(No Model.)

G. S. FOSTER.

BARREL HOOP MACHINE.

No. 346,035. Patented July 20, 1886.

Fig. 1

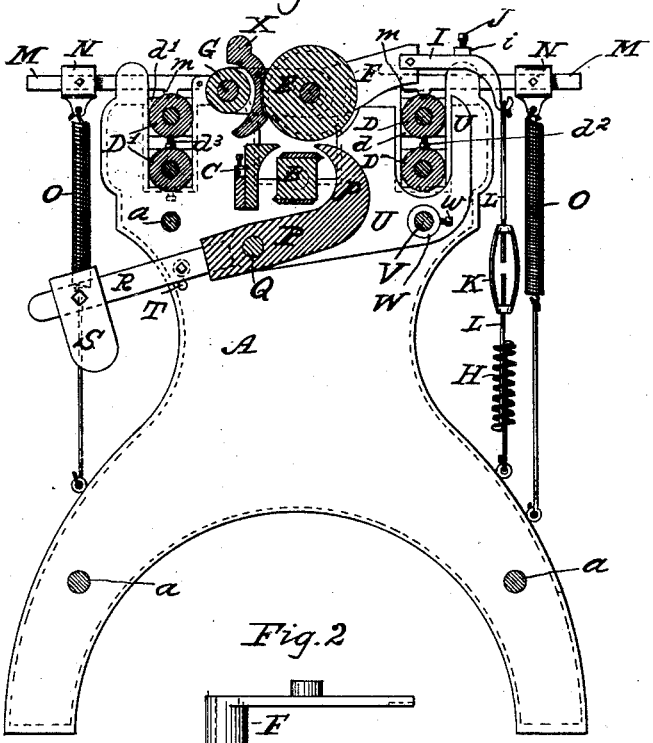


Fig. 2

Fig. 3

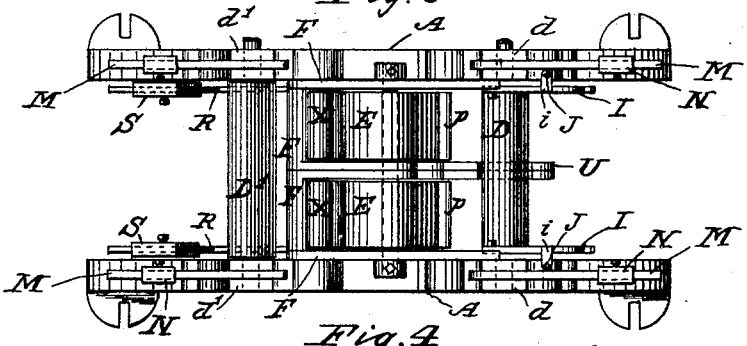
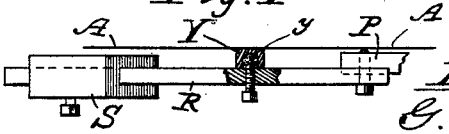


Fig. 4



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UNITED STATES PATENT OFFICE.

GILBERT S. FOSTER, OF CONCORD, NEW HAMPSHIRE.

BARREL-HOOP MACHINE.

SPECIFICATION forming part of Letters Patent No. 346,035, dated July 20, 1886.

Application filed April 10, 1886. Serial No. 198,466. (No model.)

To all whom it may concern:

Be it known that I, GILBERT S. FOSTER, a citizen of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Hoop-Planing Machines, of which the following is a specification.

The object of the present invention is to provide a machine for dressing hoops which have been previously sawed or cut from poles, and leaving them of a more uniform thickness than has heretofore been accomplished by machines of this character. These results are attained by the mechanism described in the following specification, and illustrated in the accompanying drawings, forming part thereof, of which—

Figure 1 represents a vertical sectional elevation, Fig. 2 being a detached plan view of one of the adjustable roller-frames. Fig. 3 represents a plan view of Fig. 1; and Fig. 4 shows a sectional plan view of one of the weighted arms for holding one of the adjustable beds to its work and its frictional stud, which bears upon or against the planer-frame.

Similar letters indicate corresponding parts.

The standards A A are secured equidistant from each other by suitable transverse bars or rods, *a*. The cylinder or cutter-head B is mounted in the vertical center of either standard A A and driven by a belt-pulley in the ordinary manner. A rigid pressure-bar, C, located back of the cutter-head, having its top surface about on a line with the circle described by the rotative course of the cutters, extends from one to the other of the standards A A, and is conveniently secured thereto. Front and rear feed-rollers, respectively, D D′, are mounted in bearings *d d′*, fitting slots in the standards, the rolls D being rendered adjustable to or away from each other by means of a cap-screw, d^2, threaded to one of the said journal-boxes *d*, and having its head resting against the other, and the cap-screw d^3 performs the same service for the rollers D′.

