(No Model.) 3 Sheets—Sheet 1.

J. BRAUN.

HOLDER FOR KNIFE CYLINDER ENDS.

No. 420,715. Patented Feb. 4, 1890.

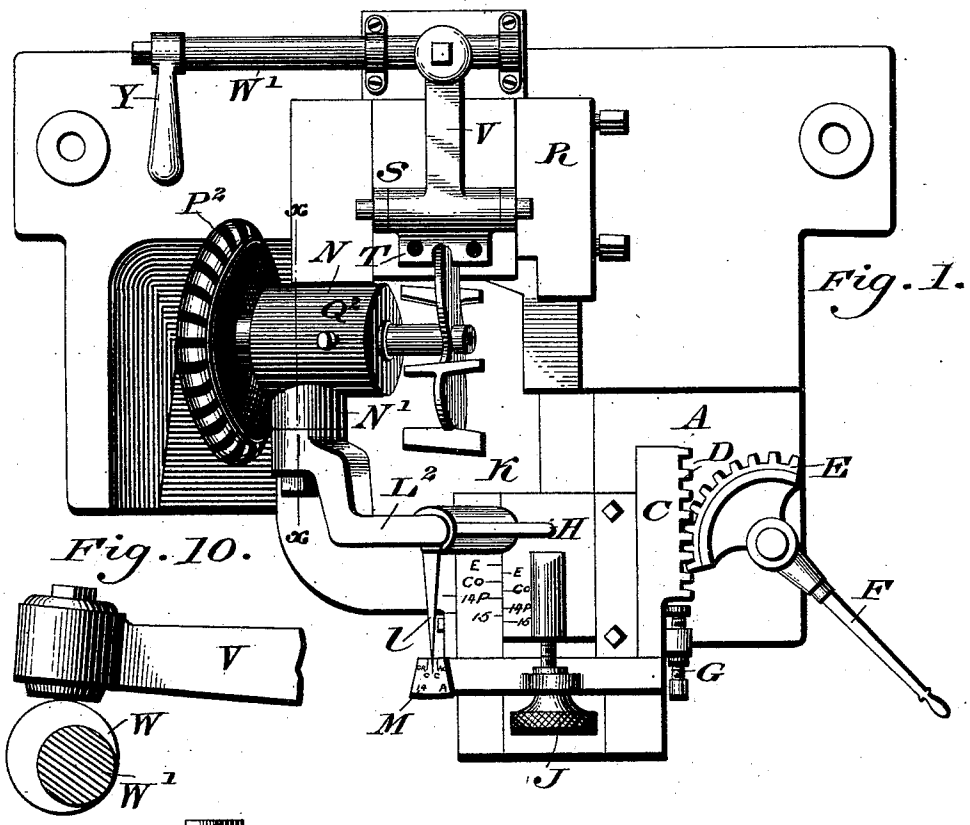


Fig. 1.

Fig. 10.

