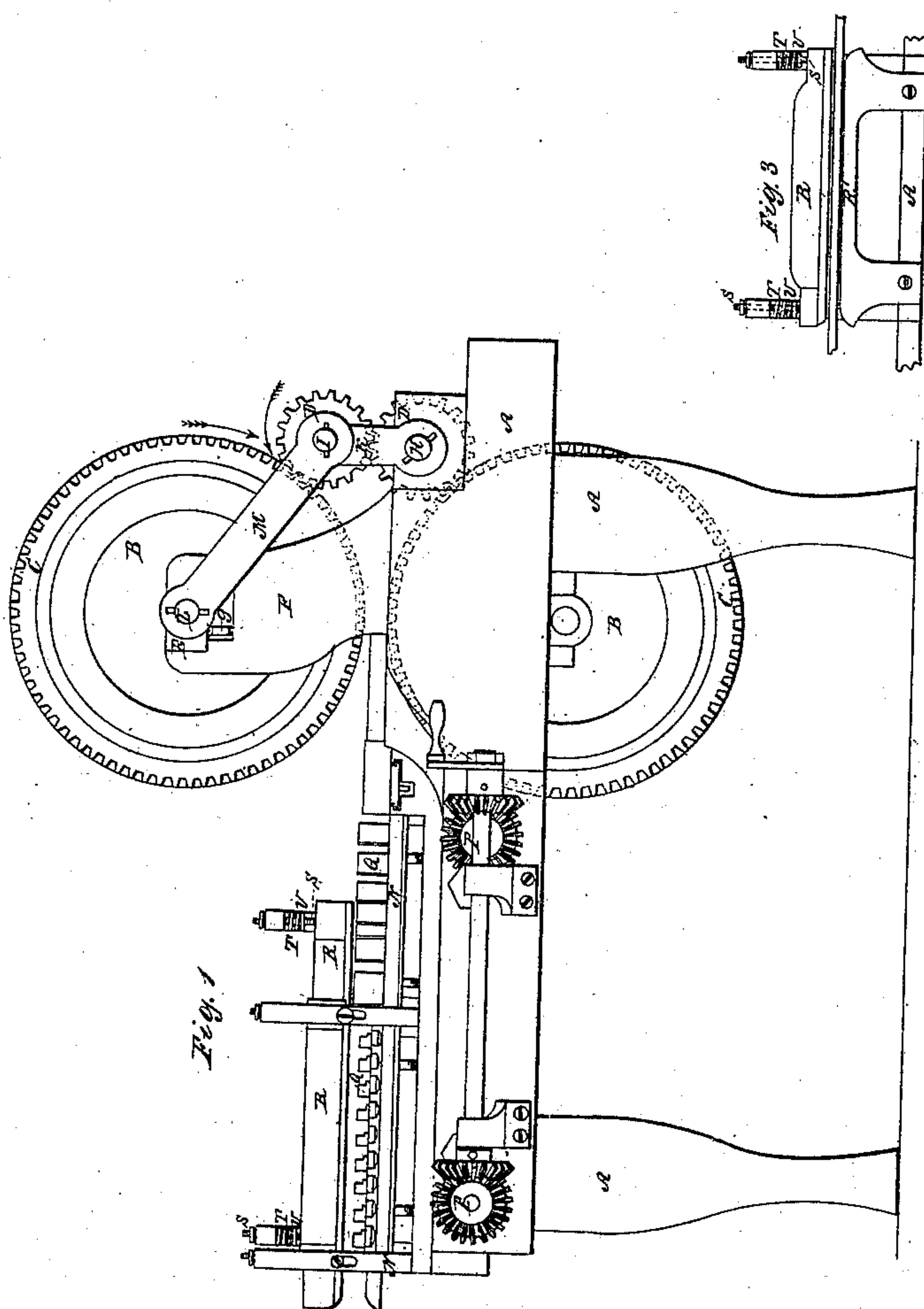
