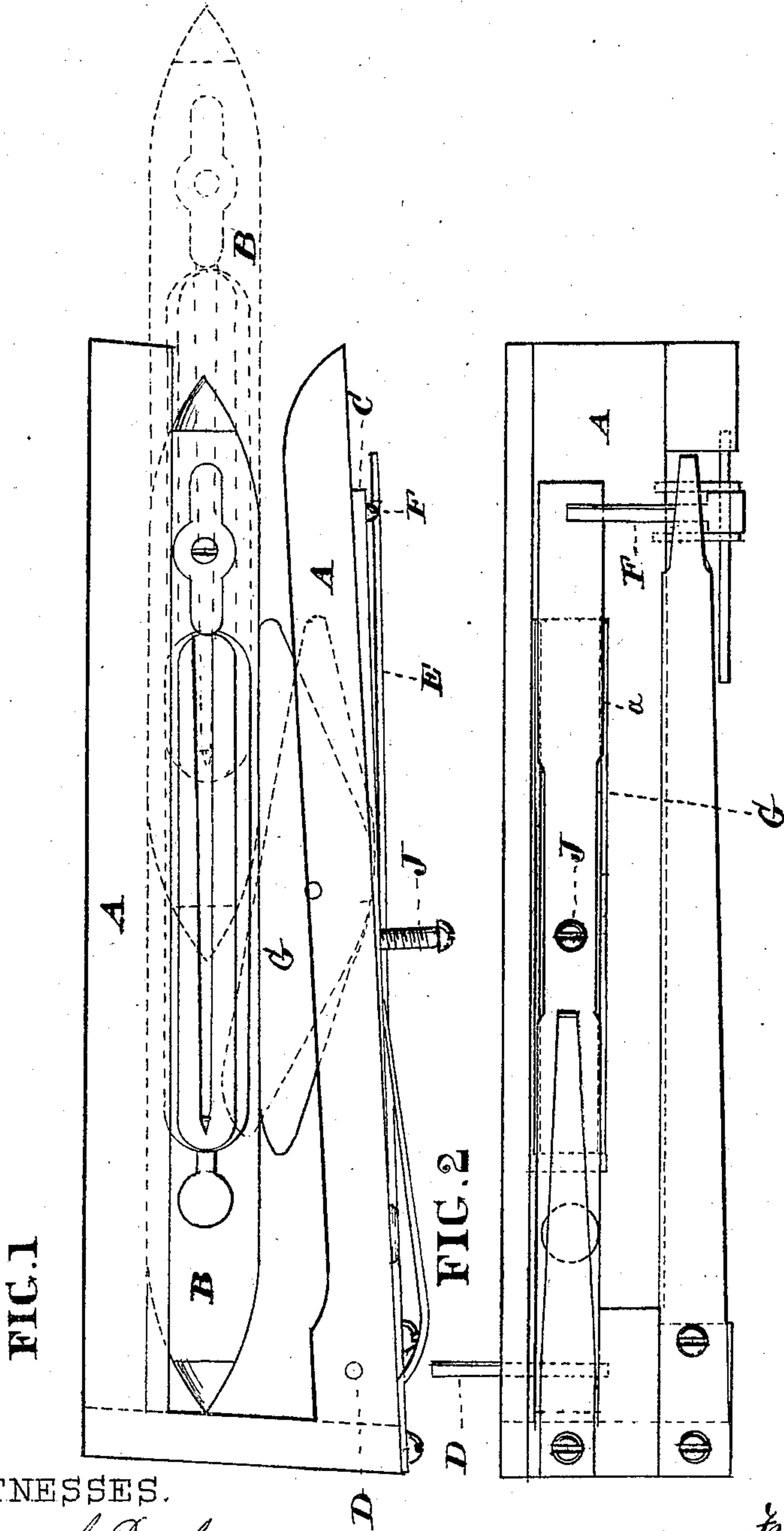


F. REA.

Shuttle Binders.