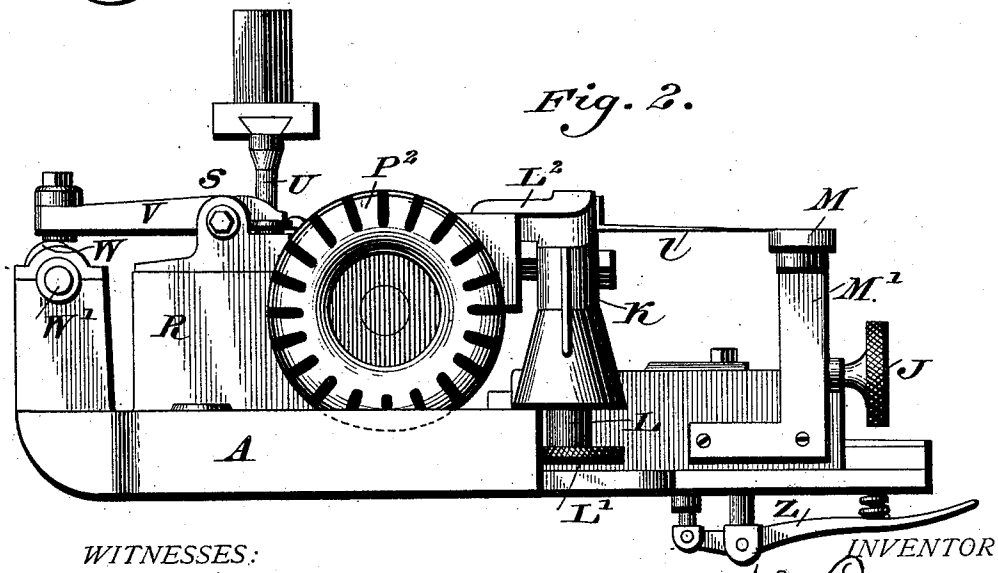


Fig. 2.

WITNESSES:
P. F. Cagle.
L. Rouville.

INVENTOR
John Braun,
by John A. Wiedersheim
ATTORNEY.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

J. BRAUN.

HOLDER FOR KNIFE CYLINDER ENDS.

No. 420,715. Patented Feb. 4, 1890.

Fig. 5.

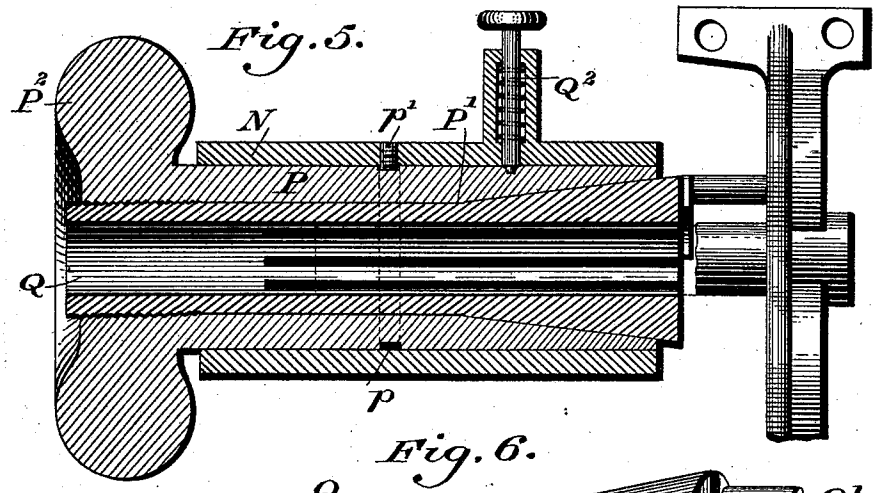


Fig. 6.

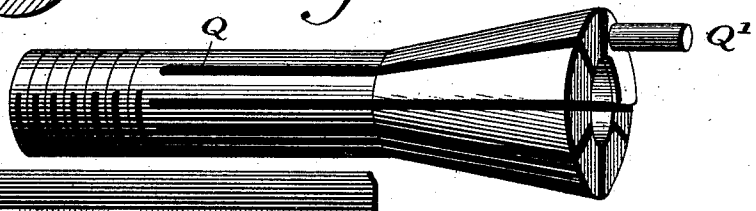


Fig. 7.

