

H. Benter,
Joining Staves.

N^o 23,007.

Patented Feb. 22, 1859.

Fig 2

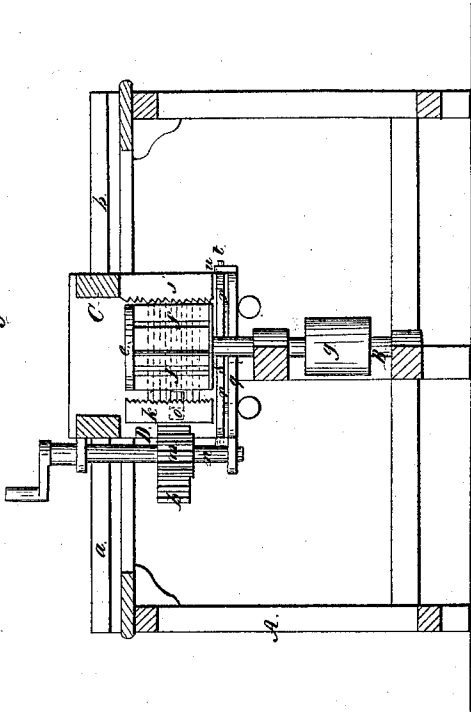


Fig 3

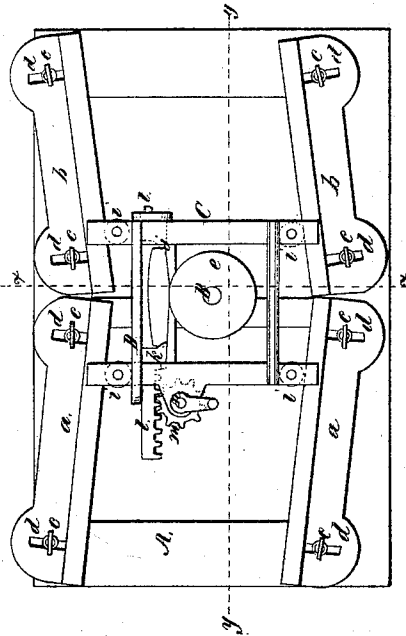


Fig 4.

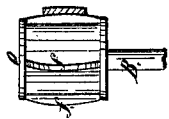
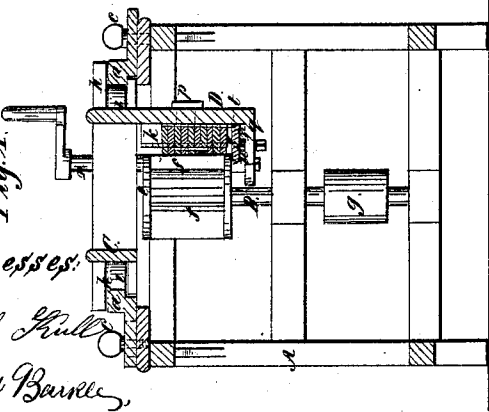


Fig 1.



Witnesses:

Isaac Hull
Jacob Barker

Inventor.

Henry Benter

UNITED STATES PATENT OFFICE.

HENRY BENTER, OF WHEELING, VIRGINIA.

MACHINE FOR JOINTING STAVES.

Specification of Letters Patent No. 23,007, dated February 22, 1859.

To all whom it may concern:

Be it known that I, HENRY BENTER, of Wheeling, in the county of Ohio and State of Virginia, have invented a new and Improved Machine for Dressing and Jointing Staves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a transverse vertical section of my invention taken in the line *x, x*, Fig. 3. Fig. 2, is a longitudinal vertical section of ditto, taken in the line *y, y*, Fig. 3. Fig. 3, is a plan or top view of ditto. Fig. 4 is a detached view of a cutter head.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved stave machine by which staves may be both dressed and jointed in a very expeditious and perfect manner, and to suit casks and barrels of various dimensions.

