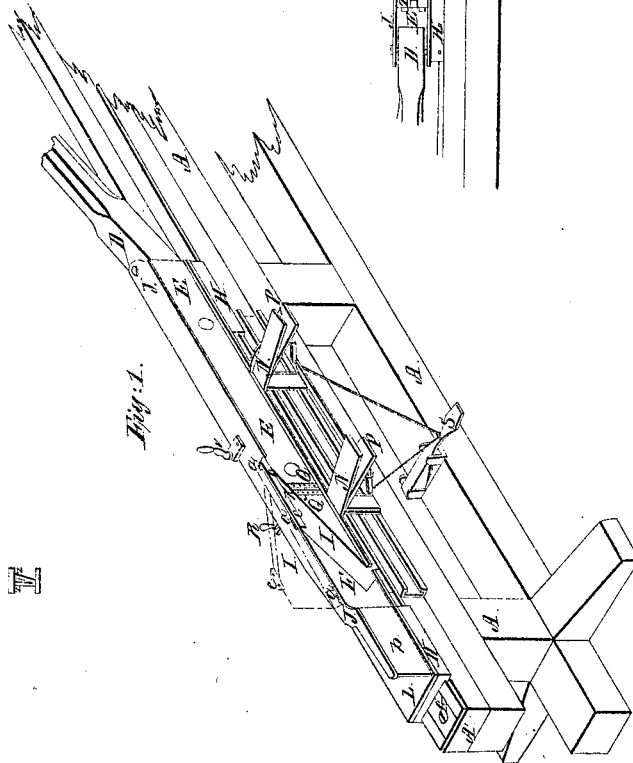
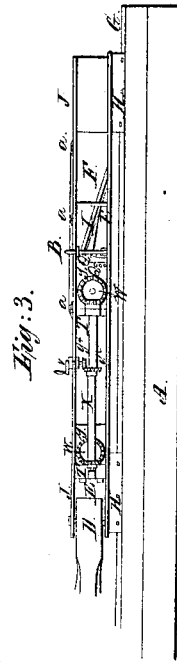
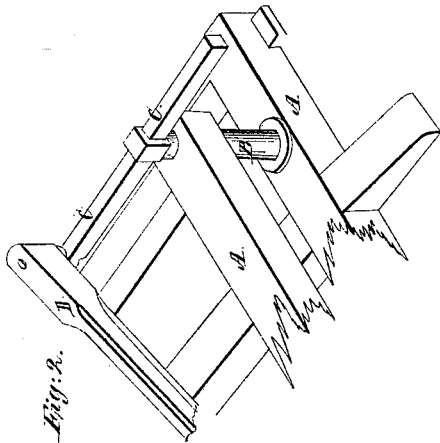


*P. Bryant,*  
*Making Hoops.*  
*N<sup>o</sup> 6,447.*  
*Patented May 15, 1849.*



# UNITED STATES PATENT OFFICE.

PATRICK BRYANT, OF CHESTERFIELD, MASSACHUSETTS, ASSIGNOR TO E. RING AND T. RING, OF WORTHINGTON, MASSACHUSETTS.

## MACHINE FOR CUTTING AND SLITTING CHEESE-HOOPS, &c.

Specification of Letters Patent No. 6,447, dated May 15, 1849.

*To all whom it may concern:*

Be it known that I, PATRICK BRYANT, of Chesterfield, in the county of Hampshire and State of Massachusetts, have invented  
5 a new and useful Improvement on a Machine for Splitting Laths, Hoops,, Splints, Veneers, &c.; and I hereby do declare that the following is a full, clear, and exact description.

10 The nature of my invention consists in providing a splitting knife to the stock in such a manner that the knife stock with the knife is attached to the frame with a strap below and a hinge above so that the knife  
15 can be swung on its axis (hinge) to be sharpened. Also in providing a movable face plate to regulate the thickness of the slit &c. When a single knife only is used in combination with which I provide a movable gage and a movable set of strippers;  
20 also a duplicate set of knives in a stock to cut two slits at one stroke.

To enable others skilled in the art to make and use my invention I will proceed to  
25 describe its construction and operation, reference being had to the accompanying drawings making a part of this specification, in which—

Figures 1, and 2, are linear perspective  
30 views. Fig. 3, a back section. Fig. 4, is a view of two knives placed in one stock and Fig. 5, represents the angle at which the one knife is set to the other, being an end view of Fig. 4.

35 A is the frame. It is made of strong timbers in any of the known ways.

B, is the driving shaft.

