

G. W. FITTS & LAR. F. GRIFFIN.
School-Desk.

No. 226,842.

Patented April 27, 1880.

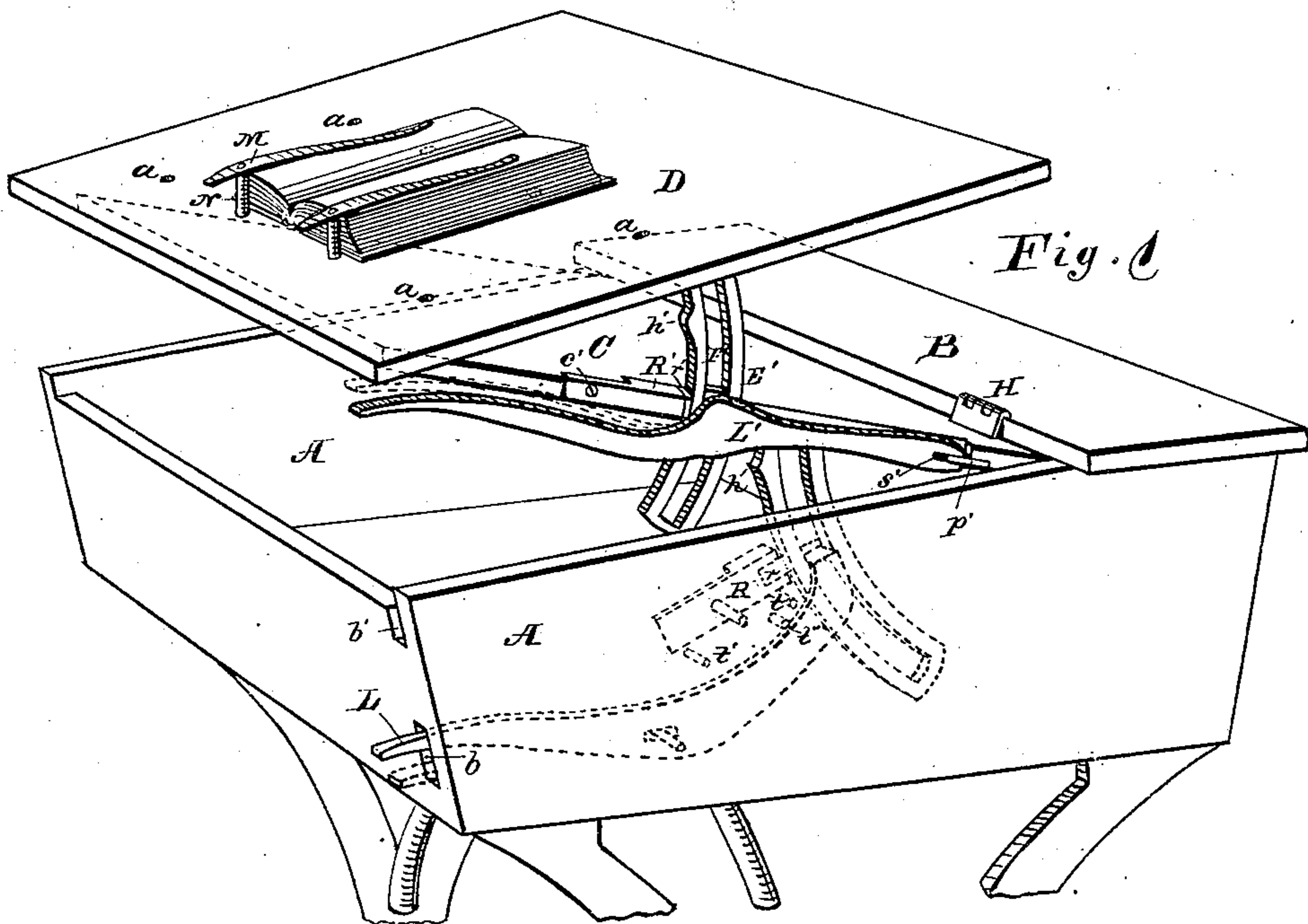


Fig. 1

Fig. 2

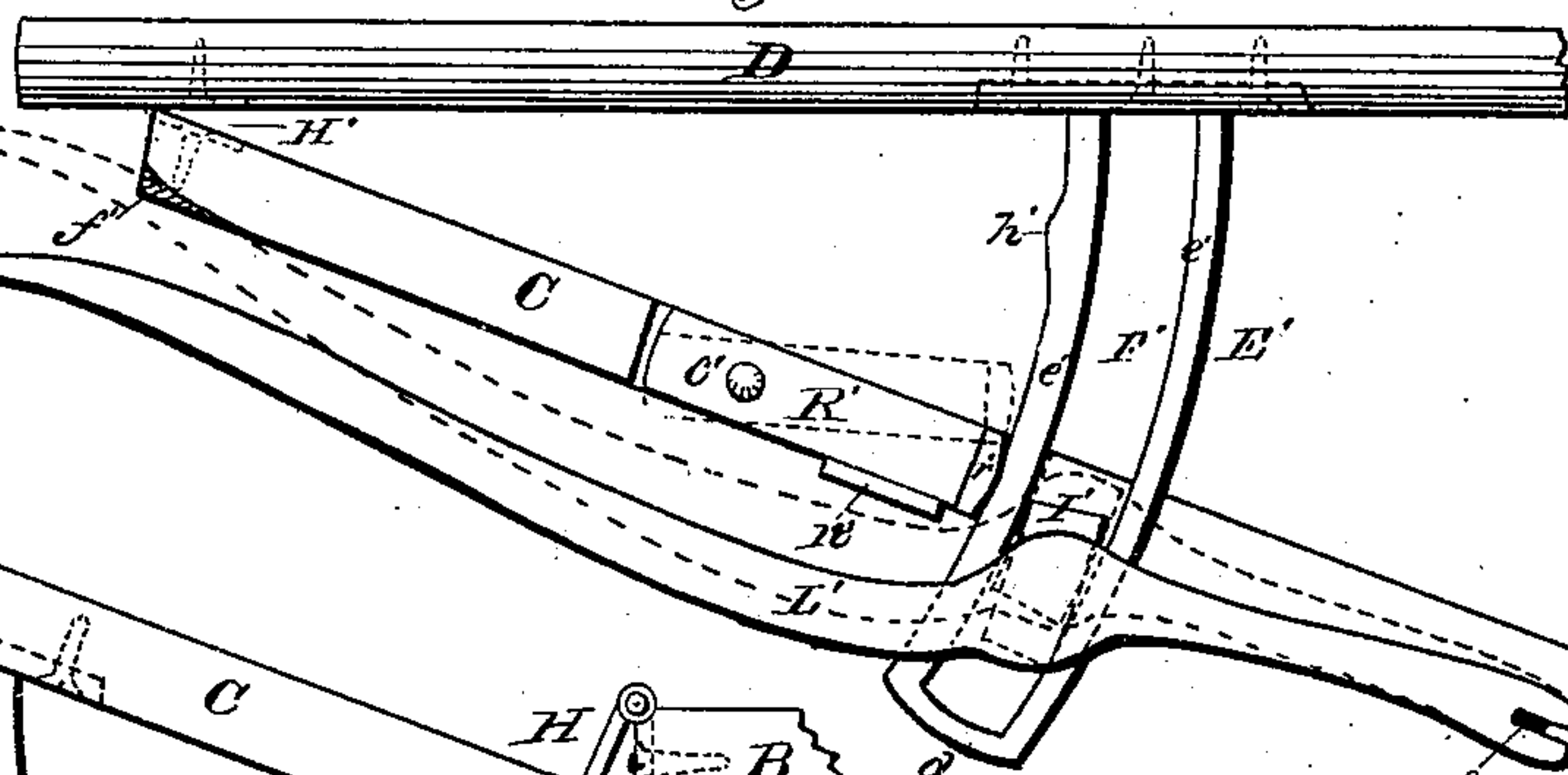


Fig. 3

