

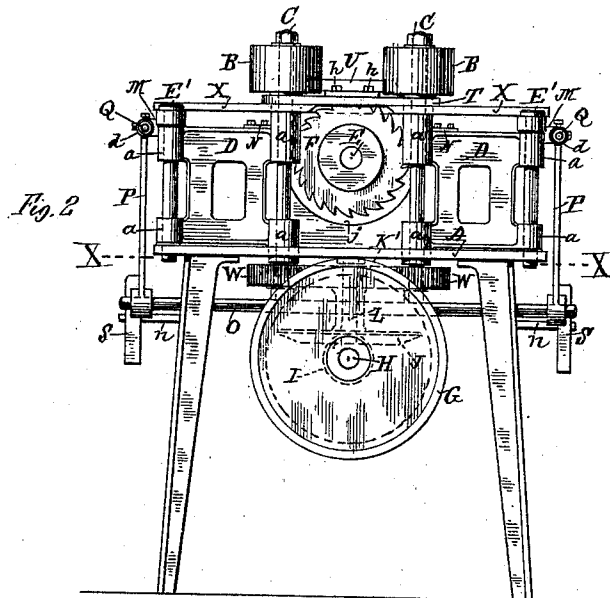
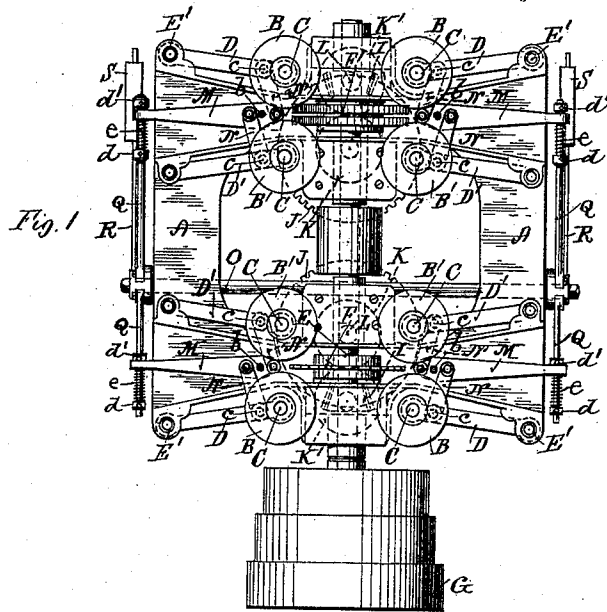
(No Model.)

3 Sheets—Sheet 1.

B. G. LUTHER.
MATCHING MACHINE.

No. 418,352.

Patented Dec. 31, 1889.



Witnesses:

James W. Beuman
John S. Lynch

Inventor:

Benjamin F. Luther
per S. Scholfield
attorney

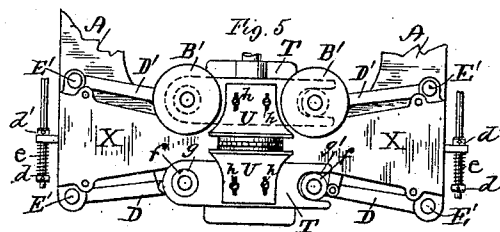
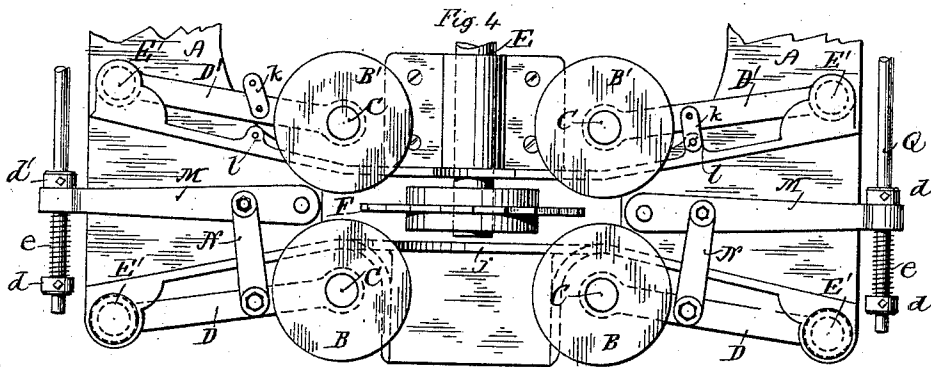
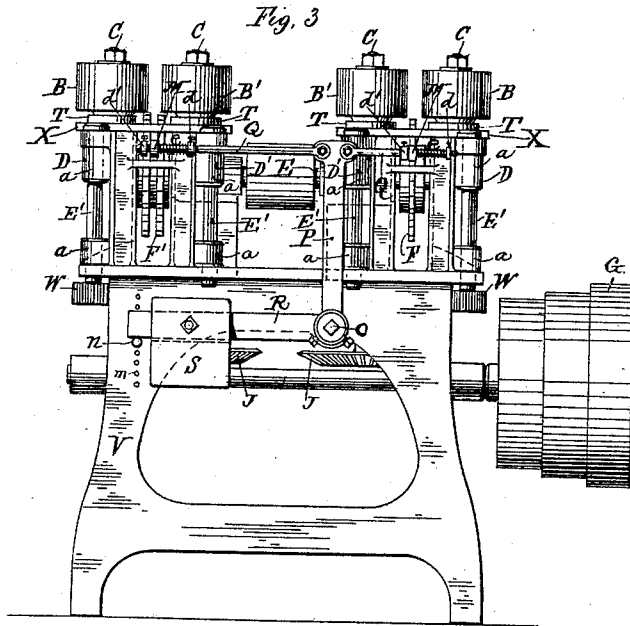
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Inventor:

