S. PARKER.

MACHINE FOR RACKING HOOPS.

No. 186,365. Patented Jan. 16, 1877.

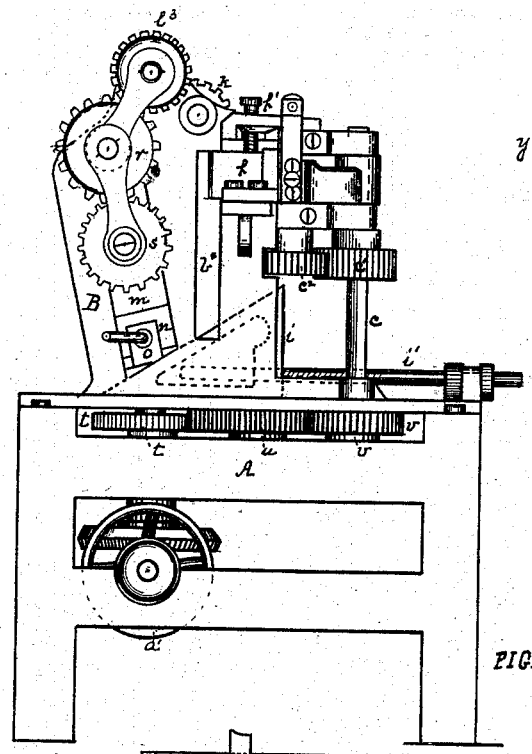

FIG. 1.

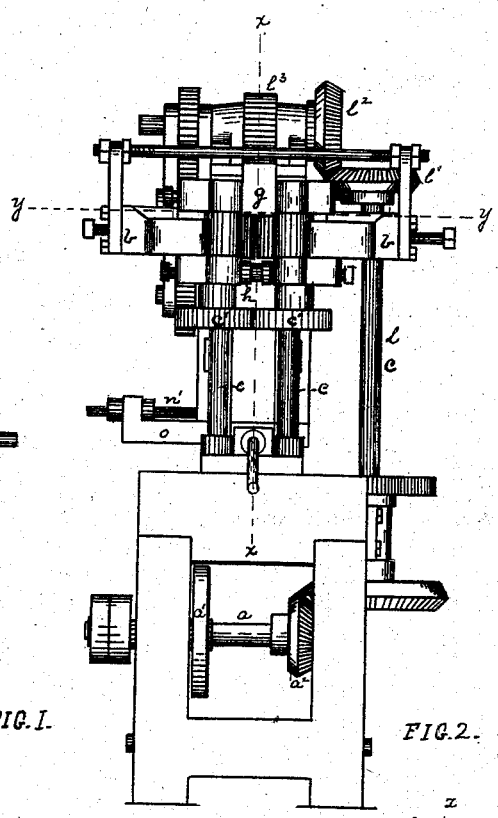

FIG. 2.

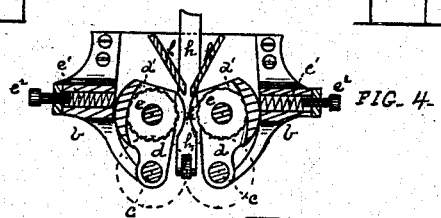

FIG. 4.

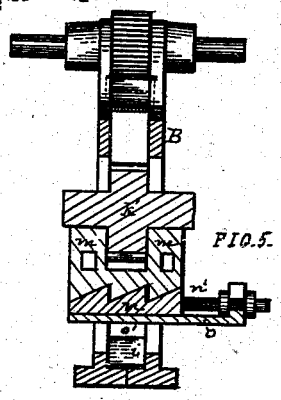

FIG. 5.

