

2 Sheets—Sheet 1.

No. 470,724.

Patented Mar. 15, 1892.

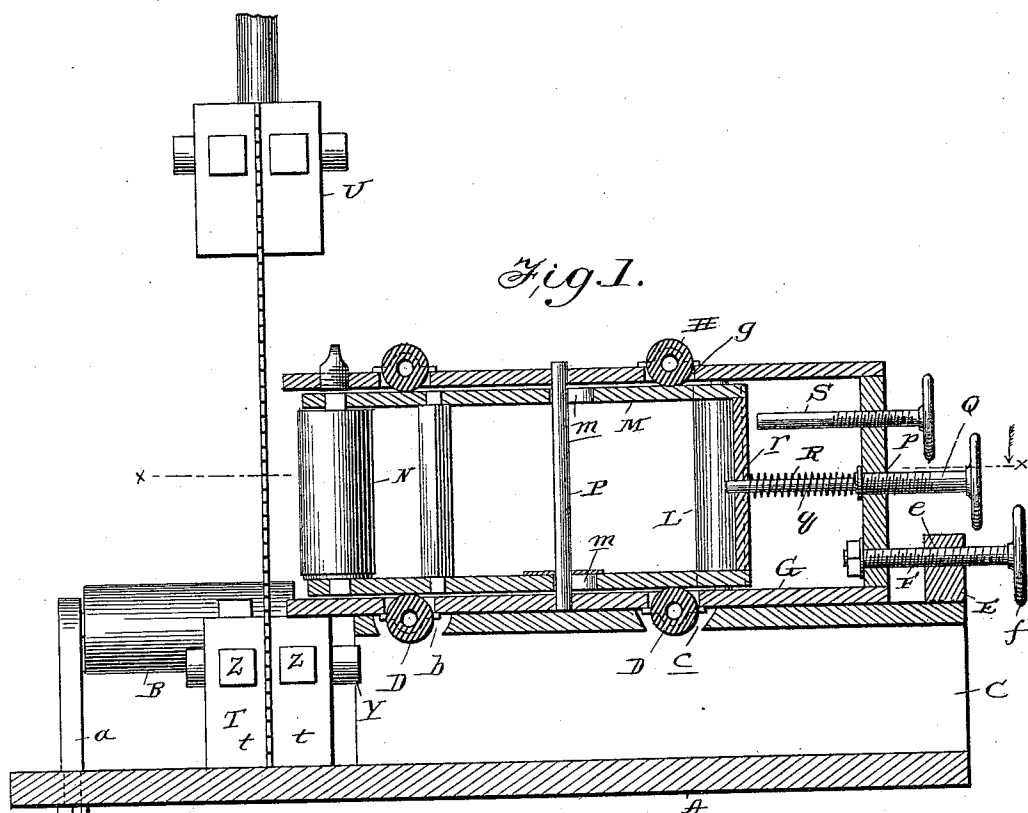
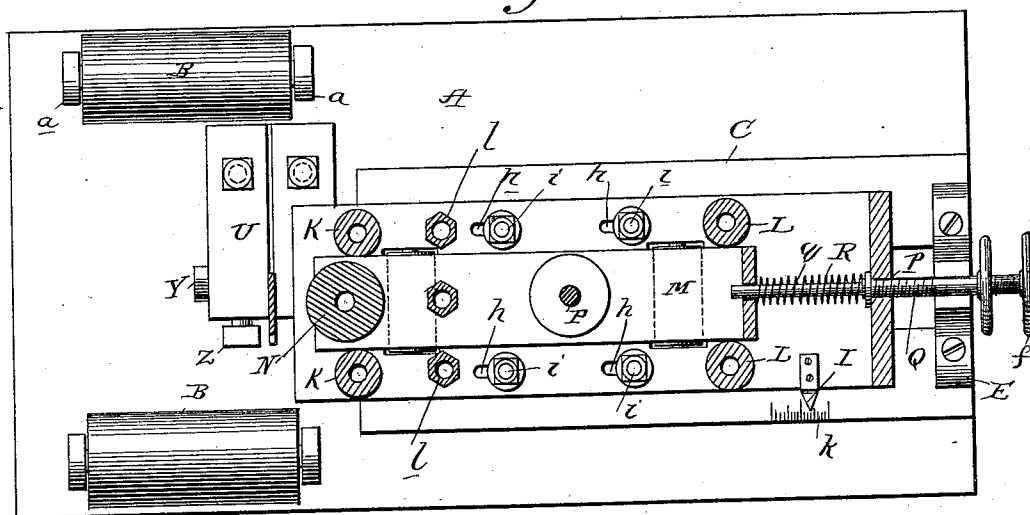


Fig. 2.



