

(No Model.)

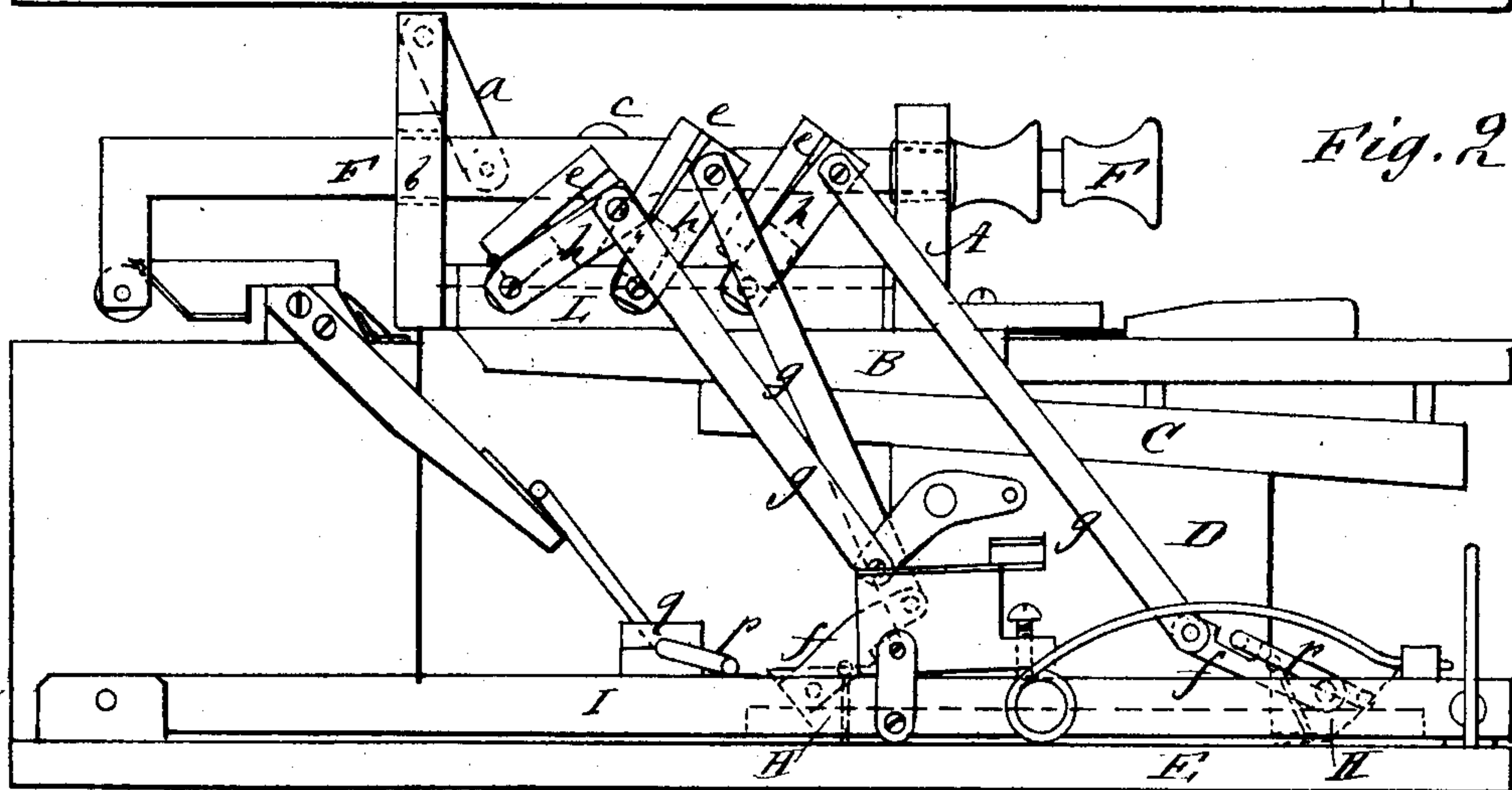
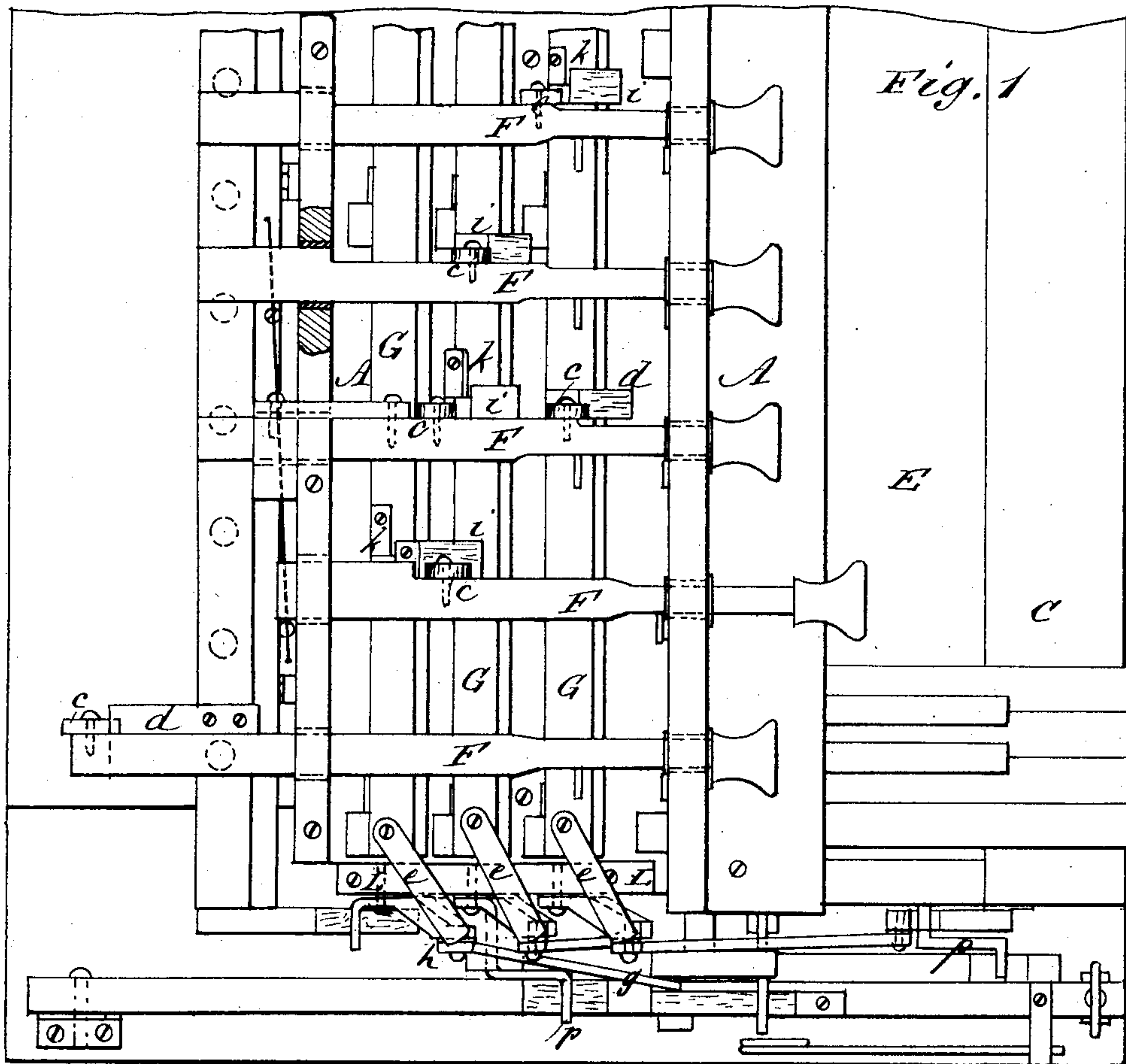
2 Sheets—Sheet 1.

