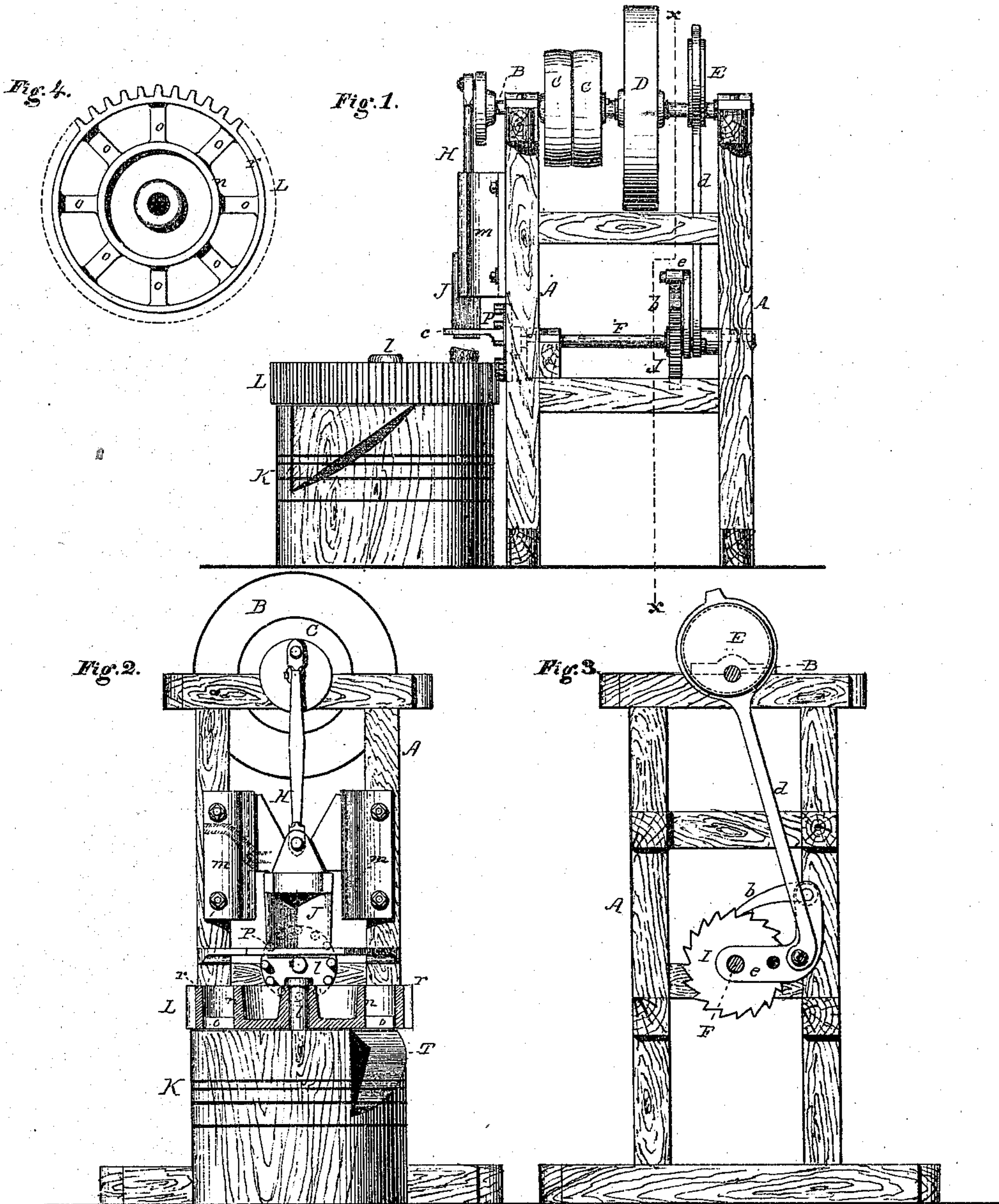


*R. I. Silverwood,*  
*Splitting Wood.*  
*No. 100,679.* *Patented Mar. 8. 1870.*



Witnesses:  
*E. J. Sommer*  
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# United States Patent Office.

ROBERT D. SILVERWOOD, OF BALTIMORE, MARYLAND, ASSIGNOR TO WILLIAM SILVERWOOD, OF SAME PLACE.

*Letters Patent No. 100,679, dated March 8, 1870.*

## IMPROVEMENT IN WOOD-SPLITTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ROBERT D. SILVERWOOD, of Baltimore, in the county of Baltimore, and State of Maryland, have invented certain Improvements in Wood-Splitting Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to machines for splitting wood, and the invention consists—

First, in a novel method of feeding the wood to the knife;

Second, a means for adjusting the height of the table or bed to suit different lengths of wood; and

Third, in the arrangement of mechanism for operating the several parts.