Witnesses:

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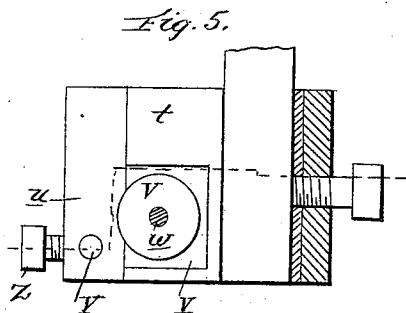
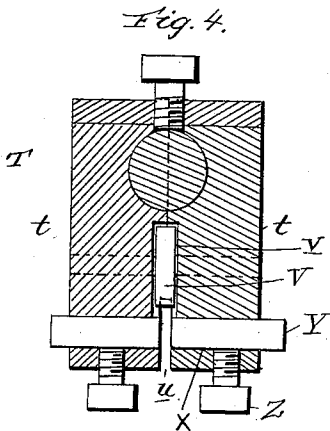
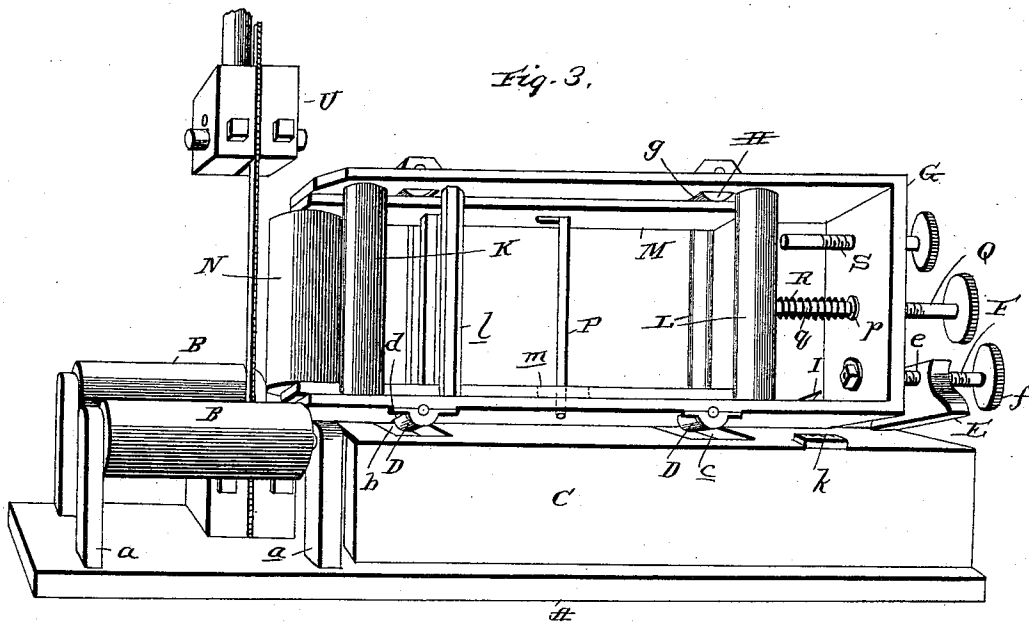
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2 Sheets—Sheet 2.

No. 470,724.

Patented Mar. 15, 1892.



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UNITED STATES PATENT OFFICE.

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ROLLER-GUIDE FOR HOOP-POLE-BAND SAWS.

SPECIFICATION forming part of Letters Patent No. 470,724, dated March 15, 1892.

Application filed May 16, 1891. Serial No. 393,056. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. VEACH, a citizen of the United States, residing at Vienna, in the county of Johnson and State of Illinois, have invented certain new and useful Improvements in Roller-Guides for Hoop-Pole-Band Saws; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a roller-guide or hoop-pole-band-sawing machine; and among other things it has for its object to provide a roller-guide for such machines which will yield under certain conditions to the action of the hoop-pole or band and saw, to provide means for gaging the thickness or width of a hoop-band, to provide means for setting and adjusting the frame for the width or thickness of band to be cut or sawed, to provide means for easing the movement and operation of the various parts and limiting the backward movement of the guide-frame, and to set the frame adjustably for the thickness of band to be cut.

