

(No Model.)

G. P. RENO.

CORE ROD.

No. 353,159.

Patented Nov. 23, 1886.

Fig. 1.

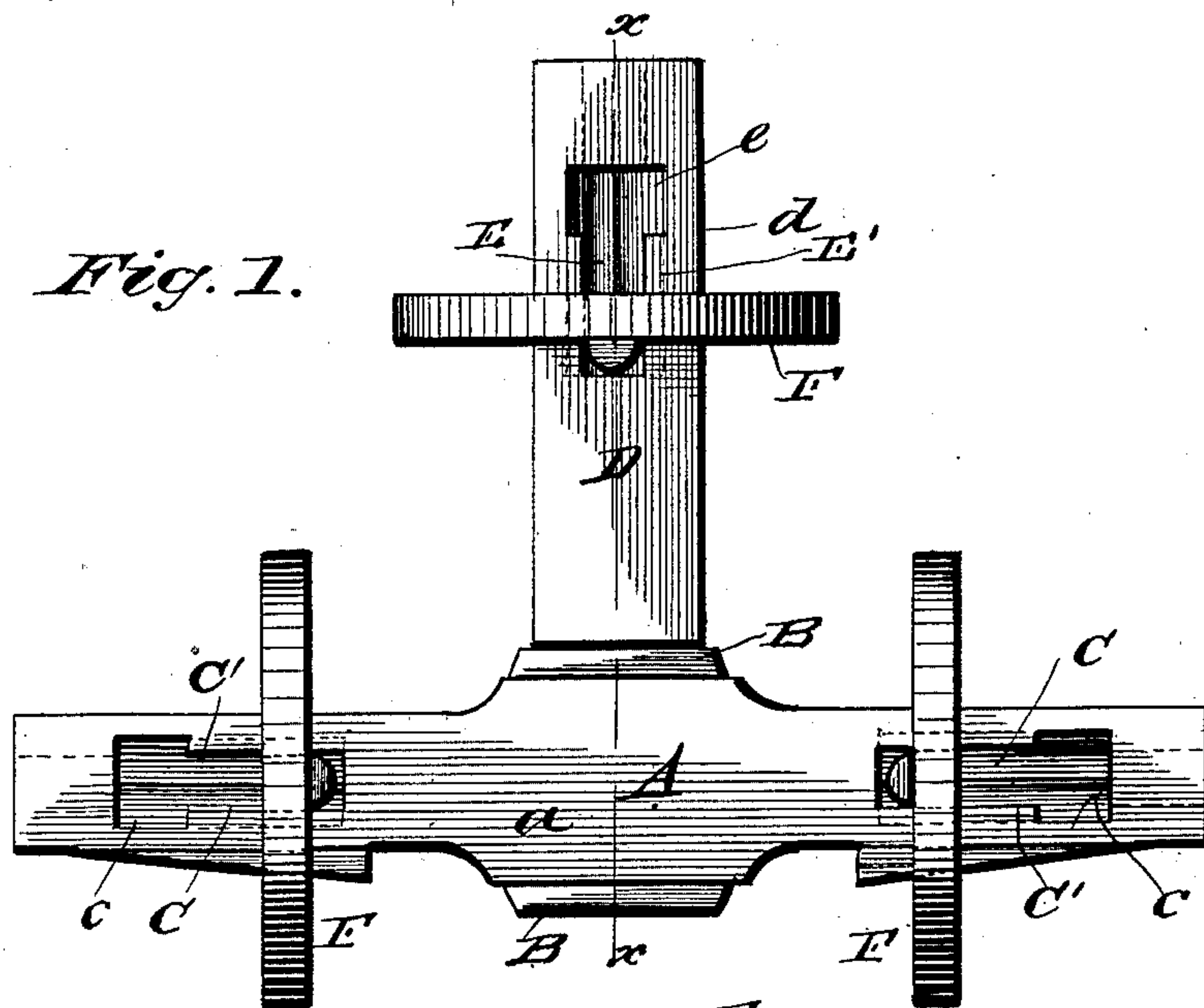


Fig. 2.

