

(No Model.)

2 Sheets—Sheet 1.

L. A. CHICHESTER.
MACHINE FOR MOLDING CHAIR BACKS.

No. 441,935.

Patented Dec. 2, 1890.

Fig. 1.

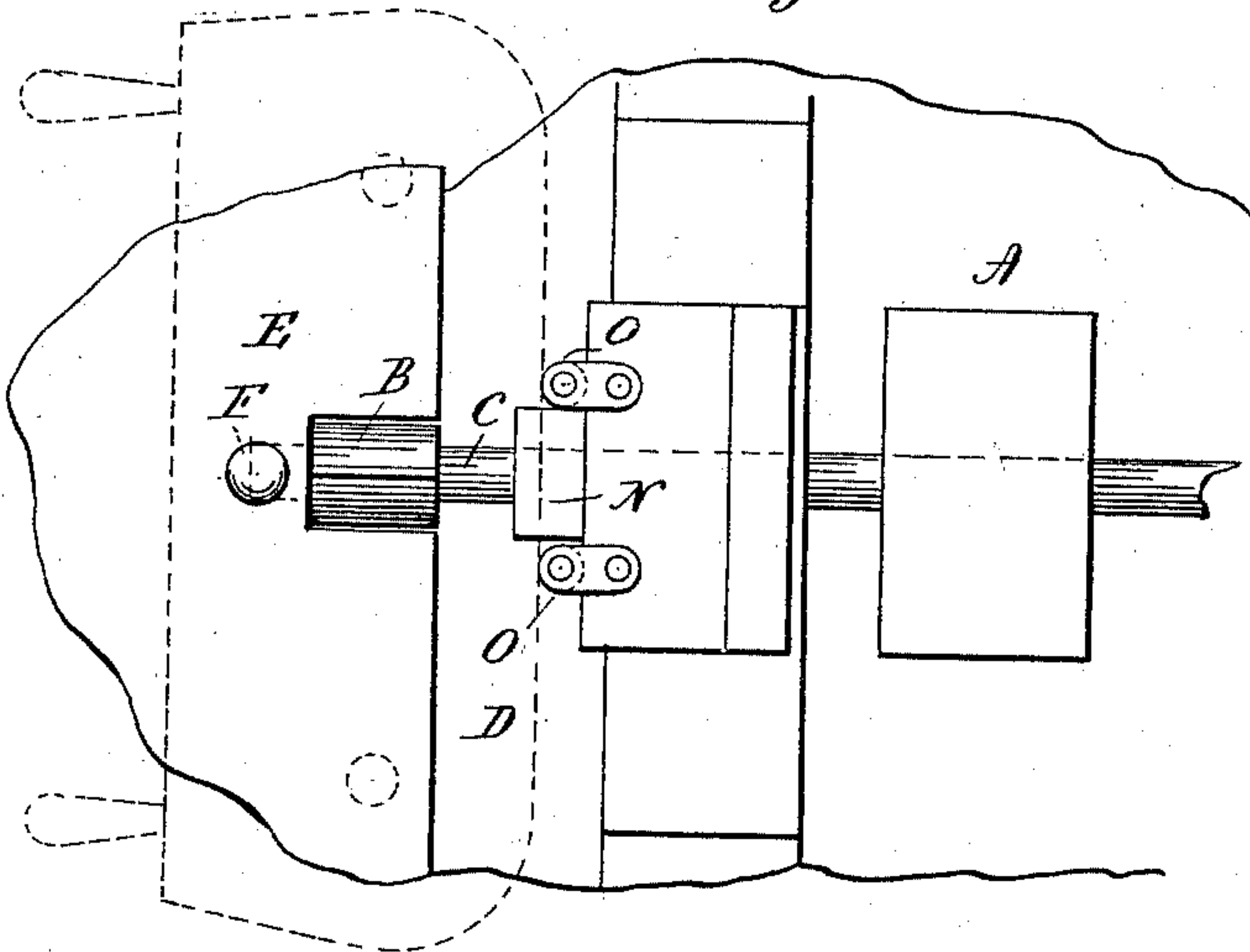
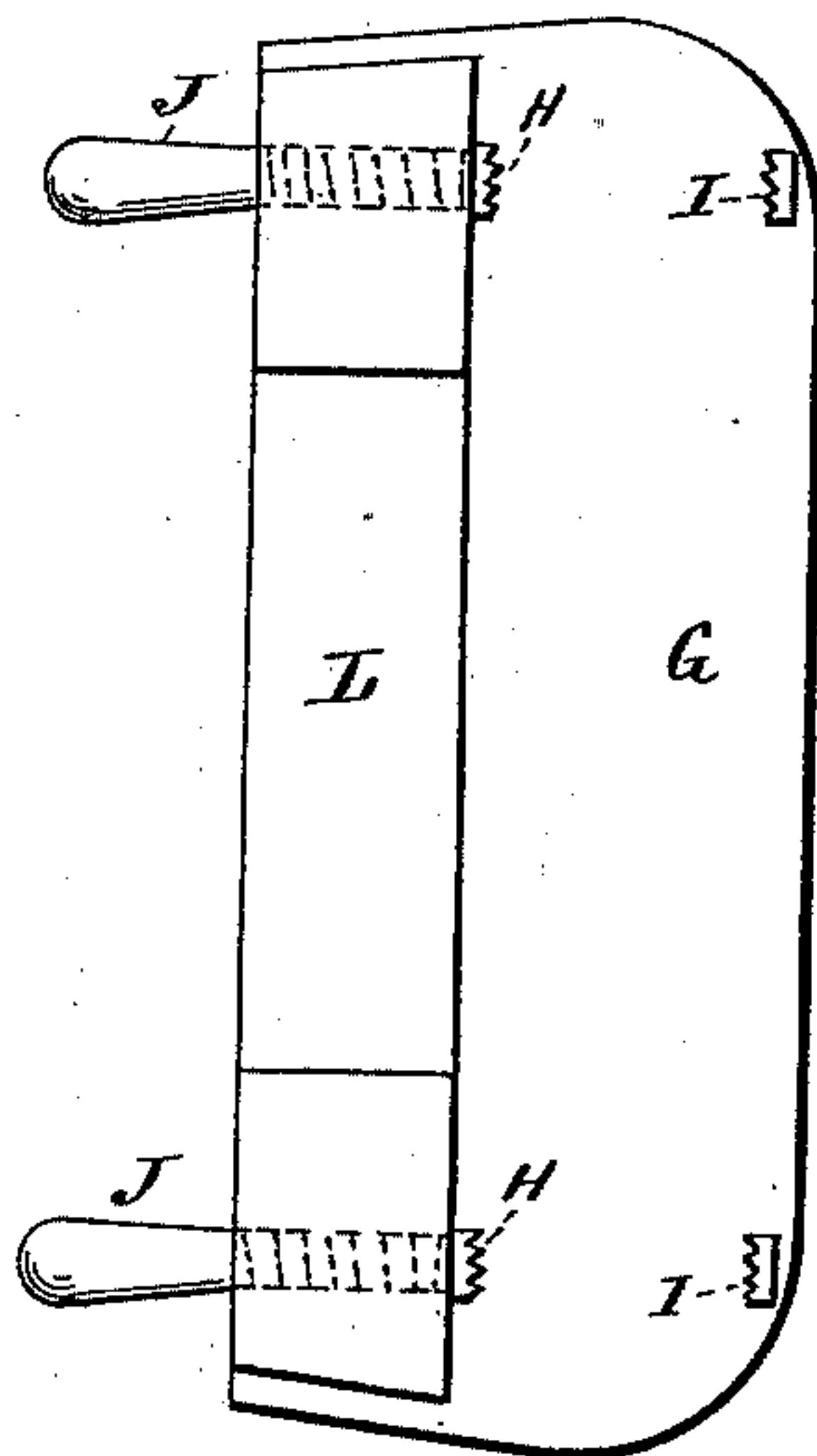