Other objects and advantages will appear from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view of my improved machine, illustrating the saw in position. Fig. 2 is a horizontal longitudinal sectional view of the same, taken in the plane indicated by the dotted line *x x* of Fig. 1. Fig. 3 is a perspective view of the machine. Fig. 4 is a horizontal sectional view of the upper saw-guide; and Fig. 5 is an interior view of one of the sections of said guide, with parts in section, the dotted lines illustrating the course or plane in which said groove is taken.

Referring by letter to said drawings, A indicates a horizontal frame or table. This table is provided at one end with four standards *a*, which are arranged at opposite sides of said tables in pairs and are suitably bolted or otherwise secured thereto. In the upper ends of the standards are journaled horizontal rollers B, which assume a position parallel in the longitudinal plane of the table and are designed to support the poles during opera-

tion. Suitably fixed upon the top of the table and occupying the greater portion thereof is a horizontal frame C. This frame is provided in its top wall, near its forward end, with a transverse slot *b*, in which is journaled a horizontal friction-roller D, and said frame is provided at a suitable point from its opposite end with a similar slot *c*, in which is also journaled transversely a horizontal friction-roller D, said rollers being designed to work in said slots, so that they may furnish a bearing for the guide-frame, as will be presently described, and the base of the gage-frame is also slotted, as shown at *d*, for the passage of said rollers to contact with the base of the roller-guide frame. This frame C is provided at its rear end, on its upper side, with a block or standard E, which has a screw-tapped aperture *e* to receive a threaded rod F, carrying a hand-wheel *f* at one end, and is connected at its opposite end with the gage-frame, so as to move the same, as will be presently described.

G indicates the gage-frame. This frame, which, as before described, has its horizontal base slotted for the play therein of friction-rollers, has its top also slotted in a similar manner, as shown at *g*, and has journaled in said slots transverse friction-rollers H, which are designed to project through said slots slightly below the inner surface of the top wall and engage the roller-frame. This frame G is provided in its base, near opposite sides, with elongated slots *h*, which receive bolts *i*, fixed in the roof of the frame C, so as to guide said frame in its backward and forward adjustments, and nuts or other suitable devices may be employed on said bolts for holding the frame properly in place. The frame G is also provided with a pointer I, and the top of the frame C is provided with graduations *k*, over which the pointer is designed to move, whereby said frame G may be set upon the frame C for a band of any desired thickness to be sawed. This frame G, which has its top secured to the base by means of bolts or rods *l*, is also provided at its forward end, on opposite sides, with two vertically-disposed rollers K and at a suitable point near its opposite end and at its sides with two similar rollers L, which are designed to co-operate with the horizontal base-rollers D and the

horizontal top rollers H in truly guiding the roller-frame in its backward and forward movements.

M indicates the roller-guide frame. This frame, which is arranged within the frame G and embraced by the friction-rollers thereof, carries at its forward end a vertically-disposed roller N, of large diameter, and is designed to project beyond the forward end of said frame and also the roller-guide frame. This roller-guide frame has its top and bottom walls provided at opposite points with elongated slots *m* to receive the vertical rod or bar P, which has its opposite ends fixed in the top and bottom walls of the frame G, as shown, and is designed to limit the forward and backward movements of said frame M.

Q indicates a horizontal screw-shaft. This shaft, which is provided with a hand-wheel, takes into a threaded hole *p* in the rear vertical wall of the frame G, and the forward end of said shaft, which is reduced as shown at *q*, is surrounded by a spiral spring R, and its free end passes through a hole *r* in the roller-guide frame M, so that said spring will be interposed between the rear vertical wall of the gage-frame and the corresponding wall of the roller-guide frame, thereby holding said roller-guide frame in a yielding-advanced position, the frame being limited in such position by means of a stop-rod P.

Bearing in the rear wall of the gage-frame and above the threaded rod or shaft Q is a threaded rod or shaft S, having at its outer end a hand-wheel for manipulating the same, and its opposite end is designed to be brought in contact with the rear wall of the roller-guide frame M to stop the same in its backward movement. By this means it will be seen that the roller-guide frame may be advanced to any desired position within the gage-frame and yieldingly sustained at such point by the employment of the shaft or rod Q and its surrounding spring, while by the employment of the shaft or rod S said roller-guide frame may be absolutely prevented from coming back during operation beyond a certain set or predetermined point. By the employment of the shaft or rod S, which is fixed at its forward end to the rear wall of the gage-frame, it will be seen that said frame may be adjustably fixed and held in such position for the thickness of band to be cut.

