2. Sheets. Sheet. 1.

H. A. Gore,

Making Fellies.

No. 106,931. Patented Aug. 30. 1870.

Fig. 1.

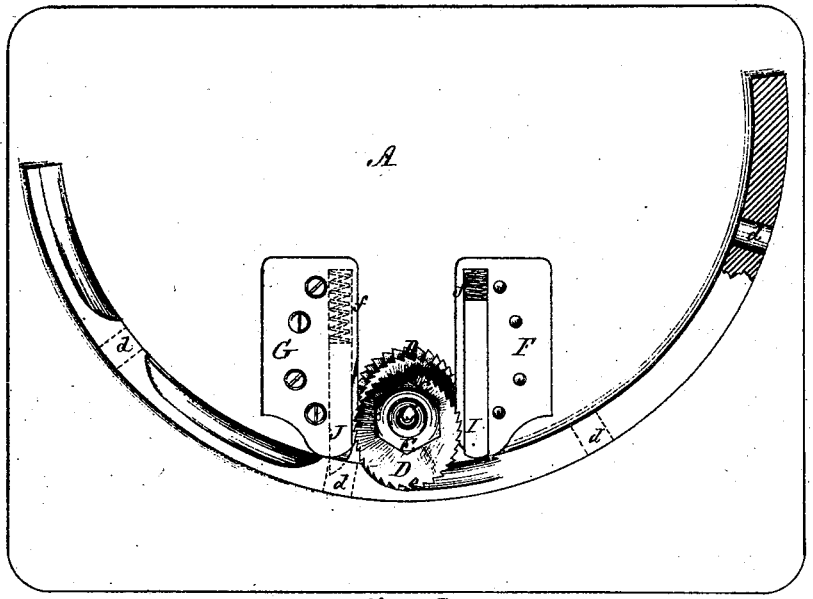
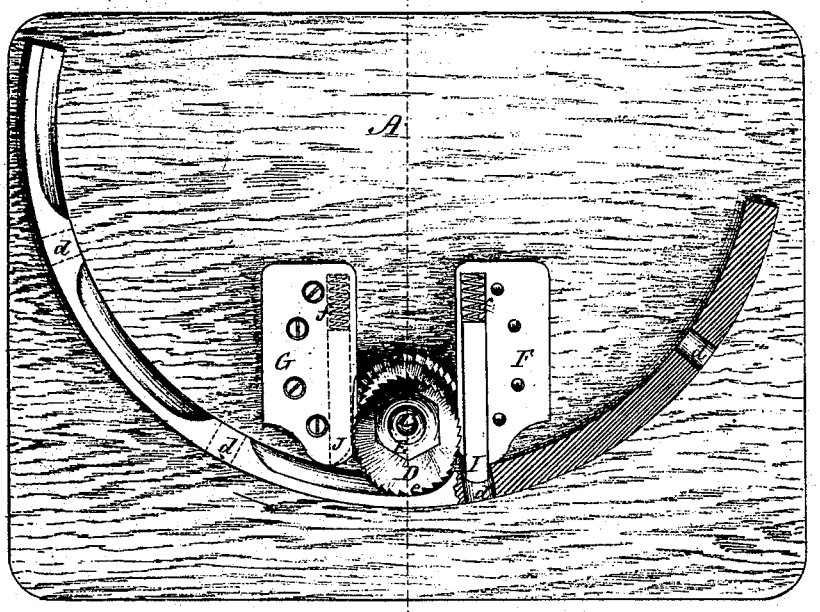


Fig. 2.



Witnesses
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French F. Mills

Henry A. Gore, Inventor,
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2. Sheets. Sheet 2.

H. A. Gore,

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Fig. 3.

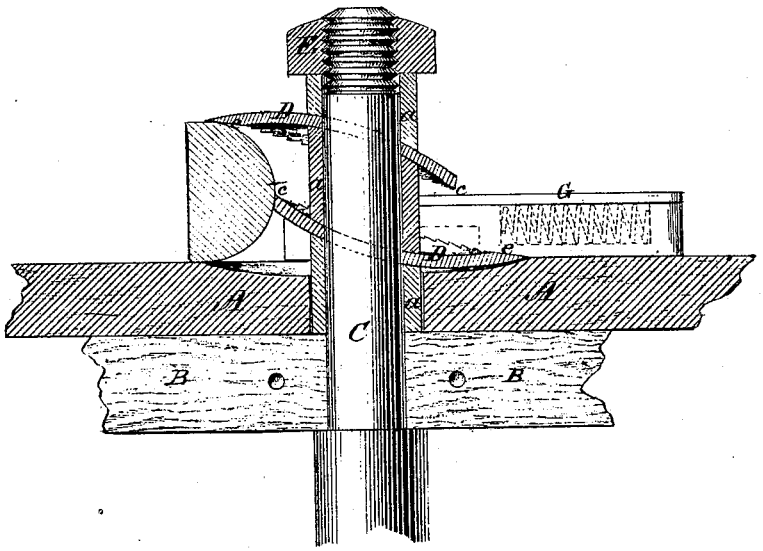
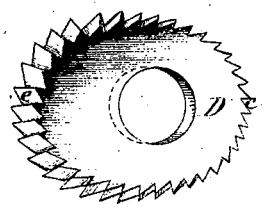


Fig. 4.



Witnesses.
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Wench F. Mik.

Henry A. Gore, Inventor
By his Attorneys;
Hopperman & Johnson.

United States Patent Office.

HENRY A. GORE, OF GOSHEN, INDIANA.

