No. 688,871. Patented Dec. 17, 1901.

E. C. MERSHON.

FEEDING AND GUIDING MECHANISM FOR MACHINE TABLES.

(Application filed Apr. 2, 1901.)

(No Model.)

FIG. 1.

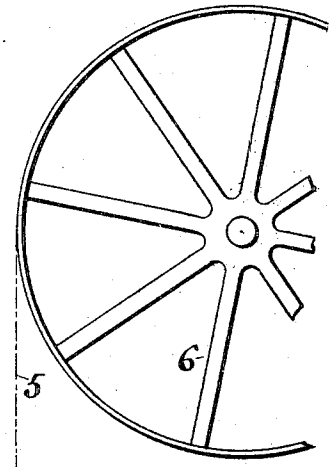


FIG. 2.

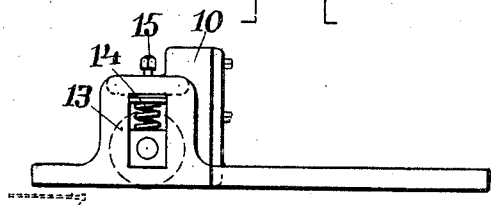


FIG. 3.

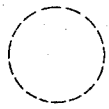
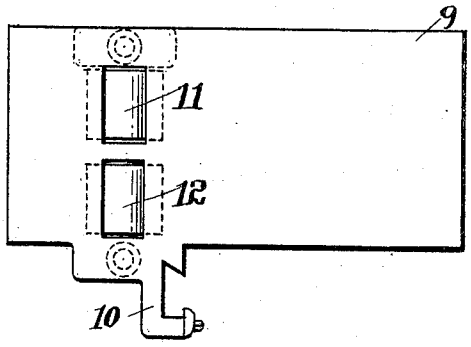
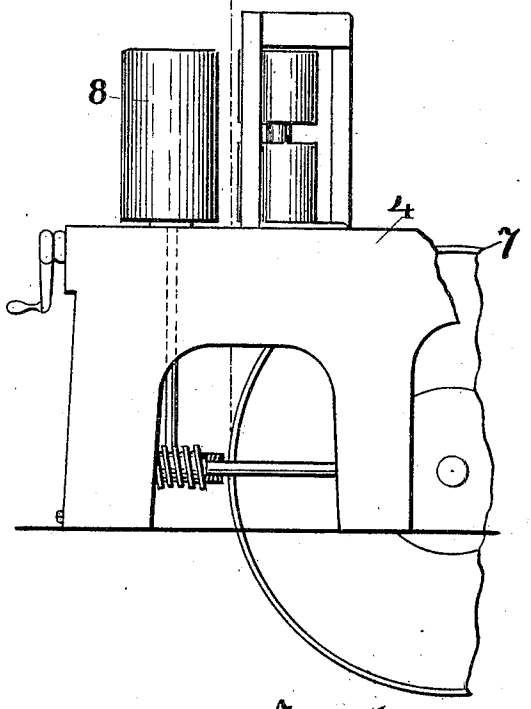


FIG. 4.





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FEEDING AND GUIDING MECHANISM FOR MACHINE-TABLES.

SPECIFICATION forming part of Letters Patent No. 688,871, dated December 17, 1901.

Application filed April 2, 1901. Serial No. 54,015. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. MERSHON, a citizen of the United States, and a resident of Saginaw, East Side, in the county of Saginaw and State of Michigan, have invented a certain new and useful Improvement in Feeding and Guiding Mechanism for Machine-Tables, of which the following is a specification.

This invention relates to an improvement in feeding and guiding mechanism for machine-tables, and particularly for tables of woodworking-machines.

One object of the invention is the production of a more perfectly finished product from the material operated upon, and another is to provide for a more positive feed of the stock through the machines.

With these objects in view the invention consists in the construction and combination hereinafter fully described and claimed.

While the invention is especially applicable to woodworking-machines, such as planers, wherein it would be incorporated in the bed or platen, and to sawing-machines, wherein it would be incorporated in the fence or guide, the advantages of its application to band resaws are perhaps of greatest moment, and it will therefore be described with particular reference thereto.

In the accompanying drawings, which form a part of this specification, Figure 1 illustrates in elevation a band sawing-machine embodying the invention. Fig. 2 represents in plan, and Fig. 3 in elevation, the particular part of the machine to which the invention is in this instance applied—namely, to the fence or guide.

