movement of this shaft, to set the logs along, is automatically produced, by the following contrivance: A disk V, is firmly secured to the shaft E; and another disk W, is mounted on the same shaft, but allowed to turn freely thereon, close to the disk V. Said disk V, is provided with ratchet teeth *l*, on the inner periphery of a projecting rim; and the disk W, is provided with a pawl, or pawls, *m, m*, which take into said ratchet teeth. A handle *n*, is attached to the disk W; and a stop *o*, adjustable to any position on a curved rod X, substantially as represented, limits the extent to which the handle *n*, can move in that direction. A concave cam U, situated so that the disks V, and W, will just pass over it, has a wedge-shaped or spiral, edge *q*, against which a pin *p*, projecting from the lower edge of the disk W, strikes, when the carriage is run back. The distance which this pin slides against the cam-face *q*, determines the extent to which the disks W,

and V, are turned thereby, and consequently the width of board, or plank, set off. And said distance which the pin slides upon the cam, is varied by changing the position of the stop *o*, on the rod X; for by setting it lower, the handle *n*, falls back farther, at each setting off, and consequently the disk W, is turned farther to bring the handle up to the same position again; and by moving the stop *o*, up on its rod, the extent to which the disk W, is moved, is lessened. Whenever it is required to move one block D, without moving the other, one of the pinions *h*, is set loose on the shaft E, by loosening a fastening screw *j*, (Fig. 1,) which couples its hub to the shaft. This screw also allows the pinion *h*, which it secures to the shaft E, to be adjusted on said shaft, to suit different lengths of logs, boards, &c. The blocks B, B, may be adjusted to different positions on the connecting rock-beam C, for the same purpose.

Studs *i*, *i*, project upward from the setting-off blocks D, D, for the purpose of securing logs, boards, and timber to said blocks. To prevent these blocks ever being set over so far as to strike the saw F, there are notches *f*, *f*, (Fig. 1,) cut out of the ledges which project over the grooves *e*, *e*,

of the blocks B, B, in such positions that when the blocks D, D, have moved toward the saw as far as allowable, the projections *d*, *d*, on the blocks will enter said notches, and thus allow the pinions *h*, *h*, to lift the blocks instead of acting upon the racks *g*, *g*.

A wedge disk K, is situated just behind the saw F; and serves to separate the boards, so that they may not pinch the saw.

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

1. The combination and arrangement of the T-shaped carriage blocks B, B, connecting rack C, and setting-off shaft E, substantially as specified, whereby a self-operating carriage, of any desired length, or compactness, is produced.

2. I also claim the self setting-off device, composed essentially, of the ratchet disks V, W, adjusting stop *o*, and stationary cam U, arranged and operating substantially as described.

The above specification of my improved sawing machine, signed and witnessed this 18th day of Augt. 1856.

ABR. S. WALBRIDGE.

Witnesses:

J. S. BROWN,

S. H. SHAKSPEARE.