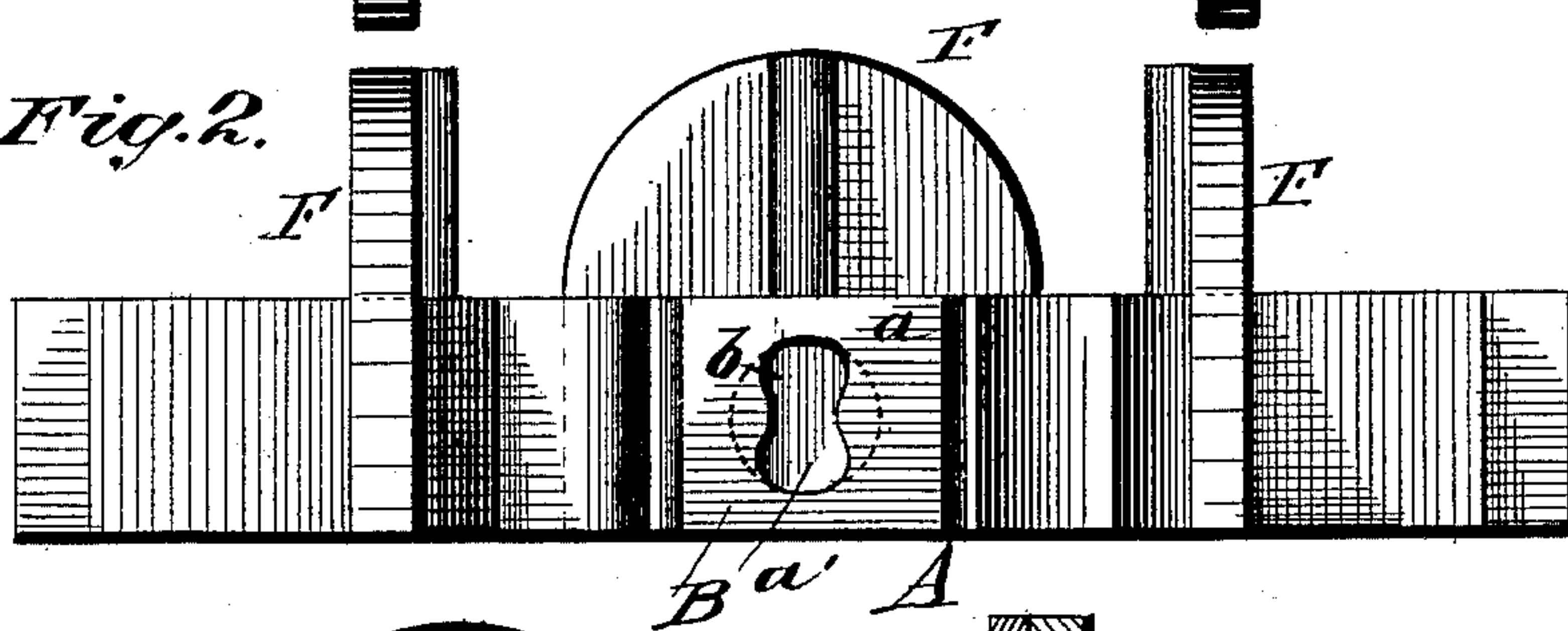


Fig. 3.