In band resawing-machines the material worked is usually supported and guided through the machine either by rigidly-mounted rolls exclusively or by these in combination with a fence or guide, and while this construction is satisfactory for certain classes of work—namely, where a stick or plank is only passed once or twice through the machine—when it is necessary to operate upon the same stick several times imperfections arising in sawing are accentuated with each succeeding cut, thus giving a more imperfect surface to bear against the rigid rolls until considerable waste is incurred or it becomes impossible to saw in a reasonably straight line and secure any more useful pieces. The present invention overcomes these objections, and when used with a resaw, as illustrated, the last piece sawed from a stick or plank will be as straight and true as the first one.

In the drawings the table of the band sawing-machine is represented at 4 and the band-saw at 5 in dotted lines, the pulleys over which said saw passes at 6 and 7, the feed-roll at 8, and opposite said feed-roll the fence or guide. The fence or guide consists, preferably, of a casting 9, having the working face thereof planed to a smooth even surface. This casting is provided with suitable means for mounting it on the saw-table with said planed surface parallel to the plane of the saw-blade. It is also mounted in any of the well-known ways by which it may be horizontally adjusted to and from the saw-blade. For this purpose it may be provided with a projection, such as indicated at 10, in which a dovetailed groove is formed for engagement with a correspondingly-shaped rib formed in the bed of the table. The projection in which this dovetailed groove is made is of a substantial nature and projects sufficiently beyond the upright portion of the fence to give a stable bearing therefor, as is clearly seen in Fig. 2.

In the working surface of the fence or guide approximately opposite to the feed-roll 8 one or more openings are made, through which may project to a certain extent, say one sixteenth of an inch, more or less, a suitable roll or rolls. These rolls are preferably spring-mounted at the back of the fence, as by means of sliding journaled boxes at 13, mounted in guides cast or formed integrally with or mounted upon the rear of the fence. The springs for pressing the rolls through the openings in the fence are indicated at 14, and to these springs the desired tension may be given by means of screws, as 15.

While two rolls are shown in the fence, it is obvious that one or more than two may be used. It is preferable, however, that the guiding or working surface of the fence be continuous from end to end at one or more points, as in the present instance above the roll 11 and between the rolls 11 and 12, in order that projections upon the stick or plank being resawed may not enter unduly the open-

ings in the fence. The benefits derived from a fence thus constructed—to wit, the more perfect sawing of the material and the more positive feed thereof—result from the fact that the extended and continuous surface of the fence and the flexibly-mounted feed-rolls in connection therewith permit the material being fed to follow a straight line coinciding with the planed face of the fence and positively prevent all lateral movement or movement adverse to said straight line, which would occur in the old form of machine, because of a knot or other projection passing over rigidly-mounted rolls commonly used therein. This advantage is especially apparent when our device is used in connection with a band resaw, as illustrated, since the smallest lateral movement of material in feeding past the saw causes a much greater lateral movement of the saw-blade. The improvement in feed is due to the fact that the rolls 11 and 12 take a portion of the friction from the surface of the guide, the amount of friction which they take being regulated by the tension put upon the springs 14. In practice the pressure of the rolls 11 and 12 against the work is made to be one-half that of the feeding-roll 8, and this pressure is preferably shared equally between the rolls 11 and 12 and the surface of the fence, though more or less of it may be taken by the rolls in accordance with the tension applied to the springs 14. At no time, however, should the tension on these springs be such as to force the work from engagement with the surface of the fence.

No description has been given of the operation of the saw or the feed-roll 8, since no invention is claimed on said parts of the machine. They may be of any well-known construction and operation.

The advantage of this invention when used in a planing-machine in connection with rotary cutters will be practically the same as with a resaw, as it is the custom invariably to provide a platen or bed opposite the cutter-head, and in order that good work may be realized it is essential that the stock being operated upon bears at all times firmly against this platen. In thus using the invention the pressure applied by the upper feeding-rolls and the weight of the timber will at all times be sufficient to give a firm bearing against the platen, whereas the upward pressure given to the flexibly-mounted bed-rolls will be sufficient to remove a certain portion of the friction on said platen, thereby securing a positive feed.

Other modifications aside from those already referred to and other applications of the improvement herein described may be made without departing from the invention.

I claim as my invention—

1. In a band resawing-machine, the combination with the feed-roll of a fence having a plain guiding-surface extending beyond it both to the front and the rear, and one or more spring-pressed rolls mounted in openings in said surface, substantially as set forth.

2. In a band resawing-machine, the combination with the feed-roll of a fence having a guiding-surface continuous from end to end except for one or more openings opposite said feed-roll, and rolls located in said openings and spring-pressed through and beyond the plane of said surface substantially as and for the purpose set forth.

Signed at Saginaw, in the county of Saginaw and State of Michigan, this 20th day of March, A. D. 1901.

EDWARD C. MERSHON.

Witnesses:

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