The rolls E govern the thickness of the hoops being dressed, and are located over the cutter-head, and preferably a little forward of the same, as shown in Fig. 1, and are mounted, one in each of the adjustable roller-frames F, both of said frames being mounted upon the rod G, secured to and extending from one to the other of the standards A A. The said frames F are subjected to additional tension over their weight, in the form of a weight attached to the long arms thereof; or a spiral spring, H, may connect said long arm, or an arm, I, secured thereto, at some convenient point with the standards A A.

The rolls E must be prevented from coming in contact with the cutter-head, and a convenient means for attaining this result is illustrated by the ears *i*, formed upon the arms I, and projecting over the standards A A, and in order to cut or dress a hoop to any given thickness set-screws J are threaded to said ears *i*, so as to bear upon said standards A A, as shown. The tension upon the arms I may be varied by the use of a turn-buckle, K, threaded to rods L, and thus forming a connection of the said arms I with the standards.

Pressure is applied to the feed-rollers by the arms M, which are pivoted at one end to said standards, their under side being provided with a boss, *m*, at the proper point to bear upon the journal-boxes, in which the uppermost front or rear rollers are mounted, and at or near their free end is mounted an adjustable block, N, a spiral spring, O, connecting said blocks with the standards, as shown in Fig. 1.

Adjustable bed-irons P, having their forward end formed as at *p*, are swiveled to the rod Q, located underneath and a little to the rear of the cutter-head, and secured to and extending from one to the other of the standards A A. The forward ends, *p*, curl up in front of the cutter-head, and the point of fulcrum Q must be such as to insure free movement of the said ends *p* without liability of contact with said cutter-head. Arms R are attached to the rear ends of said bed-irons, and weights S mounted thereon for holding said ends *p* in their normal position, and stops T are provided upon the standards, by which said arms R are prevented from dropping below a desired point. A central vertical partition, U, is supported by the rods Q and V, and collars W are placed upon the latter rod and secured by set-screws *w*, one of said collars being placed at either side of said partition, and thereby retaining it firmly in position. By this construction hoops may be planed on either side of the machine and

not come in contact with each other. When it is desired to adjust the knives on cutter-head, the rods L may be removed from the arms I, and the frames F be swung over and back out of the way.

In order that hoops passing through between the feed-rolls D and the roll E and bed-irons P may not fail to be caught between the rollers D′, suitable depending guides, X, are pivoted in the frames F, back of the rolls E, their point of fulcrum being such that their overhanging tops will retain them in the position shown in the drawings, except when their lower ends are scraped by a passing hoop, when they will yield slightly by its pressure. Another purpose of these depending guides X is to prevent all unnecessary vibration of the hoop by the action of the cutter-head with but little friction.

In passing a hoop through this machine the rollers E roll upon the bark side, and thus the cutters operate upon the smooth side. When knots are encountered by the said rollers, the hoop is suddenly forced downward upon the bed-irons and the cutter-head, causing the former to tremble under the tendency to rebound. To remedy this difficulty friction-studs Y are interposed between the arms R and the standards, and held in place by a machine-screw passing through the arm and into said stud. If found desirable, a piece of rubber or other elastic material, *y*, may be inserted in the stud Y, onto which the screw may bear, as seen in Fig. 4, in which view the line A A represents the inside line of the standards.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the cutter-head and the adjustable pressure-roller, of the weighted bed-iron having its bearing-face beneath the pressure-roller, said bed-iron having its upward throw limited, and swinging down as the hoop passes between the pressure-roller and the cutter-head, as set forth.

2. In a planing-machine, the combination, with the cutter-head and feed-rollers, of automatic adjustable bed-irons and a central longitudinal partition rigidly secured between said bed-irons, substantially as and for the purpose set forth.

3. In a planing-machine, the combination, with the cutter-head, standards, and feed-rollers, of automatic adjustable bed-irons, a central longitudinal partition rigidly secured between said bed-irons, and one or more frictional studs placed between said standards and the said bed-irons, and adapted to prevent unnecessary trembling of the latter, as and in the manner specified.

4. In a hoop-planing machine, the combination, with the cutter-head and an automatic adjustable bed, of adjustable rollers located above the cutter-head, pivotal frames in which said rollers are mounted, and suitable means whereby said rollers may be set relative to the minimum thickness required for a given hoop, as set forth.

5. The combination, with the cutter-head, the bed-iron, the pressure-roller, and the rear guide-rollers, of a depending guide pivoted in the rear of the pressure-roller and guiding the hoop between the rear guide-rollers, as set forth.

6. The combination, with the cutter-heads, of the frames F, carrying the pressure-rollers E and depending guides X, located in the rear of said rollers, the arms I, provided with ears *i* and set-screws J, threaded therein, the rods L, connected by the turn-buckle K, and the spring H, as set forth.

7. The combination, with the cutter-head, of the front adjustable guide-rollers, the adjustable bed-iron, the rigid pressure bar or support C, the adjustable pressure-roller, the depending guide arranged in the rear of the pressure-roller and above the bar C, and the rear adjustable guide-rollers, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GILBERT S. FOSTER.

Witnesses:
J. B. THURSTON,
NATHANIEL E. MARTIN.