

S. S. Gray,
Wood Planing Machine.
No 26,902. Patented Jan. 24, 1860.

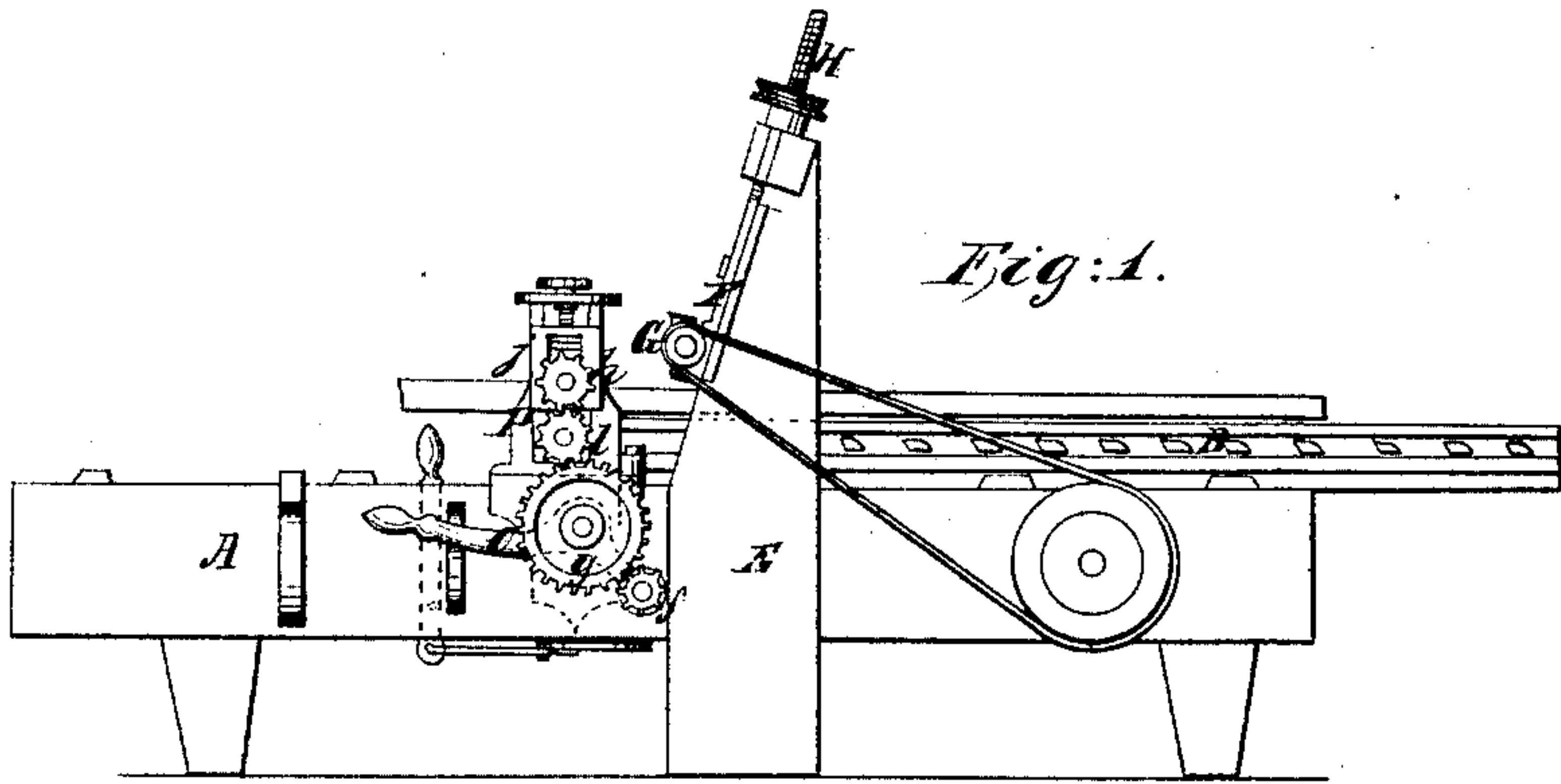


Fig: 1.