Letters Patent No. 106,931, *dated August* 30, 1870.

IMPROVEMENT IN MACHINE FOR ROUNDING FELLIES FOR WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY A. GORE, of Goshen, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Machines for Rounding Fellies for Wheels, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing of the same, which make part of this specification, and in which—

Figure 1 represents a top view of a rounding-machine embracing my improvements, a half-circle of the rim or felly of a wheel being shown as locked, with the spring detent of the gauge-bar to form the shouldered projections round the opening for the spokes.

Figure 2 represents a similar view, the rim or felly of the wheel being shown as locked, with another spring gauge to limit the round between the openings for the spoke.

Figure 3 represents a vertical section of the cutters and mandrel enlarged; and

Figure 4 represents the concave side of one of the cutters enlarged.

My invention relates to machines for rounding or shaping fellies for wheels and other articles which require a half round, and

In the drawing which represents such a machine, the table A is supported by a suitable frame, B, within which a mandrel, C, is secured in suitable bearings.

The end of this mandrel projects beyond or above the table, and carries the shaping cutters D.

These are of oval shape, and are arranged upon the mandrel so that the elongated side of each will project beyond the other on opposite sides of the mandrel to which they are secured, between collars, *a*, so as to be oblique to the axis of the mandrel.

These cutters are not flat plates or disks such as those shown and described in a patent heretofore granted to me for a shaping machine, but are dish-shaped, and are placed with their concave sides opsite each other, for a purpose to be presently described. Their edges are made with chiseled teeth or cutters, *e*, which are at right angles, or nearly so, to the axis of the mandrel at the end thereof, having the greatest projection from the journal, and from this point they radiate from the axis, gradually approach and terminate in cutters *c*, parallel, or nearly so, with said axis at the opposite side of the oval, the serrations of the oval edge being in the direction of the motion of the cutter.

The cutters shown in my former patent were oblated on one side of their circle and made of flat plates, and being arranged obliquely on their mandrel, it was found impossible to produce more than a quarter round with their cutters, as the obliquity of a flat plate would not admit of the formation of teeth thereon which would reach in a line with the plane of the sides of the article to be rounded as it rests on the table.

This difficulty my present improvement fully obviates, because, by the oval shape of the cutters, I am enabled to obtain a greater projection on one side of their axis, so as to reach over the material the proper distance to traverse each a full quarter circle, while, by reason of their concave or dish-shape, I am enabled to make the cutting-teeth on the under side of the greatest projections thereof from the axis, at right angles, or nearly so, to the axis, in order to make the round terminate with the plane or sides of the felly or other article being shaped, as seen in fig. 3.

The cutters are clamped upon the mandrel by a screw-nut, E, and the collars *a* conform to the concave and convex sides of the cutters, which may be adjusted to the thickness of the article to be rounded by changing the collar which separates them.

The table has a cavity to receive the back of the inner or lower cutter, and thus allow the teeth on its concave side to be flush with the table.

On each side of the cutters gauges F and G are secured, so that their ends, against which the article being rounded rests, will be nearly on a line with that part of the cutters having the least projection from their mandrel, by which this portion of each cutter will cut to or from the middle of the thickness of the article.

In order to round the rim or felly of a wheel and leave flush projections on the inner side around the ends of the spokes without the use of a pattern, as heretofore, I arrange spring bars, I and J, in each gauge, so as to project beyond them.

The rim or fellies having been previously bored with the holes *d* for the spokes, they determine the spaces to be rounded and the shoulders to be left.

The spring bars serve two purposes in connection with these holes, viz: the one, I, as a detent to spring into the opening *d* as the article is fed against the cutters, and arrest it at the proper point to form the shoulder on one side of the hole, while the other, J, acts as a gauge to hook into said hole *d*, when the rim is moved forward, and present it to the cutters at the proper point to form the shoulder on the other side of the spoke-hole, and in this way a half-circle rim or felly may be rounded and shaped between the holes *d* for the spokes by the spring detent I and spring gauge J of the fixed gauges.

The end of the spring gauge J is beveled on one side to allow the article to be moved forward against the cutters, and as each section is shaped the rim is released from the detent I, and moved forward to be

locked in the same hole into which the detent I was projected, with the spring gauge J, and the rim again brought against the cutters.

The detent and gauge I and J are fitted within the fixed gauges so as to be constantly forced outward by spiral springs, *f*, and held in place by shoulders, and they are forced within their cases during the operation of rounding the article.

The mandrel is driven by a pulley-band in the usual way.

Having described my invention,

I claim—

The cutters D D, shaped and made with chisel-teeth *e*, as herein described, and arranged upon their mandril C, with their concave faces opposite each other, for the purpose of allowing the cutters *e* to extend over the sides of the material to be shaped, and act jointly to cut a half round, as herein shown and described.

2. The spring detent I and spring gauge J, arranged and operating in connection with the opening in the felly, so as to gauge and determine, without pattern, the flush shoulders around said openings for the spokes, substantially as herein described.

3. The combination of the oval concave cutters with the spring detent I and gauge J, substantially as herein described.

4. The combination and arrangement of the fixed gauges F and G, with the movable spring detent I and gauge J, and the rounding or shaping-saws, substantially as herein described.

5. The spring detent I and spring gauge J, arranged so as to enter the holes in the rim or felly, and thus gauge the length of the rounded sections as well as the flush shoulders around the spoke-holes, as herein shown and described.

In testimony whereof I have hereunto set my hand.

HENRY A. GORE.

Witnesses:

F. HOWENSTINE,

WILLIS DENISON.