J. F. Sayer,

Stave-Jointer.

No 85,859 Patented Jan. 12. 1869.

Fig. 3.

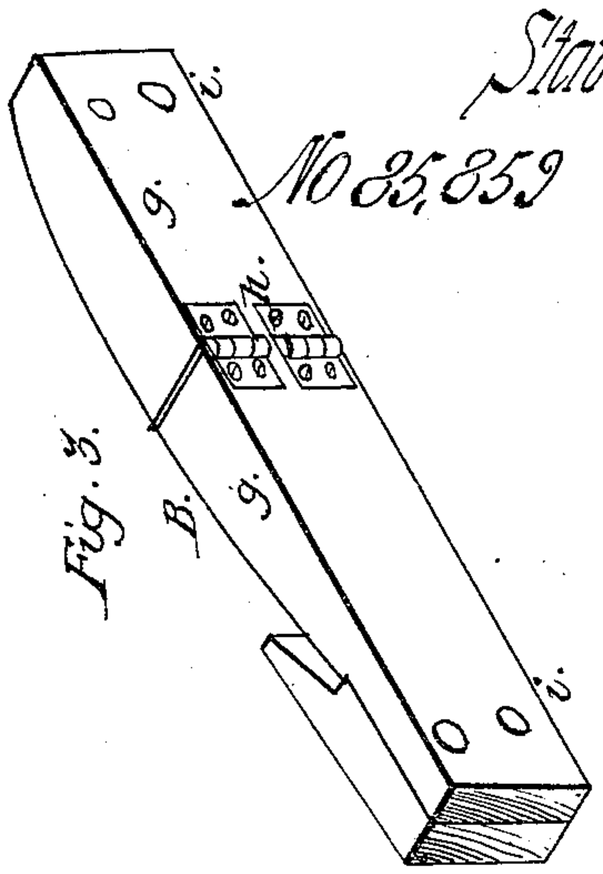


Fig. 4.