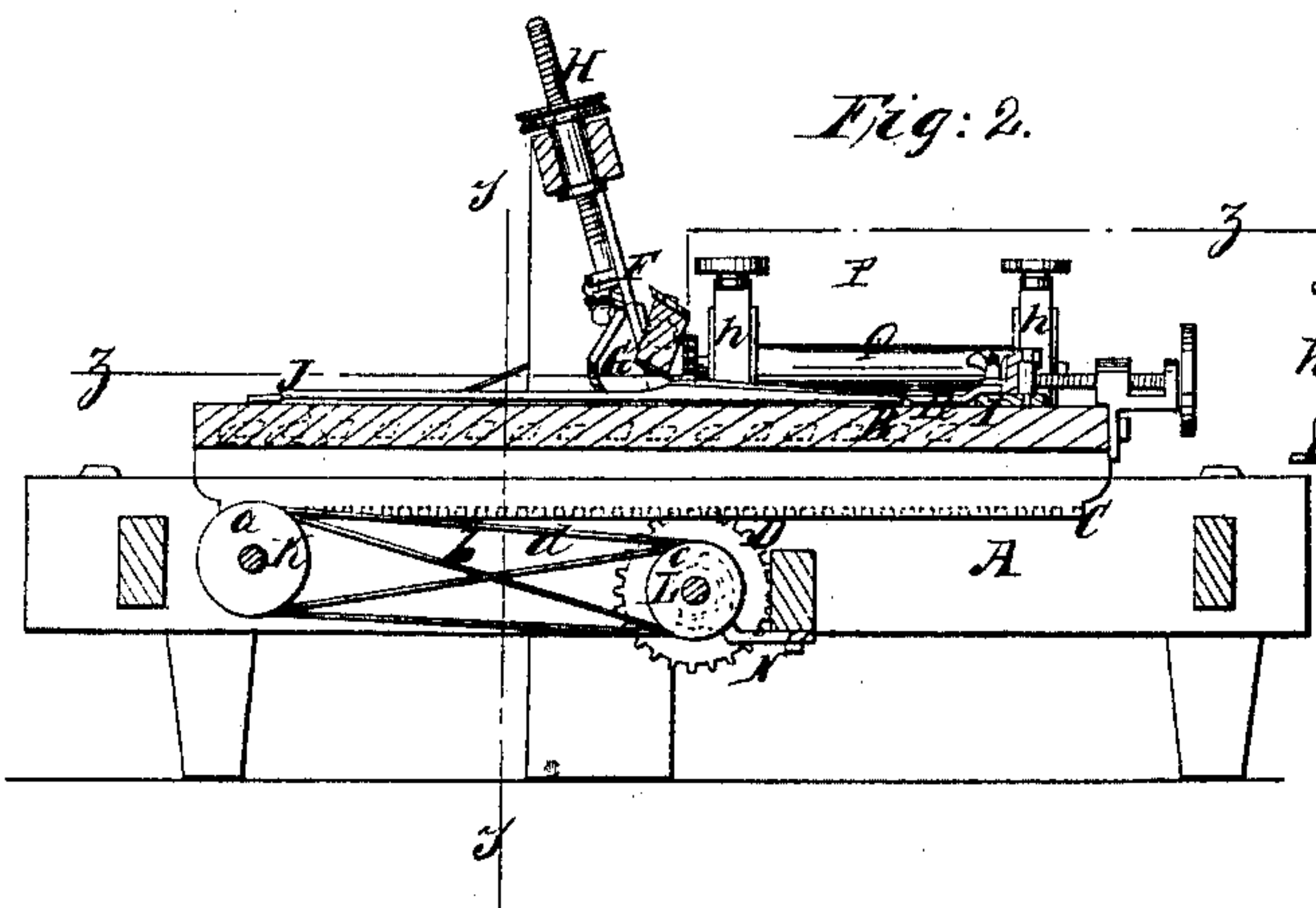


Fig: 2.