C, is the crank which is a cross head.

40 D, is the connecting crank rod which is attached by bolt or pin to the frame of the movable face plate and knife stock, both of which are connected together.

E, is the face plate and F, is the knife stock. The face plate and knife stock are  
45 moved backward and forward during every revolution of the crank, and they are guided to move steady and direct on the top of the frame. For this purpose a rail plate with two projections on the top, G, is secured on the top of A', the top beam of the  
50 frame. The rail plate is as long as the length of the stroke. On the top of the rail plate are two metallic guide blocks, H, H, whose flanches project over the edges or  
55 sides of the rail plate, fitting snugly to sit

on and slide on the rail plate, and serve as guides of the face plate and knife stock. The knife stock and face plate are attached to and rest on the guide blocks, hence they are guided in a straight line backward and  
60 forward.

I, is the knife which is attached to the knife stock in a peculiar manner. It is made to be turned up on a hinge or hinges,  
as an axis to be sharpened. The black lines 65 Fig. 1, represent the knife as set in the stock for slitting, and the red lines exhibit the knife as swung upon its hinges to be sharpened. The way in which the knife is attached to the stock is as follows. 70

J, J, is a metal plate running about the whole length of the knife stock and face plate, and it may be called the top plate of the movable frame. On the top of this  
75 plate are three eyes and on the upper side of the knife stock are three eyes with pivots through the same passing likewise through the eyes of the top plate forming a swivel joint or joints or hinge as set forth in Fig. 1. The knife stock is a metallic or other  
80 suitable plate, and being attached by a hinge to J, J, it hangs with the knife like a wing. The knife I, is secured to the plate of the stock by a narrow metallic band or strap  
85 K', at the top. Two bolts C, C, pass through the band and the top of the plate F, and effectually secures the knife to the plate without the said bolts passing through the knife. The back ends of C, C, are made  
90 with eyes to receive the pivots to form the joints or hinges, a, a, a. The knife therefore is formed with a projecting piece secured between the bar K' and the plate F and it is secured to the bottom of the plate F, by  
95 a bar K<sup>2</sup> and with screws.

The knife is securely fixed to the movable sliding frame as follows: L is a metallic plate about the breadth of the guide blocks and of the length of J, J. It is attached  
100 flatwise to the guide blocks and serves as a floor to the fixed edge plate p the knife stock F and the face plate E. On the bottom of L, there is a small projection to coincide with e, which is a small projection on the under side of the knife stock; so that  
105 when the knife stock is in its proper place for the knife to slit, the projection e, and the under projecting piece on L, will be brought into close contact and form a square shoulder M, over which, or around 110

which, is placed a clasp or strap, united in front by a square or round headed screw bolt passing through an eye on each end of the strap, the which bolt by being screwed up secures the knife stock to the bottom plate L.

When the knife requires to be sharpened the clasp has only to be loosened and the knife can then be swung up on its hinges to be sharpened. In all other slitting machines, the knife is fastened to the stock by screws and it has to be taken out of the stock to be sharpened hence the attaching of the knife to the stock by a hinge and strap is a great improvement both in the saving of time and in the ease with which the knife can be sharpened.

The timber or log to be slit into hoops, veneers, splints, &c., is placed upon the projecting frame N, N, and held to the face plate and as the knife is driven backward and forward one slit off the timber or log is cut during every revolution of the crank. The timber or log frame or bench is operated by a foot stirrup S, which is connected with reciprocating levers passing through stationary plates P, P, to raise or lower N, N, to throw the timber or log on the bench at an angle with the face plate to cut the hoop or slit with a bevel or not as may be desired.

Q', Q<sup>2</sup>, are two rows of splint knives. Q', is a stationary set and Q<sup>2</sup> a movable set. These small pointed knives are for cutting the slits into narrow splints, &c. Therefore while the movable frame is passing the timber plank or log these splint knives cut the slits horizontally. The stationary splint knives have been used before but not the movable set. The movable set are fixed on a face stock like the stationary set, but the stock of Q<sup>2</sup> project behind and is attached to a movable upright lever R, Fig. 3, which can throw the splint blades out and in gear at pleasure. The handles of R is secured in guides in any of the known ways. These movable slitters are for cutting the wane edges of plank into some useful narrow stuff when the full thickness of the timber or log is to be slit into wide stuff.

The stationary slitters are not used in connection with the movable slitters, E, E. The face plate is made to move out and in toward the timber or log or from it. Its office is to direct the thickness of the hoop, &c., to be cut.

