G. V. GRIFFITH.

Machine for Making Hoops.

No. 162,644. Patented April 27, 1875.

Fig. 3

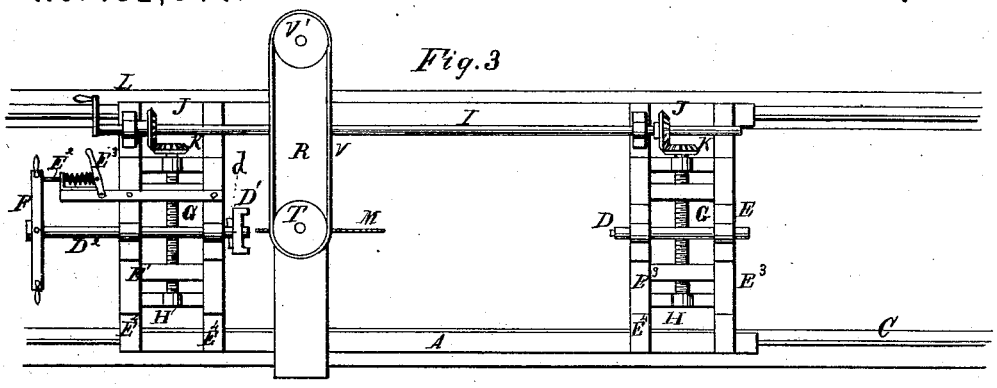


Fig. 4

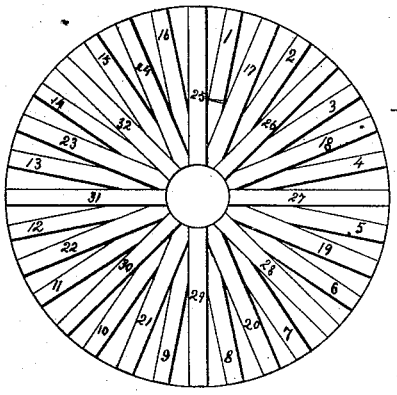


Fig. 2

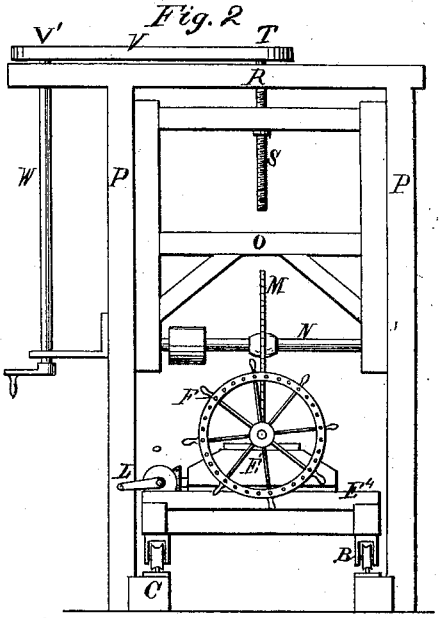
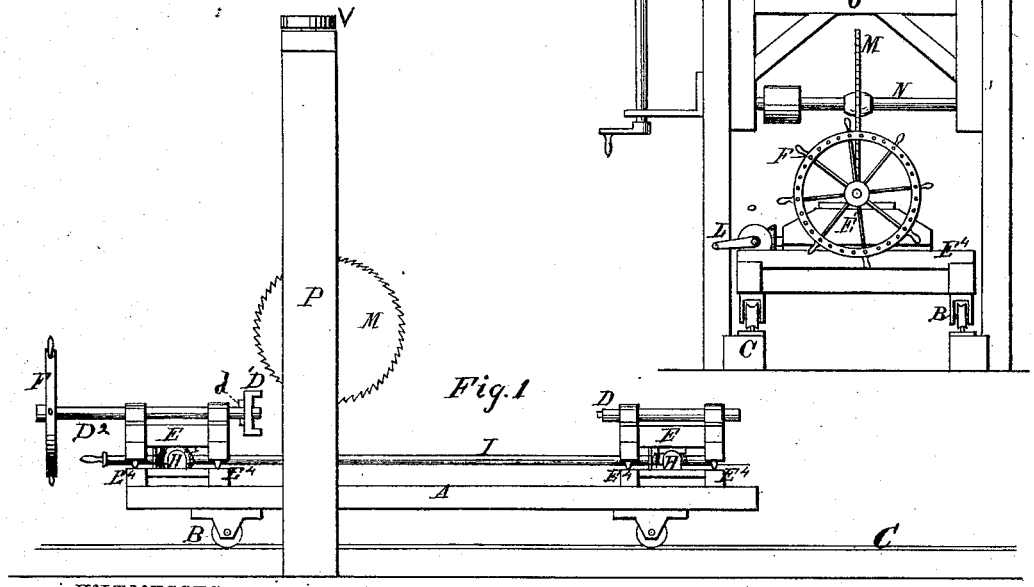


Fig. 1



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE V. GRIFFITH, OF HUNTINGTON, INDIANA.

IMPROVEMENT IN MACHINES FOR MAKING HOOPS.

Specification forming part of Letters Patent No. **162,644**, dated April 27, 1875; application filed August 1, 1874.