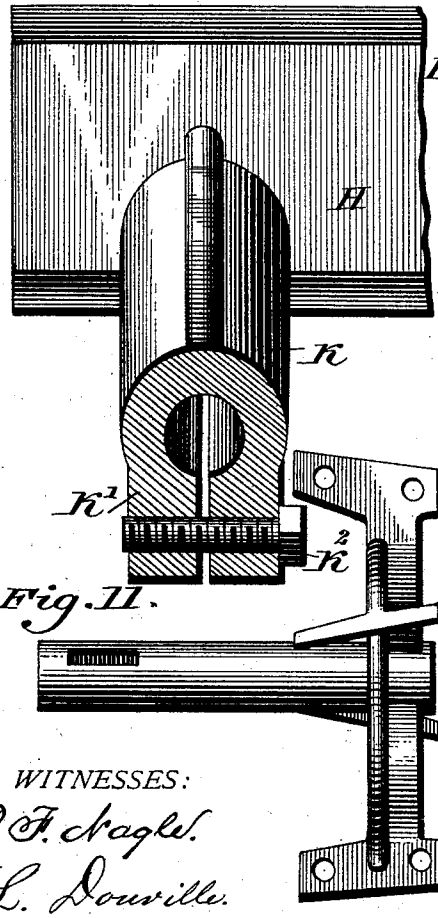


Fig. 8.

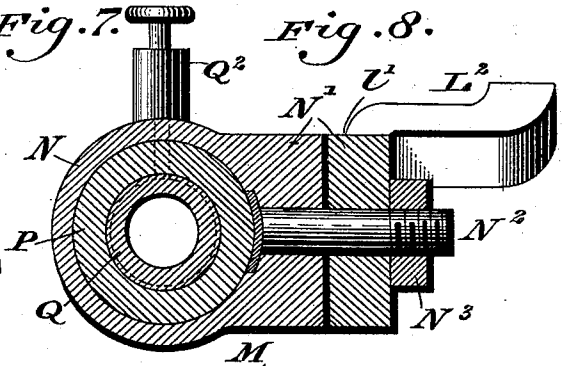


Fig. 9.

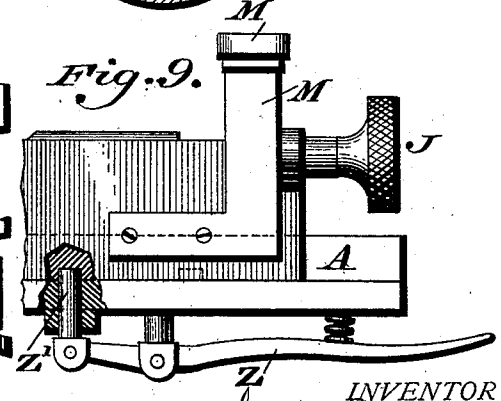


Fig. 11.

WITNESSES:

P. F. Nagle.

L. Douville.

INVENTOR

John Braun,

by John A. Wiedersheim

ATTORNEY.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

J. BRAUN.

HOLDER FOR KNIFE CYLINDER ENDS.

No. 420,715. Patented Feb. 4, 1890.

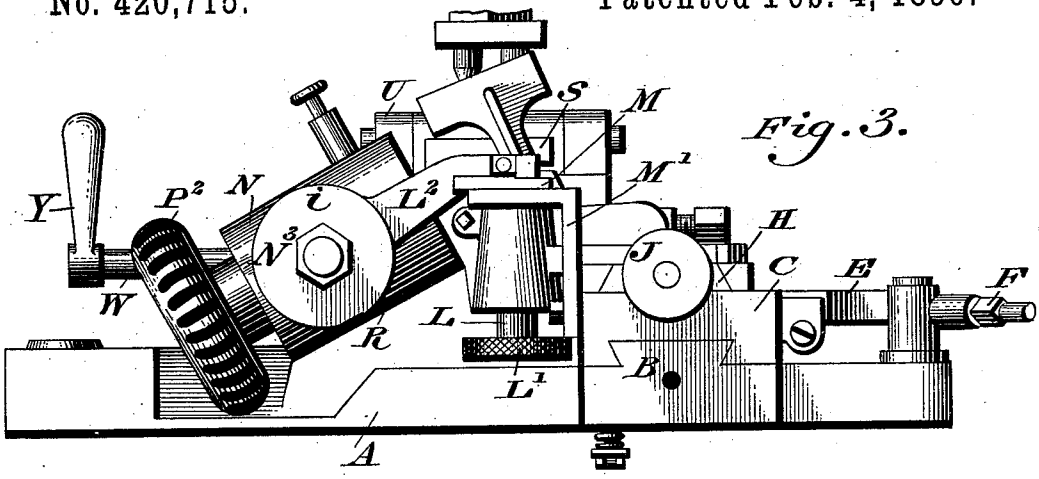


Fig. 3.

