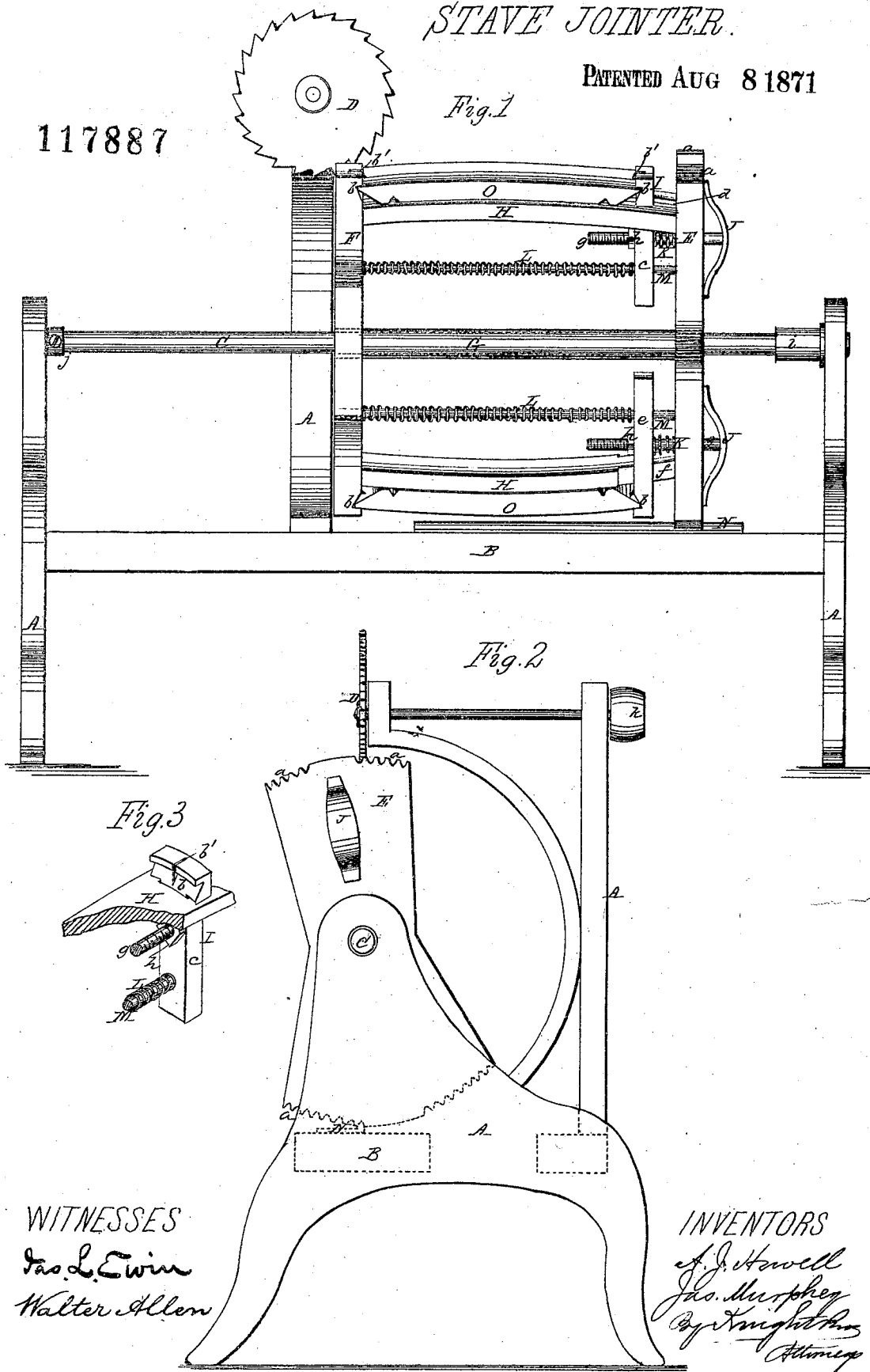


AMINTUS J. HOWELL & JAMES MURPHEY

STAVE JOINTER.

PATENTED AUG 8 1871

117887



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AMYNTUS J. HOWELL AND JAMES MURPHEY, OF SPRUCE HILL, PENNSYLVANIA.

IMPROVEMENT IN STAVE-JOINTERS.

Specification forming part of Letters Patent No. 117,887, dated August 8, 1871.

To all whom it may concern:

Be it known that we, AMYNTUS J. HOWELL and JAMES MURPHEY, both of Spruce Hill, in the county of Juniata, Pennsylvania, have invented an Improved Machine for Jointing Staves, which we term the "Universal Stave-Jointer," of which the following is a specification:

Our invention relates to those stave-jointers in which the cuts are made by a circular saw, and the staves fed to the same by a traversing carriage rocking on a longitudinal pivot, so as to present the respective edges and secure a proper radial cut. In our improved machine the carriage is supported and guided by a longitudinal pivotal shaft or rod and a spline on the frame. It is furnished with a plurality of tables adapted to different widths or styles of stave. It is also adapted to present any width of stave, so as to have both edges cut without the stave being detached. The staves are held between head-blocks and spring followers of peculiar construction, adapted to different lengths of stave. The machine is primarily intended to joint the staves produced by our machine patented January 31, 1871, which have their final curved form. But by the employment of tables curved longitudinally only, the staves being clamped thereon, or by employing flat tables and substituting a double-curved guide for the single spline above referred to, the machine may be adapted to joint the common straight or shaved stave.