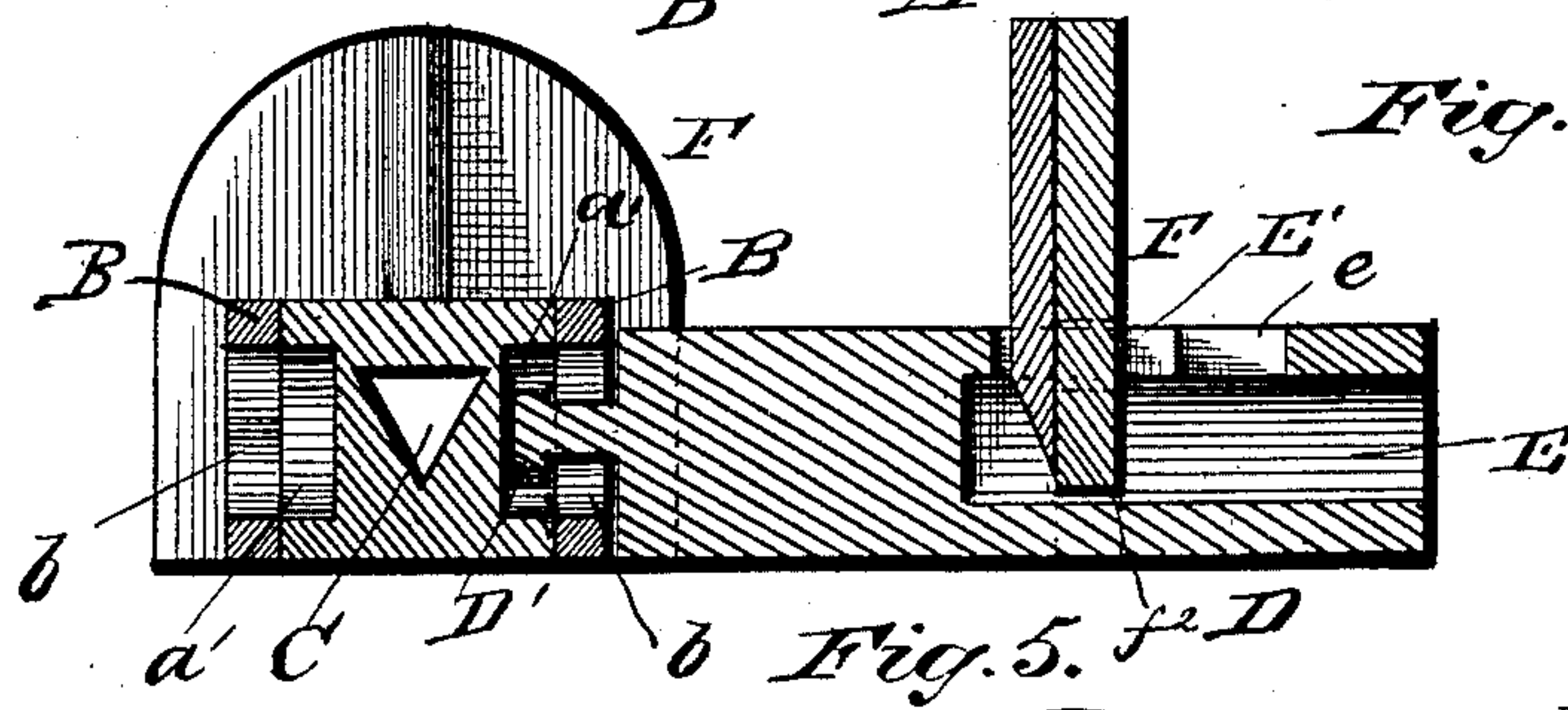


Fig. 6.

