J. P. Grosvenor.

Turning Grals.

No. 26,584. Patented Dec. 27, 1859.

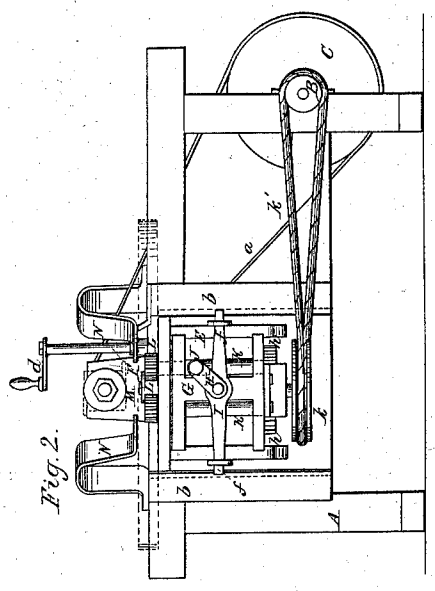


Fig. 2.

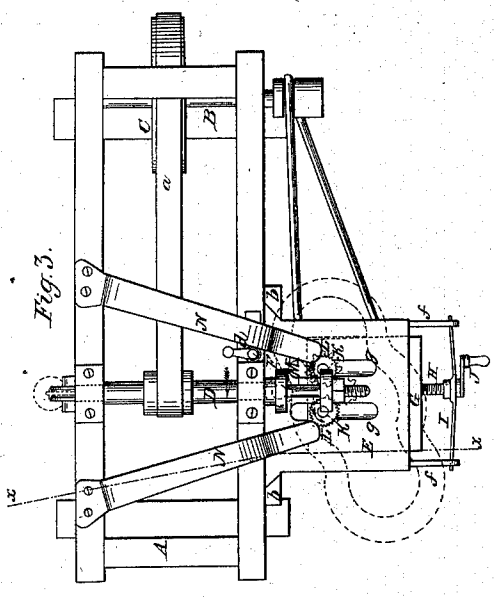


Fig. 3.

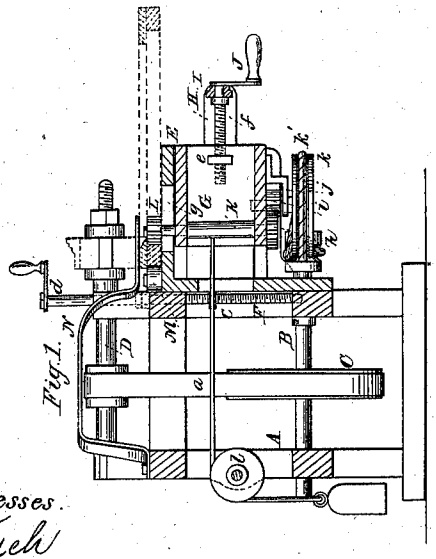


Fig. 1.

Witnesses.
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A. R. Wright

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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

J. P. GROSVENOR, OF LOWELL, MASSACHUSETTS.

MACHINE FOR PLANING CURVED SURFACES.

Specification of Letters Patent No. 26,584, dated December 27, 1859.

To all whom it may concern:

Be it known that I, J. P. GROSVENOR, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Machine for Cutting Out and Forming Moldings on Circular, Elliptical, and Sinuous Forms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a vertical section of my invention, taken in the line *x*, *x*, Fig. 3. Fig. 2, is a side view of the same. Fig. 3, is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment or use of adjustable feed rollers in connection with a fixed bearing or roller and suitable cutters arranged to operate substantially as hereinafter fully shown and described, whereby circular, elliptical or sinuous forms may be cut out direct from the bolt or, moldings "stuck" or formed on those previously cut.

The invention is more especially designed for manufacturing picture and mirror frames, the curved portions of stair rails and cabinet furniture, but the work produced by it may be applied to various other purposes.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a rectangular frame at one end of which a driving shaft B, is placed, said shaft having a pulley C, on it from which a shaft D, on the upper part of the frame A, is driven by a belt *a*. The shaft D, at one end projects beyond the side of the frame A, and has a suitable cutter head secured on it.