Fig. 2.



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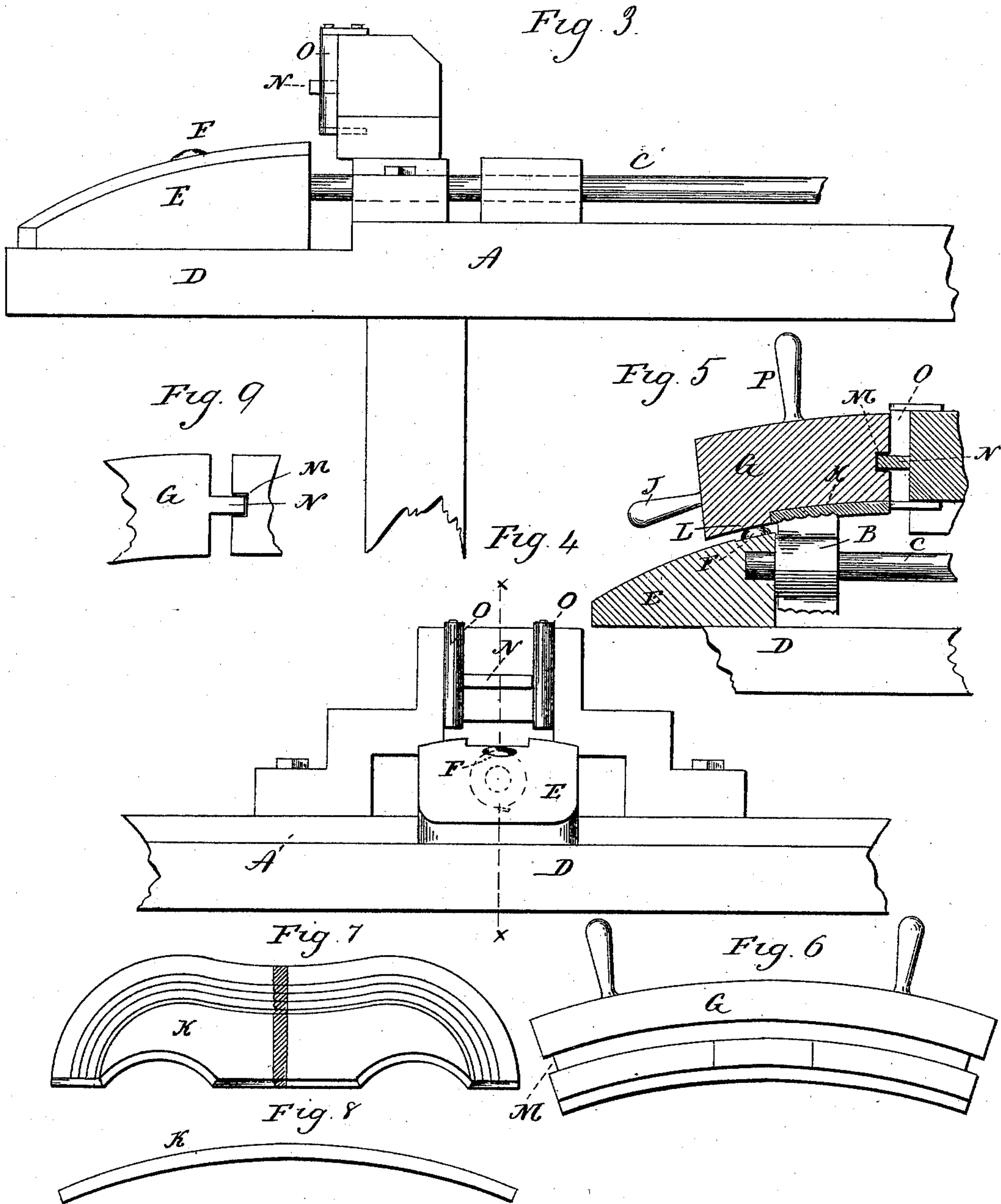
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UNITED STATES PATENT OFFICE.

LEMUEL A. CHICHESTER, OF PHOENICIA, NEW YORK, ASSIGNOR TO THE
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MACHINE FOR MOLDING CHAIR-BACKS.

SPECIFICATION forming part of Letters Patent No. 441,935, dated December 2, 1890.

Application filed July 10, 1890. Serial No. 358,286. (No model.)

