

New Inventions.

Worcester's Clapboard Planing Machine.

Mr. E. D. Worcester, of Lockport, Niagara Co., N. Y., has invented and taken measures to secure a patent for a very excellent and new improvement in machinery for planing boards on both sides at once, and making them into clapboards and shingles, at one continuous operation. He employs the Framah wheel cutters, which project out and cut beyond the edge of a shield which holds the board tight to the action of the cutters. The board is fed in edgewise, and there is a like arrangement of cutters on both sides. The board of this action, is reduced and planed on both sides to the requisite thickness. In connection with the planers, there are disc planes for trimming the edges. Behind all is placed a circular saw set in such a manner that it divides the boards in two halves lengthwise, by an oblique cut forming two clapboards planed on the outside.

The Partition Tumbler.

A new drinking glass has been introduced in England, which is used for effervescing draughts. By the ordinary method, the gas generated is so rapidly disengaged as to cause frequently a considerable waste. The partition tumbler obviates this difficulty. In one compartment is placed the acid, and in the other the carbonated alkali, which are then separately dissolved. On raising the tumbler to the mouth, the two mixtures meet over the partition, which is lower than the edge of the glass, and effervescence immediately ensues. This can be suspended at will by placing the tumbler upright, so that the whole or part of the draught may be taken as required.

Machine for Making Barrel Heads.

The accompanying engravings represent improvements in machinery for making barrel heads, invented by Mr. E. G. Brown, of Montville, Waldo Co., Maine, who has taken measures to secure a patent for the same.

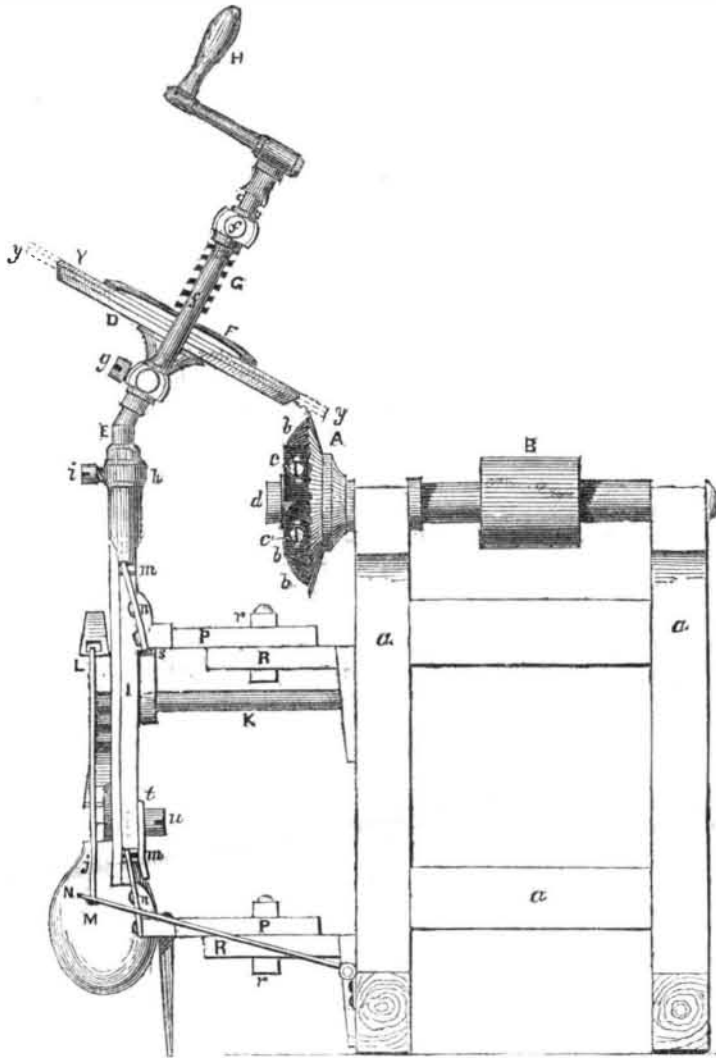
Figure 1 is a side elevation; figure 2 is a front elevation. The same letters refer to like parts.