B. FRENCH.

STOP ACTION FOR REED ORGANS.

No. 254,950.

Patented Mar. 14, 1882.



WITNESSES:

C. Neveu

T. Sedgwick

I

r

Fig. 9.

r'

r''

K

INVENTOR:

B. French

BY

Mum & Co

ATTORNEYS.

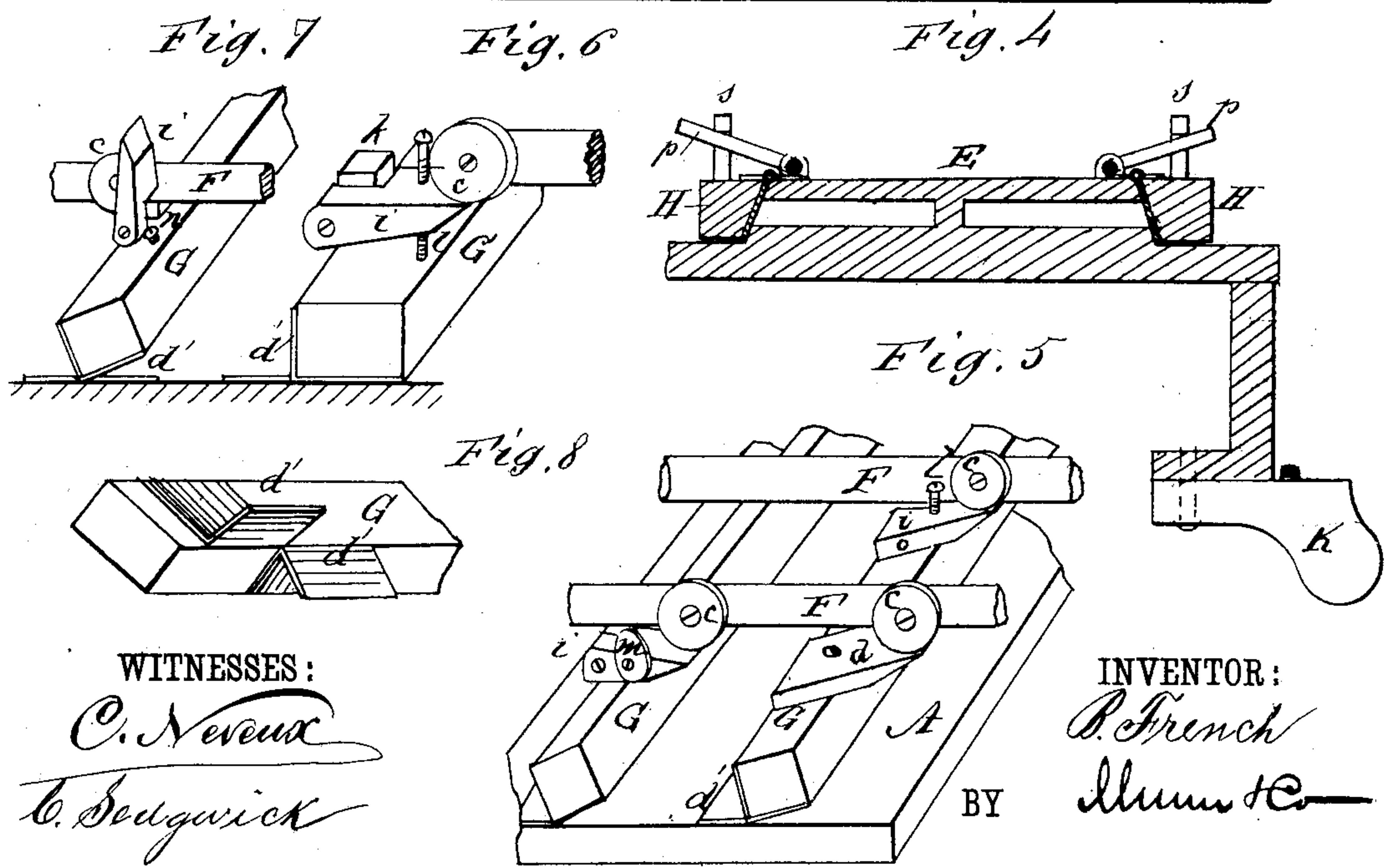
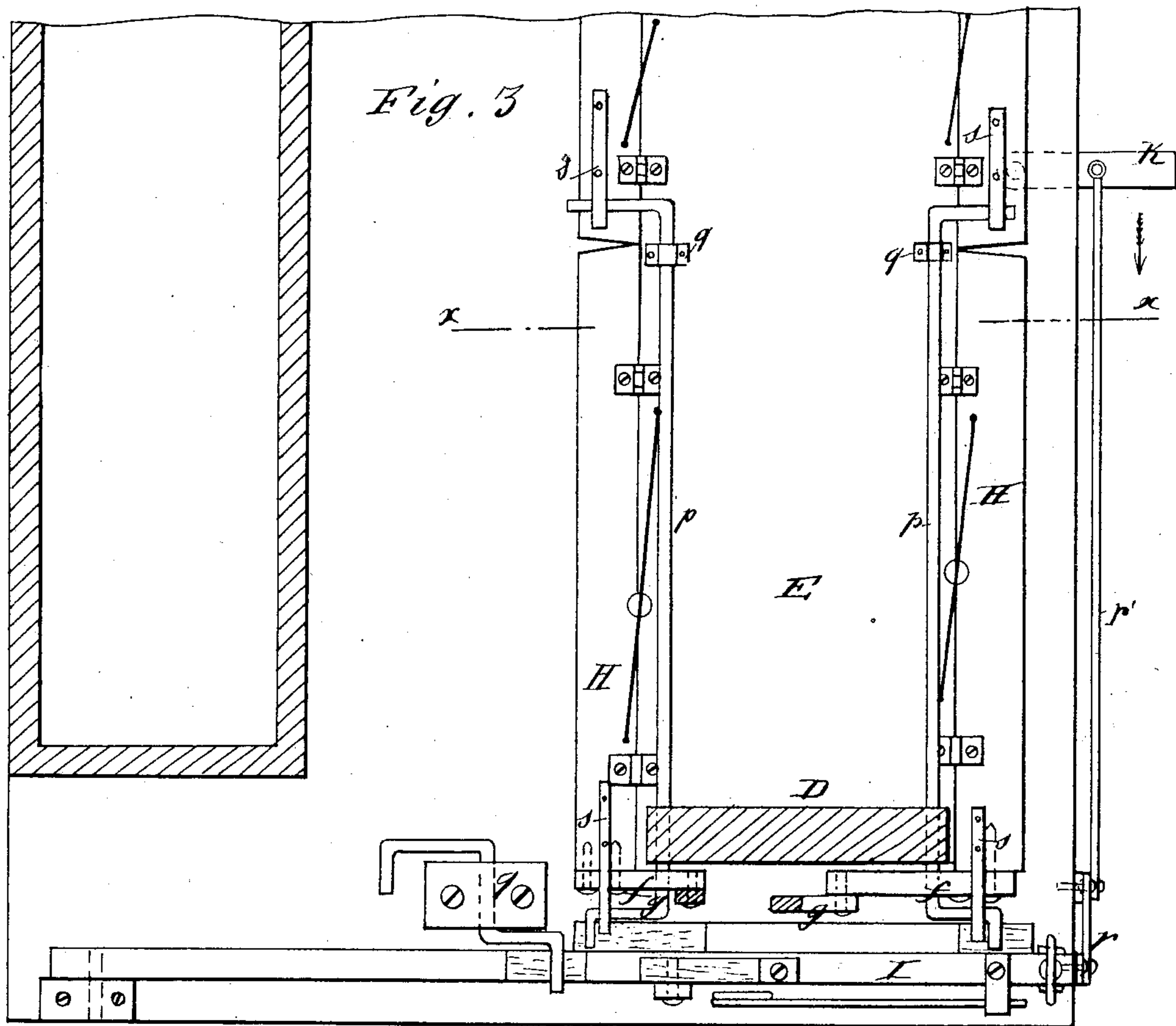
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2 Sheets—Sheet 2

