2 Sheets—Sheet 1.

J. A. PEOPLES.

MACHINES FOR SPLITTING HOOP-POLES.

No. 192,874. Patented July 10, 1877.

Fig. 1.

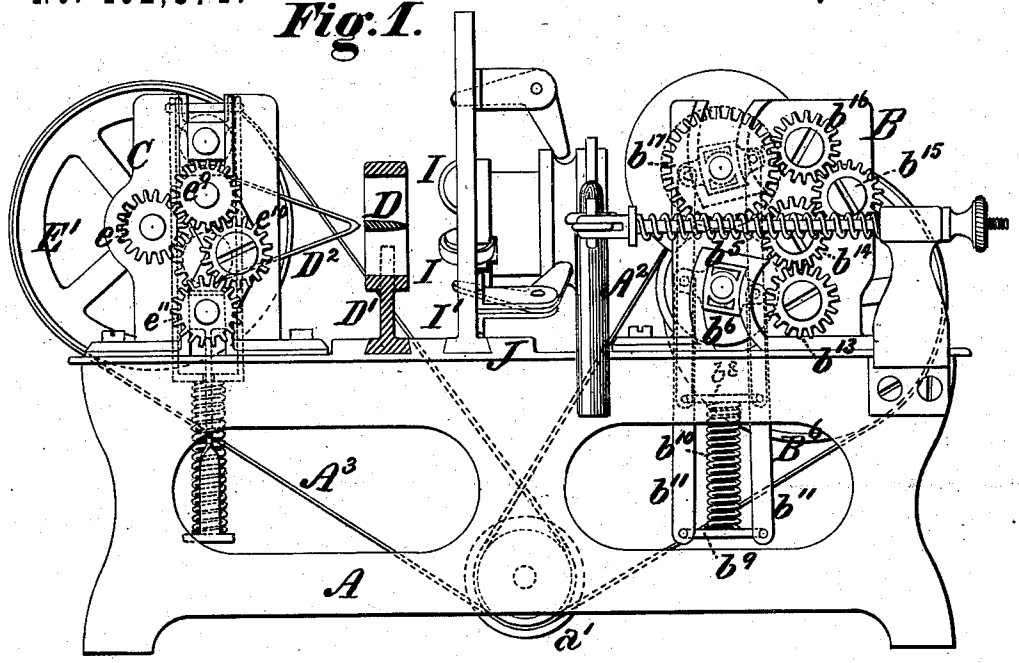
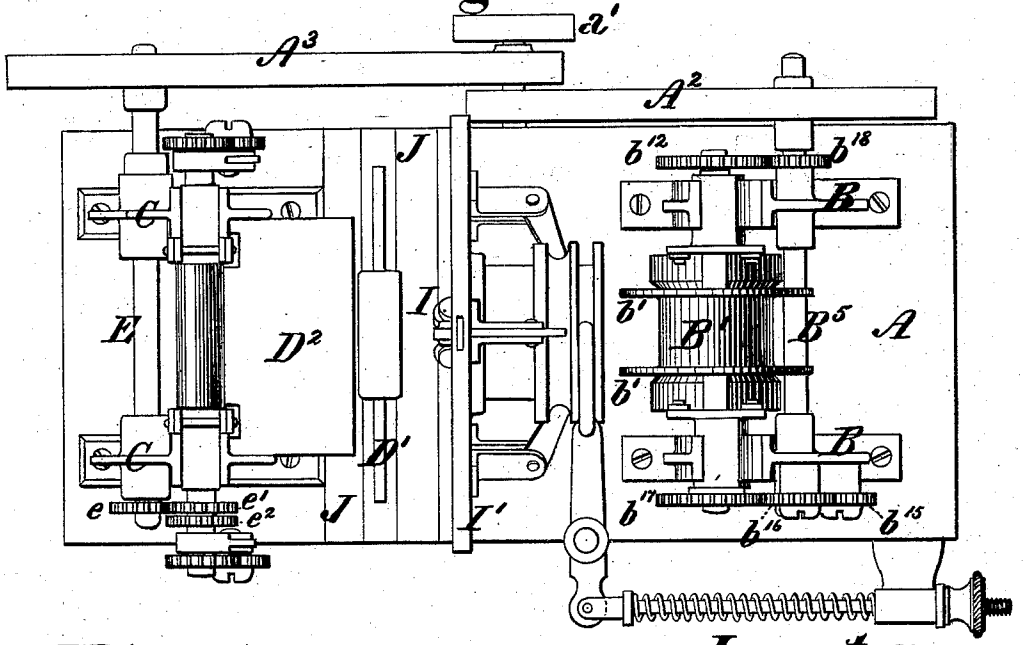


Fig. 2.