To one side of the frame A, directly underneath the cutter head on the shaft D, there is a box E. The back part of this box is fitted between vertical guides *b*, *b*, attached to the side of the frame and to the inner side of the box E, a nut *c*, is attached through which a vertical screw rod F, passes, said rod being fitted in the frame A, and having a crank *d*, on its upper end.

Within the box E, a sliding box or frame G is placed and allowed to slide freely. This box or frame has a screw rod H, fitted in a nut *e*, in its outer part and the outer part of the screw rod is connected to an elliptic spring I, the ends of which are fitted in plates *f*, attached, one to each side of the box E. The outer end of the screw rod H, has a crank J, attached to it.

Within the box or frame G, two vertical shafts K, K, are placed. These shafts project up through oblong parallel slots *g*, *g*, in the top of the box E, and each shaft has a toothed or corrugated roller L, on its upper end, both of which are shown in Figs. 2 and 3. The lower end of each shaft K, has a toothed wheel *h*, attached, and these wheels gear into a wheel *i*, on a shaft *j*, having a pulley *k*, on it around which a belt *k'*, passes from the driving shaft B.

On the top of the box E, and near its back part there is a roller M, said roller being in line with the center of the space between the two rollers L, L.

To the upper part of the frame A, there are attached at one end two bent or curved elastic metal bars N, N, the outer ends of the bars projecting over the top of the box E.

The operation of the machine is as follows:—Suppose for instance that it is designed to "stick" or form a molding on a sinuous frame, such as is shown in red in Fig. 3. This frame is placed on the top of the box E, with one side between the rollers L, L, and M, the rollers being adjusted snugly against the frame by turning the screw rod H. The box E, is then raised by turning the vertical screw rod F, until the bars N, N, rest on the upper surface of the frame to be operated on. Motion is then given the driving shaft B, by any convenient power and the shaft D, and rollers L, L, are rotated in the direction indicated by the arrows in Fig. 3. The frame is moved along by the rollers L, L, which are feed rollers, the rollers M, serving as a bearing and the cutters on the shaft D, shown in red Figs. 1 and 2, "stick" the molding on the frame, the latter as it is moved being turned by the action of the rollers L, L, in accordance with its sinuousities so that the cutters will always act in line or longitudinally with the frame and not obliquely or transversely with it.

It will readily be seen from the above description that circular or elliptical frames may have moldings "stuck" or formed on their face sides in precisely the same way, the spring I, allowing the rollers L, L, to

yield or give to the work and at the same time keeping them snugly against it. In lieu of the spring I, a weight shown in red Fig. 1, may be used, said weight being connected to the box or frame G, by a cord that passes over a pulley *l*, in the frame A.

When frames are to be cut out, a pattern is necessarily used. To cut out frames for instance as shown in red Fig. 3, a pattern frame is obtained and placed between the rollers L, L, and M, and the "stuff" from which the frames are cut is secured to the pattern, proper cutters being employed to cut the "stuff" in accordance with the pattern as the latter is fed along by the rollers L, L. The bars N, N, serve to keep the frame properly on the top of the box E, as it is moved around by the feed rollers.

I do not claim the employment or use of adjustable friction rollers with a fixed support or bearing irrespective of the arrangement and relative position of said parts as herein shown and described, for said parts have been used as feeding devices for planing machines. I am not aware however that said parts have been arranged relatively with each other to admit of the feeding of circular, oval or sinuous forms beneath or to the cutter.

I claim therefore as new and desire to secure by Letters Patent.

1. The employment or use of the adjustable or yielding feed rollers L, L, when combined with a bearing roller M, or a proper bearing surface and arranged relatively with each other as herein shown and described to admit of the feeding of circular, oval and serpentine forms to the cutters.

2. I further claim placing the rollers L, L, in an adjustable frame or box G, fitted in an adjustable box E, and used in connection with the elastic bars N, N, or their equivalent and the bearing roller M, whereby the frame or pattern may be properly adjusted and retained in proper position between the rollers while being acted upon by the cutters.

J. P. GROSVENOR.

Witnesses:
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