(No Model.)

2 Sheets—Sheet 1.

W. S. RICHARDS.

ROUTING MACHINE.

No. 606,155. Patented June 21, 1898.

Fig. 1.

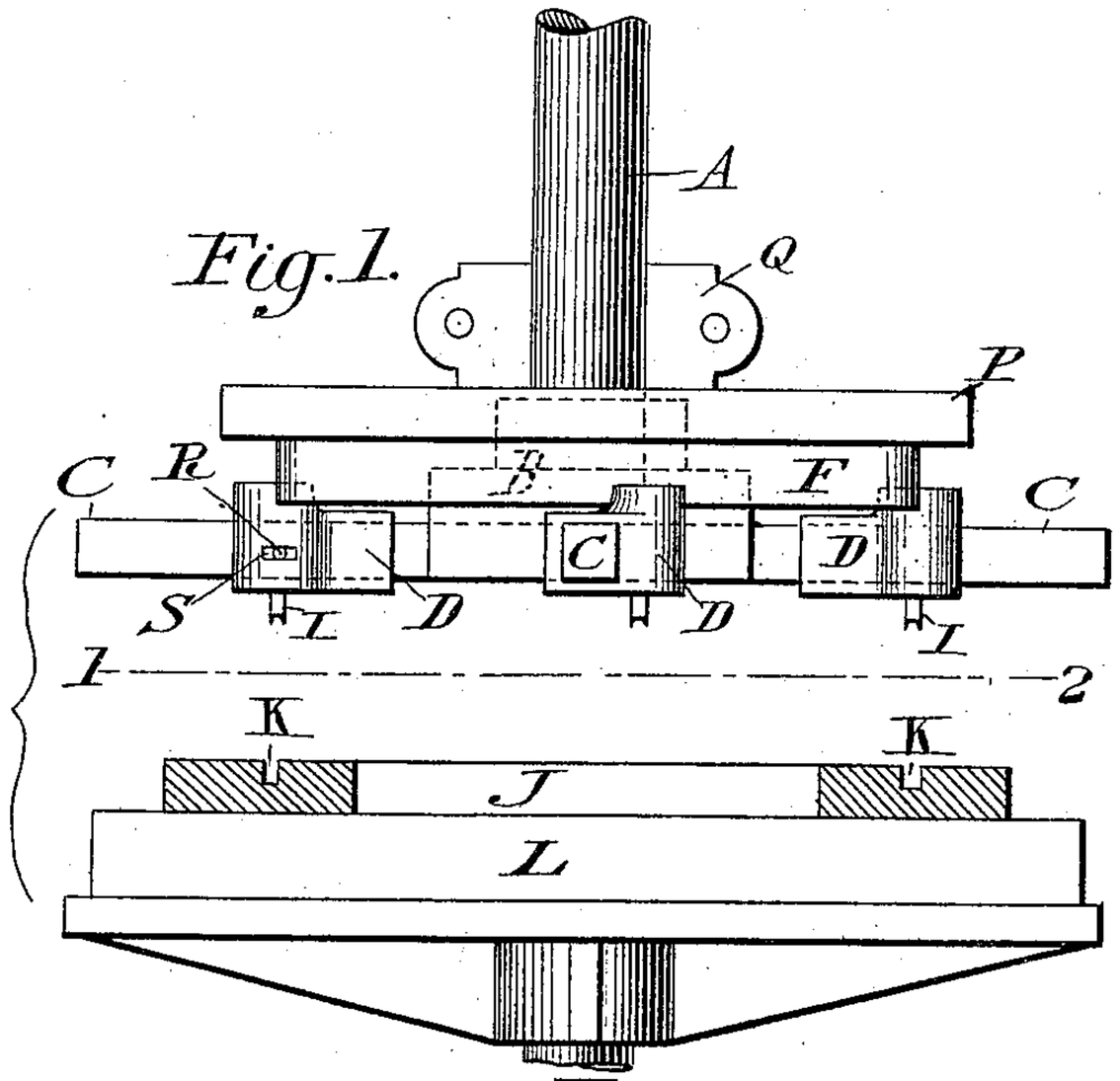
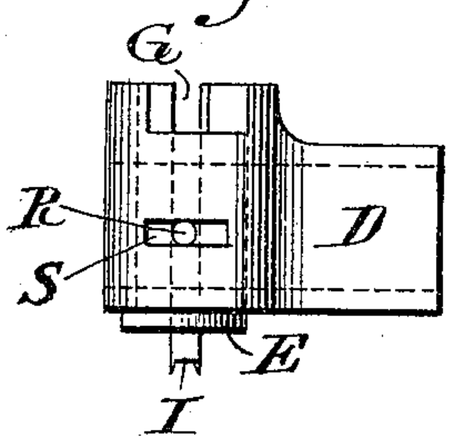


Fig. 3.



