(No Model.) 3 Sheets—Sheet 1.

J. BRAUN.

HOLDER FOR BRACE RINGS OF KNIFE CYLINDERS.

No. 420,714. Patented Feb. 4, 1890.

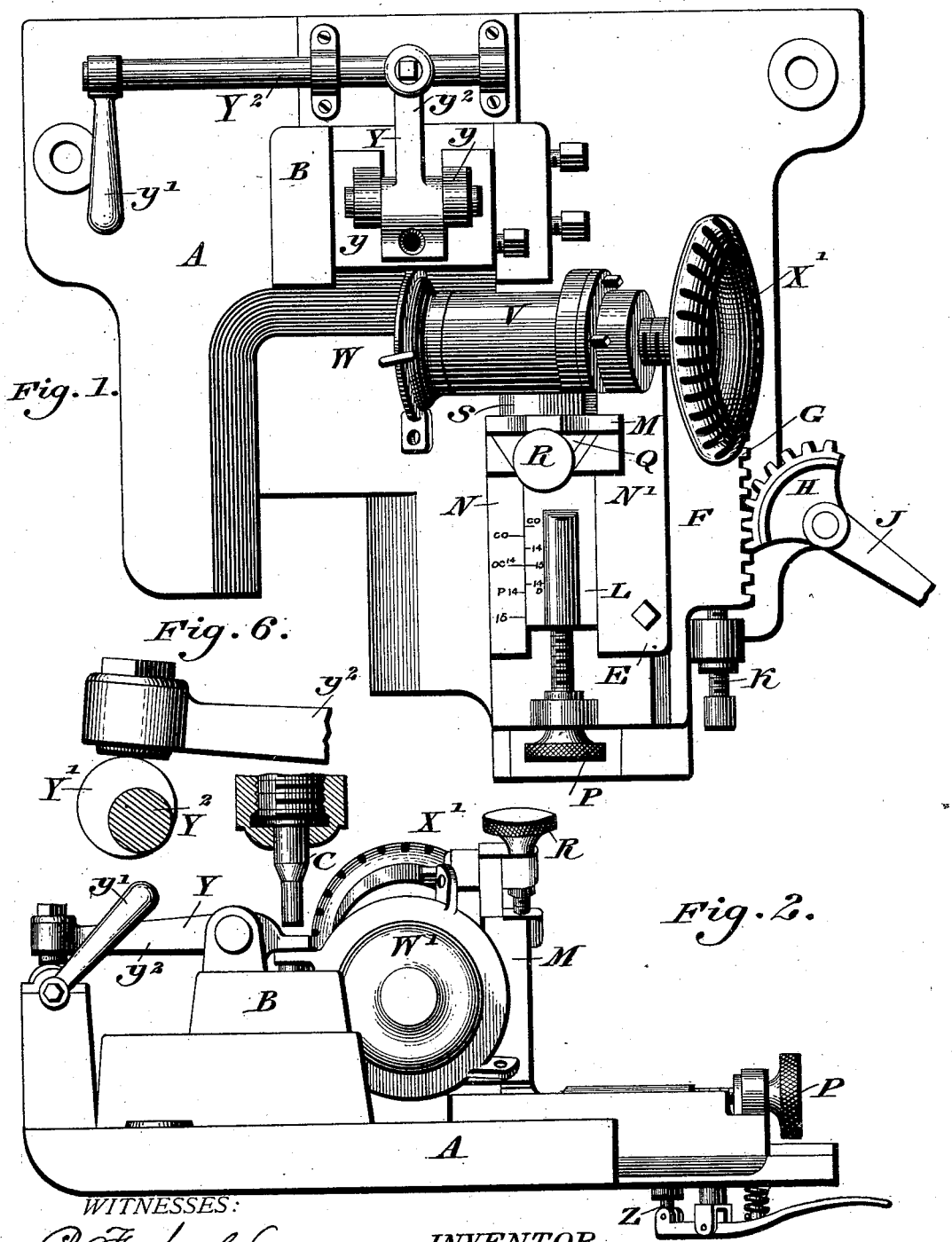

Fig. 1.