To all whom it may concern:

Be it known that I, LEMUEL A. CHICHESTER, of Phoenicia, in the county of Ulster and State of New York, have invented a new Improvement in Machines for Molding Chair-Backs; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view of so much of the machine as necessary to illustrate the invention, and showing in broken lines the presentation of the former and blank to the cutter; Fig. 2, an underside view of the former; Fig. 3, a side view of the portion of the machine represented in Fig. 1; Fig. 4, a front view of the same portion of the machine; Fig. 5, a longitudinal central section cutting on line *xx* of Fig. 4; Fig. 6, a rear edge view of the former; Fig. 7, a face view of a chair-back finished, also showing a vertical section of the same; Fig. 8, a top edge view of the back; Fig. 9, a modification in the former.

This invention relates to an improvement in machines for molding chair-backs—that is to say, the top or cross piece which connects the top of the two rear posts of the back of the chair—especially adapted to folding chairs, but applicable to molding the backs of other chairs. These backs are of irregular outline, and for the ornamentation of the back moldings are wrought upon the face, the line of the molding generally corresponding to the outline of the back. The backs are reduced in thickness from the ends toward the center, and they are also curved to correspond to the shape of the back. In Fig. 7 a back of this character is shown in face view and in Fig. 8 in top edge view, Fig. 8 showing the curve of the face, and Fig. 7 representing a common shape in outline. The face of the back is molded, as represented in section, Fig. 7. The shape of the molding, however, varies according to circumstances.

The object of this invention is the construction of a machine which will readily work

this molding upon the face of the back; and the invention consists in the construction of the machine, as hereinafter described, and particularly recited in the claims.

A represents the bed of the machine; B, a cutter on the shaft C, the said shaft being caused to rapidly revolve.

The frame of the machine and the arrangement of the shaft and cutter are the same as the usual construction in this class of machines, and does not require detailed illustration. I represent only a portion of the machine sufficient to illustrate the construction and attachment to adapt the machine to the molding of chair-backs.

Below and in front of the cutter the bed extends to form a work-table D, and on this work-table the former-support E is made fast. This former-support presents a convex upper surface, as represented in Figs. 3 and 4, the cutter standing within the support, but so that it may work through its upper surface, as seen in Figs. 1 and 5, the convex upper surface of the support inclining in all directions from the cutter. On the supporter E, and near the opening through which the cutter works, a slight upwardly-projecting boss F is made, which surface has a direct bearing for the former in its movement over the cutter.

G represents the former. (See Figs. 2 and 6.) In outline it corresponds substantially to the shape of the upper edge of the back, as seen in Fig. 2, and it is curved longitudinally, as seen in Fig. 6, corresponding to the curve required for the back, and on its under or face side it is provided with clamps H I and screws J J, by means of which the back K may be secured upon the face of the holder. The former is wider than the back, so as to leave at the front a surface L of the former against the under edge of the back, the shape of this surface being curved corresponding to the curve of the face required for the back. This surface L is in a position corresponding to the bearing F of the former-support, and so that this surface L when at work may rest upon the bearing F, as seen in Fig. 5. Around the rear edge and ends of the former is a groove M, this groove being curved corre-

sponding to the curve required for the face of the back, and as seen in Fig. 6.

On the machine and in rear of the cutter a stationary guiding-tongue N is arranged. (See Figs. 1, 4, and 5.) This tongue stands above and in rear of the cutter and in a position corresponding to the groove M of the former, and so that the groove in the former may run upon the said tongue as a guide, and so that the edge of the former so running upon the guide N will be caused to move in a path corresponding to the shape of the groove M, and near this tongue a guide is provided, against which the curved edge of the former may run. As here represented, this guide consists of two vertical anti-friction rollers O O, one each side of the tongue N. The former is provided with suitable handles P on its top, by which the operator may readily control the movement of the former. This completes the construction of the machine.

