2 Sheets--Sheet 1.

G. J. SHIMER.

Machine for Matching Lumber.

No. 163,269. Patented May 11, 1875.

FIG. 1.

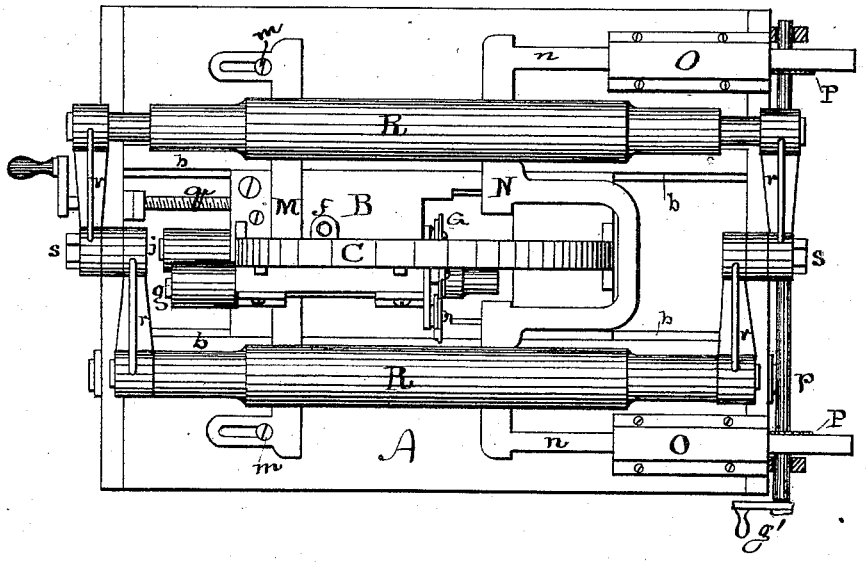
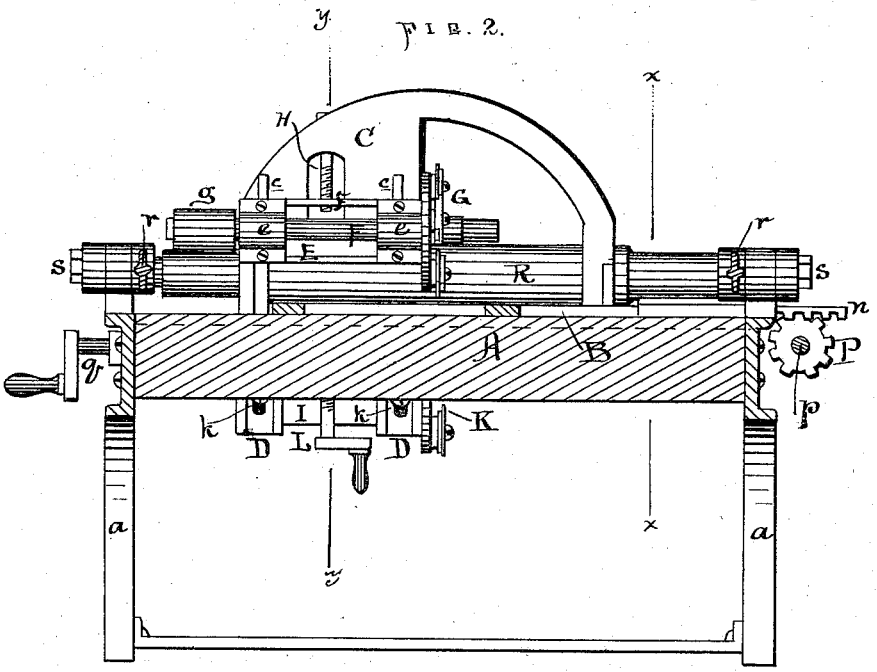


FIG. 2.



WITNESSES.

F. B. Townsend.

E. M. Gallaher.

INVENTOR

Geo. J. Shimer

By his atty

R. D. Smith

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

G. J. SHIMER.

Machine for Matching Lumber.

No. 163,269. Patented May 11, 1875.

FIG. 3.

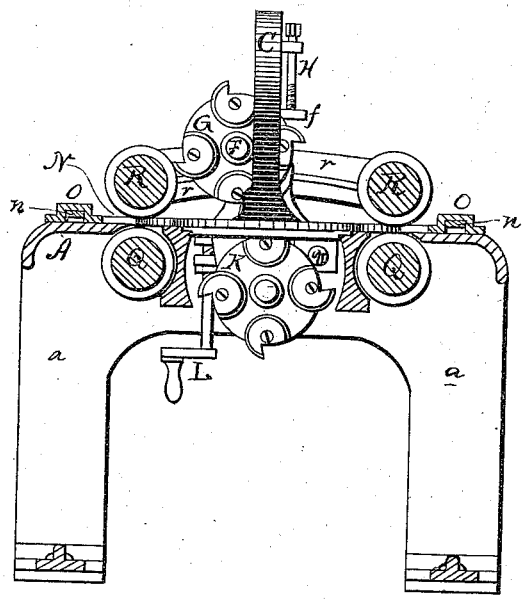
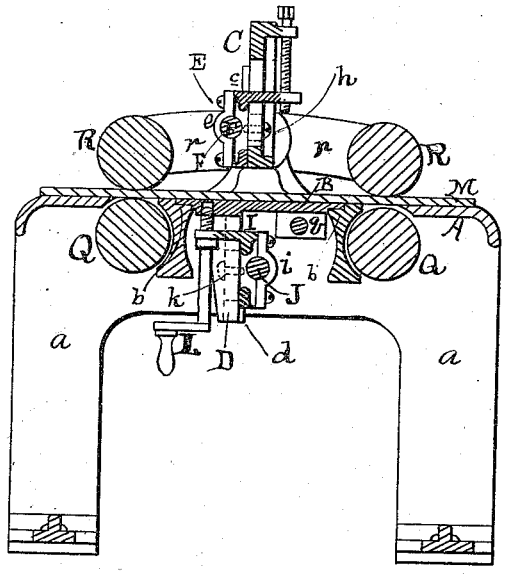


FIG. 4.