Fig. 6.

Fig. 2.

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.

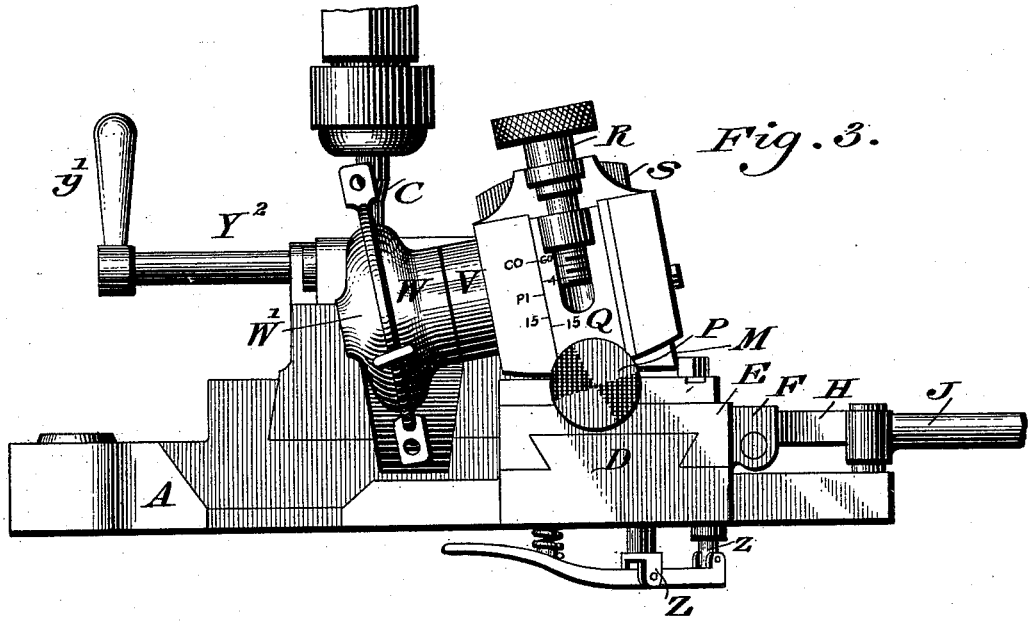
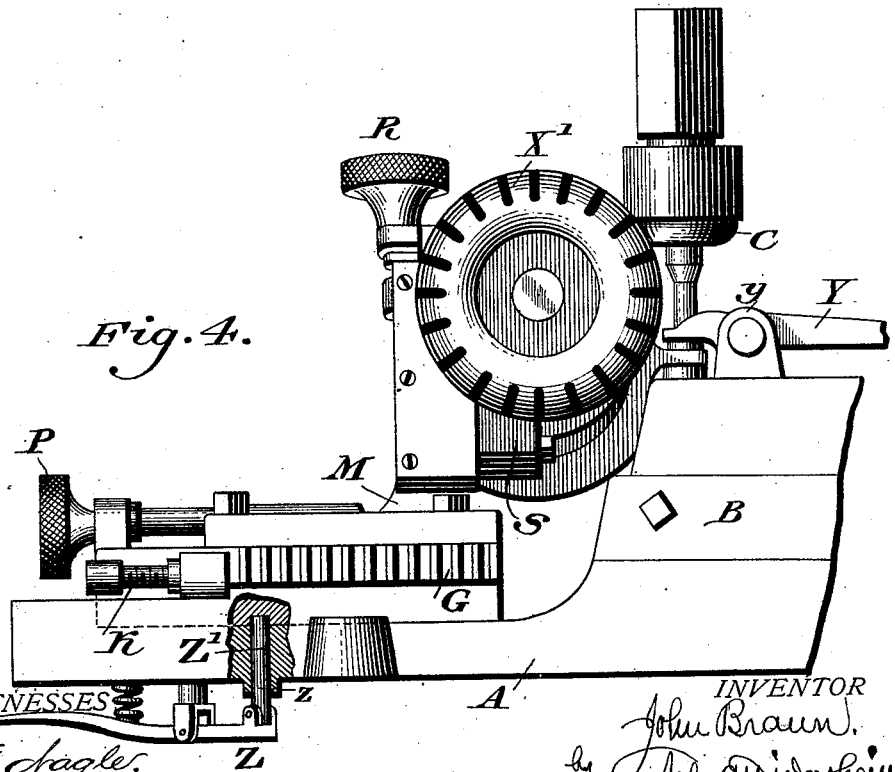