No. 136,384.

Patented March 4, 1873.



WITNESSES.

Thomas J. Bawley
Isaac Pinckney

INVENTOR.

Francis Rea
By His Attorney
Stephen Stick

F. REA.
Shuttle Binders.

No. 136,384.

Patented March 4, 1873.

FIG. 3

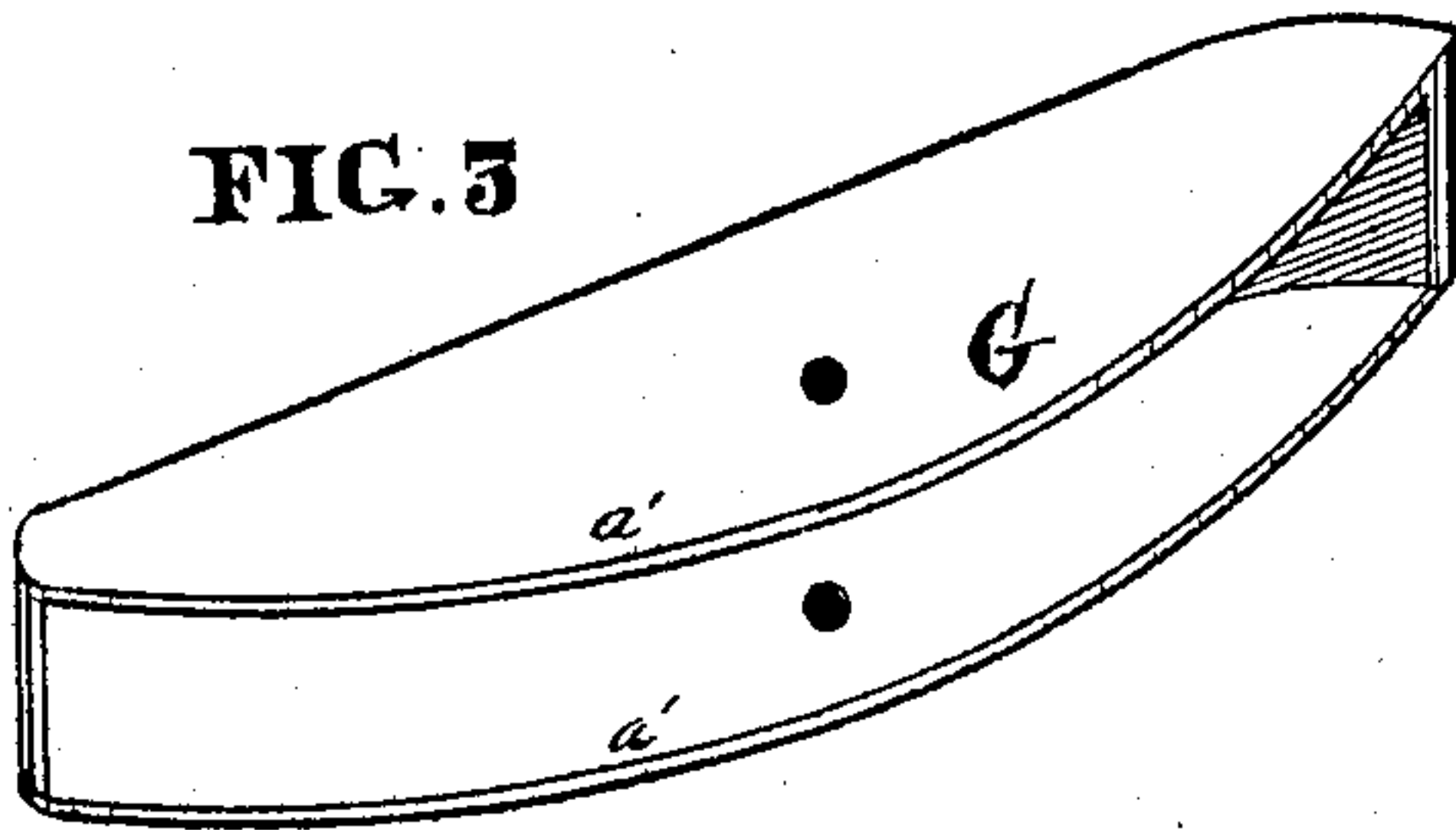


FIG. 4

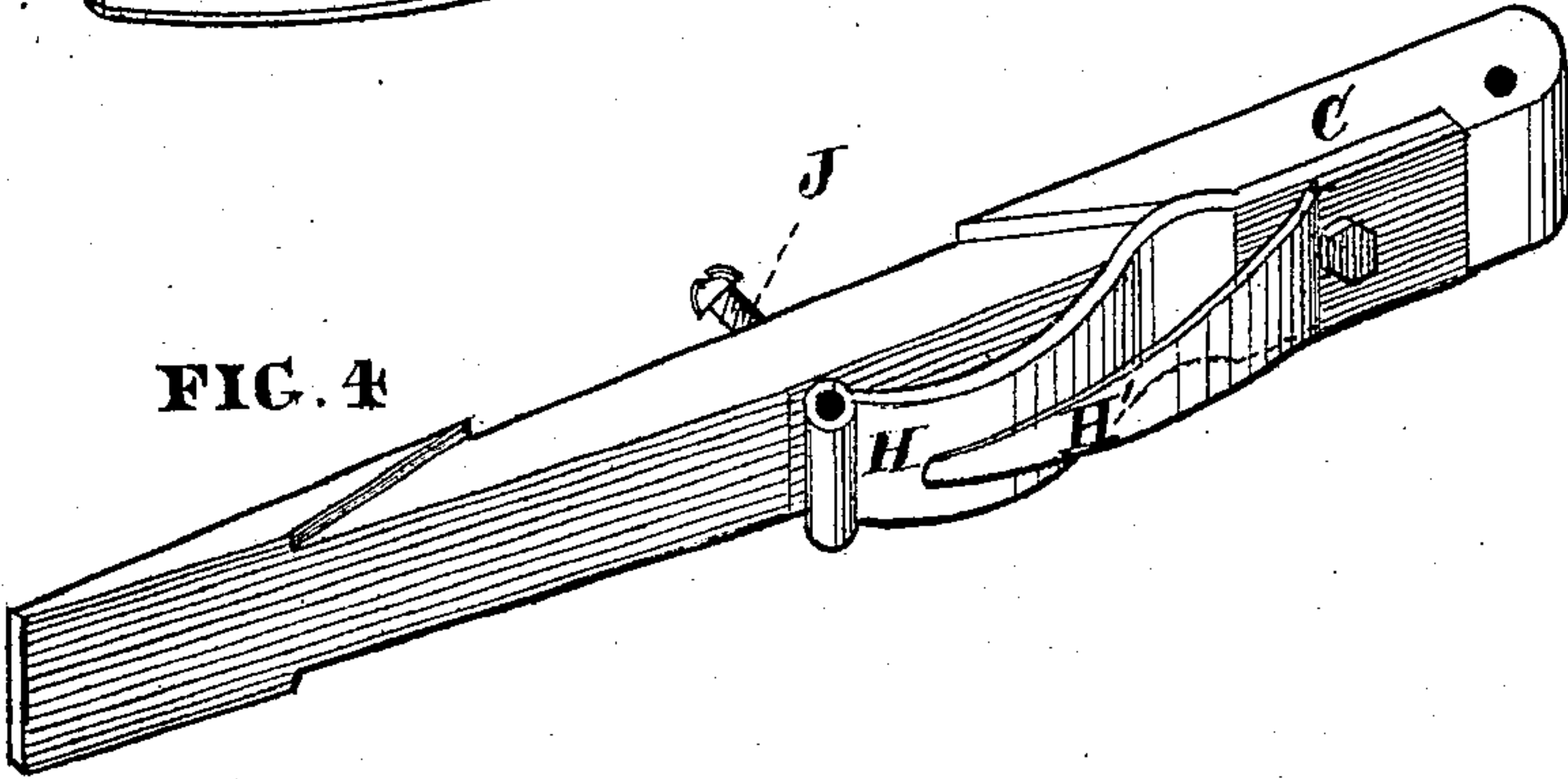
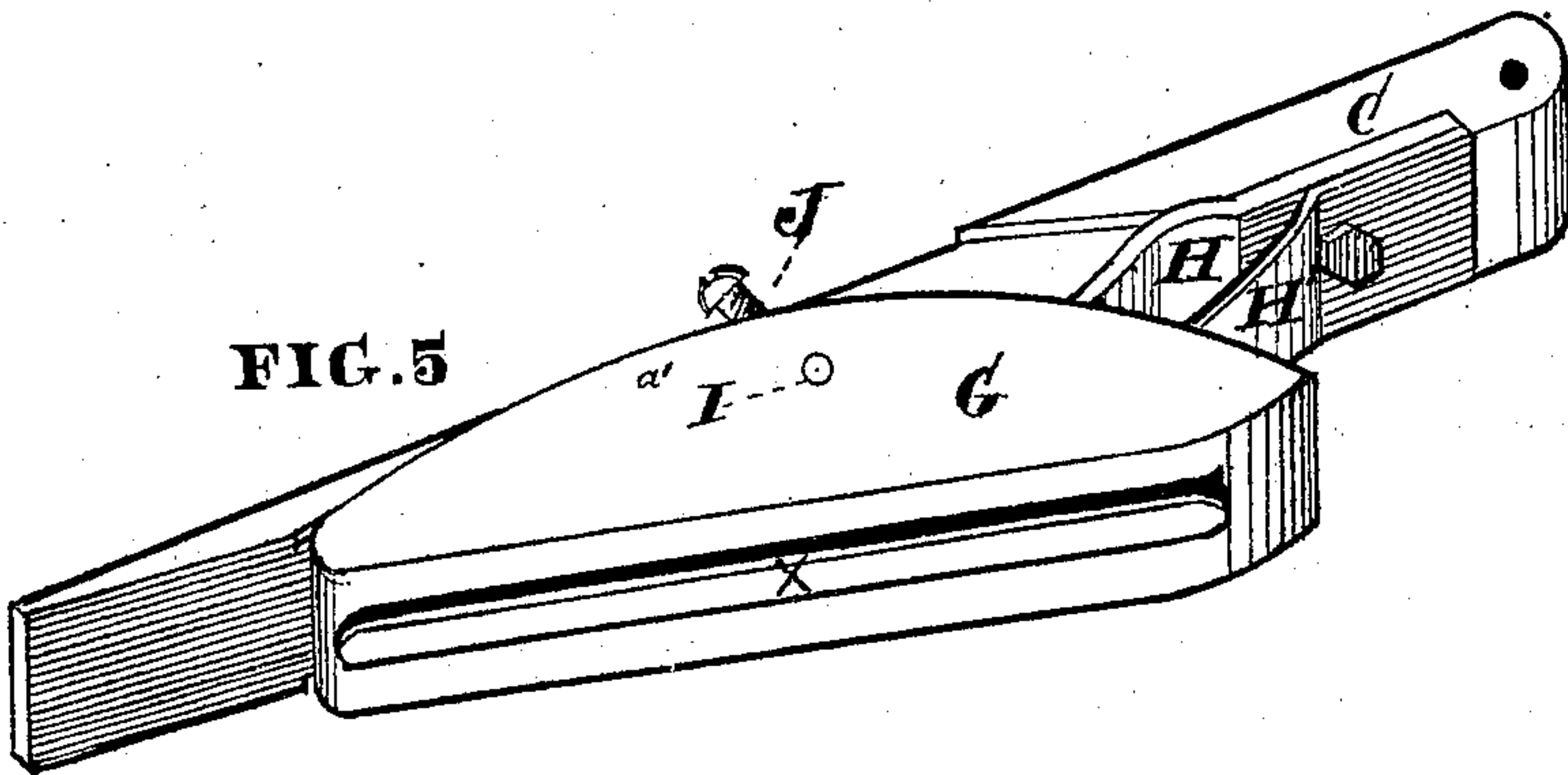


