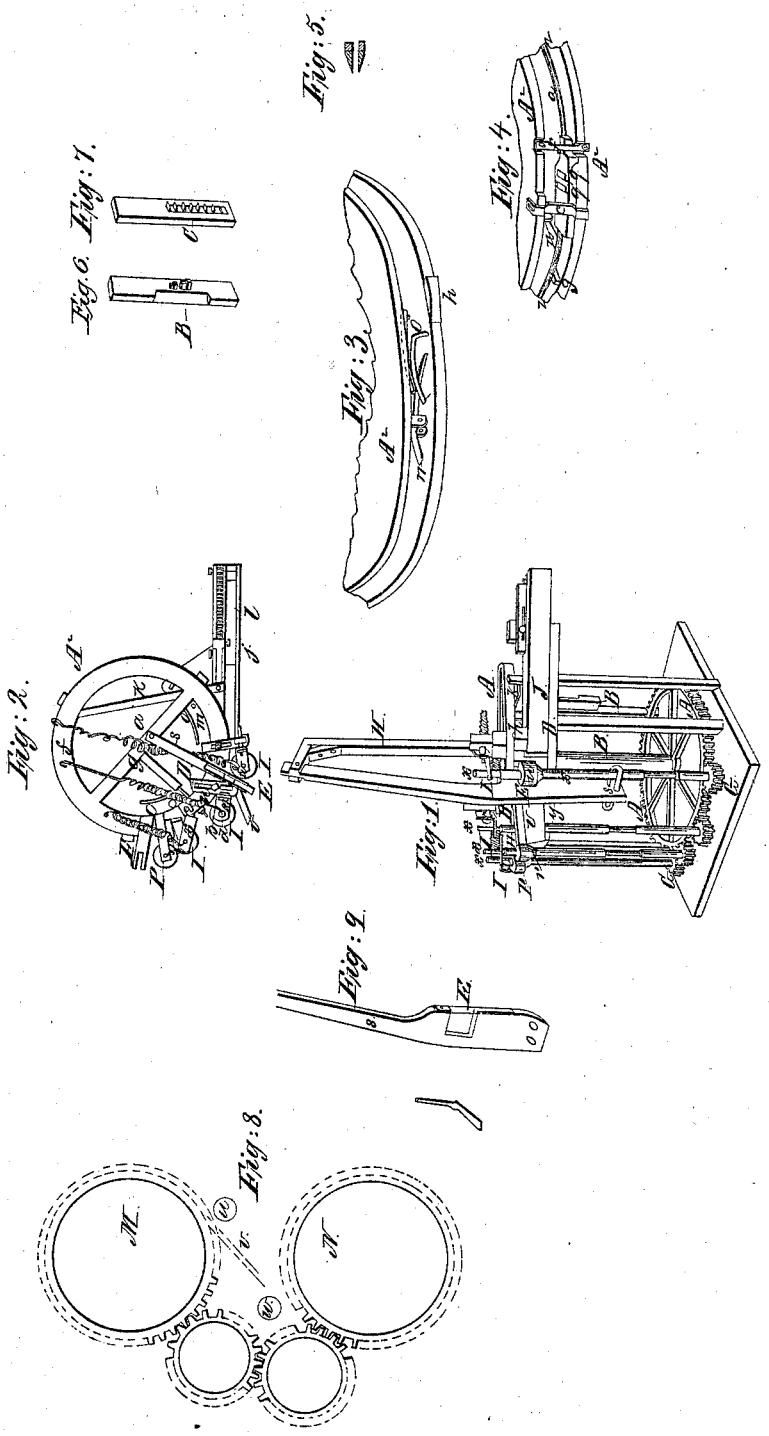
W. Rose,

Making Hoops.

No 3,726. Patented Sep. 3, 1844.



UNITED STATES PATENT OFFICE.

WILLIAM ROSE, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR SHAVING WOOD.

Specification of Letters Patent No. 3,726, dated September 3, 1844.

To all whom it may concern:

Be it known that I, WILLIAM ROSE, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Machine for Splitting and Shaving Pieces of Wood of Various Kinds and for Divers Uses, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a top view. Fig. 3 is a section of the frame showing the jointing knife and spring; and also a segment of the wheel containing the cams. Fig. 4 is an edge view of a section of the frame and wheel; Fig. 5 end view of the knives for shaving cane; Fig. 6 perspective view of ditto; Fig. 7 perspective view of the knives for cutting window blinds.

This machine consists of a circular frame A^2 having in its center a vertical turning shaft B carrying a horizontal revolving circular wheel or frame *a* for bringing forward to the stationary and movable knives the article to be split or shaved, said wheel being turned by any convenient power applied to a large cog wheel A on the lower portion of said shaft B.