Fig. 4.



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HOLDER FOR BRACE RINGS OF KNIFE CYLINDERS.

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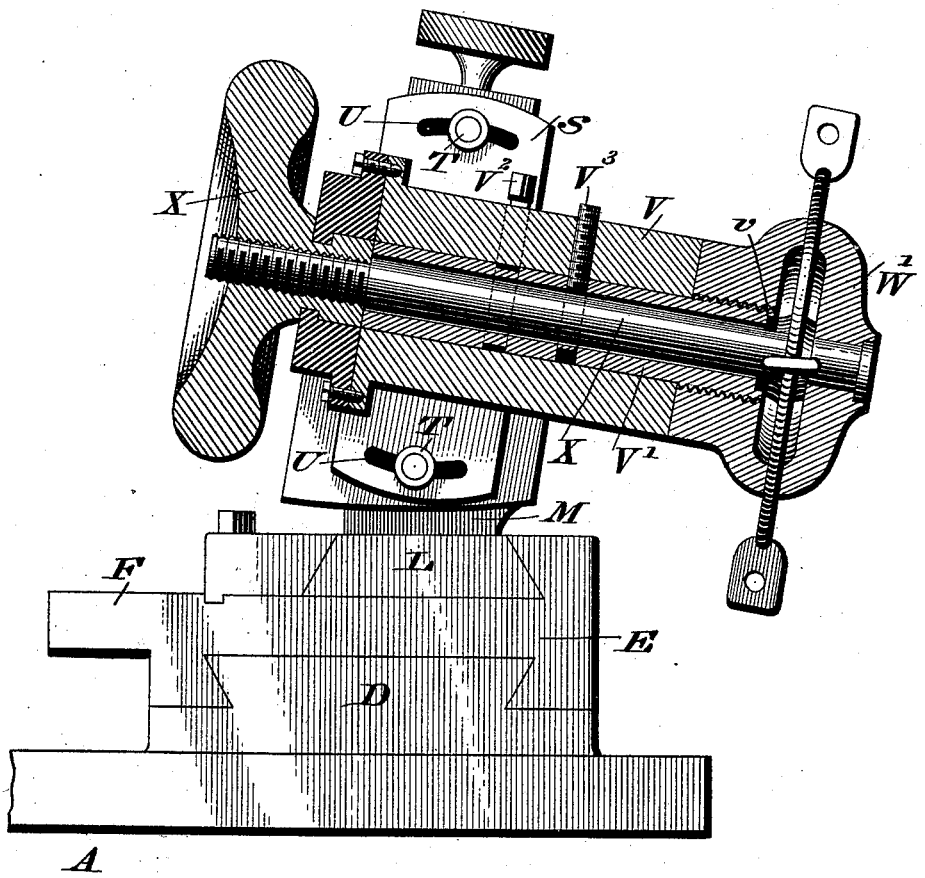
Fig. 5.



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JOHN BRAUN, OF PHILADELPHIA, PENNSYLVANIA.

HOLDER FOR BRACE-RINGS OF KNIFE-CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 420,714, dated February 4, 1890.

Application filed November 11, 1889. Serial No. 329,873. (No model.)

