(No Model.)

W. P. GINTER.

BRAD DRIVER.

No. 312,199. Patented Feb. 10, 1885.

Fig. 1.

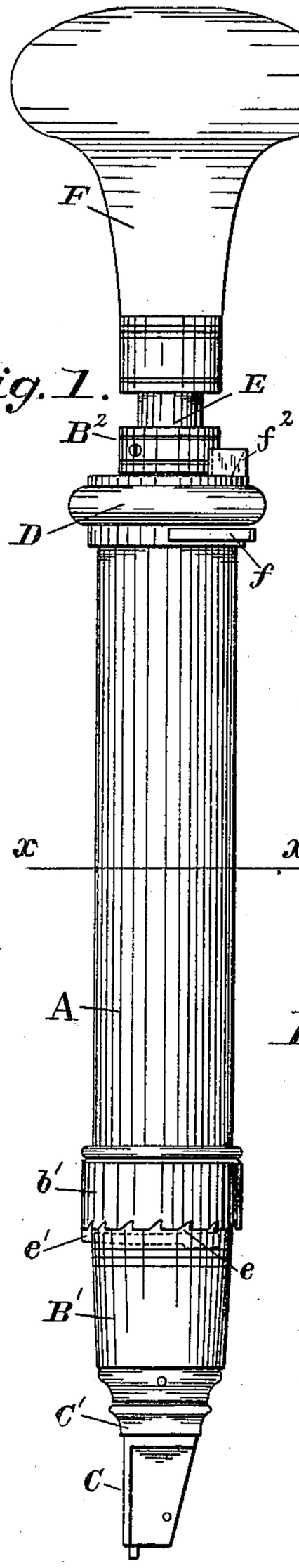


Fig. 2.

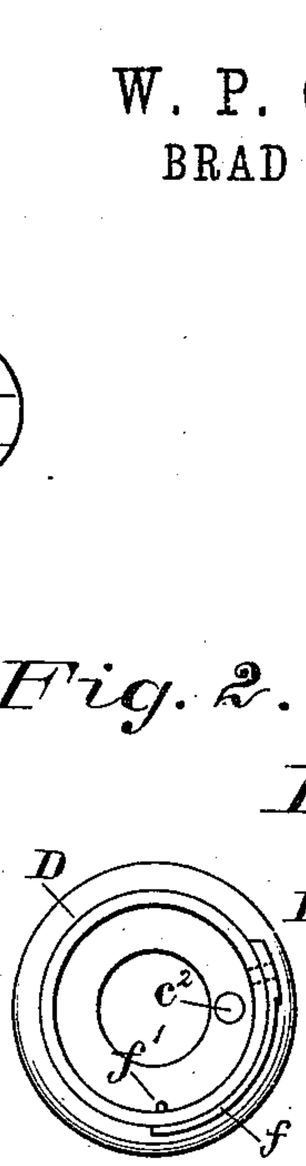


Fig. 3.

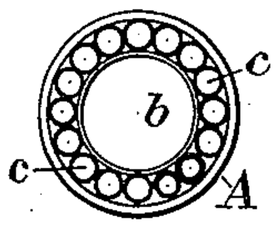


Fig. 4.

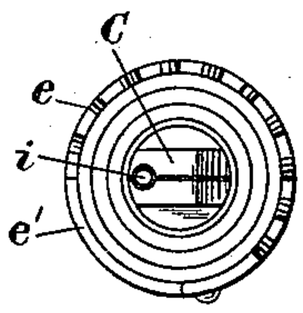


Fig. 5.

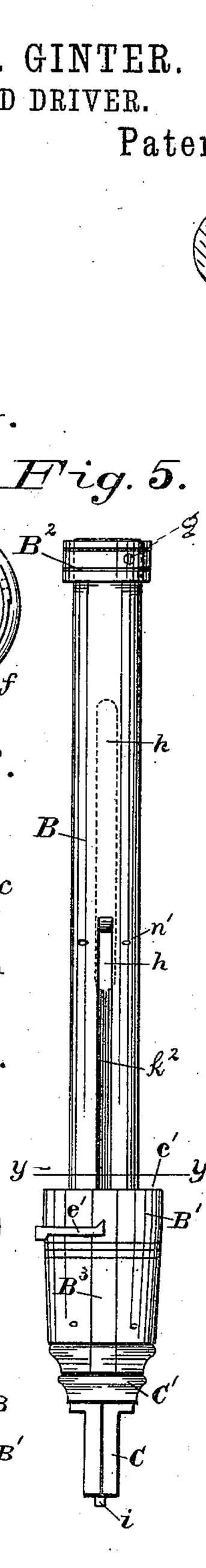


Fig. 6.