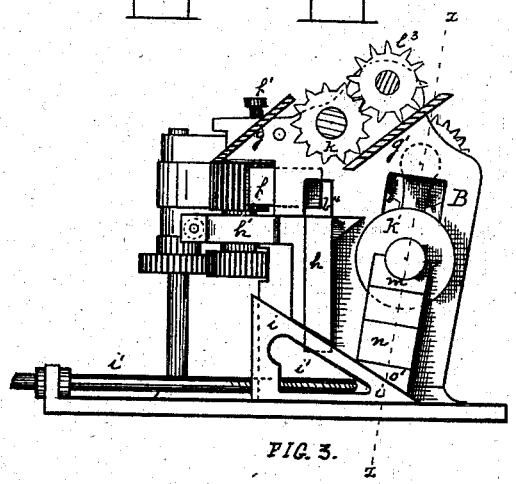

FIG. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

STILLMAN PARKER, OF ALTOONA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, JOSEPH DYSART, JAMES C. DYSART, AND G. LEWIS MYERS, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR RACKING HOOPS.

Specification forming part of Letters Patent No. **186,365**, dated January 16, 1877; application filed August 7, 1876.

To all whom it may concern:

Be it known that I, STILLMAN PARKER, of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Improvement in Machines for Racking Hoops; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a longitudinal vertical section on the line *x x*. Fig. 4 is a horizontal section on the line *y y*, and Fig. 5 is a transverse vertical section on the line *z z*.

Like letters refer to like parts wherever they occur.

My invention relates to machinery for racking the timber employed in the manufacture of hoops; and consists, first, in combining, with the pressure or racking rolls, an adjustable guide bed or bar, so that the mechanism may be readily adapted to timber of various width; second, in making the bed and one of the racking-rolls adjustable, so that the curve or bend to be given to the timber in its passage through the rolls may be increased or diminished at pleasure, according to the condition of the timber operated on; third, in combination, with the racking-rolls, a series of equalizing-knives, which serve to trim the timber and obviate any clogging or cramping of the rolls; and, finally, in details of construction hereinafter specified.

I will now proceed to describe my invention so that others skilled in the art to which it appertains may apply the same.

In the drawing, A indicates a suitable frame or bed, to which are secured vertical castings or housings B, of such shape as will support and accommodate the operative mechanism. In the bed or frame A is journaled the power-shaft *a*, provided with a fly-wheel, a^1, and bevel-pinion a^2, for communicating power. To the forward part of castings B are secured arms or brackets *b*, in the outer ends of which are journaled the upper ends of driving-shafts *c*, and between the brackets *b* and main casting B are pivoted jaws *d*, which carry the adjustable bearing-blocks *d'* of the feed-rollers *e*. In order to allow of the lateral yielding of the feed-rolls, a set of rubber or equivalent springs, e^1, which bear on the jaws *d*, are secured in the brackets *b*, and controlled by set-screws e^2. *e e* indicate corrugated feed-rollers provided with the adjustable and yielding bearings above described, and driven from shaft *c* through pinions c^1 c^2, the latter pinion having its teeth slightly spiral to accord with the lateral play permitted to the feed-rollers.

In rear of the feed-rollers *e*, and projecting in the line of feed, are the lateral dressing-knives *f*, which are secured in slots of housings B, and adjusted by means of set-screws *f'*. These knives serve to dress the face of the timber and determine the width of the hoops subsequently formed thereon. Above the feed-rolls and also impinging on the line of feed, is a third knife, *g*, supported between the housings B, and arranged at right angles to the dressing-knives *f*. Said knife may be termed an "equalizing-knife," as its function is to remove any uneven or unequal surfaces that might otherwise clog or obstruct the action of the machines.

The knife *g* may be provided with a set-screw for purposes of adjustment, if desired. In rear of the upper racking-roll is a second equalizing-knife, *g'*, which will serve to remove any inequalities which may remain after the billet has passed the first knife.

h is a bar or feed-bed, arranged between the castings B and provided with guides or lugs, which move in slots b^4 of the casting, to preserve the position of the bar, and at the same time permit of its vertical adjustment. This adjustable feed-bed extends forward between the feed-rolls *e*, and is cut away, as at *h'*, so that it shall not impede the adjustment of the feed-rolls. The forward end of the bar or bed may be provided with an anti-friction roller. In order to adjust the feed-bed or bar at pleasure a movable incline, *i*, is inserted beneath said bar, and controlled by a threaded rod, *i'*.