T indicates the lower saw-guide, there being an upper one U arranged at a suitable point and held in place by an arm which extends from the frame of the band-saw machine, the lower guide being secured to the table in advance of the slide-frame or gage-frame. These guides are composed of two sections *t*, secured together by screws or other fastening devices, and are provided on their opposing faces, at one end, with a recess, which when brought together form a groove *u* for the passage of the saw. These sections are also provided with grooves *v* to seat a friction-roller, which is designed to engage

the back of the saw, as indicated at V, and supported on a shaft or rod, (indicated at *w*.) The sections are furthermore provided with holes *x* to receive wooden guide-pins Y, which are designed to assume a position on opposite sides of the saw-bed and correct any lateral deviation of the same, and these pins may be adjustably secured in position by means of thumb-screws or bolts Z.

In operation the gage-frame is first set by manipulating the hand-wheel *f* of the shaft or rod F for the thickness of band to be cut. The roller-guide or slide frame M is then adjusted by manipulating the shaft Q, and said slide-frame is prevented from coming back beyond a certain point by the manipulation of the shaft or rod S, and the pole, being placed upon the rollers B, may be fed to the saw and bear laterally against the roller N, so that while the band is held truly against the saw, yet it may yield to the action of any foreign substance in the pole without injury to the pole and bands of various thicknesses may be cut.

While I have described specifically the parts of the construction as shown and also the exact arrangement of the same, yet I am aware that any modifications may be made in the construction and arrangement of the parts without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. In a machine for the purpose described, the combination, with a table or support, of a slotted frame arranged thereon, and the horizontal longitudinal guide-rollers at one end of said frame, a gage-frame adapted to move longitudinally and having vertical and horizontal guide-rollers, and a slide yieldingly adjustable longitudinally and embraced by the rollers of the gage-frame and carrying a vertically-disposed guide-roller at its forward end, substantially as specified.

2. The combination, with the table provided with the frame, having its top slotted and also bearing vertical studs or bolts, of the gage-frame carrying rollers in its side walls and having its base slotted to receive said rollers, and a roller-guide or slide frame arranged within the rollers of the gage-frame and carrying at its forward end a vertically-disposed guide-roller, and threaded shafts or rods for adjustably securing the gage-frame upon the main frame and adjustably securing the roller-guide frame or slide within the gage-frame, substantially as specified.

3. The combination, with the frame or table, of the main frame arranged thereon and having the screw-tapped standard at one end, the longitudinally-movable gage-frame, the threaded shaft or rod bearing in said standard and secured at one end to the gage-frame, the threaded rod or shaft bearing in the gage-frame and also passing through a hole in the roller-guide or slide frame, a spring surrounding said shaft or rod between the gage-frame

and slide, and the threaded rod or shaft also bearing in the gage-frame and adapted to limit the rearward movement of the slide, substantially as specified.

5 4. A guide for hoop-pole-band saws, having a slide carrying a guide-roller at one end, said slide being embraced by roller-bearings, in combination with a rod or shaft for adjustably fixing said slide in an advanced position
10 and a spring backing the slide for sustaining it yieldingly, substantially as specified.

5 5. In a machine for the purpose described, the combination, with the table or support, of a gage-frame movable thereon, a slide carrying a roller at one end and arranged within
15 the gage-frame, a shaft for adjustably fixing the gage-frame on the table, a threaded shaft bearing in the gage-frame, a spring surrounding said shaft and bearing at its forward end
20 against the slide, and a second threaded rod or shaft also bearing in the gage-frame and adapted to contact at one end with the slide,

so as to limit the backward movement thereof, substantially as specified.

6. In a machine for the purpose described, 25 the combination, with the main frame or table, of the rollers D, journaled transversely in the base of the gage-frame and entering slots in the top of the table, the rollers journaled in the top of said gage-frame, the rollers L, arranged vertically in the opposite sides
30 of said frame, the slide arranged within the gage-frame so as to bear outwardly on the rollers, and the vertical rod P, passing through the top and bottom slotted walls of the slide
35 and bearing in the top and bottom walls of the gage-frame, whereby said slide may be guided and limited in its forward and backward movements, substantially as specified.

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