Figure 1 is a side elevation of our improved machine, as constructed with two tables adapted to the "Howell & Murphey," or similar staves. Fig. 2 is an end elevation of the same. Fig. 3 is a perspective of one of the spring followers detached.

Like letters of reference indicate corresponding parts.

In carrying out our invention we employ a frame, *A*, preferably of cast-iron, or cast-iron and wood, which may be of any suitable form and construction, the same furnishing a longitudinal bar, *B*, and supports for a parallel cylindrical guide-rod, *C*, and the arbor of a vertical circular saw, *D*, parallel with the axis of the said shaft. Mounted on the guide-rod *C* is the carriage. This is composed of a pair of disks, *E F*, of segmental, circular, or approximate shape, united by a sleeve, *G*, or its equivalent; the tables *H*, (two or more;) followers *I* for holding the staves; handles *J* for

retracting the said followers; springs *K L* (either or both) for advancing the same; and rods *M*, or their equivalent, for guiding the said springs *L*. The disks *E F* constitute, respectively, a variable guide-head and the head-block. The former is constructed for its purpose with a number of notches, *a*, in certain position relatively to the respective edges of each table, the same being adapted to engage with a spline, *N*, on the longitudinal bar *B*, or an equivalent guide-flange or flanges, in order to support the respective edges of the tables at different distances from the saw to suit different widths of staves. The head-block *F* is provided, above the respective tables, with a notch, *b*, corresponding to the chine of the stave, crossed by a knife, *b'*, which, by penetrating the end of the stave, affords lateral support. The tables *H* vary in form with the staves for which the machine is intended. Different forms of table may be included in a single machine. The number of tables also admits of variation. The machine represented has a pair of convex tables of different widths for holding different widths of Howell & Murphey staves. We have employed, in practice, four such tables. The followers *I* have faces with grooves *b* and knives *b'* corresponding with those of the head-block *F*, and are supported and guided by contracted stems *c* working in longitudinal slots *d* in the tables *H*, or by slotted stems *c* embracing contracted portions *f* of the said tables. The handles *J* for retracting the said followers have stems *g* which project through perforations in the disk *E* and the several followers, and are threaded and supplied with screw-nuts *h* (one or more) for attaching the followers thereto; the screw-joints admitting of the adjustment of the followers to suit different lengths of stave. The springs *K L* will be seen to co-act in projecting the followers. Both sets are preferably employed, but either may be dispensed with, if preferred—for instance, the springs *L* with their guide-rods *M*. The spline *N* may be removable to admit of the substitution of a double-curved guide for use in connection with flat tables, as before stated, or the two forms might be combined on a suitable pivoted or sliding support, by the proper adjustment of which either flange could be brought to the proper point. Such arrangement of guides may be included in the subject-matter of a subsequent application. The guide-rod *C* is provided with shoulders *i j* to

stop the carriage, and on the same, *j*, formed by a sleeve held by a set-screw, may be adjustable to suit different lengths of stave. The saw *D* may be driven through a pulley, *k*.

To attach a stave, *O*, the follower *I* of the table *H* to which it is to be fastened is drawn back by the aid of its handle *J*, and the ends of the stave introduced in the grooves *b* in the head-block *F* and follower *I*, the knives *b'* in the same penetrating the ends and holding the stave laterally. A proper notch, *a*, of the guide-head *E* having been engaged with the proper guide-flange *N* to bring one edge of the stave the least possible distance outside of the saw *D*, the carriage is advanced and this edge is jointed. The carriage is then withdrawn until the guide-head *E* is released from the guide-flange, when, by a slight movement, the carriage may be turned so as to bring the other edge in position, and the jointing be thus completed. The carriage is now again withdrawn, the stave detached by retracting the follower, and another substituted. This mode of operation, in addition to its superiority on account of the small amount of labor involved and the absence of necessity for skill in the operator, will be seen to insure the production of definite

sizes of staves which may be readily sorted and obviously be "put-up" much more rapidly than those not thus uniform.

We claim as our invention—

1. The table-carriage, pivoted on a longitudinal guide-rod, *C*, in connection with holding devices *a* *N* for supporting the respective edges of the tables at different distances from the saw, the whole arranged and co-operating substantially as represented and described, for the purpose set forth.

2. In the table-carriage of a stave-jointing machine of the form herein specified, head-blocks *F* and followers *I*, constructed with grooves *b* and knives *b'* for holding the ends of the staves, as represented and described.

3. The combination, with the followers *I*, of the handles *J* with the screw-stems *g* and nuts *h*, and the springs *K* *L* (either or both) for operating the same, as set forth.

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Witnesses:

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