JOSEPH PENNEY.

Improvement in Machines for Splitting Hoop-Poles.

No. 126,983. Patented May 21, 1872.

Fig. 1

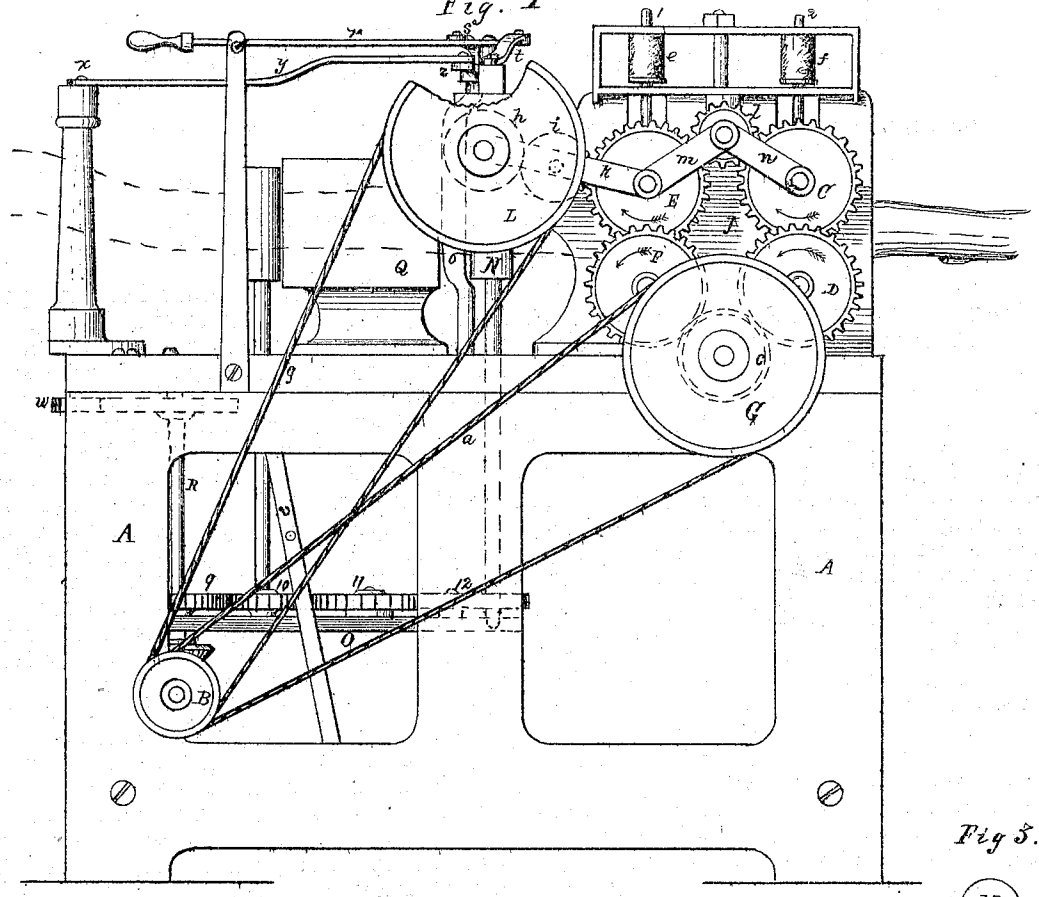
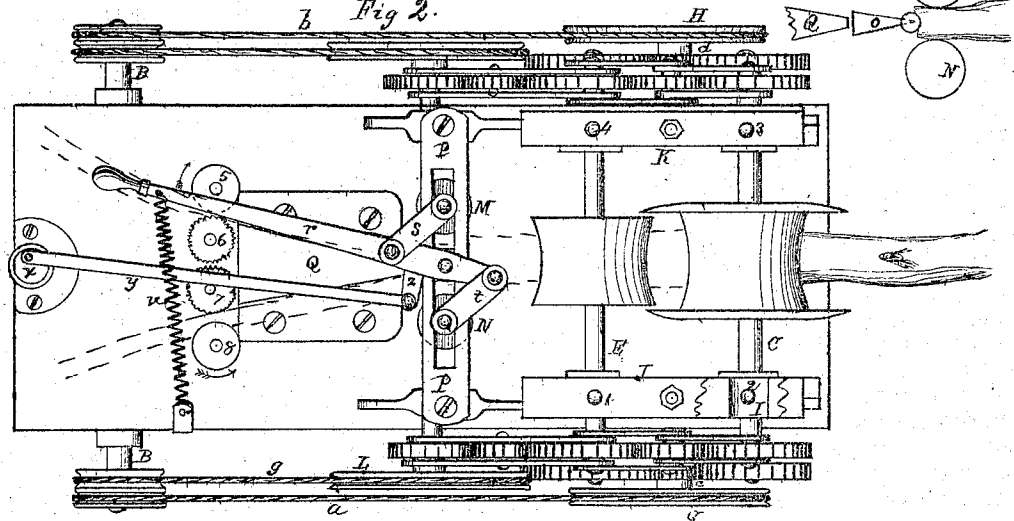


Fig 3.