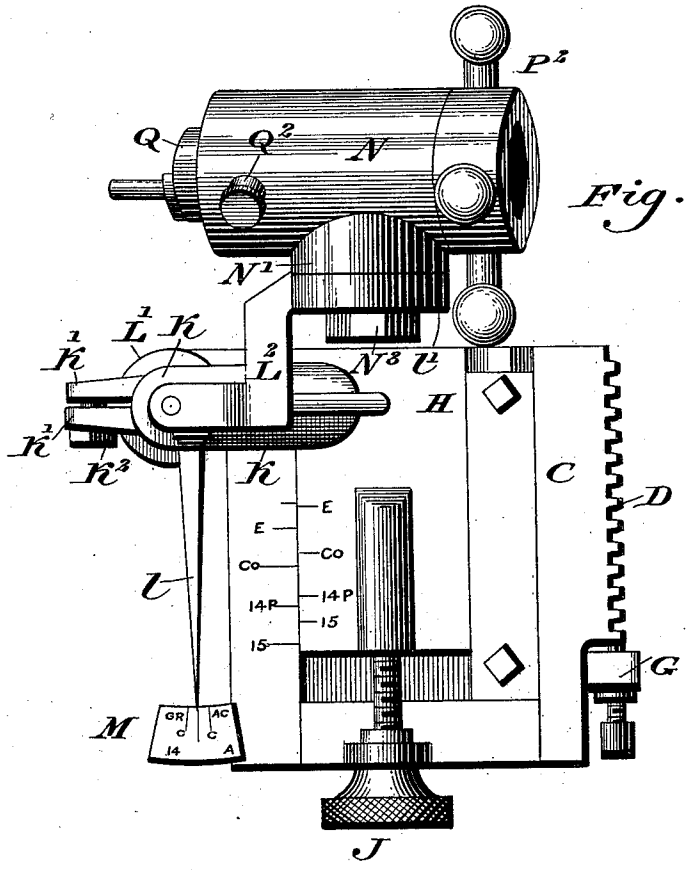


Fig. 4.

WITNESSES:

P. F. Dagle.

L. Douville.

INVENTOR

John Braun.

by John A. Wiedersheim

ATTORNEY.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN BRAUN, OF PHILADELPHIA, PENNSYLVANIA.

HOLDER FOR KNIFE-CYLINDER ENDS.

SPECIFICATION forming part of Letters Patent No. 420,715, dated February 4, 1890.

Application filed November 11, 1889. Serial No. 329,874. (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 Knife-Cylinder Ends, &c., while being punched, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to an attachment or device for holding knife-cylinder ends of lawn-mowers and analogous devices while punching the ears of the same; and it consists, first, of novel devices for supporting the said cylinder ends relatively with a punch; next, of mechanism for adjusting the same to compensate for the variance of diameter, spiral contour, and general configuration of said ends of different trade makes; and, finally, of the construction of the parts, as will be more fully hereinafter set forth.

Figure 1 represents a top plan view of an attachment or device embodying my invention. Fig. 2 represents an end elevation thereof. Fig. 3 represents a front elevation of the same. Fig. 4 represents a top plan view of a portion of the attachment or device on an enlarged scale. Fig. 5 represents a sectional view of the cylinder-end-supporting sleeve. Fig. 6 represents a perspective view of the split bushing of said sleeve. Fig. 7 represents a top plan view, partially in horizontal section, of the transverse adjusting-slide and post for supporting the said sleeve. Fig. 8 represents a section on the line x x of Fig. 1. Fig. 9 represents a side elevation of a portion of the attachment or device partially broken away to show the operation of the locking-catch. Fig. 10 represents a sectional elevation of a portion of the keeper and its actuating shaft and cam. Fig. 11 represents a view in side elevation of a cylinder end.

