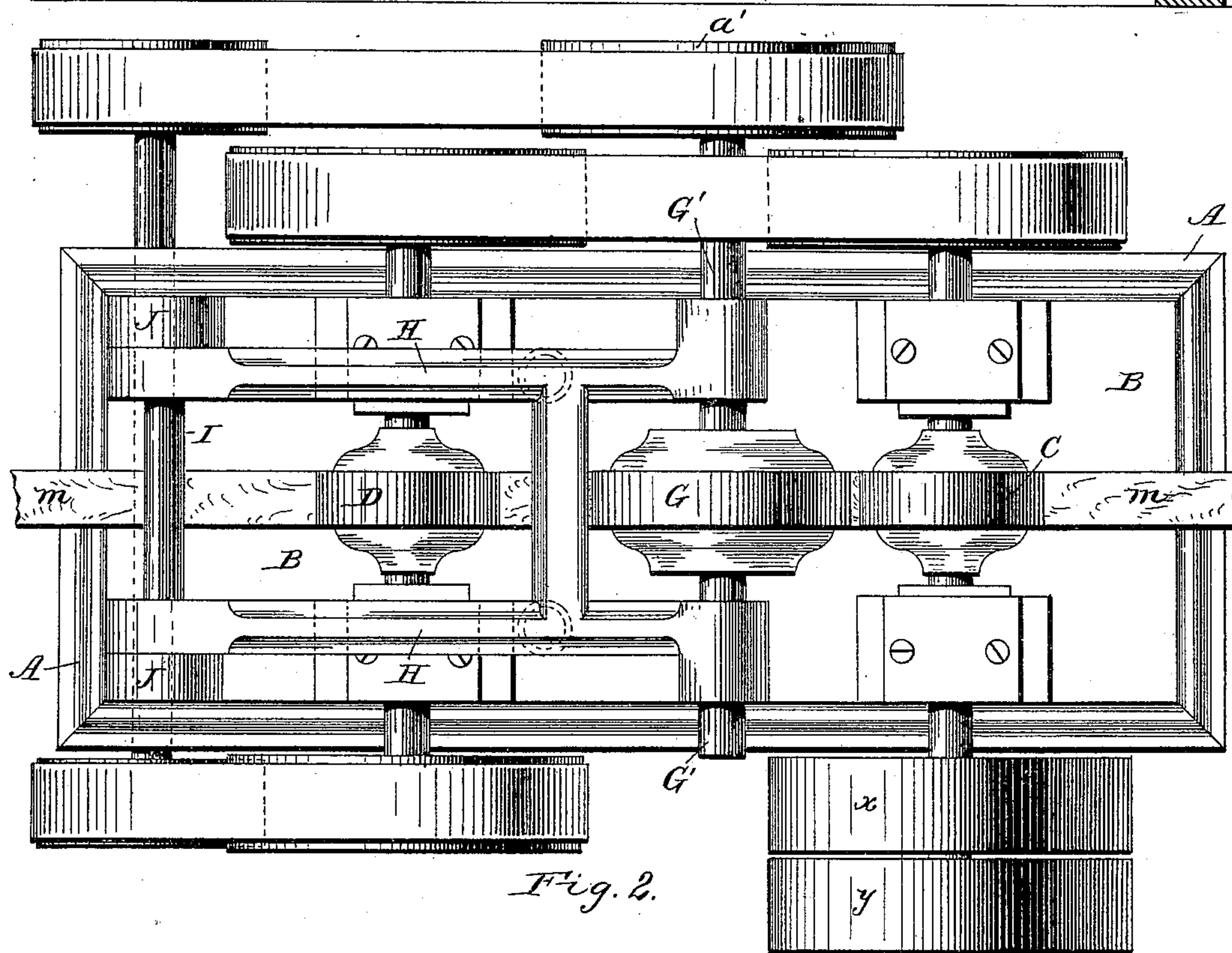