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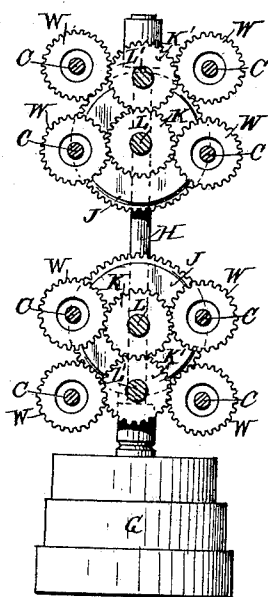


Fig. 6.

Witnesses:

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UNITED STATES PATENT OFFICE.

BENJAMIN G. LUTHER, OF WORCESTER, MASSACHUSETTS.

MATCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,352, dated December 31, 1889.

Application filed August 26, 1889. Serial No. 322,019. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN G. LUTHER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Power-Feed Matching-Machines, of which the following is a specification.

My invention consists in improved means for adjusting the feeding-rolls of a matching-machine, as hereinafter fully set forth.

Figure 1 represents a top view of a matching-machine provided with cutters adapted for both edges of the board, the table-plates which serve to support the edge of the board being removed. Fig. 2 represents a side elevation of the machine with the table-plates in position. Fig. 3 represents a front end view of the same. Fig. 4 represents an enlarged detail top view showing a modification, the table-plate being removed. Fig. 5 represents a detail top view with the table-plate in position, two of the feeding-rolls being removed from their upright shafts, in order to show the arrangement of the side guides upon a link which joins the corresponding pivoted carriers of the opposite pairs of feeding-rollers. Fig. 6 is a detail top view showing the driving-gears of the feeding-rollers from a section taken in the line *xx* of Fig. 2.

In the accompanying drawings, A represents the bed-frame of the machine.

B B' are the feeding-rollers, secured to their respective upright shafts C, which are held for rotation and adjustment in the opposite pivoted carriers D D'.

E is the arbor, having at its opposite ends the cutters F and F', which are adapted for both edges of a board, the board being first passed between the pairs of feeding-rollers B B' at one side of the machine and then reversed at its edges and passed between the pairs of feeding-rollers B B' at the opposite side.

The carriers D D' for a pair of feeding-rollers are each pivoted to the frame of the machine by means of a bolt E', and are provided with suitable bearings *aa* for the upright shaft C, at the lower end of which is placed the gear W, the said shaft being driven from the pulley G upon the shaft H by means

of the bevel-pinion I upon the shaft H, the bevel-gear J revolving loosely upon a stud L, and the gears K and K', which engage with the gears W upon the shaft C, the gear K being attached to the hub of the bevel-gear J, so as to revolve therewith, and the gear K' being made to revolve loosely upon the stud L'.