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

Referring to the drawings, A designates the table or bed-plate, having a rib B, on which is mounted a sliding plate C, formed with an edge rack D, engaged by a toothed quadrant E, operated by a handle F. On the table A is adjustably secured a stop G to bear against plate C to limit the outward movement thereof.

In the plate C is mounted a movable slide H, having an adjusting-screw J, and a split standard or post K, integrally formed therewith, and constructed with ears K′, having screw-holes to receive a clamping-bolt K^2. Within the said post K is located a screw-post L, having a lower adjusting milled head L′, the upper end of said post L being formed with an angular arm L^2, to which is connected an index l and a collar l'. The end of the index l bears on a scale-plate M, supported by an upright M′, secured to one side of the plate C.

The cylinder-end support proper consists of a collar N, having an integral bearing N′, which is swiveled to the collar l' of the aforesaid arm L^2 by a bolt N^2, which is connected to said collar N, and passes through the collar l' to receive a clamping or set nut N^3. Within the said collar N is fitted a sleeve P, formed with a circumferential groove p to receive the end of a screw p' in the said collar N, to thereby hold said collar and sleeve in proper relative connection. The said sleeve P is formed with a bore P′, which is flared at one end and screw-threaded at the other end, the said latter end having a hand-wheel P^2. Within the sleeve P is located a removable split bushing Q, having a screw-threaded end to engage the screw-threaded portion of the bore of said sleeve P, the opposite end of said bushing being conical to fit into the flared end of the said sleeve P. This conical end of the bushing Q has a stud Q′ attached thereto, which forms a means of withdrawing said bushing from the sleeve, and also acts as a guard to bear against the cylinder end to hold the same steady. A spring-pin Q^2 is connected to collar N, and engages a hole in sleeve P to prevent the latter from turning, when not desired. By raising said pin the collar N may be readily turned. A bed-block R is mounted on the rear portion of the table A, to which is trunnioned a keeper S, whose front extended end is constructed with two holes T for the passage therethrough of a double punch U. Said keeper S is also constructed with a rearward extension V, which

is engaged by a cam W on a rock-shaft W′, the latter having an operating-handle Y. The said keeper is adapted to hold the ears of the cylinder ends firmly on the bed-block R while the punches are operating thereon.

Under the forward part of the table A is located a spring-actuated locking-catch Z, having a stud Z′ on one end passing up through a hole in said table A, and enters a hole in the sliding plate C, when the latter is moved inward, to thereby lock the same in its adjusted position.

In Fig. 4 a support is shown for operating on a right-hand cylinder end, the form shown in Figs. 1, 2, and 3 being for left-hand cylinder ends. Each device will be supplied with two attachments of the nature set forth. To mount the cylinder end in connection with the device, the sleeve P and bushing Q are loosened, to allow the sleeve of a cylinder end to be inserted in the flared conical portion of the split end of said bushing Q, and the hand-wheel P^2 is turned to firmly hold the cylinder end intact therewith.

If a vertical adjustment of the cylinder end is necessary, the screw-bolt K^2 is loosened to allow the screw-post L to be raised or lowered, and thereby raise or lower the arm L^2 and the collar N and its attachments. To adjust the collar N and the devices carried thereby up or down, the nut N^3 is unscrewed to permit the collar N′ to be turned on the bolt N^2. The arm L^2 may be also turned by the post L, so that the index *l* may register with different marks on the scale-plate M, whereby various makes of cylinder ends can be readily adjusted relatively and accurately with the punch.

