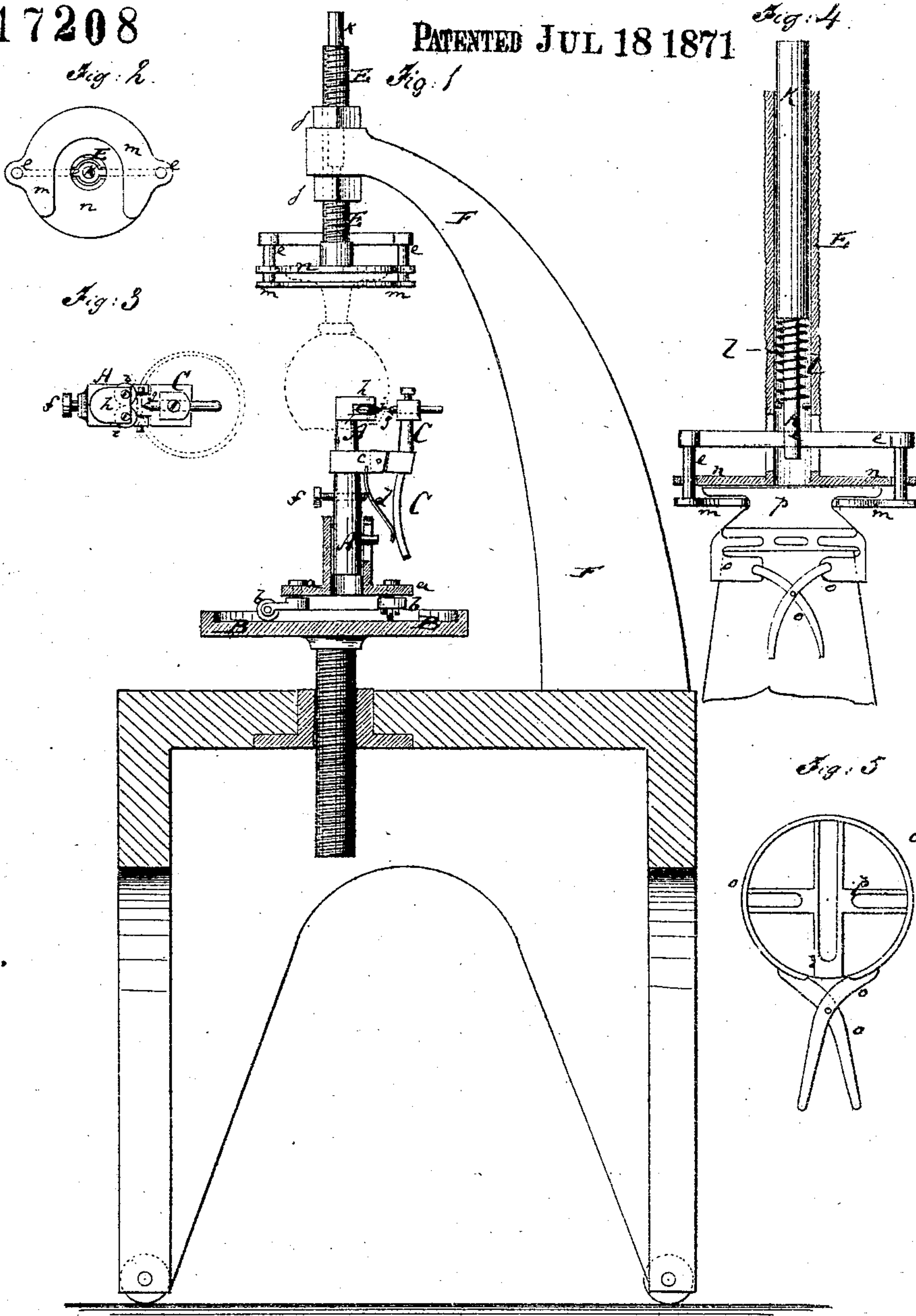


J.T.H. Richardson's Mach. for Cutting Glass.

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PATENTED JUL 18 1871



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UNITED STATES PATENT OFFICE.

JOHN THOMAS HADEN RICHARDSON, OF TUTBURY, ENGLAND.

IMPROVEMENT IN APPARATUS FOR CUTTING GLASS GLOBES.

Specification forming part of Letters Patent No. 117,203, dated July 18, 1871.

