

J. A. PEOPLES.

MACHINE FOR SPLITTING HOOP-POLES.

No. 188,939.

Patented March 27, 1877.

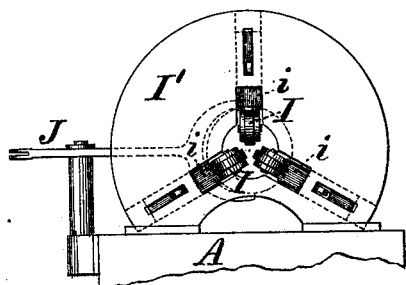
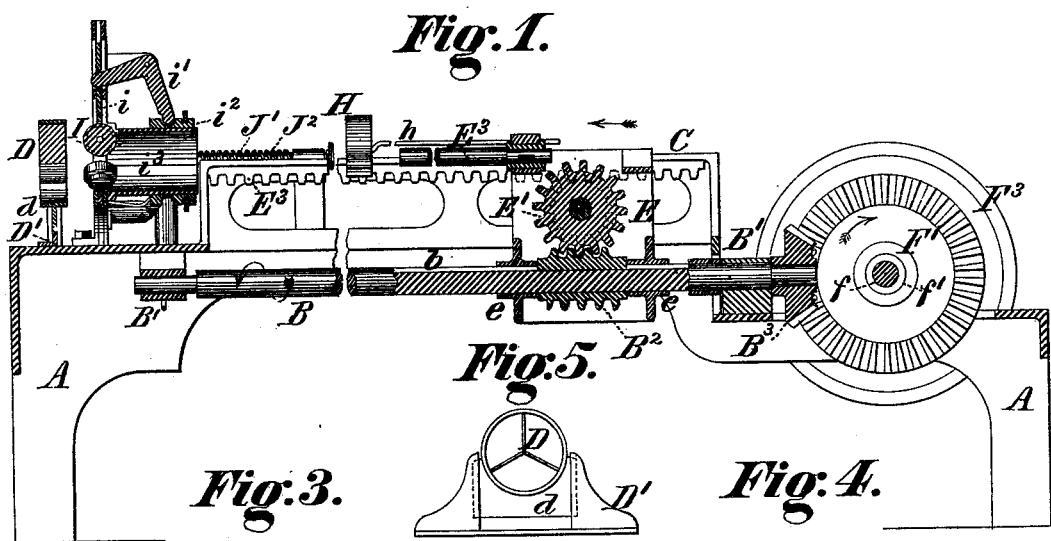


Fig. 6.

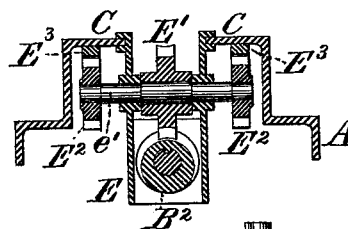
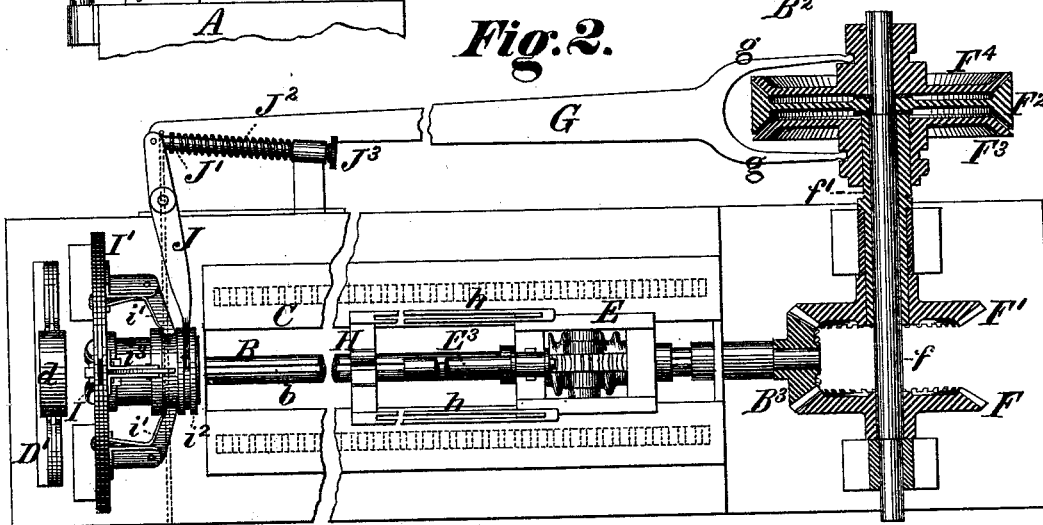


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES A. PEOPLES, OF CHICAGO, ILLINOIS, ASSIGNOR TO ROSWELL HART,
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IMPROVEMENT IN MACHINES FOR SPLITTING HOOP-POLES.

Specification forming part of Letters Patent No. 188,939, dated March 27, 1877; application filed
January 6, 1877.

To all whom it may concern:

Be it known that I, JAMES A. PEOPLES, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Splitting Hoop-Poles, of which the following is a specification:

My invention relates to machines of the class in which hoop-poles are forced against a stationary knife by the movement of a reciprocating carriage; and my improvements consist, first, in the combination of a stationary knife and certain novel devices for centering the pole thereto; and, second, in the combination of a stationary knife, a movable carriage, and improved means for moving the carriage toward and from the knife, all as hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a vertical longitudinal central section of a machine for splitting hoop-poles, embodying my improvements; Fig. 2, a plan or top view, partly in section, of the same; Fig. 3, a front view of the casing supporting the centering devices; Fig. 4, a vertical transverse section through the center of the carriage; Fig. 5, a front view of the knife and its support, and Fig. 6 a front view of the rest employed to prevent the bending of the pole.