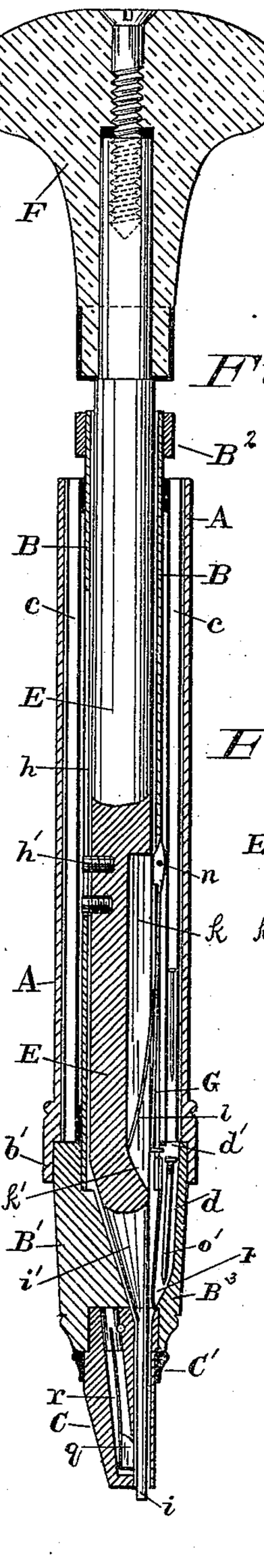


Fig. 7.

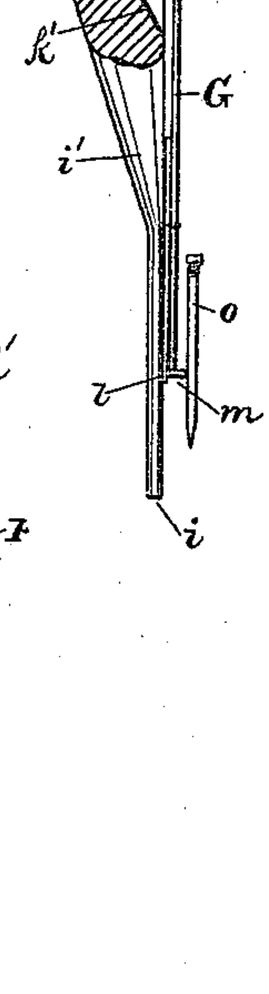


Fig. 8.

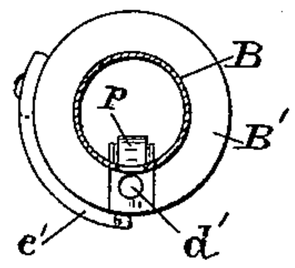
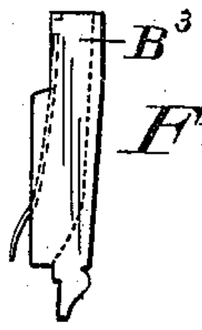


Fig. 9.



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UNITED STATES PATENT OFFICE.

WILLIAM P. GINTER, OF HUGHESVILLE, PA., ASSIGNOR OF TWO-THIRDS TO JAMES K. BOAK AND WILLIAM STROUSE, BOTH OF SAME PLACE.

BRAD-DRIVER.

SPECIFICATION forming part of Letters Patent No. 312,199, dated February 10, 1885.

Application filed December 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. GINTER, a citizen of the United States, residing at Hughesville, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Brad-Drivers, of which the following is a specification.

My invention relates to an improved tool for driving brads.

The construction of the tool and its advantages will first be described, and the invention then designated in the claims.

The invention is illustrated in the accompanying drawings, in which Figure 1 is a view of the tool. Fig. 2 is an inside view of the ferrule at the filling end. Fig. 3 is a cross-section of the brad-magazine on line *x x*, Fig. 1. Fig. 4 is a view of the discharge end of the tool. Fig. 5 is a view of a part of the tool after removing the driver and brad-magazine. Fig. 6 is a longitudinal section of the tool. Fig. 7 is a detail view showing the driver and the spring which retains a brad just previous to its entry in the discharge-bore. Fig. 8 is a cross-section on the line *y g* of Fig. 5. Fig. 9 is a view of the removable body-section, which embraces a part of the discharge-bore.

A cylinder magazine (designated by the letter A) has a central bore, *b*, around which a number of chambers or brad-holding tubes, *c*, are arranged, as shown in Figs. 3 and 6. The tube B occupies the central bore, and the magazine is adapted to turn around the tube. The discharge-bore *d* is in the body B′, and the nozzle C is attached also to the end of the body. The said body is rigidly attached to the tube B. The lower end of the cylindrical magazine has a collar, *b′*, which surrounds one end of the body, and this collar is provided with ratchet-notches *e*. A spring-pawl, *e′*, is attached on the side of the body, and engages with the said ratchet-notches. The lower ends of the brad-holding chambers *c* abut against and turn in contact with the seat *c′* on the end of the body. A hole, *d′*, in this seat (see Figs. 6 and 8) leads to the discharge-bore *d*, and the spring-pawl *e′* and notches *e* insure that one of the brad-holding chambers *c* shall be in coincidence with the said hole *d′*, thus providing for the brads contained in said chamber to pass therefrom into the discharge-bore. Each chamber will hold from five to ten brads, which have position end to end. When one chamber is emptied, the next one is brought into coincidence with the discharge-bore by partly turning the magazine, so as to bring the next notch on the pawl. The filling end of the magazine has a movable ferrule, D, which is provided with a spring-catch, *f*, having a point, *f′*, to enter a hole in the magazine, whereby it is secured to its position thereon. On the outer side of this ferrule is a boss, f^2, through which is the filling-hole c^2. The brads are entered into the magazine through this filling-hole. The magazine is held to its place on the tube B by means of a collar, B^2, on the end of the tube. This collar sets against the ferrule, and is confined by a screw, *g*, which enters the tube. A driver to discharge the brads and force them into the wood or other material which they are to enter consists of a rod, E, which is free to move in the tube B, like a piston. The tube has a slot, *h*, running lengthwise, (shown in Fig. 5 partly by broken lines,) and the driver-rod has one or two pins or screws, *h′*, whose ends project into the said slot. These not only limit the reciprocating movement of the driver, but prevent the driver from turning in the tube. The driver has a knob or head, F, attached in any suitable way. When the operator's hand is pressed against this knob, the point *i* of the driver will be forced through the nozzle and a brad will be discharged.