WITNESSES.
L. B. Townsend.
E. M. Gallaher.

INVENTOR.
Geo J. Shimer
By his Atty
R. D. Smith

UNITED STATES PATENT OFFICE.

GEORGE J. SHIMER, OF MILTON, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MATCHING LUMBER.

Specification forming part of Letters Patent No. **163,269**, dated May 11, 1875; application filed January 2, 1875.

To all whom it may concern:

Be it known that I, GEORGE J. SHIMER, of Milton, in the county of Northumberland and State of Pennsylvania, have invented certain Improvements in Machines for Matching Lumber, of which the following is a specification:

This invention relates to that class of wood-working machines known as "matching-machines;" and it consists in two cutter-heads, to form opposite grooves along the top and bottom of a board, said grooves being of proper shape to form two tongues when the board is severed along the middle of said grooves, said cutter-heads being mounted on mandrels whose bearings are adjusted laterally and vertically.

Figure 1 of the accompanying drawings is a plan view of my invention. Fig. 2 is a longitudinal section. Figs. 3 and 4 are vertical transverse sections on lines *x x* and *y y*, respectively.

That others may fully understand my improvement, I will particularly describe it.

A is the frame, constructed, preferably, of iron. It is supported upon legs *a*, at the ordinary height of a planer-table. The central part of the table A is left open, and is fitted with ways, to receive and guide a movable slide, B, which carries above it an arched standard, C, and below it two pendent studs, D D. The standard C has upon its face two ribs or guides, *c c*, upon which is fitted and slides a frame, E, which bears the boxes *c c* of the mandrel F, upon the inner end of which the cutter-head G is mounted. A stud or arm, *f*, projecting from the frame E, receives the adjusting-screw H, whereby the frame E may be raised or lowered along the guides *e e*, and the cutters be thereby caused to penetrate more or less deeply into the plank which is being tongued, regulating the thickness and position of the tongues formed. The mandrel takes motion from the prime mover by means of a belt running in the ordinary manner on the pulley *g*. Binding-screws *h h*, working through slots in the standard C, keep the frame E to its seat upon the ways *c c*, and by tightening said screws the said frame E may be fixed in one position. The pendent studs D D are provided with parallel ribs or guides *d d*, similar to the ribs *c c*, and a frame, I, bearing the boxes *i i* of the lower mandrel J is fitted to move upon said guides *d*, so that the mandrel J and cutter-head K may be moved up or down, always parallel with the mandrel F, so as to adjust the depth of the cut of the tonguing-cutter from the lower side. Binding-screws *k k*, working in slots in the standards D D, keep the frame I to its seat, and serve to hold it firmly there whenever desirable, and the adjusting-screw L serves to change the adjustment of the frame I up or down whenever desired, and these adjustments of the mandrels up or down can be effected while the machine is running. The mandrel J has at its outer end a pulley, *j*, to receive the driving-belt, similar to the pulley *g*. The standard C and studs D D are all rigidly attached to the plate B, which may be moved along the ways *b b* on the table A, by means of the screw *q*, thereby shifting the cutters with regard to width of the board. Across the table there are two adjustable guides, M N, transverse to the axis of the cutter-mandrels. The guide M is adjustable upon two set-screws, *m m*, which pass through slots in the guide, and serve to clamp it fast in any position desired. The guide N is formed to straddle the arch-standard C, and is provided with an arm, *n*, at each end, perpendicular to the face of the guide. Said arms pass through parallel sleeve-guides O, fixed upon the table A, so that as said guide N is moved backward or forward its parallelism with the guide M will be maintained. The under sides of the arms *n* are provided with cog-teeth, which gear with pinions P, fixed upon a shaft, *p*, the revolution of which will move said arms *n n* simultaneously in or out. A crank, *g'*, serves to rotate said shaft, and shift the adjustment of the guide N as often as may be made necessary by the varying widths of the boards. The lower feed-rollers Q Q run in fixed boxes, while the upper feed-rollers R R are mounted at the ends of swinging arms *r r*, which are pivoted to the frame of the table A at *s*, so that they are self-adjusting to the varying thicknesses of the boards. The cutters G K, cut opposite grooves equal in width to twice the height of the required tongue, and by properly pointing said cutters, the said grooves along their central line are cut deep enough to meet and

sever the board into two parts. By this means a wide board, when surfaced and grooved on both edges, may be formed into two narrow flooring-boards properly tongued. The lateral and vertical adjustments of the cutters above described are sufficient to meet every requirement.

I propose to construct these machines with side cutters, for grooving the two edges of the board, when only a surfacing-machine is used to prepare lumber.

The machine above described may also usefully be employed as a sawing-machine, if a circular saw is mounted upon the mandrel J, instead of a cutter-head, to size boards that are too wide for two flooring-boards.

Having described my invention, what I claim as new is—

The slide B, provided with an adjusting-screw, and constructed with the arch standard C, and pendent studs D D, provided with guide-ribs *c c* and *d d*, combined with sliding frames E I, combined with boxes *i i*, in which the cutter-head mandrels run, and whereby they are adjustable, as set forth.

GEO. J. SHIMER.

Witnesses:
JNO. MILLER,
JOHN G. KURTZ.