To adjust the collar N and the devices therein, together with post K and parts supported thereby, farther in toward the punch or away therefrom, the screw J is operated to slide the plate H inward or outward. When the adjustments have been accurately set, the toothed quadrant E is operated by handle F to slide plate C inward toward the punches and away therefrom, during which operation, by raising the spring-pin Q^2 and turning the sleeve P and the bushing carried thereby, the ears of the cylinder ends will be successively brought under said punches to have holes formed therein.

When each ear of the cylinder end is brought to bear on the bed-block R, the keeper S is forced downward thereon to firmly hold said ear and provide for the formation of clear-cut holes by the punches.

The several adjustments set forth accommodate various sizes of cylinder ends, 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 formed in plates H and M, indicating the trade-name of the various knife-cylinders used, and thereby speedily acquiring the exact adjustment, which will have been previously ascertained by practical experiment.

The device entire is adapted to be removably mounted on the bed of an ordinary punch.

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 interchangeable right-and-left adjustable support for holding a cylinder end of a lawn-mower-cutter cylinder under a punch, to form holes in the ears thereof, substantially as described.

2. In a device of the nature set forth, an adjustable support for a cylinder end, having a split bushing, substantially as described.

3. In a device of the nature set forth, an adjustable support for a cylinder end, having a split bushing and a clamping-sleeve, substantially as described.

4. In a device of the nature set forth, an adjustable support for a cylinder end, comprising a split bushing, a clamping-sleeve, and an exterior collar having a stop-pin, substantially as described.

5. In a device of the nature set forth, a sliding plate supporting an adjustable plate having a rear standard or post, an arm adjustably carried by said rear standard or post, and a sleeve containing cylinder-end-supporting devices adjustably connected to said arm, substantially as described.

6. In a device of the nature set forth, an arm adjustably connected to the cylinder-end-supporting device, and a sliding plate having an index bearing on a scale-plate, substantially as described.

7. In a device of the nature set forth, a sliding plate having a post or standard, an arm adjustably mounted in said post or standard and carrying an index engaging with a scale-plate, a collar supporting a split bushing and a clamping-sleeve adjustably connected to said arm, and a punch, substantially as described.

8. In a device of the nature set forth, a sliding plate having an edge rack, a toothed quadrant for operating said plate, an independently-adjustable plate mounted in said sliding plate and having a rear hollow post or standard, an arm adjustably secured to said post or standard, a cylinder-end-supporting device adjustably connected to said arm, a keeper, and a punch, substantially as described.

9. In a device of the nature set forth, a cylinder-end-supporting device comprising a split bushing with a flared or conical end and a clamping-sleeve with a bore flared at one end, substantially as described.

10. In a device of the nature set forth, a cylinder-end-supporting device comprising a split bushing with one end flared or conical and the other end screw-threaded, and a clamping-sleeve having a bore flared at one

end and screw-threaded at the other end and provided with a hand-wheel, substantially as described.

11. In a device of the nature set forth, a cylinder-end-supporting device comprising a split bushing with a flared end, a clamping-sleeve having a bore flared at one end, and a cylindrical collar over said sleeve adapted to be adjustably supported, substantially as described.

12. In a device of the nature set forth, a cylinder-end-supporting device comprising a split bushing, a clamping-sleeve having a circumferential groove, and a collar over said sleeve supporting a pin projecting into the circumferential groove of said sleeve, substantially as described.

13. In a device of the nature set forth, a cylinder-end-supporting device comprising a split bushing, a projecting pin or stud attached to one end thereof, a clamping-sleeve, and a collar, substantially as described.

14. In a device of the nature set forth, a bushing Q, having a projecting pin or stud Q′, substantially as and for the purposes set forth.

15. The combination, with the sliding plate C, of an upright or standard M′, supporting a scale-plate M, and an index *l*, attached to the adjustable devices of the cylinder-end supports, substantially as described.

16. In a device of the nature set forth, a sliding plate H, having scale-marks to coincide with similar marks on the guides therefor, 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.