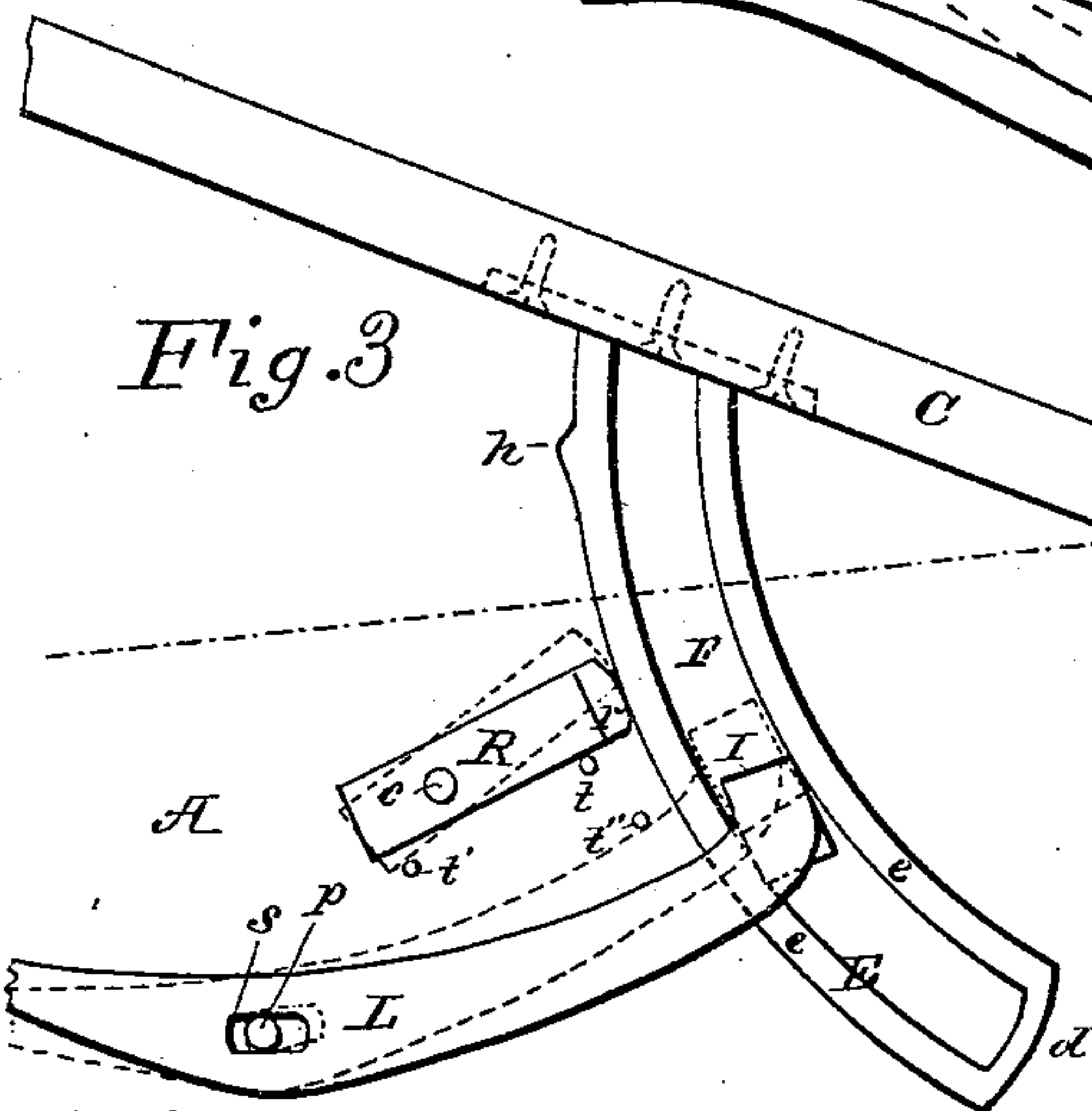


Fig. 4

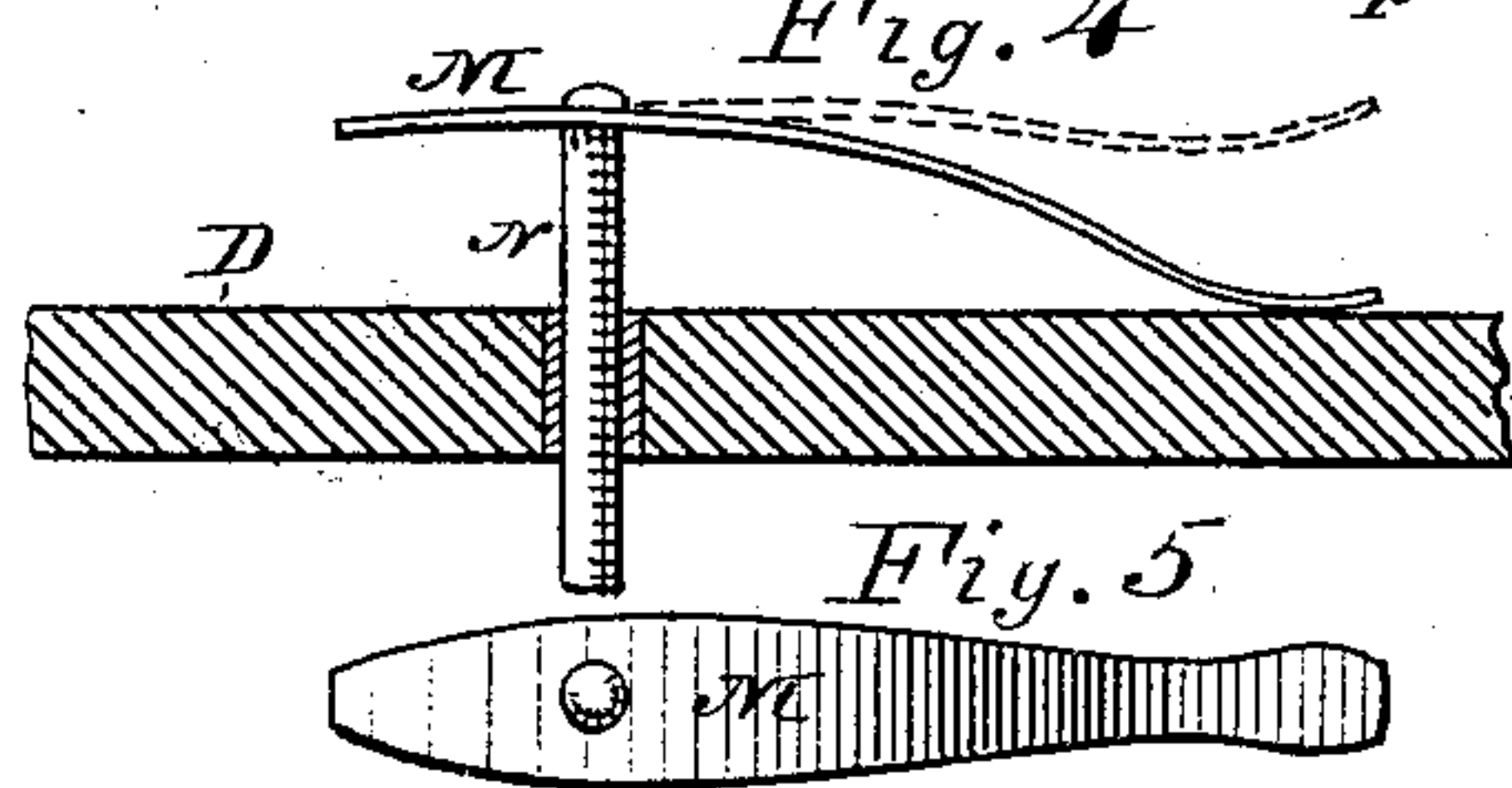


Fig. 5

WITNESSES

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UNITED STATES PATENT OFFICE.