The knives E, *f*, *c*, *n*, *q* for splitting and shaving and jointing the several articles are arranged around and outside the periphery of the circular frame, A^2 some in a vertical, some in a horizontal and others in an inclined position, fixed and movable, according to the kind of work designed to be performed. In front of each knife is arranged a roller on a vertical axle *x*, whose periphery touches the periphery of the driving wheel *a* for receiving the article to be split, shaved, or jointed between them and carrying them forward to the knives as they revolve, motion being given to the said wheel and rollers by the aforesaid large cog wheel A and small cog wheels G on the vertical axles *x* of the rollers meshing into said large cog wheel A and by the friction of the rubbing surfaces of the said rollers against the article passed between the rollers and the wheel. The lower ends of the axles of the rollers turn in boxes on the foundation of the frame. The upper ends turn in movable boxes I attached to the circular frames by perforated arms and screw bolts and springs and swivels so as to allow the said rollers to approach toward and recede from the periphery of the wheel *a* at pleasure according to the size of the article introduced between them. The article of wood to be acted on by the aforesaid knives is introduced to the rollers by a horizontal tangential trough J into which it is put by hand or other means. This trough is open at its two ends and top and is fastened to the frame in a line tangential to the periphery of the wheel directly in front of the first vertical knife E having a driver *l* working back and forth therein for driving forward the article of wood to the knife, or knives, that are to act upon it, attached to the end of a horizontal vibrating arm *k*, which is made to throw the driver forward in the trough by means of a pin *m* or cam inserted in the wheel, that strikes against said arm as the wheel revolves. The driver *l* is drawn back by a spring attached to it and to the trough. It is simply a block of wood fitting the trough loosely so as to move freely back and forth therein.

The first or splitting knife E is fastened to a vertical arm S suspended to a gallows H in the center of the circular frame in a position to bring the cutting edge near the periphery of the first roller to whose axle the lower end of said vertical arm is attached by a staple *t*, so that said splitting knife moves outward from the periphery of the wheel *a* as the axle *x* of the roller *u* to which the knife is attached is moved outward from the said wheel *a*. The two vertical knives *c* and *f* for shaving are secured to the periphery of the circular frame A^2 in front of the rollers *r* and *p*. The horizontal stationary knives *q*, *q* Fig. 4 are also secured to the frame A^2. The vibrating jointing knife *n* is likewise attached to the frame A^2.

In order to split poles into hoops and then shave them the machine is put in motion; the pole is put into the feeding trough J; the pin *m* strikes the arm *k;* this moves the driver *l* in the trough and brings it against the end of the pole and carries it forward to the knife E; this divides the pole longitudinally into two parts or hoops, the half next the wheel *a* passing between it and the rollers *u b r p* to the shaving knives *f*, *c* (Fig. 4,) by which it is shaved and discharged at the rear of the last roller. The other half of the pole is guided to the left and from the wheel *a* to another shaving machine made similar to the one above described by means of a guide *v* fastened to the frame behind the splitting knife E in

which second machine it may be shaved, or it may be returned to the trough and shaved in the same machine. The rollers press the hoop against the wheel while the latter carries it around against the knives which takes off the roughness of the hoops.

The two machines may be arranged side by side and be geared together in the manner represented in Fig. 8, in which M and N represent the large cog wheels on the shafts of the propelling wheels.

In the operation of splitting and shaving hoops for sieves the timber must be first split by hand to the requisite thickness—it is then put into the feeding trough and carried forward to the splitting knife E in the manner before described and divided into two parts, one of which is carried forward to the knives and shaved on one side and tapered at one end by the cam *h* Fig. 3 on the periphery of the wheel crowding it outward against the knife, the said cam forcing the end of the hoop outward toward the edge of the knife causing a greater portion of the hoop to be taken off, by which the requisite taper is made. It is then reversed in position and put into the trough and carried between the rollers and knives and its opposite side and end subjected to the same operation of being shaved and tapered. While these operations are going on the other half of the piece of wood may be conducted to the second machine by the conducter *v* and subjected to similar operations. Shingles are shaved and tapered in like manner except that they are tapered only at one end.

In shaving and jointing pieces of wood for staves the pin *m* must be adjusted so as to bring the middle of the piece of wood to the vibrating jointing knife *n* before the cam *o* is made to operate on the tail of said jointing knife for giving the bilge. The taper is effected by the cam *h* and vertical knives.

In order to split and shave cane for umbrellas, weavers' reeds, and other articles suitable knives and rollers may be added if necessary while these in conjunction with the groove on the circumference of the wheel will effect the end proposed. When the article is to be planed on both sides and jointed with parallel straight sides then the knives *f c* and the jointers *q q* are used. But should the edges require to be tongued and grooved suitable cutting tools may be added to the frame to effect the object intended, arranged similar to the cutter *q* and *q*. The small roller is brought nearer to the edge of the knife when a thin shaving is to be taken off, and is effected by having the axle of the roller to run in a swivel *d* Fig. 2. Said swivel having two adjusting screws. The forked arm F may be substituted for the swivel *d*.

The rollers *p* and *r* are generally used for bending hoops and are furnished with a small plate to guide the hoop between them. Should the hoop require to form an oval a roller of corresponding shape will be required—and the pin *m* must be placed to correspond with the position of said oval roller. The boxes of the upper ends of the axles are provided with spiral springs to keep them against the wheel and to allow them to recede therefrom when required. The front rollers are provided with sliding boxes and screws to prevent them from touching the periphery of the wheel. The other rollers may also be provided with screws for the same purpose.

The knives may be of any size and shape required. The frame may be round or square and when round made a little greater than the roller turning thereon. And there may be several of them arranged one above the other—the base or foundation of the whole structure being square, or of any convenient shape. The tail of the vibrating jointer is provided with a spring to return it to its former position after being raised by the cam. The splitting knife is provided with a screw to regulate its distance from the wheel. The feeding trough J is taken away when the article is intended to be shaved of equal width and thickness. The timber should be split by hand small enough for the machine and then passed through the machine a sufficient number of times to bring it the thickness desired.

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

The combination of the revolving wheel and cams with the rollers and knives for splitting and dressing pieces of wood as before described.

W. ROSE.

Witnesses:
JOSEPH W. JONES,
MARSHALL A. JONES.