FIG. 5



WITNESSES

Thomas J. Bewley
James Dineley

INVENTOR

Francis Rea
By His Attorney
Stephen Stick

UNITED STATES PATENT OFFICE.

FRANCIS REA, OF GLOUCESTER, NEW JERSEY.

IMPROVEMENT IN SHUTTLE-BINDERS.

Specification forming part of Letters Patent No. **136,384**, dated March 4, 1873.

To all whom it may concern:

Be it known that I, FRANCIS REA, of the city of Gloucester, in the county of Camden and State of New Jersey, have invented a Reaction Clasp Swivel-Plate for Shuttle-Boxes, of which the following is a specification:

Ordinarily the shuttle-box is provided with a swell upon which one edge of the shuttle presses at a single point to hold it in position. This does not give the proper ease to the stoppage of the shuttle and steadiness which is desirable. My invention relates to the employment of a clasp swivel-plate having a straight side, which is gradually brought against the side of the shuttle by a spring as the shuttle comes to its resting point, thereby giving it an easy check and holding it steadily in position, as hereinafter fully described.

Figure 1 is a plan view of the box A and shuttle B. Fig. 2 is an edge view of the same. Fig. 3 is a perspective view of the reaction clasp swivel-plate G. Fig. 4 is a like view of the lever C and springs H H' in connection therewith. Fig. 5 is a like view of the swivel-plate and lever in connection.

Like letters in all the figures indicate the same parts.

A is an ordinary shuttle-box. B is the shuttle. C is a lever, connected at one end with the box A by means of the pin D, and held in the opening *a* in one side of the box by means of the spring E and clasp lever F in the usual manner. The parts above mentioned are of the usual construction. My improvement consists in the reaction clasp swivel-plate G, in combination with the lever C. The plate G is provided with flanges *a' a'*, which overlap the edges of the lever C, and accurately fit the same, so as to admit of the very ac-

curate vibratory motion of the plate without endangering its edges catching, or the breaking of the fulcrum-pin. There is a longitudinal groove, X, in the inner side of the plate G, for the filling to fall into after the contiguous side of the shuttle has been so worn away as to destroy its groove. The groove in the plate, by taking the place of the groove in the shuttle, protects the filling from cutting or drawing, in lieu of the ordinary swell of the lever. The swivel-plate, which is shown in detail in Fig. 3, is connected to the resilient end of the spring H on the lever C by means of the pin I, as seen in Fig. 5. The lever C and springs H H' in connection therewith are shown in detail in Fig. 4. J is a screw, which passes through the lever C for adjusting the spring H to give the proper degree of tightness to the clasp operation of the swivel-plate G.

The Operation.

The swivel-plate G is thrown by the spring H' into the position shown by dotted lines in Fig. 1, to allow the shuttle to advance easily. The spring yields as the shuttle advances to its stopping-point, as represented by full lines, allowing the clasp swivel-plate G to bear flat against the edge of the shuttle, and thus to prevent the latter from shaking, and causing an easy stopping action.

I claim as my invention—

The swivel plate or stop G, provided with flanges *a' a'* and a longitudinal groove, X, in combination with the lever C, substantially in the manner and for the purpose set forth.

FRANCIS REA.

Witnesses:

STEPHEN USTICK,
THOMAS J. BEWLEY.