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SCHOOL-DESK.

SPECIFICATION forming part of Letters Patent No. 226,842, dated April 27, 1880.
Application filed July 17, 1879.

To all whom it may concern:

Be it known that we, GEORGE W. FITTS, of South Hampton, New Hampshire, and LA ROY F. GRIFFIN, of Lake Forest, Illinois, have invented certain new and useful Improvements in School-Desks; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention has for its object to provide in a school-desk or other desk a cover that may be raised and set either parallel to its original position or at any desired angle thereto; and to this end it consists in the several devices and combinations of devices hereinafter described, and pointed out in the claims.

Figure 1 of the drawings is a perspective view of a desk having our improvements. Figs. 2 and 3 are detail elevations; and Figs. 4 and 5 show the book-clamps designed to be used in connection with the desk-cover.

A A are the ends, and B is the fixed portion of the top, of a school or other desk. D is the movable cover, adapted to be raised and held at any desired height and at any desired degree of inclination. For the purpose of obtaining this movement of the cover D the auxiliary cover C is employed, being hinged at its rear edge to the fixed portion B and at its front edge to the cover D, as more clearly shown in Fig. 2. Each of these covers is, of course, adapted to be raised on its own hinges, and, by the use of the devices now to be described, either can be held at any suitable angle of inclination.

As these devices are similar for both covers the general description of them may be limited to one, as that of the lower cover, C. To this cover C is secured a curved slotted arm, E, having its curve in a circle drawn from the center of motion of the cover to which it is attached, or from the axis of the hinges H, on which the cover swings. This arm is set so as to fall within the chamber of the desk, near its end, as indicated in Fig. 1, and has a concentric slot, F, bounded by the parallel walls e.

L is a lever pivoted to the inner face of the

end piece of the desk by means of the pin p, which works in the short slot s. This lever protrudes a short distance through the desk-front, as also shown in Fig. 1. The inner end of the lever L passes between the desk end and the curved arm E, and is provided with a rectangular boss or head, I, which enters the slot F. The head is a trifle narrower than the slot, so that when held in proper position it will move along freely therein, but when turned slightly will bind between the walls e.

The dotted outline of the lever in Fig. 3 shows the position of the lever necessary to the free movement of the head I therein, and this position is obtained by depressing the outer end of the lever until the pin p strikes the outer end of the slot s.

A stop, t'', set in the inner face of the desk, prevents the inner end of the lever L from being further lifted, so that the cover C may evidently be raised freely without any manipulation whatever of the lever L. Now, the inner end of said lever is made heavier than the outer, and by its own weight falls when free, so as to bear with the opposite diagonal corners of the head I in contact with the walls e, or in position to bind against them, as plainly shown in Fig. 3. Whenever the cover is raised to any height and then released by the hand, it is therefore instantly arrested in falling by the binding action of the head I within the slot F of the arm E. When it is desired to lower the cover the outer end of the lever L protruding through the desk-front is depressed, as already described, the head I is raised in the slot F and ceases to bind therein, and the cover falls.

As it is not always practicable to control the fall of the lid by the hand to prevent objectionable noise when the lid strikes the desk-body, an automatic friction-catch is provided, consisting of a vibrating bar, R, strongly but loosely pivoted to the end of the desk by the pin c, and having at its inner end a soft-rubber cushion or face, r.

The bar R is so placed as to closely proximate or to bear slightly by its rubber face against the outer edge of the curved arm E, which is smooth. At h on this face of the

arm is formed a projection, also having a smooth surface.

When the cover is lowered slowly the rubber slips easily over the smooth projection *h*; but when it falls rapidly the adhesion of the rubber and metal faces is so great as to wholly arrest the cover, so that it is necessary to lift the latter a short distance in order to further lower it at proper speed.

The movement of the bar is suitably limited by the stops *t* and *t'*, set in the desk end, as shown clearly in Fig. 3.