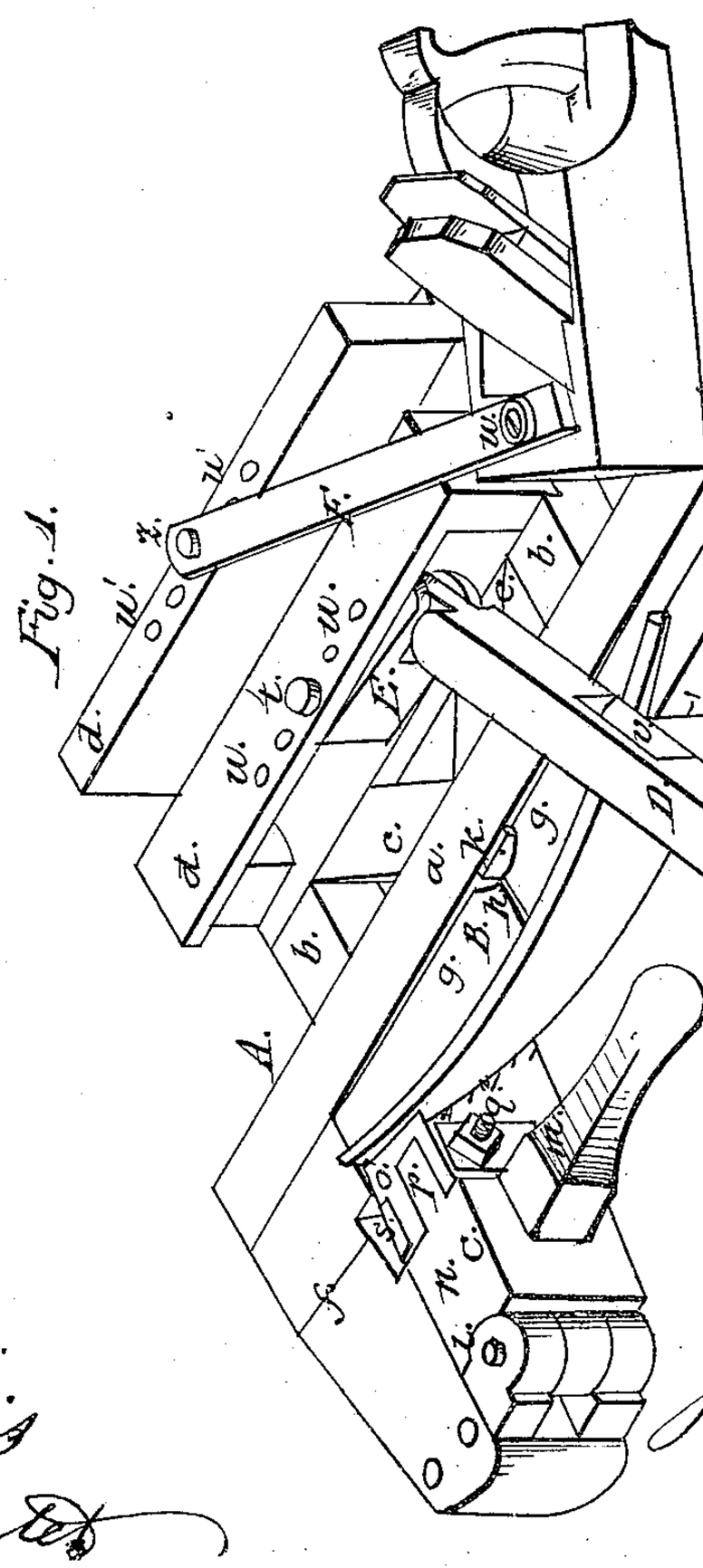
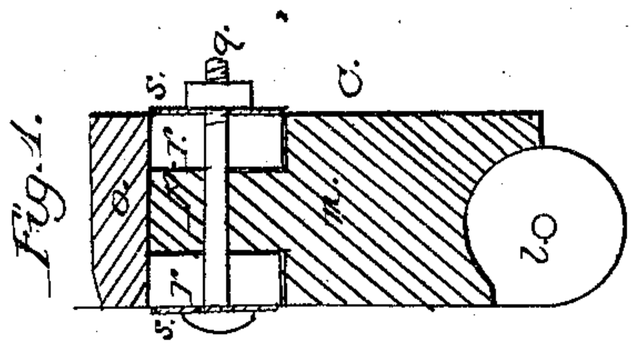


Fig. 4.



Witnesses:

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JAMES F. SAYER, OF MACOMB, NEW YORK.

Letters Patent No. 85,859, *dated January* 12, 1869.

IMPROVEMENT IN STAVE-JOINTERS.

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, JAMES F. SAYER, of Macomb, in the county of St. Lawrence, and State of New York, have invented a certain new and useful Improvement in Stave-Jointers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification

Figure 1 is a perspective view of my improved device

Figure 2, a section of the clamp-head.

Figure 3, a perspective view of the hinged bed removed from place.

Like letters of reference indicate corresponding parts in all the figures.

The object of my invention is to adapt the bed that holds the staves to adjustment out and in, to vary the bilge; to adapt the clamp-head that holds the staves to the bed, to adjust in the same manner; and to connect the swinging knife and plane-stocks in an improved manner, whereby the same are much more effective in operation.

As represented in the drawings—

A is a frame, which is attached to the bench by screws or otherwise.

It consists of a face or block, *a*, for the attachment of the bed, with two timbers, *b b*, extending back and strengthened by braces *c c*, and connected at the rear by cross-pieces *d d*, by which the knife and plane-stocks are attached.

One end of the block *a* has a projection, *f*, which serves as a fulcrum-attachment for the clamp-head, as will be presently explained.