The invention consists in the employment or use of adjustable guides placed on a suitable frame in which a rotary cutter head is secured and used in connection with a carriage and clamp provided with rollers, the whole being arranged as hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a rectangular frame on the upper part of which four adjustable guides *a, a, b, b*, are placed, two guides *a, b*, being at each side of the frame, as shown clearly in Fig. 3. The guides are attached to the frame by set screws *c*, which pass through slots *d*, made transversely in the guides, as shown clearly in Fig. 3, and admit of the guides being adjusted so that those at one side of the frame may be in line with each other, and parallel with those at the opposite side, or the guides at each side be adjusted out of line with each other, as shown clearly in Fig. 3.

In the frame A, at about its center a vertical shaft B, is placed. This shaft has a cutter head *e*, at its upper end in which head vertical cutters *f*, are placed. These cutters may have straight, concave or convex edges according to the work to be performed. On the lower part of the shaft B, a driving pulley *g*, is placed.

C, is a rectangular frame which forms a

carriage, the sides of the frame near each end fitting on the guides *a, b*, as shown clearly in Fig. 1. At each side of the frame C, and within the recesses *h*, in which the guides *a, b*, fit there are rollers *i*, one roller being placed at the inner part of each recess, as shown clearly in Fig. 1.

To one side of the frame or carriage C, a pendent plate D, is attached. This plate has a stationary serrated jaw *j*, attached to its front end, and at its inner side, and a sliding or movable serrated jaw *k*, is attached to its opposite end at the same side, see Fig. 2. The jaw *k*, has a rack *l*, attached to it into which rack a pinion *m*, gears, said pinion being on a vertical shaft *n*, which is attached to the frame or carriage C. The jaw *k*, is attached to the plate D, by a bolt *o*, which passes through the plate D, and has its head *p*, at the outer side, see Fig. 1.

The plate D, has a horizontal lip *q*, at its lower end and through this lip two screws *r, r*, pass vertically. Directly over the lip *q*, there is a plate *s*, the back part of which is connected by joints *t, t*, to the lip *q*, or rather to ears *u*, at its front and back ends.

The operation is as follows. When staves are to be jointed, a series of them, shown in red, are placed one over the other on the plate *s*, and the staves are placed in a slightly inclined position by adjusting the screws *r, r*. The object in giving the staves this inclination will be presently explained. The staves are firmly clamped between the two jaws *j, k*, by adjusting the sliding or movable jaw, *k*, by turning the shaft *n*, and motion is given the shaft B, in any proper way. The carriage C, is shoved by hand, or other means toward and past the cutter head *e*, and the cutters *f*, which have straight edges for the purpose of jointing act upon the edges of the staves cutting them in a rounded form longitudinally according to the position of the guides *a, b*, see Fig. 3. The position of the guides *a, a, b, b*, it will be seen by referring to Fig. 3, are placed out of line with each other, and the movement of the carriage C, is in the path of a curve, the sharp angle formed by the junction of the guides *a, b*, being lost or neutralized by the rollers *i*, which cause the carriage to move freely in a curve past said angles, and, in fact, along the whole of its path. These rollers *i*, it will be seen form an important feature of the invention.

By having the staves placed inclined their

edges will be cut obliquely so as to form radii of a circle corresponding to the size of the cask which the staves are to form. When the staves in the clamp are jointed
5 at one end or edge they are reversed and the opposite edges cut.

In order to dress staves, that is to say, to cut them transversely of concave and convex form, the guides *a*, *b*, at each side
10 of the frame A, are adjusted in line with each other, and a cutter head *e*, is used, having concave and convex cutting edges, according to which side of the stave is being cut, the different cutter heads being adjusted
15 on the same shaft B, see Fig. 4, in which a cutter head with convex cutting edges is shown.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. The carriage C, provided with rollers *i*, and used in connection with the adjustable guides *a*, *b*, and rotating cutter head *e*, substantially as and for the purpose set forth.

2. The adjustable plate *s*, in connection with the stationary jaw *j*, and sliding jaw *k*, attached to the carriage C, substantially as and for the purpose specified.

HENRY BENTER.

Witnesses:

JACOB BURKLE,
JAKOB KULL.