G Fig. 5.

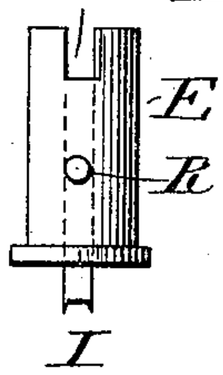
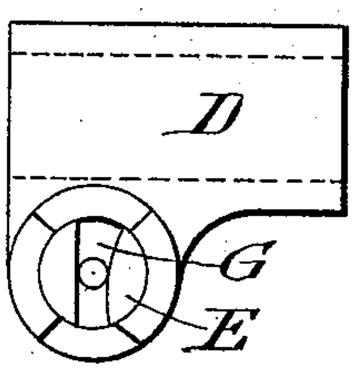


Fig. 2.

Fig. 4.



Witnesses:
P. C. Vieal.
Pres. B. Marshall.

Inventor:
Wm. S. Richards

(No Model.) 2 Sheets—Sheet 2.

W. S. RICHARDS.

ROUTING MACHINE.

No. 606,155. Patented June 21, 1898.

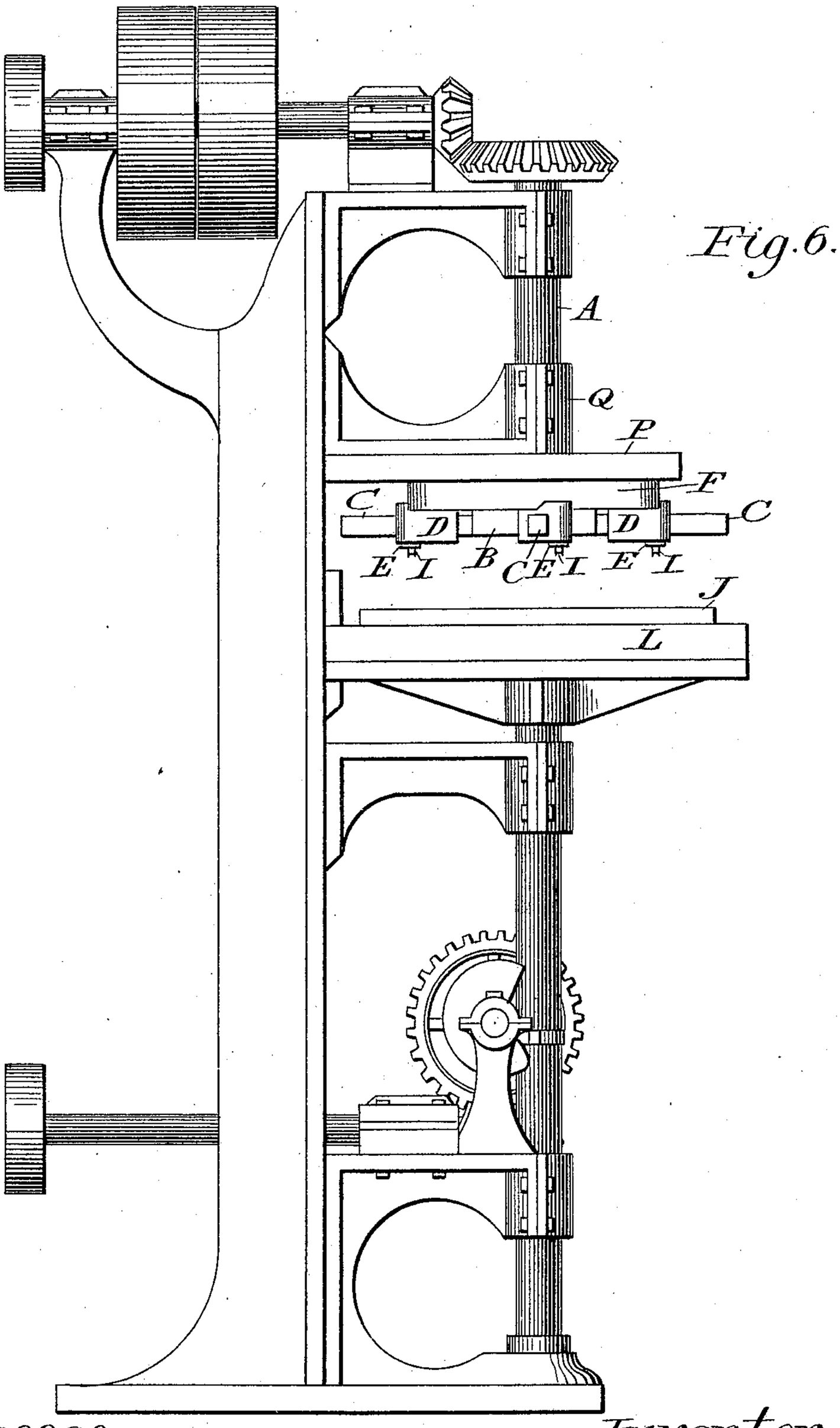


Fig. 6.

Witnesses:
F. C. Veal.
Chas. B. Marshall.

Inventor:
Wm. S. Richards

UNITED STATES PATENT OFFICE.

WILLIAM S. RICHARDS, OF ALBANY, OREGON, ASSIGNOR TO ANGIE RICHARDS, OF SAME PLACE.

ROUTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 606,155, dated June 21, 1898.

Application filed January 4, 1897. Serial No. 617,945. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. RICHARDS, a citizen of the United States, residing at Albany, county of Linn, State of Oregon, have invented a new and useful Routing-Machine, of which the following is a specification.

My invention relates to improvements in routing-machines; and it consists of a rotating head having radial supports, cutter-heads sliding on such supports and having tool-holders rotatably mounted in said cutter-heads, cutting-tools secured in said tool-holders of a continuous-pattern form engaging directly surfaces on the tool-holder and governing the angular relation of said tool-holder to the cutter-heads as well as the position of the cutter-head on the radial supports, so that the face of the cutting-tool is always normal to the direction of travel of the tool.

The object of this improvement is to facilitate the routing of chair-seats and other work of this class and to improve the quality and increase the quantity of the work by using cutters that work as a plane instead of the boring process in other machines for this purpose.

The accompanying drawings will illustrate the mechanism by which these results are obtained.

Figure 1 represents a vertical elevation of that portion of the machine by which the object is attained, the work being shown in section and which consists of the rotating head, cutter-heads, form, cutters, and bed on which the work is held to be operated. Fig. 2 is an inverted plan of the rotating head and shows the plate on which the form is fastened, rotating head, and four