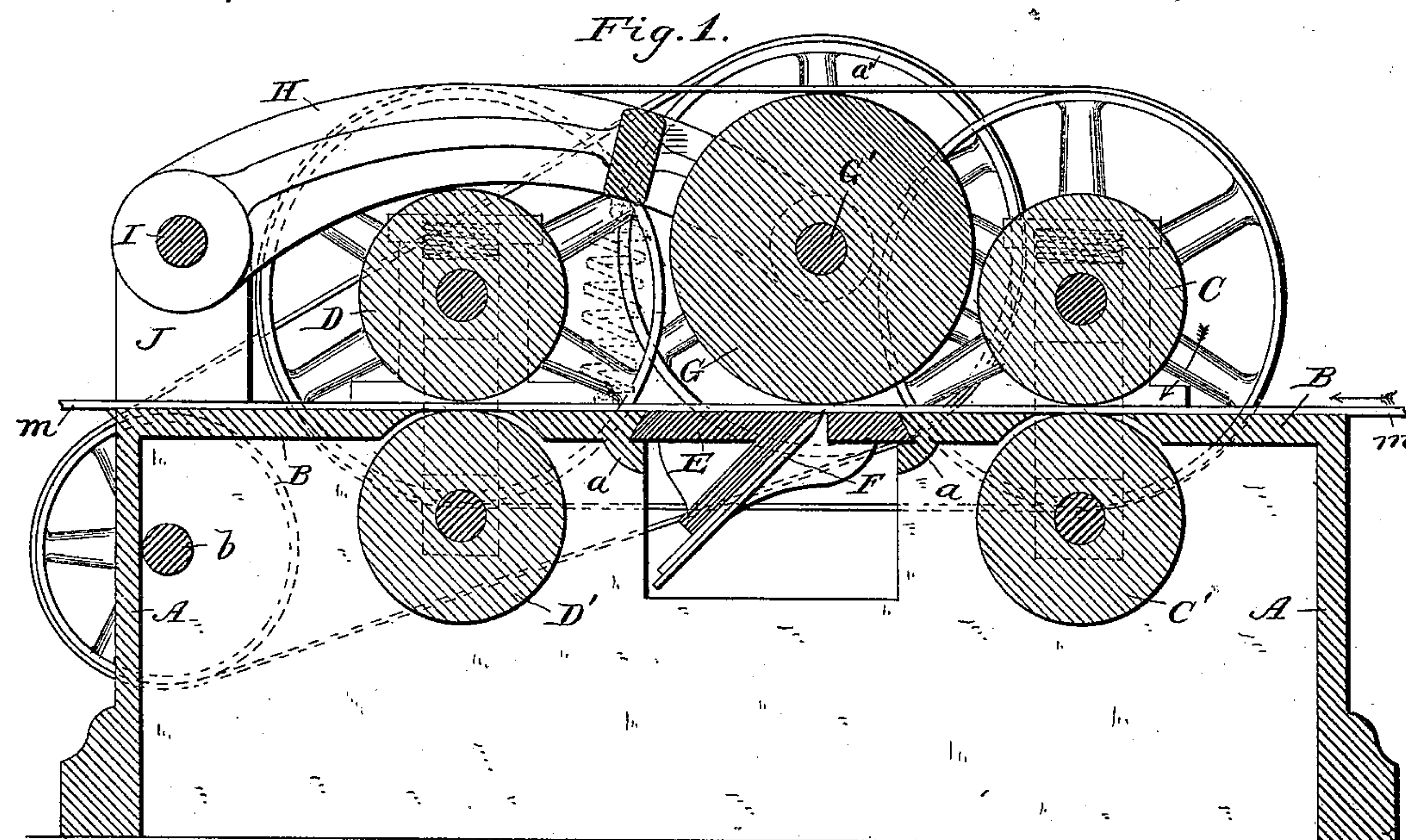