Upon the bed-frame A are pivoted the levers M at the points *b*, and to the levers M at equal distances on each side from the pivot-point *b* are pivoted the links N, which are also pivoted to the carriers D D' at the points *c*, located at equal distances from the pivot-bolt E', so that when the outer end of the lever M is moved in either direction both of the feeding-rollers B B' will be equally moved toward or from a centrally-located plane or the plane of the cutter. Upon the opposite ends of the rock-shaft O, extending under the bed-frame A, are secured the upright arms P P, and to the upper end of the arms P are pivoted the opposite rods Q, which are each provided with the adjustable collars *d d'*. The rods Q are passed loosely through the perforated outer end of the levers M, which are held between the collars *d* and *d'*, and between the end of the lever M and the collar *d* in each case is placed a spiral spring *e*. Horizontally from the shaft O at each side of the machine is extended an arm R, upon which is placed a suitable weight S, which serves to force the feeding-rollers B B' toward each other.

Upon the upwardly-projecting hubs *f* of the oppositely-set carriers D D and D' D', and above the table-plate X, are placed the links T, (see Fig. 5,) one end of which is preferably provided with a perforation *g*, loosely fitting the hub *f* of one of the carriers, and the other end provided with the open slot *g'*, which embraces the hub *f* of the opposite carrier, and upon the top of the links T are secured the side guides U by means of the screws *h*.

When the feeding-rollers B B' are arranged at equal distances on each side of the plane of the cutter and the board is fed forward, it will first enter between the rollers B B' at one side of the cutter-arbor, causing the said rollers to be opened equally from the plane of the revolving cutter, so that, however the

board may vary in thickness, the tongue or groove, as the case may be, will be uniformly made at its true central line, the guides U also partaking of the equal lateral movement of the rollers from the plane of the cutter.

The frame A is cut away at *j*, as shown in Fig. 2, in order that the cutter can be readily removed from the arbor E by first disconnecting the links N of the outer carriers D D from the levers M and swinging the carriers D D outward, so that the cutter can be made to pass outward from the end of the arbor without obstruction, and by reason of the slot *g'* in the guide-supporting link T either one of the carriers D D can be moved outward independently of the other.

In some cases I hold the opposite back rollers B' B' stationary, as shown in Fig. 4, by means of the links *k*, which are connected to a fixed ear *l* of the frame A, and in this case the cutter is to be adjusted upon its arbor when changing from boards of one thickness to another, and when the link *k* is disconnected from the ear *l* the feeding-roller B' and its carrier can be moved back from the cutter, in order to have free access to the same.

In order to provide for the ready adjustment of the rollers for boards of different thickness, I provide a series of holes *m* in the side of the leg V, Fig. 3, and insert a pin *n* at the proper point under the end of the weighted arm R. I thus adjust the rollers at opposite sides of the machine simultaneously, and by the employment of the springs *e* upon the rods Q, I am able at the same time to feed boards of varying thickness to the cutters at opposite sides of the machine, the rollers being all subject to the same single adjustment, and still capable of a certain degree of independent movement.

I claim as my invention—

1. In a matching-machine, the combination, with the cutter, the duplicate pivoted carriers, and a pair of feeding-rollers supported by the said carriers, of the connected lever adapted to impart equal movement to the carrier and rollers relatively to the plane of the cutter, and means for forcing the feeding-rollers toward each other to clasp the boards, substantially as described.

2. The combination, in a matching-machine provided with a cutter and pairs of feeding-rollers having pivoted carriers at opposite sides of the cutter-arbor, of a corresponding pivoted carrier and its supported feeding-roller at each side of the cutter-arbor, and a guide-link jointed to the said carriers and provided with the open slot, substantially as described.

3. In a matching-machine, the combination, with the arbor provided with opposite cutters, the one adapted to tongue and the other to groove the board, pivoted carriers, and the feeding-rollers supported by said carriers, of the connected levers for imparting equal movement to the pivoted carriers and their rollers relatively to the plane of the cutters, connected means for adjusting the feeding-rollers of both cutters at the same time, and the springs which allow for a forced opening movement in the feeding-rollers of one of the cutters greater than the corresponding movement of the feeding-rollers of the opposite cutter, substantially as described.

BENJAMIN G. LUTHER.

Witnesses:

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