Fig 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH PENNEY, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN MACHINES FOR SPLITTING HOOP-POLES.

Specification forming part of Letters Patent No. 126,983, dated May 21, 1872.

SPECIFICATION.

I, JOSEPH PENNEY, of Grand Rapids, in the county of Kent and State of Michigan, have invented an Improvement in Machines for Splitting Hoop-Poles, of which the following is a specification:

This invention consists in the use, in a machine for splitting hoop-poles, of two sets of self-adjusting friction-rolls, operating in planes at right angles to each other to feed the poles against an oscillating knife, thereby enabling the machine to handle either round poles or half-round splints.

In the accompanying drawing, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a plan of the same. Fig. 3 is a section, showing the knife and one pair of rolls.

A is the frame of the machine. B is the driving-shaft, from which power is transmitted to the various working parts. The poles are fed into the machine between the two pairs of horizontal friction-rolls on the shafts C D and E F, as indicated by the dotted lines in the drawing. The shafts carrying the lower rolls of these two pairs turn in boxes on the top plate of the machine, and are driven from the shaft B by means of the belts *a b* at each side of the machine, pulleys G H on fixed studs, and pinions *c d* meshing into the gears on the shafts. The boxes of the upper shafts, one of which is shown at I, Fig. 2, have a vertical movement in the jaws of the side frames J K of the machine, and are held down by the rubber springs *e f*, by means of the rods 1 2 3 4. The upper shaft E is driven by the belt *g*, pulley L, pinion *h*, and intermediate *i*, a similar arrangement being adopted on the other side of the machine. The pulley L revolves with the pinion *h* on a fixed stud, and the intermediate *i* is supported on a link, *k*, extending from the fixed stud to the shaft E. The link is slotted in its bearing on the shaft, and the fixed stud is set opposite the middle of the vertical travel of the shaft in order to secure the best meshing of the intermediate *i* and the gear on the shaft. The shaft C is driven at each end from the shaft E by means of the intermediate pinion *l* supported on the links *m n*. The vertical rolls M N center the pole to the knife *o* when it enters between them, and maintain an equal pressure on each side of it while being split. The shafts of these rolls are stepped loosely in the lower plate O, and their upper ends slide laterally in slots in the cross-bar P, and are linked together by the lever *r* and links *s t*, so that as one roll recedes from the knife sidewise the other roll moves an equal distance from the knife on the other side. A spring, *u*, attached to the end of the lever *r*, holds the rolls together. The oscillating knife stands vertically, the edge of the knife coinciding with the center of oscillation, (see Fig. 3,) and is supported by bearings in the top plate and cross-bar P. Behind the knife a wedge-shaped casting, Q, maintains the separation of the splints produced by the knife, and guides them between the two pairs of clamped pulling-rolls 5 6, 7 8, which discharge them out of the machine, as indicated by the dotted lines in the drawing. The rolls 6 and 7, which act on the split side of the splint, are fluted and in stationary boxes, while the outer ones are smooth, have their shafts stepped loosely in the lower plate O, and their upper boxes fitted into slots in the top plate. These rolls are clamped together by springs, one of which is represented at *v*, Fig. 1. The vertical shaft R, which is driven by a pair of bevels from the shaft B, carries at its upper end a gear, from which, by means of the pinion *w*, crank *x*, crank-rod *y*, and arm *z*, attached to the knife, the oscillating motion of the knife is obtained. The upright shaft R, by means of the train of gears 9 10 11 12, transmits power to the pulling-rolls 5 6, 7 8, and the centering-rolls M N. A pole entered between the horizontal rolls is centered to the knife by the centering-rolls, and by the combined action of both pairs of rolls, assisted, especially at the end of the operation, by the pulling-rolls, is split into halves and discharged from the machine. The horizontal rolls are slightly concave on their faces, and are provided with flanges, Fig. 2, to retain the pole between them.

The number of these rolls may be increased to give greater feeding-power, and they may be driven in any other convenient manner.

The centering-rolls need not be driven; but I prefer to drive them, as it both facilitates the entrance of the pole between them and increases the feeding power.

A stationary knife may also be used, and other devices may be employed to control the

action of the centering-rolls, the essential point being that the two sets of horizontal and vertical rolls are equally well adapted to splitting a round pole or to resplitting a half-round splint obtained from a large pole. In the latter case the horizontal rolls hold the splint firmly in consequence of its one flat side, and present it to the knife, properly centered by the vertical rolls, in position to be divided in halves.

Claim.

In combination with the knife *o*, the friction-rolls described for feeding the pole, and the centering-rolls M N, operating in planes at right angles to each other.

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