(No Model.)

B. D. STEVENS.
PLANING MACHINE.

No. 405,280.

Patented June 18, 1889.



witnesses:

H. N. Low
Ed. Hill

Inventor:

Benjamin D. Stevens
by Marcellus Bailey
his attorney

UNITED STATES PATENT OFFICE.

BENJAMIN D. STEVENS, OF BURLINGTON, VERMONT, ASSIGNOR OF ONE-HALF TO THEODORE S. PECK, OF SAME PLACE.

PLANING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 405,280, dated June 18, 1889.

Application filed March 25, 1886. Serial No. 196,445. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN D. STEVENS, of Burlington, in the State of Vermont, have invented a certain new and useful Improvement in Planing-Machines for Planing Blind-Slat Stock and other Thin Pieces of Wood, of which the following is a specification.

The object I have in view is to insure the smooth planing of thin strips or pieces of wood notwithstanding irregularities in their surface, to more efficiently feed the material through the machine and reduce the liability of damage to the stock which is incident to the feeding operation, and to provide a convenient arrangement for the removal and replacement of the plane-stock. To this end with the customary front and rear feed-rolls, the bed-plate, and the plane stock and bit I combine a power-driven presser and feed roll, which bears upon the material from the side opposite that which is being planed at about the point where the plane-bit makes its cut, this roll being located above the material, while the plane itself is below or on the under side of the material. The roll bears upon the thin strip of wood with yielding pressure and forces it down upon the platen tightly at the point where the planing operation takes place. It also acts to feed along the material, being power-driven and revolving at the same peripheral speed with the other feed-rolls. The plane-stock itself is mounted in transverse ways in the frame of the machine, so that it can be inserted into place or withdrawn from the side of the machine, and when it is in place its face forms the platen or bed upon which the wood is pressed and held down by the intermediate pressure and feed roll.

In the drawings, Figure 1 is a longitudinal vertical section of so much of a planing-machine as needed for the purpose of illustrating my improvements. Fig. 2 is a plan of the same.

A is the frame of the machine.

B is the platen or bed-plate.

C is the front feed-roll, and C' its fellow roll, which works against roll C through an opening in the bed-plate.

D D' are the rear feed-rolls, arranged similarly to the front pair. Rolls C D are power-

driven and are supported in spring-bearings, whereby they are pressed toward their fellow rolls, which latter revolve by frictional contact merely. On the shaft of roll C are the fast and loose pulleys *x y* for the belt by which power is communicated to the machine. Roll D is driven from C by pulleys and belting, as indicated in Fig. 2. The rolls are to the front and rear, respectively, of the point where the planing takes place, and the direction of feed is indicated by the arrow. The strip of thin wood to be operated on is represented at *m*. Thus far there is nothing novel in the machine.

The plane-stock is seen at E. It is to be inserted in place from the side of the machine in position to cause the plane-bit F to act upon the material *m* from below, the upper face of said stock forming the bed upon which that portion of the wood in the immediate vicinity of the plane-bit rests. To this end transverse ways *a* are formed in the bed-plate at a point intermediate between the two pairs of feed-rolls, and the bed-plate is cut away between these ways. The side edges of the stock E are formed to fit between and slide in these ways, and the stock itself is so constructed that when inserted into place its upper face will project up into the opening in the bed-plate B and will be flush with the face of the latter.

Immediately above the point where the plane-bit is located is placed a third and intermediate presser and feed roll G, for the purpose indicated in the opening portion of this specification. Said roll is power-driven and bears upon the material with yielding pressure, for which purpose it may be supported in spring or elastic bearings, like those of the rolls C D, or may be otherwise arranged in various known ways so as to exert the requisite yielding pressure. I prefer, however, the arrangement shown in the drawings, which is employed with a view to permit the roll to be swung back from over the plane stock and bit whenever desired. The shaft G' of the roll is journaled in two bracket-arms H, hung upon a cross-rod I, which is mounted in stands J at the rear end of the machine. The shaft G' is power-driven and derives its movement

from a pulley *a'* upon it, which is belted to a pulley on a cross-shaft *b*, which in turn is driven from the shaft of roll *D*, as indicated in the drawings. This is one of the many ways in which motion may be imparted to the roll *G*. The bracket arms or frame *H* can be held down by a spring or springs, as indicated by dotted lines in Fig. 1, or by weights. The roll *G* is of course geared or belted so as to move at the same peripheral speed as the other rolls *C D*. By this means I obtain a positive feeding action at the point where the resistance to the forward movement of material takes place during the planing operation, and at the same time I am enabled to press the material down flat upon the bed with all the power desired at the point where the planing takes place, thus insuring smooth planing notwithstanding accidental irregularities in the surface of the material.

Having described my improvements and the best way now known to me of carrying the same into effect, what I claim herein as new and of my own invention is as follows:

1. The combination of the bed-plate, the plane-stock mounted therein, the front and rear feed-rolls, and the intermediate power-

driven presser and feed roll arranged to bear from above with yielding pressure upon the material at about the point where the plane-bit makes its cut, substantially as and for the purposes hereinbefore set forth.

2. The combination of the bed-plate, the plane-stock mounted in an opening therein so that its upper face shall be flush with that of the bed-plate, and the power-driven yielding presser and feed roll *G*, arranged to bear from above upon the face of the plane-stock, as and for the purposes hereinbefore set forth.

3. The bed-plate formed with an opening and with transverse ways for reception of the plane-stock and the removable plane-stock mounted therein, in combination with the front and rear feed-rolls and the intermediate power-driven yielding presser and feed roll *G*, these parts being constructed and arranged together for joint operation, substantially as hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 22d day of March, 1886.

BENJN. D. STEVENS.

Witnesses:

EWELL A. DICK,
MARVIN A. CUSTIS.