In my former invention the bed B has been made fast and solid, and a fixture of the frame; therefore, its curvature is adapted to the bilge of but one kind of barrel. It is my object, in the present invention, to vary the curvation of the bed, and therefore adapt it to the bilge of different-sized barrels. To accomplish this, I make it in two parts, *g g*, hinged in the centre at *h*, and attach the same by screws *i i* to the block, so that it can be loosed at pleasure. Then, in order to vary the curvation, I place wedges *k* between the bed and the block *a*, at any desired position, as shown in fig. 1.

By this arragement I can set the bed to any desired curvation, so as to form staves for barrels of any required bilge. It is only necessary to loosen the bed a little, and apply the wedge at the required point. When the edges of the staves thus bent are jointed straight, they will exactly fit with the desired bilge.

This arrangement is of much importance, for it enables me to fit the staves with the greatest exactness and very rapidly. The construction also enables me to apply beds of different lengths to the block.

The clamp-head C, which tightens and holds the stave in place, is of a form similar to that described in my aforesaid patents. It is pivoted at *l*, and is operated by a handle, *m*. It differs, however, from the others in being made in two parts, *n o*, united by a mortise-and-tenon joint, *p*, or equivalent, which allows the parts to expand endwise.

Bolts *q q* pass transversely through the joint thus formed, holding fast in the tenon of one part, while the other part is provided with slats *r r* that allow the necessary sliding movement. The screw-bolts clamp down upon metallic bars *s s*, which hold the parts firmly in contact.

This arrangement of the clamp-head is necessary to compensate for the corresponding adjustment of the bed against which it acts; otherwise, were it to have no adjustment, it would not hold the stave firmly to the clamp under all circumstances. It also adapts to staves of different thicknesses.

In my other patents, the knife and plane-stocks, or arms, are pivoted centrally to swing over the edge of the stave. The knife, thus pivoted centrally, and swinging each way from the centre of the stave, to ross the surface of the stave, is limited in the amount and stroke of its leverage, since its fulcrum or pivot is not movable. To obviate all difficulty from this source, I joint the end of the knife-stock D to a toggle, E, which in turn rests on a pivot, *t*, which is changeable to any of a set of adjusting-holes, *u u*, of the cross-connection *d*, to adjust to different lengths of bed.

By this arrangement I can shift the position of the knife by the swing of the toggle, so as to stand midway of each half of the parts *g g* of the bed, and correspondingly midway of each half of the stave. Thus, a greater lever-purchase is gained, and a shorter knife-blade, *v*, can be used. In the old plan, the knife-stock, swinging on a fixed, central pivot, requires a very long knife-blade or a very short lever-purchase on the knife-stock.

In addition to these advantages, the toggle allows an end or shearing-cut of the knife, when desired, which might be very desirable, especially in cross-grained staves.

In my other invention, the plane G is attached rigidly to the stock or swing-arm F, which allows it to sweep over the edge of the stave.

My improvement on this device consists in pivoting the plane at *w* to the end of the stock, so that its position may be reversed at any time. When the plane is attached rigidly to the tock, it must necessarily sweep from end to end of the stave, and must cut one-half the length against the grain. In tough timber it is impossible to cut smooth in this manner, unless with a fine set of the knife, which greatly increases

the labor. By this new arrangement of the plane, I can cut in both directions from the centre by simply shifting the position, and thus always cut with the grain. This not only produces better work, but greatly lessens the labor.

The pivot *z* of the plane-stock adjusts in the holes *u u'* in the same manner as that of the knife-stock.

The adjustment of the knife and plane, by the holes *u u'*, enables those parts to be brought to work in any desired position at any time.

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

1. The arrangement of the adjustable bed B, clamp C, knife-stock D, and toggle E, the whole operating as described, and for the purpose specified.

2. The arrangement, with the above, of the plane when jointed loosely to arm F, and operating in the manner as and for the purpose described.

In witness whereof, I have hereunto signed my name, in the presence of two subscribing witnesses.

JAMES F. SAYER.

Witnesses:

JOHN STACEY,

HORACE D. ALLEN.