Between the slim point *i*, which bears on the brad, and the straight part of the rod is a tapered portion, *i′*. The rod has a recess or groove, *k*, (see Fig. 6,) just above the point. The end of this recess nearest the point has an incline, *k′*, which extends from the deepest part of the recess *k* to the surface of the rod. The tube has a second slot, k^2, in such position that it will coincide or be directly over the recess in the rod when the latter is pressed in the tube. The lower end of this slot extends to or below the seat *c′* on the body. A straight spring, G, has a branch or bifurcation, *l*, and at one end a nib, *m*, projecting laterally and away from the said branch. The other end of this spring is secured to the tube at the upper end of the slot k^2 by a pin, *n*, entered

through both the end of the spring and hole n' in the tube. By this arrangement the straight spring G occupies the slot k^2 in the tube, and the branch spring l, when the rod is pressed into the tube, as shown in Fig. 6, will occupy the recess k in the rod. When the drive-rod is drawn out, the incline k' at the end of the recess will press the branch spring toward the straight spring, the nib m on which will project into the path of the discharge-bore d, thereby preventing the brads in the chamber c from passing out. The operation of this spring is shown in Fig. 7, where, it will be seen, the spring stops the brad o from passing as long as the drive-rod is drawn out. When the drive-rod is pressed in, as shown in Fig. 6, the spring G does not bar the path into the discharge-bore, and then a brad, o', passes below the nib and into that part of the said bore that is within the body-section B^3, which is a removable part of the body. A second spring, p, in the body-section has its free end toward the nozzle, and the free end bears normally away from the discharge-bore. (See Fig. 9.) When thus away, it offers no impediment to a brad passing into the nozzle; but when the drive-rod is pressed in, as shown in Fig. 6, then the spring p confines the brad in that part of the bore that is within the body.

In Fig. 6 the straight point i of the drive-rod is shown occupying that part of the discharge-bore that is in the nozzle C. For convenience the nozzle is made in two parts or two halves, which are bound together by the ring or collar C'. A third spring, q, occupies a recess, r, in the nozzle. The lower and free end of this third spring, q, is forced to one side by the straight point i of the driver when the latter is pressed in; but when the drive-road is drawn out the point i does not occupy the nozzle, and then the spring q takes its normal position across the discharge-bore in time to intercept the brad o', which drops into the nozzle. When the driver is now pressed in, the brad occupying the nozzle will be driven into the wood or other material. It will be seen the chambers rotate around the drive-rod.

The magazine being filled, the brads may be rapidly driven in any spot desired.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A brad-driver having a brad-magazine with a central bore and chambers around the bore, and driving mechanism adapted to reciprocate within the bore, as set forth.

2. The combination of a nozzle, a tube, B, in connection with the nozzle, a brad-magazine with a bore to receive the tube and turn around the same, and a driver free to move like a piston in the said tube, as set forth.

3. The combination of a cylindrical body, B', having a discharge-nozzle, and a pawl, a magazine having brad-chambers, and a collar to surround the body provided with ratchet-notches, whereby one of the brad-holding chambers is kept in coincidence with the bore leading to the discharge-nozzle, as set forth.

4. The combination of a drive-rod free to move endwise, like a piston, and a brad-magazine with a central bore, and chambers around the bore, the said magazine being free to turn, whereby the chambers will rotate around the drive-rod, as set forth.

5. In a brad-driver, the combination of a tube having an attached spring, G, provided with a branch, l, and a laterally-projecting nib, m, a drive-rod to move endwise in the tube, and having a recess, k, provided at one end with an incline, k', a brad-magazine, and a body having a nozzle and provided with a discharge-bore communicating the magazine with the nozzle, as set forth.

6. The combination of a drive-rod free to move endwise, like a piston, a brad-magazine with a central bore and chambers around the bore, the said magazine being free to turn, a body having a nozzle, and a discharge-bore communicating one chamber in the magazine with the nozzle, and a spring to stop the brads from passing from the chamber to the nozzle, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM P. GINTER.

Witnesses:
JOHN MALONY,
ISAAC J. BRENHOLTZ.