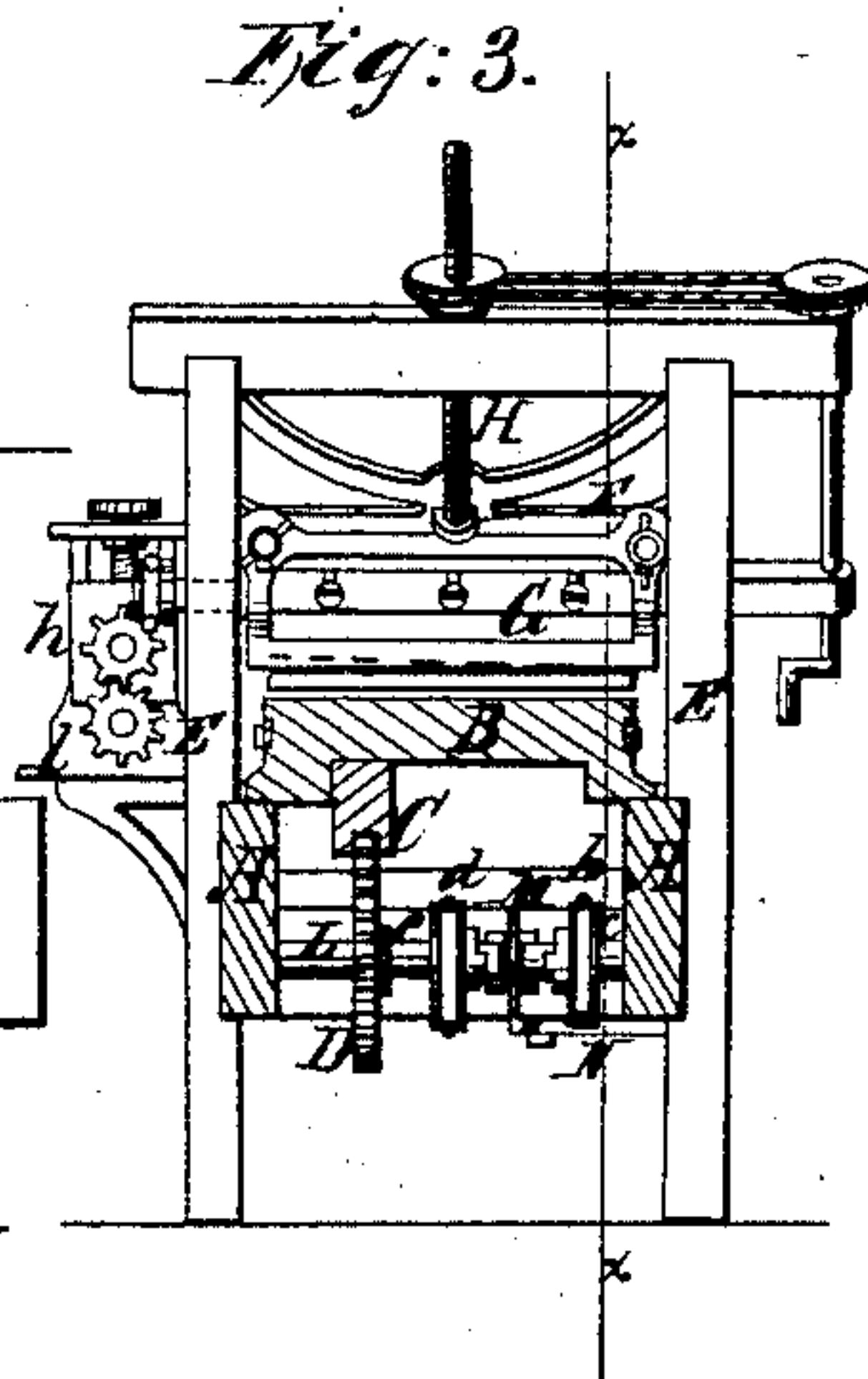


Fig: 3.