To all whom it may concern:

Be it known that I, JOHN BRAUN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Holders for Brace-Rings of Knife-Cylinders, &c., while being Punched, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to means for holding the brace-rings of the knife-cylinder of lawn-mowers and analogous devices while being punched; and it consists, first, of novel devices for supporting the rings; next, of mechanism for adjusting the said supporting devices relatively to the punch to compensate for various sized rings, and, finally, of the construction and combination of the several parts, as will be more fully hereinafter set forth.

Figure 1 represents a top plan view of a punching-machine embodying my invention. Fig. 2 represents an end elevation thereof, partly broken away. Fig. 3 represents a front elevation of the machine. Fig. 4 represents an end elevation of the machine from the side opposite to that represented by Fig. 2. Fig. 5 represents an enlarged sectional elevation of the cylinder-support. Fig. 6 represents a detail view of a part of the mechanism.

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

Referring to the drawings, A designates the table, which is suitably supported and has its rear part raised to form a bed-block B for a punch C. A portion of the table A is formed with a dovetail or analogous rib D, on which is mounted a movable plate E, having a groove of the configuration of the said rib D. The plate E is formed with or has attached to one side thereof an extension F, formed with a rack G, engaged by a toothed quadrant H, which is pivoted to the table A, and operated by a handle J to give a sliding motion to plate E. An adjustable stop K is mounted on the table A and limits the outward movement of the plate E by bearing against the forward end of the extension F thereof.

On the plate E is located an independently-adjustable plate L, having a standard M at the rear portion thereof. The said plate L is movable between guides N and N′, formed with the said plate E, the guide N having scale-marks to coincide with similar marks on the plate L. The plate E carries an adjusting-screw P, which enters a screw-threaded socket in the plate L, to thereby move said latter plate when desired. The standard M has a vertically-movable plate Q, adapted to be adjusted by screw R, and provided with scale-marks to align with similar marks on one of the guides for said plate. A plate S is attached to the plate Q by clamping-screws T, passing through slots U, formed in the upper and lower ends of said plate S, to thereby provide a lateral adjustment for the same.

To the plate S is secured a sleeve V, having a cylindrical bushing V′, which is held intact with said sleeve V by suitable screws V^2 and V^3. One end of said bushing is screw-threaded to receive a removable clamping-head comprising two sections W and W′, and said bushing is also formed with a recess *v* to receive one side of the hub of the ring. The section W is constructed with a screw-threaded opening to fit over the screw-threaded end of the bushing V′, and the other section W′ has an opening for the passage therethrough of a mandrel X and reception of the head thereof, both sections being hollowed out to fit over the hub of the ring held thereby, and to allow the peripheral rim of said sections to bear against the ring. The mandrel X passes through the cylindrical bushing V′, the screw-threaded end thereof being engaged by a clamping-wheel X′, supported in revoluble connection with the opposite end of the sleeve.

Over the bed-block B is trunnioned a keeper Y, consisting of a plate extending beyond the trunnions *y*, with a hole therein through which passes the punch C, the extended end of the keeper being held down on the ears of the ring when punching the

same by a cam Y′ on a rock-shaft Y^2, operated by a handle y', the said cam Y′ bearing against the rear extended end y^2 of the keeper Y.

Under the table A is pivotally fixed a spring-catch Z, having a post z passing up through an opening in said plate A, and adapted to enter an opening Z′ in the plate E to lock the same when moved inward during the punching operation.

In operation the outer section W′ of the head and the mandrel X are withdrawn from the sleeve V, and the ring is placed in position against the section W, with a portion of the hub in the recess v of the said sleeve V. The section W′ is then placed against the ring and the mandrel X inserted therethrough and through the hub of said ring and the cylindrical bushing V′, and the parts clamped together by the clamping-wheel X′. The toothed quadrant H is then operated against the rack G to slide the plate F inward to bring the ears of the ring under the punch. The ring is turned to cause the ears to come consecutively under the punch on the bed-block B by revolving the hand-wheel X′.