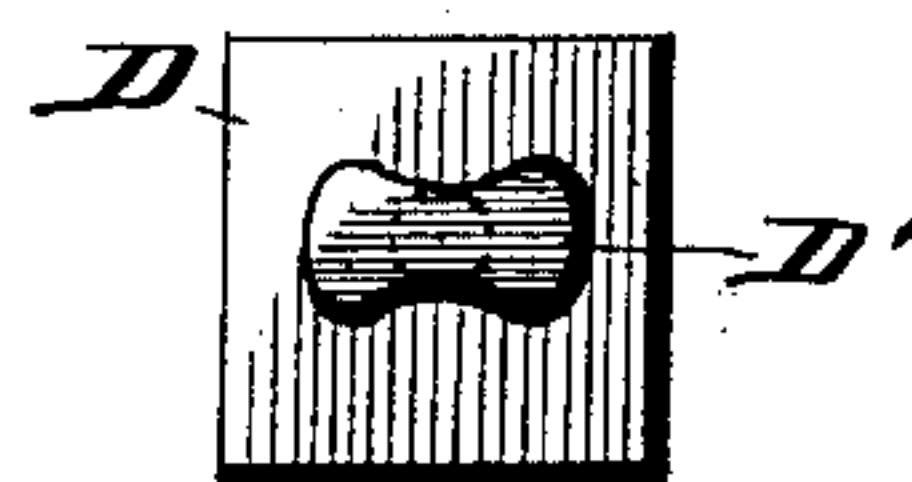
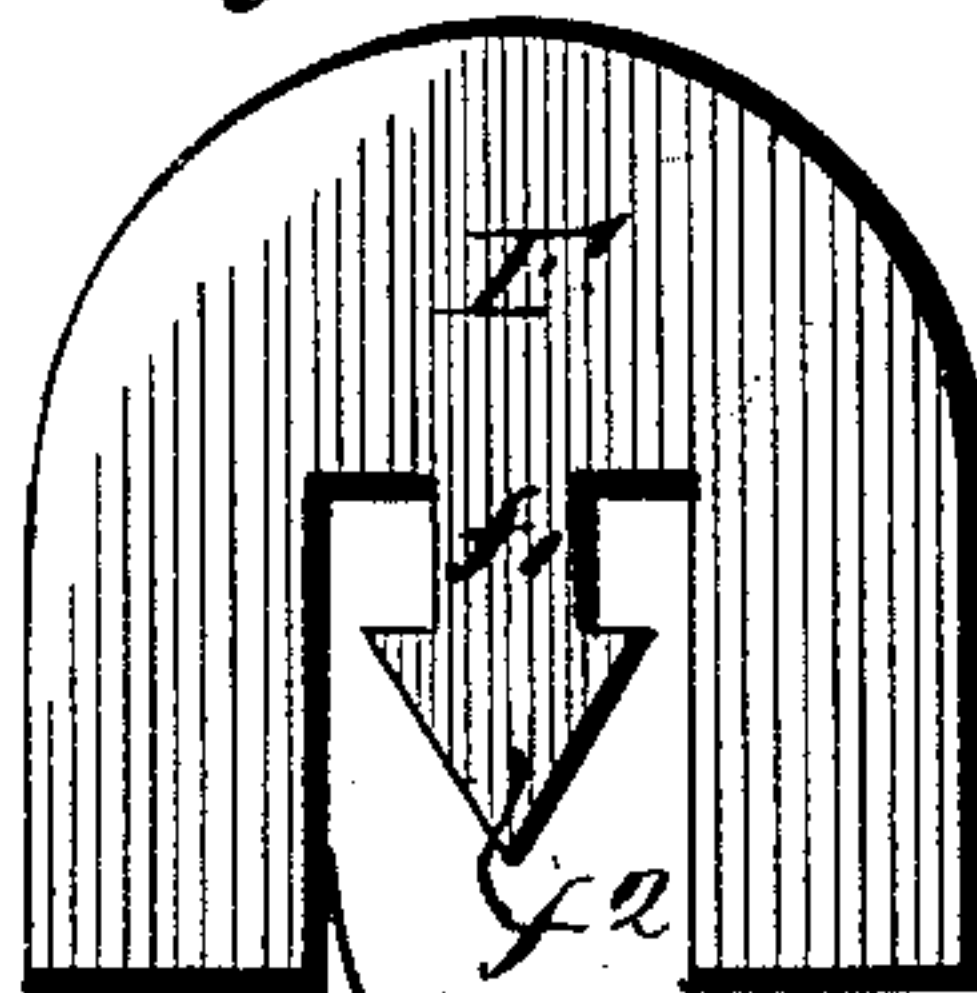
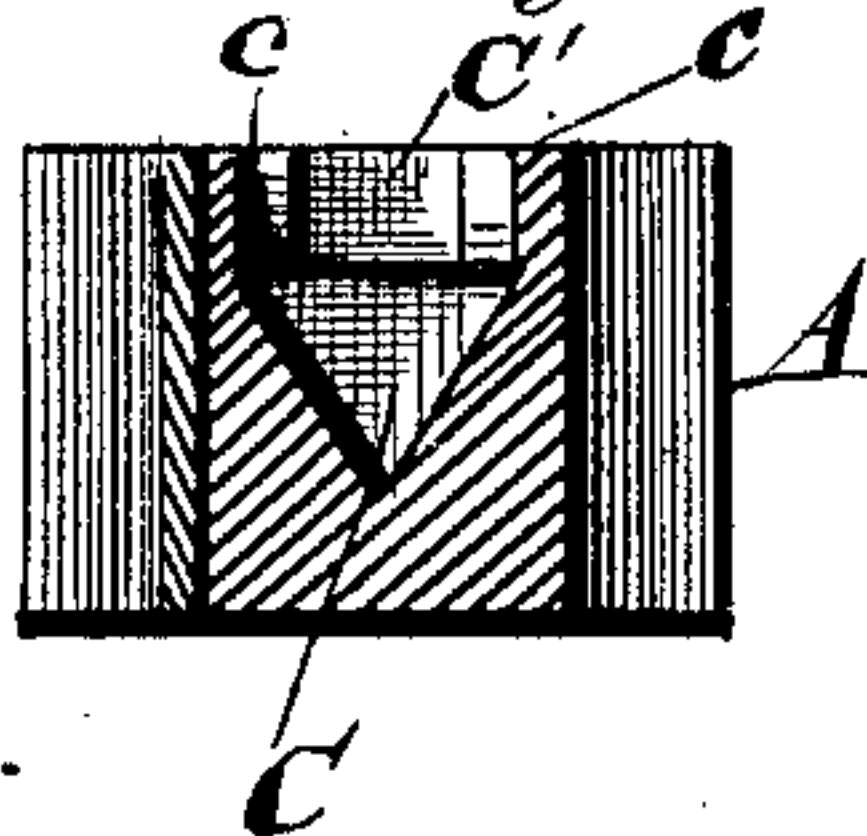


Fig. 4.