The cover *D* is controlled by wholly similar and equivalent devices in its movement upon the hinges *H*, by which it is joined to the cover *C*.

By reason of the hinges being at the front, instead of at the back, as in *C*, the direction of the curved arm *E'*, secured to the cover *D*, is reversed, as seen in Fig. 1.

In order to bring the ends of the two levers *L* and *L'* near each for convenience in manipulation, the head or boss of *L'*, that works in the slot *F'* of the arm *E'*, is located midway of the lever, instead of at its end, and the fulcrum is at the end of the lever. The entire weight of the lever so suspended and arranged with reference to the curved arm *E'* operates to bring the head *I* into position to bind in the slot *F'*, and it is necessary to raise said outer end to release the arm and allow the cover to fall.

The stop by which the lever is arrested to bring the head or boss *I'* into sliding position within the slotted arm *E'* is provided in the cover *C*, which overhangs the lever, and may be cut away, as shown, to give the same proper movement. *R'*, pivoted at *c* to the edge of the cover *C*, has the rubber face *r'*, is held by the stop *w'*, and co-operates with the smooth projection *h'* in a manner precisely the same as do the bar *R* and corresponding parts connected therewith, as already described.

The obvious result of hinging the covers *C* and *D* together and to the desk, as described, is to enable the upper cover, *D*, to be raised to any required height, and to be set while so raised at any desired inclination from a horizontal plumb.

For the purpose of bringing the upper cover flush with the fixed top piece, *B*, the lower cover, *C*, is set down on the hinges *H*, and made of proper length to drop between the ends *A A* of the desk-body.

In order that the upper lid may be separately raised on its hinges the under cover, *C*, extends out far enough at the front of the desk to bring the axes of the hinges in line with or outside the upper front corners of the desk. For this purpose the desk-front is cut away, as shown in Fig. 1.

If necessary, both ends of the desk may be

provided with the holding devices described, or they may be arranged centrally in the desk; so, if desired, a suitable space or spaces may be cut off by partition from the general interior of the desk, into which the curved arms *E* and *E'* may fall without disturbing or being prevented by the contents of the desk.

It is plain that the arms *E* and *E'* may be solid, instead of slotted, as shown, and that the heads *I* and *I'* may be slotted to embrace them.

The mechanism shown for holding the cover or frame *C* may be applied to an ordinary single covered desk for the purpose simply of holding the cover up.

M M are spring-metal clamps, adapted to hold a book open and in position upon the lid *D* by thrusting their shanks *N* into appropriate holes *a* in said lid.

Having thus described our invention, we claim—

1. The combination, with a desk and a lid hinged thereto, of the holding mechanism described, which consists of a curved arm secured to the lid and directed in a circle drawn from the hinge-axis, and a pivoted lever having a head adapted to engage with said arm and have a longitudinal movement, whereby the head may be engaged or released from engagement with the arm, substantially as set forth.

2. The vibrating stop-bar *R*, having a soft-rubber bearing-face, *r*, in combination with the stop *t* and the curved arm *E*, provided with the smooth-surfaced projection *h*, substantially as and for the purpose set forth.

3. In a desk, the intermediate lid or frame, *C*, hinged on one side to the desk and on the other to the lid *D*, combined with the arms *E* and *E'*, curved about their respective axes, and the pivoted levers *L* and *L'*, connected with said curved arms, whereby it may be held at variable angles with both desk and lid, substantially as and for the purpose set forth.

4. The lid *D* and intermediate lid or frame, *C*, hinged to each other and to the desk, combined with the curved arms *E E'* and movable clamp-levers *L L'*, engaging said arms, as shown, each lid being thereby adapted to be held at a variable angle with the adjacent part.

In testimony that we claim the foregoing as our invention we affix our signatures in presence of two witnesses.

GEORGE W. FITTS.

LA ROY F. GRIFFIN.

Witnesses to signature of Fitts:

URIAH T. FLANDERS,

FRANK B. SWAIN.

Witnesses to signature of Griffin:

M. E. DAYTON,

JESSE COX, Jr.