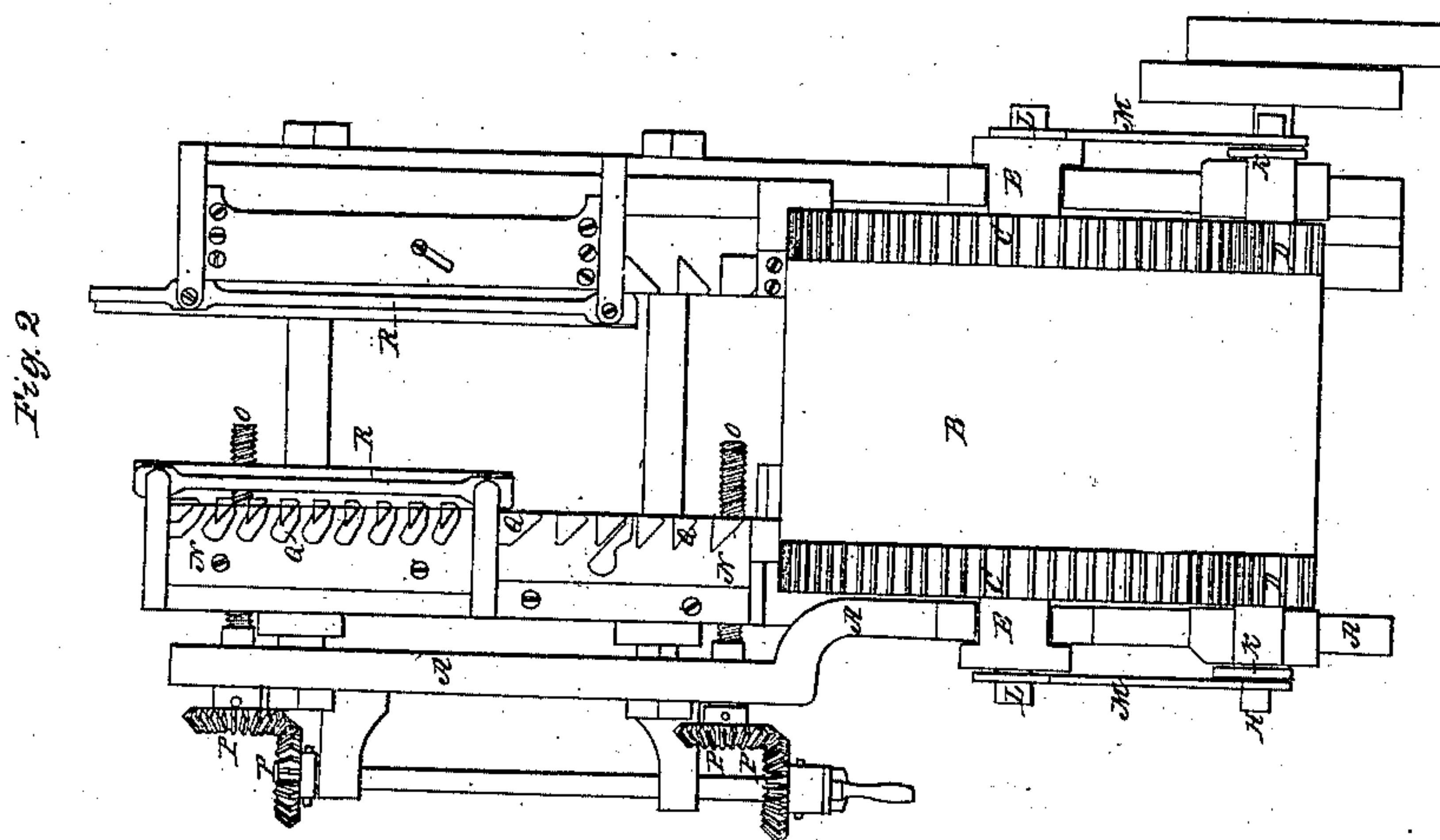