WITNESSES

Phil. Masi.
D. Triggitt.

INVENTOR

Geo. P. Reno,

by *Andrew Smith*
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE P. RENO, OF LOUISVILLE, KENTUCKY.

CORE-ROD.

SPECIFICATION forming part of Letters Patent No. 353,159, dated November 23, 1886.

Application filed June 3, 1886. Serial No. 204,053. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. RENO, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Core-Rods; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification:

Figure 1 of the drawings is a representation of a plan view. Fig. 2 is an end elevation. Fig. 3 is a transverse section on line *x x*, Fig. 1. Figs. 4, 5, and 6 are detail views.

The invention relates to improvements in core rods or bars upon which the cores of tubes and other hollow ware are formed; and it consists in the construction and novel arrangement of parts hereinafter described, illustrated in the drawings, and pointed out in the claims.

By the hereinafter-described construction the cores of straight pipes of three-way coupling-pieces and of four-way coupling-pieces can be made with equal facility.

Referring by letter to the accompanying drawings, A designates the body or shank of the core-bar, having the enlarged central portion, *a*, in which are the circular recesses *a'*, situated on sides opposite each other and on the bulging or outstanding parts of said enlarged portions. B are plates secured over said recesses, and having the key-hole shaped-slots *b*, as shown. The arms of the shank A are provided with the longitudinal passages or recesses C C, each V-shaped in cross-section.

C' C' are longitudinal slots entering the said passages or recesses on the same side of the arms of the shanks, the said side being between those in which the recesses *a'* are made.

D is one of the detachable arms of the core-rod, having on its end the projection D', the contour of which corresponds to that of each of the slots *b*. The shank *d* of said projection is just about as long as the plate B is thick, so that the projection can be passed through one of the slots *b*, and by turning the arm on its axis the projection will turn in the recess *a'*, and the arm will lock to the shank. There may be two of these arms, if desired, one to

lock to each side of the shank. Each arm D is provided with a longitudinal passage or recess, E, similar to the recess C, and a longitudinal slot, E', similar to the slots C'. The slots C' and E' each have their outer end enlarged at *c* and *c'*, respectively, as shown.

F F are semicircular plates, notched centrally on their straight edges to fit and ride upon the arms of the shank A and the arm or arms D. Each of the plates F have standing from the bottom of said notch *f* a projection, *f'*, provided with an arrow-headed or V-shaped end, *f''*, which fits snugly in one of the recesses C or E. By passing the said end *f''* through the wide part of the slot C' or E' and slipping the plate inward on the arm the shank of the projection will lock upon the arm, as shown in Fig. 3.

In making the core the plates are locked on, as described, and one or both arms locked to the shank. The device is then set in one half of a core-box of proper shape—that is, a box in which the semicircular plates F will rest with their peripheries against the inner surfaces of the arms of said box, the interior of said arms being semicircular in cross-section. The sand is then packed in the box and around the rod. When the plates are removed, the shank and arm or arms are lifted out and reversed and the other half of the core made in a similar manner. The two halves of the core are then united by any ordinary means.

By using the shank only, a core for a straight piece of piping is formed. A core for a three-way coupling-piece may be formed by attaching one arm to the shanks, and a core for a four-way coupling-piece by attaching both arms thereto. The projections *f'* are in practice re-enforced to prevent them from breaking away from their respective plates.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the shank provided with the recesses C C, V-shaped in cross-section, and the slots C' C', entering said recesses, and provided with the enlarged outer ends, *c* *c'*, the arm locking to the shank by means substantially as described, and provided with a recess, E, and slot E', respectively similar to the recess C and slot C', and the plates F, having the notches *f*, projection *f'*, and V-shaped

head f^2 on said projection, to lock in the recesses of the shank or arms, substantially as specified.

2. The combination of the shank provided
5 with the recesses a' and C, and slots C' , having enlarged outer ends, the plates B, having the slots b , the detachable arms D, having the projections D' , and provided with the recesses E and slots E' , having enlarged outer ends, and
10 the plates F, provided with the notches f and projections f' , having the V-shaped heads to engage the recesses C and E, substantially as specified.

3. A core-rod consisting of a shank having V-shaped recesses and slots forming entrances 15 to said recesses, and plates having V-shaped heads and reduced portion f' , substantially as specified.

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

GEORGE P. RENO.

Witnesses:

SIMON FROMHOLTZ,
THOMAS P. PARRENT.