In the accompanying drawings—

Figure 1 is a side elevation of my improved machine, complete;

Figure 2 is a front elevation; and

Figure 3, a transverse vertical section taken on the line *xx* of fig. 1.

Figure 4 is a top plan view of my feeding wheel detached.

In constructing my improved machine, I provide a rectangular upright frame, A, in the upper part of which I mount the driving-shaft B, on which shaft I secure a fast and loose pulley, C, a balance-wheel, D, and an eccentric, E.

At the outer end of this shaft I secure a crank or wheel with a wrist pin, to which is secured a pitman, H, the lower end of which is connected to a knife, J, mounted in a suitable gate moving in ways, *m*, attached to the frame A, the knife working through an opening in a clearer plate, *c*, in the usual manner, as shown in figs. 1 and 2.

In the lower part of the frame I mount another shaft, F, on which I mount a ratchet-wheel, I, as shown more clearly in fig. 3, and on this shaft, by the side of this wheel, I hang an elbow-lever, *e*, to the outer end of which is pivoted a pawl to engage with the teeth of the ratchet-wheel I.

The elbow-lever *e*, I connect by a rod, *d*, with the eccentric E on the upper shaft, so that at each revolution of the upper shaft the elbow-lever, with its pawl *b*, is depressed; the pawl sliding over the teeth in its downward movement, and then is drawn up again, the pawl engaging with the teeth of wheel I as the lever *e* rises, thereby imparting to the lower shaft F an intermittent movement. The elbow-lever *e* is provided with a series of holes, or with a slot, as may be preferred, so that the connection of the rod *d* may be made nearer to or further from the shaft F, which is the center of motion of said lever and pawl, and thereby vary or regulate the movement of the shaft F, causing it to move more or less, as may be desired, and for reasons hereinafter explained.

In front of the frame A, I place a bed or splitting-block or table, K, on which the wood is to rest and be supported while being split by the knife J, as represented in figs. 2 and 3.

This table or bed I prefer to build up in transverse sections of solid timber or planks, the sections varying in thickness, so that by inserting or removing one or more sections the height of the block or table may be varied at will to suit different lengths of wood.

A section is cut out of this block or table on one side, as represented at T, figs. 1 and 2, the base of this cut forming an incline, as there represented.

Upon this stationary table, I mount a wheel, L, of peculiar construction. This wheel consists of a central hub and disk, at the periphery of which is a raised rim or annular flange, *n*, and from this flange *n* there extends a series of radial bars or arms, *o*, to the outer ends of which is secured another annular flange or rim, *r*, upon the periphery of which latter rim there is a continuous row of cog teeth, as represented in figs. 1 and 4.

This wheel may be cast entire, but I prefer to make the central and the exterior portions separately, and then to connect the two by the radial bars or arms *o* of tough wood, the latter being less liable to break, and easier replaced in case of accident than when made of cast-iron.

This wheel thus formed is secured loosely in a horizontal position on the upper face of the bed K, where it is held in position by a central bolt, *l*, on which the wheel turns as a journal.

Upon the outer end of the lower shaft, I secure a cog-wheel, P, which is so located as to gear into the cogs on the periphery of the feed-wheel L, and thus to impart to the latter a motion corresponding with its own movements.

When the parts are thus constructed and arranged the blocks of wood are set on end in the spaces between the flanges *n* and *r* of the wheel L, and, as the latter moves, the radial arms *o* of the wheel L sweep or push the blocks along before them on the face of the bed, the blocks resting on the face of the bed, and moving in the arc of a circle, until they are brought under the knife J, which splits them as it descends. As the wheel L continues its movements, the blocks which have been thus split are carried forward until they arrive at the point where the bed is cut away, when the sticks fall through between the arms *o*, and sliding down the incline T are thus delivered from the wheel L.

It will, of course, be understood that the eccentric E is to be so adjusted in relation to the knife as to cause the wheel L to move forward as the knife ascends, and permit it to remain stationary while the knife descends and is operating on the wood. By means of the adjustment of the rod *d* where it is con-



nected to the elbow-lever *e* the movement of the shaft F, and consequently of the feed-wheel L, may be increased or decreased at pleasure, and thus the wood be split finer or coarser, at will.

By this method of constructing a machine, I dispense with the use of sectional or jointed beds or carriers, and produce a very efficient, simple, and strong machine, and one that can be adjusted to split wood of various lengths and of different degrees of fineness, and in which the wood while being split rests firmly on a stationary bed or block.

Having thus described my invention,  
What I claim is—

1. The feed-wheel L, constructed and arranged to operate substantially as described.

2. The sectional bed or support K, having the recess T, or its equivalent, substantially as set forth.

3. The combination of the feed-wheel L with the shaft F, having the wheel P, ratchet-wheel I, and elbow-lever with its pawl *b* mounted thereon, and connected by the adjustable rod *d* to the eccentric E, when said parts are arranged to operate as and for the purpose herein described.

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