The nature of the invention consists in the employment of a concave circular saw carrying cutters on its inner face, which, combined, serve to cut the inner and outer level on the edge of the heads or pieces forming the same, —the head or pieces being fed up to the saw and cutters by an inclined disc or table attached to a slide having a vertical and forward motion, the heads being held to the disc by clamp, and turned by hand or otherwise, so as to present continuously its edge or edges to the cutting surfaces.

A is a concave circular saw with convex back, having any appropriate form of teeth; it is mounted on a horizontal shaft carrying a driving pulley, B, which is supported in the framing, *aaa*; *bbb* are cutters of suitable shape, secured to the block, C, (fig. 2) by set pins, *ccc*, the block, C, fitting on the shaft carrying the saw, and being held up against the inner (concave) face of the saw by the nut, *d*, the cutters, *bbb*, being made of an incline or bevel on their cutting extremities (fig. 1) so as to cut the one bevel on the head, also being made with and secured at their shank ends to the block, C, by slots through which the set pins, *ccc*, pass, holding them to the block, C, at any required distance and enabling them to be set in or out, according to the diameter of the cutting circle they are required to move in or describe. D is an inclined disc or table revolving on a spindle branching at the requisite angle from a vertical round sliding shank, E; it is made flat on its upper face, and with a bevel downwards on its edge, being situated in an inclined direction with relation to the saw, from, and as regards which it is set in front at any required position or distance. *ffff* are rods forming, as united, an inclined oblong frame within which the disc, D, revolves, and which carries a revolving clamp, F, connected to the oblong frame by a screw, G, operated by handle, H

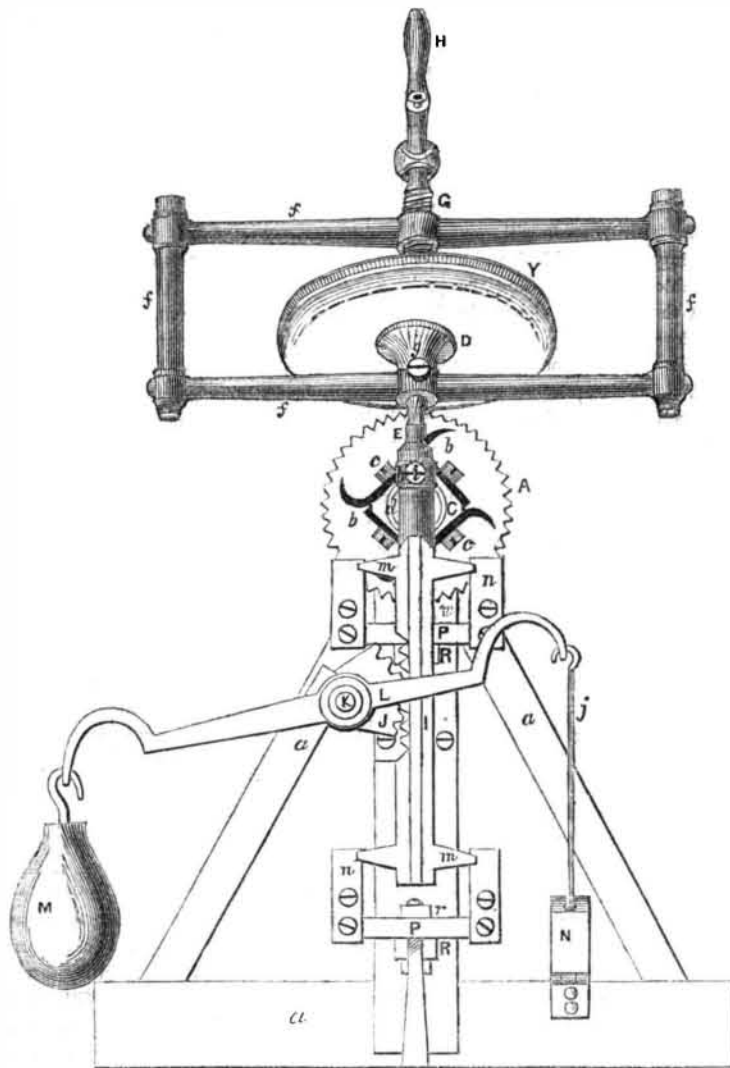
the screw passing and working through the upper horizontal rod of the oblong frame, and being attached loose to the clamp, F, so as to admit of the clamp turning upon its end; it (the clamp, F) may be constructed of any suitable form for holding the head, or pieces constituting it, between it and the disc, D; it is here shown as being made with flexible arms, which are slightly curved downwards at their ends, so that when brought to bear hard upon