To adjust the sleeve V horizontally, the screws T in plate S are loosened to allow said plate to be turned, and then fastened to retain the desired adjustment. The said sleeve V is made vertically adjustable by the movable plate Q on standard M and laterally adjustable on the plate F by the movable plate L. These adjustments accommodate various sizes of rings, the ears thereof, and the spiral contour. As machines made by different manufacturers vary in the configuration of the knife-cylinders, and as a further aid in determining said adjustments with convenience and facility, letter and figure marks are cut on the guides of plates L and Q, indicating the trade-name of the various cylinders used, and thereby speedily acquiring the exact adjustment, which will have been previously ascertained by practical experiment.

The device entire is mounted on the table of an ordinary form of punch C, and may be readily removed when the punch is required for other uses.

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

1. In a device of the nature set forth, an adjustable support for holding a brace-ring of a lawn-mower-cutter cylinder under a punch, substantially as described.

2. In a device of the nature set forth, a table, a sliding plate thereon having a rear standard, and adjustable devices attached to said standard for supporting a brace-ring of a lawn-mower-cutter cylinder, and a punch, substantially as described.

3. In a device of the nature set forth, a table, a sliding plate thereon having adjustable devices for supporting a brace-ring of a lawn-mower-cutter cylinder, means for operating said sliding plate, a locking-catch therefor, and a punch, substantially as described.

4. A sliding plate having a standard with an adjustable supporting-sleeve for holding brace-rings of lawn-mower-cutter cylinders under a punch, substantially as described.

5. A sliding plate having a standard with an adjustable supporting-sleeve, a sectional head therefor, a bushing therein, a mandrel and hand-wheel, and a punch, said parts being combined and arranged for adjustably holding a brace-ring for a lawn-mower-cutter cylinder under the punch, substantially as described.

6. A table having a rib, a sliding plate thereon with a rack, adjusting devices attached to said plate for holding a brace-ring of a lawn-mower-cutter cylinder, a toothed quadrant and operating-handle, a locking-catch for said sliding plate, and a punch, all combined for the purposes set forth.

7. A table having a rib, a sliding plate mounted on said rib, having a rack, adjusting devices attached to said plate for holding the brace-ring to be punched, a toothed quadrant and handle for operating the said sliding plate, a locking-catch for said sliding plate, a stop therefor, and a punch, substantially as described.

8. A support for a brace-ring of a lawn-mower-cutter cylinder, having a horizontal adjustment on a sliding plate, a vertical adjustment and a swiveled adjustment at a right angle to said horizontal adjustment relatively with a punch, substantially as described.

9. A support for a brace-ring of a lawn-mower cutter, having a universal adjustment, and a punch, substantially as described.

10. A support for a brace-ring of a lawn-mower cutter, having a vertical, a swiveled, and horizontal adjustment, and a keeper, substantially as described.

11. A table having a rib thereon, a sliding plate on said rib, having a rack and a rear standard, a toothed quadrant for operating said table, an adjustable plate supported in said sliding plate, vertically and laterally adjustable plates on said standard of the sliding plate, a sleeve carried by said laterally-adjustable plate, having a bushing, mandrel, and clamping devices therein, a keeper, and a punch, all combined and arranged for supporting and punching holes in the ears of brace-rings of lawn-mower-cutter cylinders, substantially as described.

12. A laterally-adjustable plate S, a sleeve V, a bushing V′, a head composed of sections W and W′, a mandrel X, a hand-wheel X′, and a punch C, combined and arranged for the purposes set forth.

13. A keeper Y, having a rear extension, a

rock-shaft Y^2, having a cam Y′ and handle y', and a punch C, substantially as described.

14. A sliding plate F, supporting adjusting devices, and a locking-catch Z, substantially as described.

15. In a device of the nature set forth, a sliding plate L, having scale-marks thereon, and the adjustable plate Q, having similar marks, said plates coinciding with marks on the guides thereof, substantially as described.

To the above I have signed my name this 9th day of November, 1889.

JOHN BRAUN.

In presence of—
JOHN A. WIEDERSHEIM,
A. P. JENNINGS.