To all whom it may concern:

Be it known that I, JOHN THOMAS HADEN RICHARDSON, of Tutbury, in the county of Stafford, in England, have invented a new and Improved Machine for Cutting Glass Globes, Goblets, Tumblers, &c., and in apparatus to be employed therefor; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a side elevation, partly in section, of my improved machine for cutting glass. Fig. 2 is an inverted plan view of the glass-holder. Fig. 3 is a top view of the cutting-tool. Fig. 4 is a sectional side view of the tumbler-holder. Fig. 5 is an inverted plan view of the same.

Similar letters of reference indicate corresponding parts.

This invention is designed to supersede the ordinary method of cutting flint-glass, which operation has hitherto been performed with scissors, and could only be accomplished by skilled workmen of many years' practice; and the invention consists in the novel and peculiar arrangement of devices for applying a diamond or hard-cutting material to the cutting of wine-glasses, goblets, tumblers, or other table-glass, or of lamp or other globes and shades of circular or oval shape, as hereinafter more fully described.

The apparatus I use consists principally of an upright or other standard, A, screwed or otherwise fixed to a horizontal bottom plate, a, and made, by preference, extensible vertically, and capable of being fixed at any required position in a socket secured to said bottom plate, so that the cutter may be inserted and adjusted in the glass to the required height. The bottom plate a is provided underneath with casters b b, so that it is capable of being turned and moved on the supporting-table B. From the standard A project lugs c c, between which is pivoted a lever, C, at or near its center, by a suitable pivot. The lower end of this lever is held off the standard by means of a spring or other suitable contrivance, d, which is fixed to the standard. At the back of the standard a thumb-screw, f, is placed, which allows of the spring being pressed or released, thus causing the diamond or hard-cutting material g at the top of the lever to press against

the glass with more or less force. The upper end of the standard is provided with two projecting lugs, h, between which is fitted a pair of small disks or circular pieces, i i, of steel, which disks are allowed to turn free on their arbors. The top of the spring-lever C is formed into a head, and through this head is a rectangular or other conveniently-shaped orifice. In this orifice the piece of steel which contains the diamond g or hard-cutting material is placed. The height of the cutting-point of the diamond is made to correspond with that of the preferably V-shaped edges of the two revolving disks i i. The glass to be cut is in an inverted position affixed to a holder above the standard A. This holder consists of a tube, E, having a screw-thread cut on its outside, and screwing into a corresponding tap in the boss F, which projects from the table B. The tube may thus be raised and lowered and held in position by jam-nuts j j, it being at all times above the center of the table B. A rod, K, drawn up by a spring, l, passes through the tube E, and has fixed at its lower end, by a fork, e, a horseshoe-plate, m, between which and a plate, n, fitted to the end of the tube E, the foot of a wine-glass or the flange or foot of any other article of similar formation can be clamped, the plate m being held against the lower face of said foot or flange by the power of the spring l. For holding tumblers and other articles which have no flanges or projecting parts, I use a spring-clasp, o, shown in Figs. 4 and 5, the said clasp being applied to a plate, p, which is fitted between the plates m n in the same manner in which the foot of the wine-glass was secured therein. The spring-clasp holds the tumbler or other article by embracing its upper part in the manner indicated in Fig. 4.

The operation is as follows: The screw-tube E is adjusted to the proper height, and receives the glass in an inverted position. The table B is then set up or down, or the standard A extended or shortened to bring the cutting-diamond to the required height, the cutter or the upper end of the standard having been previously inserted within said glass. The standard is then moved on the table to let its cutter work entirely around the glass and separate therefrom the proper part. A gas-jet or other means of heating the glass during the cutting process may, if desired, be employed.

It will be understood from the foregoing that the cutter may either work against the inner side of the glass, in which case the upper end of the standard, with the rollers *i i*, will be on the outer side of the same, as indicated in Fig. 3, the dotted lines showing the position of the glass, or the rollers *i* are within and the cutter without the glass, as in Fig. 1. In either case the operation will be perfect.

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

1. The movable standard A, provided with the roller or rollers *i*, and combined with the spring-lever C and cutter *g*, all arranged substantially as herein shown and described.

2. The holder for the glass to be cut, consist-

ing of the adjustable tube E, horseshoe-plate *m*, spring-rod K, and plate *n*, all arranged substantially as herein shown and described.

3. The standard A provided with casters, as described, and combined with the table B provided with the upwardly-projecting flange, substantially in the manner herein shown and described.

The above specification signed by me this 16th day of June, 1870.

JOHN THOMAS HADEN RICHARDSON. [L. s.]

Witnesses:

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