Directly over the vertically-adjustable bed or bar *h*, and journaled in frame B, is the first racking-roll *k*, which is driven from the power-shaft *a* through intermediate shafts *l*, bevel-gear l^1 l^2, and pinion l^3, and in rear of the bar or bed *h* is the second bending or racking roll *k'*, which may also be termed the delivery-roll. This latter roll is journaled in an adjustable bearing-block, *m*, arranged in slots of the housing or casting B, said bearing-block being raised or lowered by means of the movable wedge or incline *n* operated by a screw, *n'*, secured to the bed-block *o*. The object of placing this bending or racking roll in adjustable bearings is that the roll may be adjusted so as to give a greater or less curve to the timber passing through the machine, according as the wood is more or less brash.

In order to adjust the roll *k'* equally with the bed or bar *h* so as to accommodate different-sized pieces of timber without changing the bend, (the roll *k'* having been set, as before specified, to give the proper curve,) I form an incline, *o'*, upon the under-side bed-block *o*, so that the incline *i* operates both the bar *h* and the roll *k* simultaneously and equally.

The roll *k'* receives its power from the same source as roll *k*, through the additional hanging gearing *r s*. The shaft *c* of the feed-rollers *e* is driven from the power-shaft *a* through the pinions *t u v*.

The operation of my devices is as follows: The logs having been cut into suitable lengths, quartered and split into sections equal to multiples of the hoop to be produced, are checked or notched on the end in the usual manner to determine the thickness of the hoops. The screw-rod *i'* is then turned to draw out or force in the incline *i* and raise or lower bar *h* until the opening between the feed-rolls corresponds to the size of the billet to be operated upon. The incline *n* is operated by its rod to raise or lower the roll *k'*, to give the desired curve to the billet, and the lateral or dressing knives *f* adjusted. Power being applied to the machine, the billet is placed in the bite of the feed-rolls *e*, the end checks or notches being in a horizontal line, and is forced forward by the rolls until it engages with the lateral or dressing knives *f*, which dress the face of the billet which correspond to the edges of the finished hoop. At the same time the upper forward knife will remove from the upper face of the billet any inequalities which might otherwise obstruct the machine. From the knives the billet passes beneath roll *k* and roll *k'*, being compressed and bent thereby in such a manner as to rack the wood and separate it into layers or strips corresponding to hoops. Should any inequalities remain upon the upper face of the billet after it has passed the knife *g* and roll *k* they will be removed by the second equalizing-knife *g'*, before the timber escapes from the machine. The hoop-strips thus produced are subsequently passed through a hoop-shaving machine of any approved pattern, and in the usual manner.

The advantages of my invention are, first, that the billet is gaged and partially dressed before it reaches the racking-rolls, so that no obstruction to the operation of the rolls can occur; secondly, the machine can be regulated to operate upon billets of different widths without changing the bend or curve given to the wood; thirdly, the curve given to the wood may be changed from time to time, as desired, to adapt it to the class or character of the wood used.

Having thus described my invention, what I claim, and desire to secure by Letter Patent, is—

1. The combination of the racking-rolls and the adjustable feed bed or bar *h*, substantially as and for the purpose specified.

2. In a machine for racking hoop-billets, the combination of the adjustable feed-bed and independently-adjustable lower racking-roll with the upper racking-roll, substantially as and for the purpose specified.

3. The combination of the lateral knives *f f* with the racking-rolls, substantially as and for the purpose specified.

4. The combination of the equalizing-knife *g* with the racking-rolls, substantially as and for the purpose specified.

5. In combination with the feed bed or bar *h* of a racking-machine, the movable incline *i* for adjusting the same, substantially as and for the purpose specified.

6. In combination with the roll *k'* of a racking-machine, the adjustable bearing and movable incline *n*, substantially as and for the purpose specified.

7. In a racking-machine, the combination of the adjustable bed *h*, the incline *i*, the roll *k'*, with its adjustable bearing, and incline *n*, and the adjustable bed-block *o*, substantially as and for the purpose specified.

In testimony whereof, I, the said STILLMAN PARKER, have hereunto set my hand.

STILLMAN PARKER.

Witnesses:
JAMES I. KAY,
F. W. RITTER, Jr.