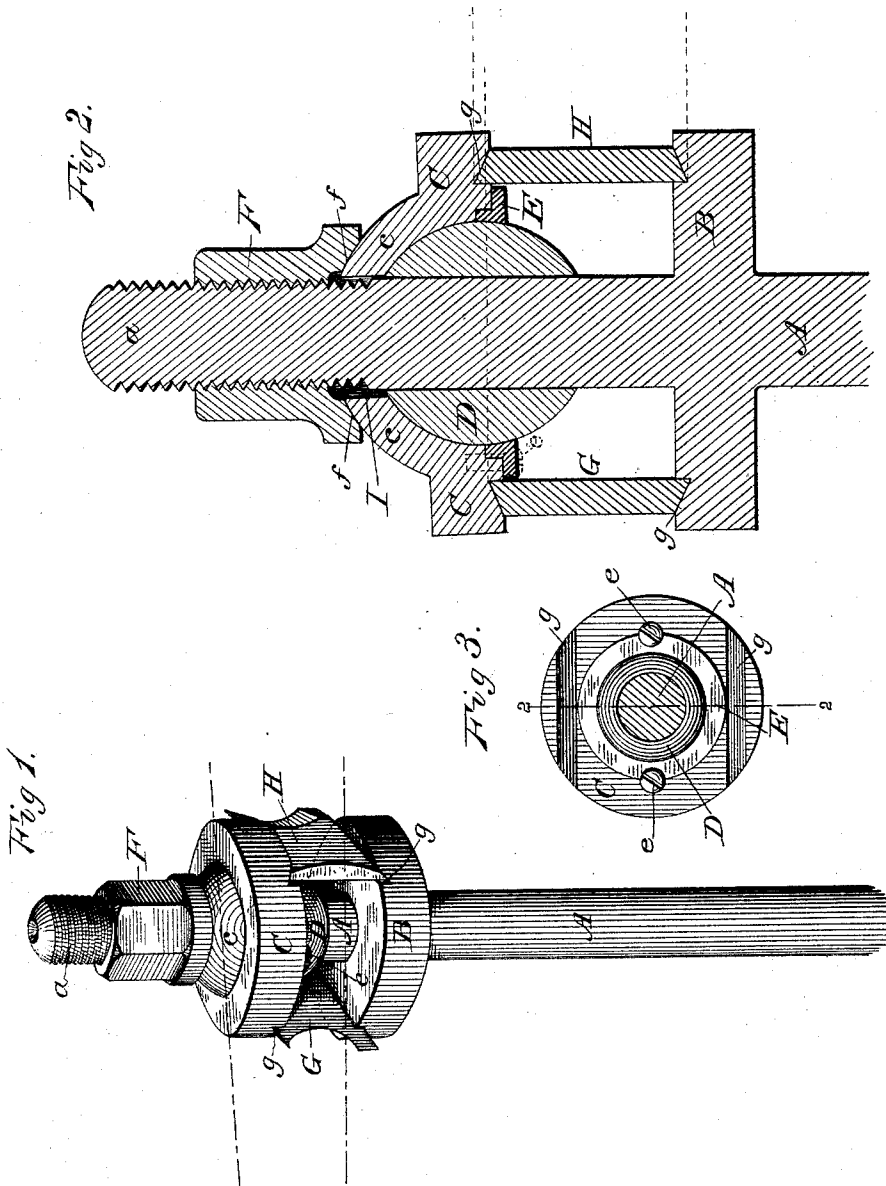


(No Model.)

I. FRALEIGH & F. L. HEMMER.
ROTARY STOCK CUTTER.

No. 485,792.

Patented Nov. 8, 1892.



WITNESSES
Harry King
Martin Hermann

INVENTORS:
Irae Fraleigh
Fredrick L. Hemmer
By *Wm. Irving Utting* Attorney.

UNITED STATES PATENT OFFICE.

ISAAC FRALEIGH AND FREDERICK L. HEMMER, OF POUGHKEEPSIE,
NEW YORK.

ROTARY STOCK-CUTTER.

SPECIFICATION forming part of Letters Patent No. 485,792, dated November 8, 1892.