Figure 1.



the head or aforesaid pieces, they will slightly yield or straighten, owing to their flexibility, as caused by the pressure produced through the screw, G. The frame, *ffff*, is secured

Figure 2.



and set on a collar uniting the spindle, *e*, and sliding shank, E, by a set pin, *g*, which admits of the frame being swung or turned upon the collar, also the sliding shank, E, fits into and slides in a socket, *h*, attached to and forming part of a vertical slide, I, the sliding shank, E, being held at its proper height in the socket, *h*, by a set pin, *i*. The slide, I, has teeth forming a rack on its one edge (as seen in figure 2) into which a part pinion or tooth-

ed quadrant, J, works for elevating or depressing the slide, I, as may be, the toothed quadrant, J, being attached to a shaft, K, turning in brackets secured to the framing and branch or branches therefrom, the shaft, K, and toothed quadrant being operated by a lever, L, on the one arm of which is a weight, M, pressing the slide upwards and so relieving the board from the cut, and the other arm being connected by a rod, *j*, with a treadle, N, which, in being depressed, draws down the slide, I, and by the attachments described, brings down also the board or pieces (held by the clamp, F, on the disc, D) to the saw, A, and cutters, *bbb*, the slide, I, by arms, *mmm*, being made to receive, in addition to its vertical movement, a curvilinear forward motion through curved guides, *nnn*, which the arms, *mmm*, made with grooved ends, slide against or are guided by; the curved guides, *nnn* are secured to arms projecting at right angles from or forming part of the sliding pieces, P P, which move over fixed pieces or branches, R R, attached to the front upright of the framing, *aaa*; the pieces, R R, have slots in them in the direction of their length, which serve, through bolts, *rrr*, to admit of the pieces, P P, being set in or out from the framing, *aaa*, and so setting the board or pieces under operation further from or nearer to the saw, D, and cutters, *bbb*; *s* is a stop fixed to the slide, I, which, by striking against the under surface of the upper piece, P, arrests the up stroke of the slide, *u*, which, fitting through a slot in the stop, *t*, secures the stop to the slide, I, whose down stroke the stop, *t*, thus adjusts and arrests by striking against the upper surface of the lower piece, P. Y represents a head or end, as finished by the machine, showing it held on the disc, D, by the clamp, F, and *yy* represent, in dotted outline, the board or pieces when first put into the machine for cutting out the head, Y; the operation, and further description, is as follows: a board of the breadth of *yy*, and of corresponding length, or strips having their edges adjoining and forming one piece, as if it were of the same dimensions as *yy*, is placed upon the disc, D, and held thereon by the clamp, F, operated as described. The saw, A, and cutters, *bbb*, are put in motion, and the foot applied to the treadle, N, which, through the slide, I, arms, *mmm*, acting against the curved guides, *nnn*, and other accompanying connecting parts as described, will cause the board or piece, *yy*, formed of strips, to be fed up to or against the saw and cutters, the curved guides giving the necessary forward or curvilinear direction (corresponding with the disc or concave shape of the saw) to the vertical motion downwards of the slide, I, and accompanying parts, so that the saw, in revolving, will cut out the board or piece, the head or end, forming it with an upper bevel, which it is enabled to do by reason of the disc, D, (holding the board or piece), being positioned on an incline in relation to the saw, of the necessary disc shape, as specified; the disc and clamp, together with the board or piece which they carry being turned by hand or otherwise, through the provisions described, until the saw has performed its operation of cutting out the head, which it fashions with an upper bevel on its edge, while the cutters, by reason of their inclined cutting edges, shape or cut the under bevel, which, when fitted to the cask, may be the upper bevel for fitting into the grooves in the staves forming the cask or barrel, as usual, more or less upper and under, or either bevel being given, as required, by varying the position or shape of the cutters, and setting the disc at any suitable inclination with relation to the saw, in connection with the several adjusting arrangements described, for altering the position of the slide and frame, which adjusting arrangements serve to admit of different sized discs being used, according to the diameter of the head required, also to vary the bevel and otherwise regulate or direct the cut.

This is a new and useful arrangement of machinery, and we are informed that it operates in a most favorable manner. More information may be obtained by letter addressed to Mr. Brown.