cutter-heads in their course around the form; also, tool-holders and tools. Fig. 3 shows a vertical view of cutter-head with tool-holder and tool inserted. Fig. 4 shows a plan view of cutter-head with tool-holder and tool inserted. Fig. 5 shows a vertical view of tool-holder with tool inserted. Fig. 6 represents a side elevation of the entire machine.

Similar letters refer to similar parts in each and all views.

A represents the vertical shaft, which carries the head; B, the flange, into which the arms C are notched and bolted, thus forming the rotating head.

D represents the cutter-heads, which carry the tool-holders E and are guided in their course by the form F, secured to plate P, when being driven by the rotating head. The vertical flange-plate form F is inserted into a slot G in the top end of tool-holder E, which extends through cutter-head D, and thus the tool-holder E acts as a guiding-pin and by means of the slot in top and by being loose in cutter-head as it travels around the form and passes around the corners and to and from them is made to turn and keep the tool I, which is inserted in lower end, square with the cut or groove, making it of a uniform width. When the bed L is raised, which may be done by any ordinary device, (I use a cam,) and the rotating head is made to revolve, the tool I is made to cut the groove K in seat J of same shape as form F.

R represents a set-screw which holds tool I in tool-holder, the slot S allowing it to turn in cutter-head as it passes around the form.

Q is one of the boxes on vertical shaft, which may be driven by any ordinary device.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination with a rotary head having radial supports, cutter-heads sliding on such supports and having tool-holders rotatably mounted in said cutter-heads and routing-chisels secured in said tool-holders, of a continuous-pattern form engaging directly surfaces on tool-holders and governing the angular relation of said tool-holders to the cutter-heads as well as the position of the cutter-heads on the radial supports so that the face of the routing-chisel is always normal to the direction of travel of the chisel.

WILLIAM S. RICHARDS.

Witnesses:
FRED VEAL,
W. D. MORRIS.