The frame A of the machine supports the bearings B¹ of a horizontal shaft, B, carrying upon one of its ends a bevel-pinion, B³, above and parallel with which shaft are secured horizontal guides C. A knife, D, which is usually multipart, or provided with three or more blades converging to a center, is secured in a frame, d, which rests in guides in a stationary support, D', secured at or near one end of the machine. The frame d can be removed whenever required, and replaced by another having a knife of a different number of blades, according to the number of splints into which the pole is to be divided. A groove or spline, b, preferably the former, is formed upon the shaft B, its length being equivalent to that of the guides C, or thereabout, and a worm, B², is mounted loosely upon the shaft B, having a key or feather, which enters the groove, so that the worm has the capacity of longitudinal movement upon the shaft while rotating therewith. A carriage, E, is supported by bearings

e, through which the shaft B passes freely, and is maintained in line therewith by lips or flanges at its top, fitted to slide upon the guides C. A worm-wheel, E¹, meshing with the worm B², is secured upon a shaft, e', which is mounted in bearings transversely upon the carriage, and has secured upon it a spur pinion or pinions, E², meshing with a rack or racks, E³, secured upon the lower side of the guides C. By this arrangement it will be seen that the carriage can be moved longitudinally upon the guides toward or from the knife, according to the direction of rotation of the shaft B. The bevel-pinion B³ of the shaft B meshes with two bevel-gears, F F¹, one of which, F, is secured upon a transverse shaft, f, rotating in bearings on the frame A, and the other, F¹, upon a sleeve, f', loose upon said shaft. Power is applied to a loose pulley, F², on the shaft f, the rotation of which pulley may be communicated either to the shaft f or the sleeve f', according as one or the other of two friction-disks, F³ F⁴, is brought into contact with one of the beveled friction-rings upon each of its sides. The disk F³ has the capacity of longitudinal movement on a key or feather on the sleeve f', and the disk F⁴ is similarly arranged upon the shaft f. The two disks can be moved simultaneously, so as to bring either one of them into contact or both out of contact with the loose pulley F², by a shipper, G, the forks g of which enter grooves in the hubs of the disks F³ F⁴, respectively. The shipper G is pivoted to the frame A, and is moved by a transverse rod, G'.

A rod or pusher, E³, is secured to the top of the carriage E at the end adjacent to the knife, and when the carriage is moved toward the latter pushes the pole up before it. To obviate the buckling or bending of the pole in its traverse I provide a rest, H, composed of a bent spring or yielding plate united to a transverse bar, Figs. 1, 2, and 6, which can slide freely on the guides C. The rest H is placed upon the guides about midway between the pusher and the centering devices, presently to be described, and has a horizontal slotted bar, h, connected to each of its sides. Stops on the carriage E enter the slots of the bars h, and when the carriage has advanced far

enough for them to strike the ends of the slots adjacent to the rest, they push the latter before them to the ends of the guides C, and on the reverse movement of the carriage, acting against the opposite ends of the slots, they return the rest to its original position.

The poles are centered to the knife by three or more centering-rolls, I, mounted in bearings on plates *i*, sliding in radial slots in vertical frames or guides I', secured to the frame A adjacent to the knife *d*. Bell-cranks or angle-levers *i*¹ are pivoted to the outside of the frame I', which is farthest from the knife, one of the arms of each bell-crank entering a slot in one of the plates *i*¹, and the other arm resting in a groove turned upon a sleeve, *i*², encircling a tubular projection, *i*³, of the frame, to which the bearings of the bell-cranks are secured, said tubular projection being concentric with the knife D and pusher E³. A horizontal shipping-lever, J, is pivoted to one side of the frame A, having forks at one end, which enter a groove on the sleeve *i*², and being pivoted at the other to a sliding rod, J¹, which is pressed in the direction of the knife by a spring, J², the tension of which may be regulated by a nut, J³, on the screwed end of the rod. Instead of the tension of a spring, as herein shown and described, a weight might be used to operate the shipping-lever, acting to draw its outer end toward the knife. The tendency of the spring or weight is to draw the sleeve toward the end of the tube *i*³ farthest from the knife, and, by the bell-cranks *i*¹, to force the rolls I radially toward a common center. The rolls, when separated by the entrance of the pole passing between them, clamp the same, and, by their centripetal action, present it, as nearly as may be, to the center of the knife, the several blades of which converge to a point concentric with the tube *i*³.

The traverse of the carriage and the length

of the pusher are such that the latter moves almost or quite up to the centering-rolls, and as the knife is placed as close as practicable to the latter, the splints of the pole can be readily removed by hand from the machine.

I do not claim the employment of radially-moving centering-rolls as applied to the uses hereinbefore referred to; neither does my invention embrace the movement of the carriage toward and from the knife by means of a screw and nut; nor does it include resting one end of the hoop-pole upon the carriage when the said pole is of extra length; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a machine for splitting hoop-poles, of a stationary knife, three or more centering-rolls, moving radially toward and from the center of said knife, pivoted bell-cranks, connecting said rolls with a sliding sleeve, and a pivoted shipping-lever actuating said sleeve, and governed by a spring or weight, substantially as set forth.

2. The combination, in a machine for splitting hoop-poles, of a stationary knife and a centering device, substantially as described, with a carriage reciprocating on guides upon the frame, a grooved shaft rotating in bearings on the frame, and carrying a longitudinally-moving worm, meshing with a worm-wheel on the carriage, and a pinion on the carriage meshing with a rack upon the frame, substantially as set forth.

3. The combination, in a machine for splitting hoop-poles, of a stationary knife, a movable carriage, and an intermediate movable spring-clamping rest to prevent the bending of the pole, substantially as set forth.

JAMES A. PEOPLES.

Witnesses:

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JAMES HOGG.