All slitting machines have face plates but they are stationary and can only direct the thickness of the slit to be cut in conjunction with the angle at which the knife is set in the stock.

The operation and construction of the movable face plate is as follows: E, E, the face plate is not permanently secured either

to the top plate J, J, or the floor plate L and it is not attached to the knife stock. It extends from where it is connected to D, to the end of the salient angle at the lower edge of the knife I. Fig. 3 exhibits its back parts and the manner in which it is moved out and in. T, T, are two upright posts or bearings secured by bolts at top and bottom to the plates J and L. In these two posts is fixed an axle or shaft X to revolve or move in proper bearings, in the posts. On each end of the axle is a pinion g', g'. These pinions mesh into two bevel wheels W, W. Near the middle of X is another pinion g<sup>2</sup>, which meshes into another pinion g<sup>4</sup>, on an upright shaft which passes through two guide eyes attached to the top plate by a shoulder of metal. The shaft of g<sup>4</sup> has a handle V attached to it, so that when the said handle is moved the axle X will be moved and the bevel wheels W, W, likewise. The axles of W, W, are screws fastened at their heads O, O, to the face plate, and ground smooth with the surface of the face plate on the front side of Fig. 1. The bevel wheels W, W, are collars having interior threads and fixed on the screw axles O, O. These collars pass through and are supported on rests or bearings Y, Y, the which bearings are plates secured to the top and bottom plates of the movable frame, therefore when the bevel wheels W, W, are moved by the pinions by the threads of the collars of the bevel wheels working into or on the screw of the face plate the said face plate will be moved out and into and from the timber to be slit according as the handle is turned.

The use of the face plate principally is this. In slitting timber by a knife or knives when the knife during the clip or stroke approaches the center or heart of the log of some kinds of timber owing to the greater solidity and harness and the circular layers or rings of the wood there is always a tendency of the knife being turned somewhat out of its direct line of clip and thus a slit is cut of unequal thickness throughout. My movable face plate effectually remedies this evil for the operator who attends the machine has but to notice the exact point of the departure of the knife from the straight line and regulate the clip in any direction for thickness or thinness by turning the handle V which will move the face plate while the machine is in operation and thus no time lost nor unequal clips or slits made while the machine is in operation which is not the case with those machines that have no movable face plate.

I also employ for certain purposes two or more knives in one knife stock to be moved together and cut two or more slits at one operation or stroke. Fig. 4 is a side view of the two knives in the stock and Fig. 5

an end view. The two knives Z Z are placed in slits or grooves in the top and bottom plates J and H. The top parts of the knives may project above J but not through the bottom slots. The knives are secured by screws in the said slots or grooves and the bottom and top plates are fastened by bolts or screws to an upright plate or beam. Two metal bands one on each side of each knife at top and bottom may be used in the slots or grooves in the plate J and H to secure the knife or knives in the slots to the frame of the knife stock, by screws passing through the bands and plates and through the upper and lower ends of the knives, or merely through the bands and plates or screwed into the knives as may be found most convenient to secure the knives properly in the knife stock. The double knives may be attached to D and operated in the same manner as the movable frame Fig. 1 already described. The double knives are fixed in the stock as set forth in Figs. 4 and 5 at such an angle and distance from one another as that in cutting slits and other articles there will be a bevel or feather edge or taper cut on the slits by the one knife below and the other above and at every stroke, although two bevel hoops may be cut at once, will leave the face of the timber to be slit straight for the next clip of the two knives.

Having thus described my invention I claim

1. The knife stock F attached to the mov-

able frame in such a manner as to swing up the knife I for the purpose of sharpening the same either by attaching the stock to the frame by hinges above and a clasp below or for such equivalents as will make the knife stock movable in the manner and for the purpose set forth.

2. I also claim the combination of the movable face plate E, with the slide or stock J, in such a manner that the position of the face plate can be changed during the operation of the machine, for the purpose of counteracting the effects produced by the springing of the knife I, in passing through the central and hardest portion of a piece of wood, and thereby enabling the operator to perfectly govern the thickness of the veneers or splints cut from different parts of the same piece of wood, without stopping the machine.

3. I also claim the combination of the pointed slitters Q<sup>2</sup>, with the slide or stock J, in such a manner that they, (the pointed slitters) can, while the machine is in motion, be thrown into use to act in combination with the knife I, when their services are required, and be thrown out of use again without stopping the machine, when their services are no longer needed, substantially as herein set forth.

PATRICK BRYANT.

Witnesses:

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