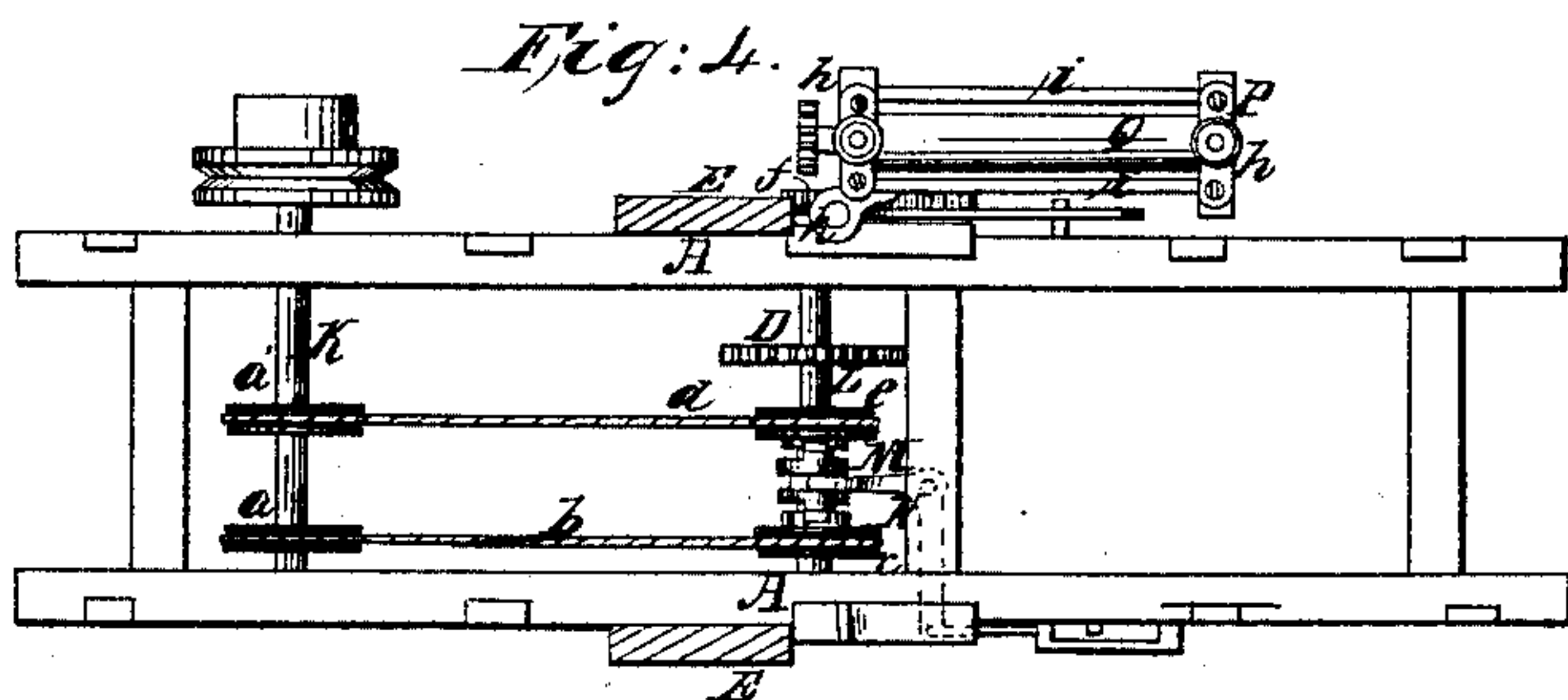


Fig: 4.