Witnesses.

Geo. A. Vaillant.

F. C. Harding.

Inventor.

Jas. A. Peoples,

by J. Snowden Bell

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2 Sheets—Sheet 2.

J. A. PEOPLES.

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Fig. 3.

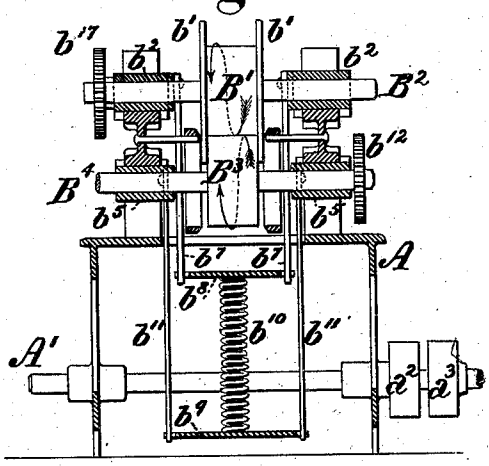


Fig. 4.

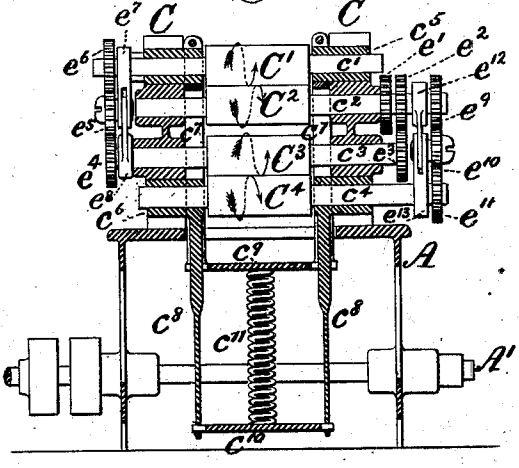


Fig. 5.

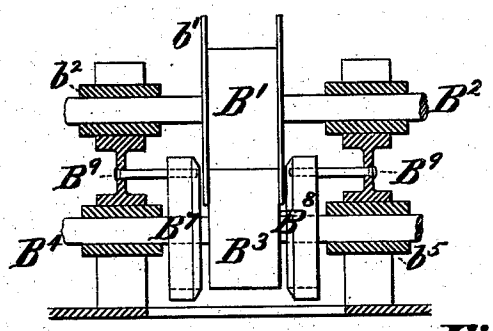


Fig. 6.

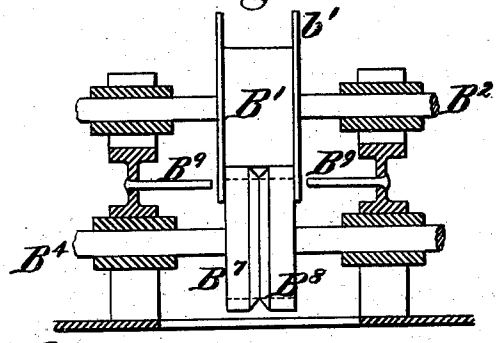


Fig. 9.

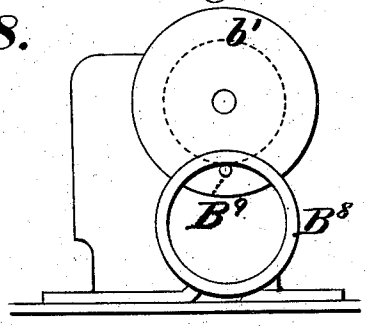


Fig. 7.

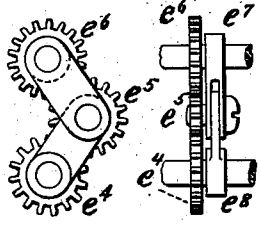
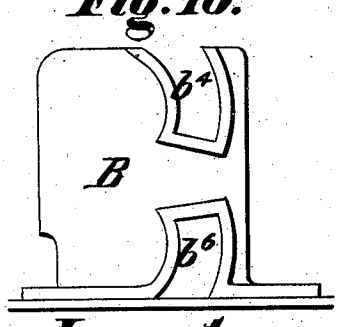


Fig. 8.

Fig. 10.



Witnesses.

Geo. H. Vaillant.

F. E. Harding.

Inventor.