J. WHITNEY.
TONGUEING AND GROOVING MACHINE.

No. 8,881.

Patented Apr. 13, 1852.



UNITED STATES PATENT OFFICE.

JOEL WHITNEY, OF WINCHESTER, MASSACHUSETTS.

FEED APPARATUS OF PLANING-MACHINES.

Specification of Letters Patent No. 8,881, dated April 13, 1852.

To all whom it may concern:

Be it known that I, JOEL WHITNEY, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Tonguing and Grooving Boards, and that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1 is a side elevation of my machine, Fig. 2 is a plan of the same and Fig. 3 is a detail view of the guide rails, &c., which hold the board.

The essential features of my improvements consist first, in the manner of gearing and connecting the two feed rolls, so that the upper roll yields to any inequality in the board and also draws down upon the surface to which it has yielded, in proportion to the resistance of the cutting tool.

As these machines have usually been constructed, the lower guide rail, for holding the board, has been made movable so as to allow it to yield in case of any shavings or other obstructions getting between the board and said rails; but by thus allowing the lower rail and consequently the board to yield, while the cutting tools were stationary, an irregular tongue or groove was necessarily formed in the board. In my machine this defect is remedied by making the upper guide rail movable while the lower one is stationary, so that in case of any obstruction the upper rail alone moves, while the board keeps in the same position with regard to the cutting tools as before.

A A A in the drawings represents the framework of the machine.

B, B are the two feed rolls having on each end the large gear wheels C, C which are connected to each other by the small gear wheels D, D'. The bearings E, E of the upper roll are allowed to play up and down in the standards F, F being placed upon the supports G, G. The driving shaft H on which the gear wheel D' is placed is connected to the shaft I on which is the

wheel D, by the short movable vertical arm K; and this shaft I is connected to the shaft L of the upper feed roll by the inclined moving arm M, thus connecting the shaft of the stationary wheel D' to the vertical sliding bearings of the upper feed roll.

It will be seen as the wheel D' revolves, it will continually have a tendency to force the gear D (the shaft of which is movable, having its bearings in the two arms K, M) from the roll, or out of connection with the gear C, and having this tendency, the wheel D will, through the medium of the arm M, draw down upon the roll in proportion to the power applied, which depends upon the resistance to the cutting tools.

N N is the movable slide which is fed up on the screws O, O by the bevel gears P, P, &c.

Q, Q are the stocks for the cutting tools, constructed and placed in the same manner as in other machines and as shown in the drawings.

R, R', Fig. 3 are the guide rails, the lower one R' being stationary while the upper one R is movable and adjustable, being held by the screws S, S around which are the spiral springs T, T which bear against the nuts U, U.

By the above described arrangement, it will be seen that when any obstruction gets between the guide rails and the board, the upper one, by the nuts U, U pressing against the springs S, S will rise, while the board will remain perfectly level upon the lower guide and thus prevent the tongue or groove from becoming irregular.

It will be seen that the arrangement by which the feed roll is made to bear upon the board in the manner above described, can be applied to machines for planing as well as to machines for tonguing and grooving, and also that the lower feed roll may be made movable and the upper one stationary, which arrangement will work equally well by simply having a spring or weight to counterbalance the weight of said lower roll. The feed rollers may be fluted or otherwise roughened for the better holding of the board to be operated upon.

I do not claim gearing the feed rollers with each other by means of pairs of movable pinions, connected to each other and to the feed rollers by links, this having already been done for the purpose of giv-

ing large play to said feed rollers; but having described my improvements, I shall state my claim as follows:

What I claim as my invention and desire
5 to have secured to me by Letters Patent is,

The arrangement by which the upper feed roll is allowed to yield to any inequalities in the board and at the same time draw
10 down upon the surface to which it has yielded in proportion to the resistance to the cutting tools, that is connecting the fixed shaft with the vertical sliding bearings of

the upper feed roll, by means of the swinging inclined and vertical arms, the gears on the fixed shaft operating the lower feed roll and also playing into the gears which
15 move the upper feed roll, said latter gears having their bearings in the intersection or joint of the said arms, the arrangement being substantially as herein above set forth. 20

JOEL WHITNEY.

Witnesses:

EZRA LINCOLN,
JOSEPH GAVETT.