In operation the blank K is made fast upon the face side of the former, as seen in Figs. 2, 5, and 6, the rear surface of the blank corresponding in shape to the under surface or face of the former, and so that it may rest firmly thereon. Thus secured upon the former, the former and the blank are set upon the machine, as indicated in broken lines, Fig. 1, the former at the front resting upon the bearing F, and the groove M of the former set upon the tongue N, and so that the blank of the former may be presented from one end and its lower edge, as indicated in broken lines, Fig. 1. Thus placed upon the machine the operator moves the former, guided as to its plane of movement by the tongue or guide N and the bearing F and also guided by the bearing or rollers O as to its horizontal movement, the curved edge of the former working against the said rollers O and so that the advance movement of the blank follows the curve of the edge of the former. The cutter operating upon the face of the blank will work upon that face a molding corresponding to the shape of the cutter, and as seen in Fig. 5. This operation may be continued from the lower edge of the blank at one end around and to the opposite end, as seen in Fig. 7; but because of the grain of the wood the best result is accomplished by working from the lower edge at one end around and up to the center, and then reversing the operation for the other half. For this purpose duplicate machines are employed, the one adapted to work from the right hand and the other from the left, so that the operator may apply the former and the blank first to one machine and work one-half the face of the blank, and then to the other machine to work the other half, both working from the lower edge upward and around to the center, the work of the two meeting at the center. This is readily accomplished, because the shape of the former corresponds to the required shape to be wrought, and the machines being adjusted accordingly, both cutters will readily termi-

nate in precisely the same line at the center, so that the molding will appear to be continuously wrought.

As before stated, the back is required to be thinner upon its upper edge at the center than at the ends, and, as represented in Fig. 6, the curve of the groove in the edge of the former is made of a corresponding curve, upon the stationary guide N will so present the blank to the cutter that this reduction in thickness will be made from the lower edge of the blank around and up to the center. One blank having been thus wrought and the face of the back completed, that completed back is removed, a new blank attached to the former, and that new blank wrought in the same manner, and so continuing.

If a different shape for the line of the molding is required, then the outline of the former must be made of corresponding shape. This may be made to follow the outline of the back or vary therefrom, as may be desired. The bearing F controls the movement of the former as to the thickness at the under edge of the back. Different shaped formers, according to the work required, are readily applied, each former being provided with a groove, which will operate upon the stationary guide, and also so as to rest upon the bearing F.

While I prefer to construct the guide N as a tongue and the former with a corresponding groove, it will be understood that this order may be reversed and the guide be a short groove, and the former constructed with a rib upon its outer edge to work through said groove, as seen in Fig. 9. I do not therefore wish to be understood as limiting the invention to the formation of the groove in the edge of the former and the corresponding stationary groove, but that on the contrary the reversing of this groove in the former and stationary tongue is a substantial equivalent therefor.

I prefer to employ the convex-shaped stationary support E, upon which the bearing F is arranged. First, because it aids somewhat in controlling the movement of the former, and, second, because it covers the cutter, excepting as to its working-point; but the convex support may be omitted, the bearing F being all that is actually necessary for the support and guidance of the former at the front.

It will be understood that while this invention is described as especially adapted to shaping and molding chair-backs, it is equally well adapted to shaping and molding other articles having similar irregular face-shape. The invention is therefore not to be understood as limited to any particular purpose.

I claim—

1. In a machine for molding chair-backs and similar articles, the combination of a revolving cutter, a former adapted upon its under surface to receive and hold the blank to

be shaped, the outline of said former around one edge and ends curved corresponding to the line of molding to be cut, the under face of the former opposite the said curved edge corresponding in shape to the lower face to be cut, with a stationary bearing F forward of said cutter and corresponding to said face portion of the former, and so that said face portion may ride upon said bearing, a stationary guide N in rear of and above the cutter, the edge of the said former having a groove around its curved edge and ends, the said groove corresponding to the curve required for the face of the back around its edge and ends, and a stationary bearing O, against which the edge of the said former may work, all substantially as described.

2. In a machine for shaping chair-backs and similar articles, the combination of a revolving cutter, a support E, presenting a convex upper surface about said cutter, the surface

receding from the cutter, a stationary guide N in rear of and above said cutter, vertical anti-friction rollers O each side of said tongue N, with a former G, its edge and ends curved corresponding to the line of the molding to be cut in the face of the blank, the under surface of the former adapted to receive and secure the blank to be operated upon, the edge and ends of the former constructed with a groove curved corresponding to the curve of the face required to be cut, a bearing F in front of said cutter, the under face of the former having a surface L, corresponding to the surface to be cut at its lower edge, the said surface L adapted to work upon the said bearing F, all substantially as and for the purpose described.

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