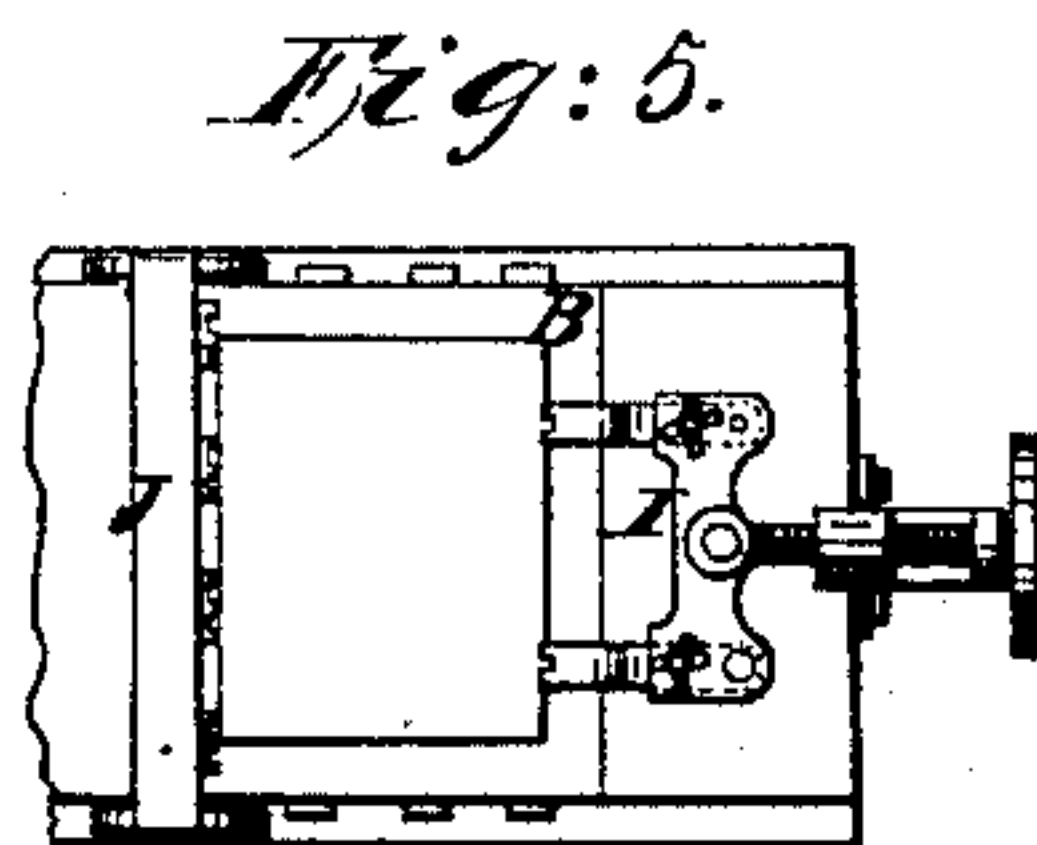


Fig: 5.

Witnesses:
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W. H. Smith

Inventor:
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UNITED STATES PATENT OFFICE.

SOLOMON S. GRAY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND S. A. WOODS, OF SAME PLACE.

PLANING-MACHINE.

Specification of Letters Patent No. 26,902, dated January 24, 1860.

To all whom it may concern:

Be it known that I, SOLOMON S. GRAY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Planing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side view of my invention; Fig. 2, a side sectional view of ditto taken in the line *x, x*, Fig. 3; Fig. 3, a transverse vertical section of ditto, taken in the line *y, y*, Fig. 2; Fig. 4, a horizontal section of ditto taken in the line *z, z*, Fig. 2; Fig. 5, a detached plan or top view of the clamp.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to combine the two classes of wood planing machines in use, viz., those which are used simply for reducing to a smooth surface boards or other lumber, for general purposes, and those which are used for reducing lumber to an even thickness throughout, that is to say, for planing lumber out of wind for joinery, cabinet and fine or finished work generally.

I propose to combine the two classes of machines in such a way that a very simple and efficient device will be obtained, capable of being used in both capacities equally as well as those made for either specialty and thereby effect a great saving, as a combined machine constructed according to my invention will not greatly exceed in cost those made specially for either purpose, and will require but the same space as either of the ordinary machines.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, A, represent two parallel horizontal bars supported at a proper height and forming ways for a bed B, which, when required, is allowed to slide freely thereon. This bed B, is provided at its under side with a longitudinal sunken rack C, as shown in Fig. 3, and by dotted lines in Fig. 2, and when a feed movement is given the bed, a pinion D, gears into the rack and communicates motion to it. To each bar A, an upright E, is attached. The front edges of these uprights are beveled off as shown clearly in Figs. 1 and 2, and to these beveled edges an adjustable frame F, is attached in which a ro-

tary cutter head G, is placed, the frame and consequently the cutter head being adjusted by a screw H. One end of the bed B, is provided with a clamp I, and a dog J, is placed on the bed, the dog and clamp, securing the board and lumber to the bed, when the latter has a feed movement given it.