Jas. A. Peoples

by J. Snowden Bell

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N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES A. PEOPLES, OF CHICAGO, ILLINOIS, ASSIGNOR TO ROSWELL HART, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN MACHINES FOR SPLITTING HOOP-POLES.

Specification forming part of Letters Patent No. **192,874**, dated July 10, 1877; application filed January 6, 1877.

CASE C.

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 drawn toward a splitting-knife by rotating feed-rolls; and my improvements consist, first, in combining feed-rolls mounted in movable and self-adjusting bearings with driving mechanism so arranged as to operate with equal facility in any of the positions assumed by the feed-roll shafts; second, in combining two feed-rolls, each movable independently in its bearings, with devices for maintaining the tension of both rolls upon the pole which passes between them, while admitting of the movement of each roll-shaft toward or from the other; third, in combining two cylindrical feed-rolls and a supplementary V-grooved or bevel-faced ring or rings; fourth, in combining a removable knife-support and centering apparatus, and a stationary clamp or clamps upon the frame; fifth, in combining two pairs of discharging-rolls and devices for admitting of independent movement of the bearings of two of the rolls, while maintaining equal tension upon the splints and normal operation of the driving-gearing.

In the accompanying drawings, Figure 1 is a side view, in elevation, of a machine for splitting hoop-poles, embodying my improvements; Fig. 2, a plan or top view of the same; Fig. 3, a vertical transverse section of the same at the center of the feed-roll shafts; Fig. 4, a similar section at the center of the discharging-rolls; Figs. 5 and 6, similar sections, on an enlarged scale, at the center of the feed-rolls, showing the supplementary bevel-faced rings in two positions; Figs. 7 and 8, detailed views of a portion of the driving-gearing of the discharging-rolls; Fig. 9, a view of the upper feed-roll, and one of the supplementary rings of the lower; and Fig. 10, a side view, in elevation, of one of the feed-roll housings.

The frame or table A of the machine has secured upon it, at or near one of its ends, two vertical housings, B, for the bearings of the feed-roll shafts, and the housings C of the discharging-rolls are secured at or near its opposite end. A driving-shaft, A^1, is mounted in bearings in the lower part of the frame, and carries a pulley, a^1, through which it receives power from the prime mover, and pulleys a^2 and a^3, for driving the feed and discharging rolls, respectively. The upper feed-roll B^1 is cylindrical, and provided with a flange, b^1, on each side, and is secured upon a shaft, B^2, mounted in boxes or bearings b^2, which are fitted to and movable within curved slots b^4 in the upper portion of the housings B. The lower feed-roll B^3 is likewise cylindrical, but without side flanges, and is secured upon a shaft, B^4, mounted in bearings b^5, fitted to and movable within slots b^6 in the lower portion of the housings. The bearings b^2 of the upper feed-roll are articulated by links b^7 to a horizontal plate, b^8, and the bearings b^5 of the lower roll are similarly connected by links b^{11} to a lower horizontal plate, b^9. A spring, b^{10}, connects the plates b^8 and b^9 in such manner that its tension acts equally upon the bearings of the upper and the lower roll, and in opposition to their movement apart, so as to maintain constant and equal pressure of each of the rolls upon the pole passing between them. The rolls are driven by a shaft, B^5, mounted in fixed bearings in the housings B, and having a pulley, B^6, upon one of its ends, carrying a belt, A^2, from the pulley a^2 of the driving-shaft A^1.

A spur-pinion, b^{13}, on the shaft B^5, adjacent to the pulley B^6, meshes with a gear, b^{12}, on the lower feed-roll shaft B^4, and a similar pinion, b^{13}, on the opposite end of the shaft B^5 rotates a gear, b^{17}, on the upper feed-roll shaft B^2, through the intermediation of the pinions b^{14} b^{15} b^{16}, each of which rotates upon a stud or within a bearing secured to the adjacent housing B.

The curved slots b^4, in which the bearings of the upper feed-shaft rest, are concentric with the pinion b^{16}, and the slots b^6 of the lower feed-shaft are concentric with the shaft B^5, by which arrangement it will be obvious that the gears of the feed-shafts will mesh

with the respective driving-pinions in any of the positions which the shafts may assume when separated by the passage of a pole of varying thickness between the feed-rolls.

The object of employing three intermediate pinions for driving the upper roll-shaft is to enable the centers of the upper and lower slots to be placed as nearly as practicable in the same vertical plane.