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To all whom it may concern:

Be it known that we, ISAAC FRALEIGH and FREDERICK L. HEMMER, citizens of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Rotary Stock-Cutters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in rotary stock-cutters in which the cutting-knives are held in place between two clamping disks or washers attached to a spindle. Hitherto the slightest variation in the width of the two cutting-knives when they were fastened in place between the clamping-disks or in the depth of the grooves which hold them would tend to warp or bend the outer end of the spindle when the movable but rigidly-horizontal clamp was driven to place against the knives with sufficient force by the nut in the ordinary way for holding knives securely in position. The great speed at which the cutter-head must be driven in a so-called "variety" machine or planer to do its work properly in cutting the stock, more than three thousand revolutions per minute being usual, has resulted in a great straining of the machine and consequent wear of its several parts whenever the spindle has been in the least degree warped from its true axis or revolution. In point of fact it has been found impossible in most cases, even in a new rotary cutter-head, to fit the cutting-knives or their grooves so accurately as not to cause in some degree a variation of the disks from the horizontal plane, and to this extent bend the spindle from its axis, if the ordinary clamping-disks are used to hold the knives; but even if the cutter-head knives and grooves are accurately fitted at first the difference in the temper of the metal will in the constant use of the cutter-head at high speed cause some variation in the width of the knives or the depth of the grooves.

It is the object of our invention to entirely obviate these practical disadvantages and to make it possible to fasten knives, which vary in width or lie in grooves of different

depths securely in place without in the least bending the spindle from its true axis of revolution. We attain this object by the device illustrated in the accompanying drawings, in which—

Figure 1 is a slightly-perspective view of our invention, showing the parts in place upon the spindle ready for insertion in the planer. Fig. 2 is an enlarged cross-section of our device, cut on line 2 2 of Fig. 3, but including, also, the spindle and the cutting-knives in place to better show the relation of all the parts; and Fig. 3 is a plan view showing the lower side of the upper clamping-disk constructed as hereinafter described.

Similar letters refer to similar parts throughout the several views.

In the drawings, A represents the ordinary spindle, threaded at *a*, and B represents the usual rigid clamping-disk, provided with grooves *g g*, fitted to receive the lower edges of the cutting-knives G H. The upper clamping-disk C has the ordinary grooves *g g*, corresponding with those in B and holding the upper edges of the knives G H; but instead of making this disk rigidly horizontal in its movement upon the spindle we construct it so as to be adjustable horizontally as well as vertically by providing it with a central opening I, slightly larger than the spindle, and a raised portion *c*, concaved at its interior, so as to receive the upper portion of the round ball D. The ball D is provided with a hole in its center just large enough to move upon the spindle A and is held to place on the clamping-disk C by a recessed rim E, having its interior diameter slightly less than the exterior diameter of D. E is attached to C by the set-screws *e e*, as shown in Figs. 2 and 3. The ordinary nut F is only changed in construction by having its flange *f* concaved to correspond with the convex upper surface *c* of the disk C to permit the ready adjustment of C out of its horizontal plane. It is evident that the introduction of a ball-joint, as herein described, in one of the clamping-disks of a rotary stock-cutter successfully obviates the serious disadvantages of bending the spindle by any variation in the horizontal planes of the disks of the cutter-head; but to represent this feature more clearly the cut-

ting-knife H has been shown in Fig. 2 of the drawings to be wider than the knife G, and this difference is indicated by the fine dotted lines. In Fig. 1 the lower broken line accentuates the horizontal plane of the lower clamping-disk B, and the "canted" plane of the upper disk C is accentuated by the upper broken line.

The object of our invention being to provide for the necessary variation of knives or grooves in a rotary stock-cutter by the introduction of a clamping-disk adjustable horizontally, we do not confine ourselves to the precise construction of a ball-joint shown in the drawings. The adjustable disk might be constructed with its parts reversed as to convexity and concavity, the nut-flange *f* and the ball D being correspondingly changed, without altering the scope of our invention, or the lower disk B might be made adjustable horizontally instead of C; but that construction would not be as convenient as the one above described.

What we claim, therefore, as our invention, and desire to secure by Letters Patent, is—

1. In a rotary stock-cutter, the combination, with a spindle and fixed clamping-disk, of a ball carried by said spindle and free to slide thereupon, a movable clamping-disk carried

by said spindle and free to rock thereon and embracing said ball, and means for clamping the cutters between said disks, substantially as set forth.

2. In a rotary stock-cutter, the combination, with a spindle and fixed clamping-disk, of a ball carried by said spindle and free to slide thereupon, a movable clamping-disk carried by said spindle and free to rock thereupon and provided with a concave portion which embraces said ball, and a nut for clamping the parts against the cutters, substantially as set forth.

3. In a rotary stock cutter, an adjustable cutter-head consisting of a clamping-disk B, attached rigidly to the spindle A, in combination with a movable clamping-disk C, concaved at *c*, and a ball D, surrounding the spindle A and held in place within the corresponding concavity of the disk C by the recessed rim E and the set-screws *e e*, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ISAAC FRALEIGH.

FREDERICK L. HEMMER.

Witnesses:

MARTIN HEERMANCE,
IRVING ELTING.