To all whom it may concern:

Be it known that I, GEORGE V. GRIFFITH, of Huntington, in the county of Huntington and State of Indiana, have invented an Improvement in Machines for Making Hoops; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of the sawing-machine by which the first step in my improvement is worked. Fig. 2 is a front elevation of the same. Fig. 3 is a top-plan view; and Fig. 4 is a section of a log or butt, showing a diagram of the saw-cuts.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention has for its object to improve the method of sawing boards or planks for the formation of barrel and other hoops. To this end the invention consists in the peculiar method of sawing the planks from the logs or butts, as I will presently describe, and in the construction and combination of various parts of the sawing-machine, whose operations form a part of this method.

For the purpose of following the logical order of the steps constituting my improved method, I will first describe the construction of the sawing-machine, and then its operation in forming the planks.

In the accompanying drawings, A is a rectangular carriage, supported upon trucks B, by which it is run back and forth along a suitable track, C. The carriage is provided at the ends with chucks or centers D D^1, mounted upon suitable supports or frames E, which may be arranged to slide upon transverse ways E^4. G G are transverse screw-shafts, journaled in boxes H, secured to the carriage A between the ways E^4, and provided at one end with beveled pinions K, to engage with similar pinions J, mounted upon a long shaft, I, arranged at one side of the carriage. Each shaft passes through a nut or screw-socket attached to its frame, so that when the shaft I is operated it will feed the frames back and forth upon the ends of the carriage. P is an upright frame secured upon opposite sides of the track, so that the carriage shall move through it, and O is a saw-frame arranged to slide vertically within the frame P. M is the saw, mounted upon a cross-arbor, N, at the lower end of the frame O, and adapted to be driven by any suitable means. The saw stands over the carriage, and is adjusted vertically by means of the screw-rod S passing down through the cross-beam R of the fixed frame, and working within a screw-socket secured to the top cross-bar of the saw-frame. The rod S carries a pulley, T, at its upper end, which is connected by a band, V, with a second pulley, V′, mounted upon the upper end of the hand-rod W. This rod has its bearings in two lateral extensions of the fixed frame P, and, when operated, serves to raise and lower the saw-frame through the medium of the pulleys, belt, and screw-shaft S, as above stated. The centers D D^1 are mounted on the frames E, opposite to each other, in order to clamp the log from which the planks are sawed between. The dog D^1 fits over the end of the shaft D^2, and is held with its points within the log by means of a key, *d*, driven through a slot in the shaft, as shown in Fig. 3. F is a hand-wheel, mounted upon the outer end of the shaft D^2, for the purpose of rotating the log or butt which is clamped between the centers D D^1, and E^2 is a spring-bolt, held in a projection of the front frame, so as to engage with holes or recesses formed in the rim of the hand-wheel, and lock the center D^1 against rotation. The number of recesses in the rim of the wheel should be equal to the number of radial cuts to be made in a butt or log. In most cases there should be thirty-two recesses, into which the locking-bolt automatically springs when the hand-wheel is moved. This arrangement insures uniformity in the radial cuts, without any particular care as to nicety of adjustment on the part of the operator. The locking-bolt is retracted from the wheel by means of the hand-lever E^3, whose arrangement is clearly shown in Fig. 3. A modification of the cutting devices consists in the employment of two saws, arranged upon the arbor N, distant from each other about the thickness of the planks to be cut.

For convenience of description I will first explain the operation of the two saws;

but I wish it understood that the disposition of the cuts or kerfs in the log is exactly the same whether made by one or two saws, and that I merely describe the operation of the latter first because it facilitates the preparation of this specification. The log or butt to be cut is first clamped between the two centers D D^1, and the saws moved up, so that when the carriage is moved under them they will first cut the shortest radial kerfs, as shown in Fig. 4. As each cut is made the hand-wheel is rotated to turn the log the requisite distance, and thus all the narrow planks around the log, from 1 to 16, inclusive, are cut before the saws are again set. They are then dropped down a little within the frame, and the cutting operation repeated to produce the planks from 17 to 24, inclusive; and, lastly, the saws are dropped down to their lowest point to cut the planks from 18 to 25, inclusive. By this means only three different settings of the saws are necessary to complete the operation of sawing all the planks. When one saw is used the operation is exactly the same, with the exception that there are, necessarily, a greater number of cuts to be made. The setting of the saws may be effected in a variety of ways; but I prefer to employ a stop or series of stops upon the saw-frame, which shall act as gages to determine the point of adjustment for each cut. The stops prevent the saws from moving beyond a certain point, and, therefore, prevent them from cutting into adjoining planks before the final or longest cuts are made. As the sawing proceeds the wedge-shaped pieces are removed, until only the last or the two last series of wide planks remain attached to the centers, and they are removed in any suitable manner after the sawing has been completed.

If desired, the lines of the cuts may be laid off upon the end of the log or butt by a stencil or other suitable device before the sawing begins; but this is not absolutely essential, as the hand-wheel and locking-bolt will generally insure the proper adjustment of the log to the required cuts. By this method of sawing, the planks are all cut with the grain of the wood running as nearly as possible at right angles with their sides, so that the subsequent process of riving shall produce hoops of a width equal to the thickness of the plank.

Having thus described my invention, what I claim as new is—

1. The method of sawing planks for forming barrel and other hoops, as herein set forth and shown.

2. The combination of the carriage A, frames E E, centers D D^1, perforated hand-wheel F, and spring-catch E^2 with each other and the adjustable saw, substantially as described, for the purpose specified.

GEORGE V. GRIFFITH.

Witnesses:

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