For the purpose of feeding angular splints two supplementary rings, B^7 B^8, each of which is beveled or inclined at the side of its periphery adjacent to the other, are suspended upon pins B^9, secured to the housings, and by elevating the upper shaft B^2 may be slipped around the lower feed-roll B^3, so as to rest upon and rotate therewith, their beveled faces presenting an angular or V-shaped groove, which receives the angular portion of the splint. Instead of two bevel-faced rings, as shown, a single ring having a V-groove in its periphery might be employed for the same purpose.

The hoop-pole is fed by the rolls B^1 B^3 to the centering-rolls I, by which it is centered to the splitting-knife D. The centering-rolls and their attachments, and the knife, are fully described and shown in an application for Letters Patent filed by me simultaneously herewith, and designated "Case B," and need not, therefore, be here specifically described.

The knife-support D^1 and the frames I′, in which the centering devices are mounted, are each fitted to dovetail grooves in a stationary clamp or clamps, J, secured to the top of the frame, so that either the knife or the centering apparatus, or both, can be readily removed and replaced whenever required.

The splints of the hoop-pole, after passing the knife D, are caused to diverge by a wedge-shaped divider, D^2, which directs them to the upper and lower pairs of discharging-rolls C^1 C^2 and C^3 C^4, which are respectively secured upon shafts c^1 c^2 and c^3 c^4, mounted in bearings in the housings C. The bearings of the lower roll C^2 of the upper pair, and of the upper roll C^3 of the lower pair, are each fixed, but the bearings c^5 of the roll C^1 and the bearings c^6 of the roll C^4 are fitted to vertical slots in the housings, within which they have a limited range of movement. The bearings c^5 are connected, by bars or links c^7, to a horizontal plate, c^9, and the bearings c^6 are similarly connected, by links or bars c^8, to a lower plate, c^{10}, a spring, c^{11}, being connected to the plates c^9 c^{10}, with a tendency to oppose their separation, similarly to the spring described in connection with the feed-rolls.

By this arrangement the tension of the spring is constantly exerted upon both pairs of rolls, and equally upon each pair.

The discharging-rolls are driven by a shaft, E, mounted in bearings in the housings C, and having secured upon one of its ends a pulley, E′, carrying a belt, A^3, from the pulley a^3 of the driving-shaft A^1, and on the other a spur-pinion, e, meshing with a similar pinion, e^1, on the shaft c^2. A pinion, e^2, on the shaft c^2 meshes with a pinion, e^3, on the shaft c^3. The shaft c^3 carries upon its opposite end a pinion, e^4, which meshes with a pinion, e^5, and this, in turn, with a pinion, e^6, on the shaft c^1. The pinion e^5 rotates upon a stud, which is articulated by links e^7 e^8 to the shafts c^1 c^3, so as to remain in gear with the pinions e^4 and e^6, while admitting of vertical movement of the shaft c^1. The shaft c^4 is driven in a similar manner from the shaft c^2, the latter shaft carrying a pinion, e^9, which gears with a pinion, e^{10}, rotating on a stud connected by links e^{12} e^{13} with the shafts c^2 c^4, and gearing, in turn, with a pinion, e^{11}, on the shaft c^4.

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

1. The combination, in a machine for splitting hoop-poles, of an upper and a lower feed-shaft, each driven by gearing, the bearings for said shafts fitted to and movable within slots curved concentrically with their driving-gears, and a spring or springs connecting the bearings of the two shafts, substantially as set forth.

2. The combination, in a machine for splitting hoop-poles, of two feed-roll shafts, mounted in bearings fitted to and movable in curved slots, pivoted links articulating the bearings of the upper and lower shafts, with upper and lower plates, respectively, and a spring connecting said plates, substantially as set forth.

3. The combination, in a machine for splitting hoop-poles, of a cylindrical feed-roll having side flanges, a cylindrical feed-roll without flanges, and a supplementary V-grooved or bevel-faced ring or rings, which can be adjusted upon or removed from said last-named roll-shaft, substantially as set forth.

4. The combination, in a machine for splitting hoop-poles, of a knife-support and centering apparatus, having their bases fitting into dovetail grooves in a stationary transverse clamp secured upon the frame, so that either or both may be readily removed therefrom, substantially as set forth.

5. The combination, in a machine for splitting hoop-poles, of two pairs of discharging-rolls and their shafts, one shaft of each pair being mounted in movable bearings, and a spring connected at its ends to two plates, respectively jointed to the movable bearings of the two shafts, so that the spring shall act with equal tension upon each of said shafts, substantially as set forth.

JAMES A. PEOPLES. [L. S.]

Witnesses:

E. A. SHEPARDSON,

GEORGE EASTMAN.