The parts above alluded to do not require a more minute description as they may be seen in a machine patented by me in conjunction with S. A. Woods, the twenty-second day of August, 1854, and the fourth day of September, 1855, said parts comprising a machine for planing out of wind.

R, is the driving shaft of this machine, said driving shaft having two pulleys *a, a'*, placed on it and both secured permanently to the shaft. Around the pulley *a*, a cross belt *b*, passes said belt also passing around a pulley *c*, on the shaft L, of the pinion D, the pulley *c*, being fitted loosely on shaft L, but secured to it when necessary by a clutch M, which is operated by a lever N, see more particularly Figs. 3 and 4. Around the pulley *a'*, of the driving shaft K, a straight belt *d*, passes said belt *d*, also passing around a loose pulley *e*, on the shaft L, the pulley *e*, being also connected with the shaft L, when necessary by the clutch M. On one end of the shaft L, a small pinion *f*, is placed as shown in Figs. 1 and 4. On the end of shaft L, and adjoining the pinion, one end of a lever O, is fitted. This lever O, has a toothed wheel *g*, secured to it, which gears into the pinion *f*.

P, is a frame which is formed of two uprights *h, h*, connected at their lower ends by transverse bars *i, i*. In each upright *h*, an adjustable bearing *j*, is placed said bearings having the journals of a roller Q, fitted in them, and just below the roller Q, a similar roller R, is placed, the latter having its journals in fixed bearings in the uprights. These rollers Q, R, are arranged precisely similar to the usual feed rollers employed on planing machines and when in use on the within described machine perform the same function as will be presently explained. The frame P, is secured to one of the bars A, by a bolt or pivot *k*, which serves as a hinge for the same so that the rollers may, when desired for use, be turned around transversely on the bars A, A, and when not required turned around off from the machine and parallel with the bars A.

The operation is as follows: When the machine is to be used as a finisher, or to plane boards or lumber out of wind, the frame P, is turned around off from the machine, and the "stuff" properly secured on the bed B, by means of the clamp I, and dog J. The bed B, is so adjusted that the pinion D, may gear into the rack C, and the pulley *e*, on the shaft L, is connected with said shaft by means of the clutch M, the other pulley *e*, being loose. Power is applied to the shaft K, and the cutter head G, operates as usual on the "stuff," while the bed B, feeds it along underneath the cutter head. In gigging back the bed B, the pulley *e*, is detached and the pulley *c*, attached to the shaft. When the machine is to be used as an ordinary planer for planing boards for siding and similar purposes without reference to getting the "stuff" out of wind, the bed B, is shoved back out of gear with the pinion D, the rollers Q, R, turned around on the bars A, A, and the lever O, adjusted so as to throw the wheel *g*, in gear with the lower pinion *l*. The board or "stuff" is then passed between the rollers Q, R, which, as they rotate, feed the "stuff" under the cutter head and over the bed B, which is stationary in consequence of being thrown out of gear with the pinion D.

From the above description it will be seen that the same feeding mechanism is used in both cases, that is to say, the same shaft L, drives both the bed B, and the rollers Q, R,

the latter being thrown in and out of gear with the shaft by adjusting the lever O. The mechanism therefore employed in order to alter the working of the machine is very simple, but by this simple arrangement one machine is made to perform the work hitherto required to be done by two and the means therefore of performing the two kinds of work is placed within the reach of almost all mechanics doing business in a small way.

I do not claim separately the feed rollers Q, R, nor the cutter head G, nor do I claim the bed B, for these parts have all been used, but,

I do claim as new and desire to secure by Letters Patent—

1. The combination of the feed rollers Q, R, and bed B, when used in connection with the mechanism composed of the shaft L, provided with the pinions D, *f*, and the lever O, provided with the pinion *g*, and the pinion *l*, on the roller R, arranged substantially as shown, so that by a simple adjustment either the feed rollers Q, R, or the bed B, may be driven as occasion may require.

2. I further claim the manner as shown of attaching the roller frame P, to the machine, to wit, by means of the joint or pivot *k*, so as to facilitate the adjustment of the rollers Q, R, as specified.

SOLOMON S. GRAY.

Witnesses:

JAMES W. ROLLINS,
W. H. L. SMITH.