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STOP ACTION FOR REED ORGANS.

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WITNESSES:
C. Neveu
C. Sedgwick

INVENTOR:
B. French
BY *Allen & Co*
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UNITED STATES PATENT OFFICE.

BROOKS FRENCH, OF FORT WAYNE, INDIANA.

STOP-ACTION FOR REED-ORGANS.

SPECIFICATION forming part of Letters Patent No. 254,950, dated March 14, 1882.

Application filed October 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, BROOKS FRENCH, of Fort Wayne, in the county of Allen and State of Indiana, have invented a new and useful Improvement in Stop-Actions for Reed-Organs, of which the following is a full, clear, and exact description.

The object of my invention is to produce a simple, easy-working, and effective stop-action, by which there may be obtained a greater number and variety of stops with one stop-drawer; also, to regulate and control the opening of the mutes by simple devices, and to obtain certain other advantages.

The invention consists in the combinations of mechanism hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a reed and stop board with the improved stop-action. Fig. 2 is an end view of the same. Fig. 3 is a sectional plan view, showing the cell-board and mutes. Fig. 4 is a cross-section on line *x x* of Fig. 3; and Figs. 5, 6, 7, and 8 are detail views. Fig. 9 is a detail view, showing the means for operating the mute-lifting lever.

A is the stop-board, fastened upon seat-block B, which is secured on the key-frame C, that is supported from the cell-board E by a block, D, all in the usual manner.

F is a stop-drawer, pivoted at its rear end to a link, *a*, that is suspended from a fixed post, *b*. The drawer passes through a cloth lined cross-groove in the post and fits snugly between the inner side of the groove and the link, so that the drawer is firmly and noiselessly guided. All the drawers F are to be similarly fitted, and are each provided with small wheels *c*, for operation of the flap-rods, next described.

G G are the rods or flaps, secured on board A by hinges *d'*, of flexible material, by which connection the flaps are allowed to move with the smallest possible amount of friction. The flaps G correspond in number with the mutes to be operated upon, and are provided with fixed arms *d*, projecting beneath the wheels *c* of the drawers, and also provided at their ends

with rigid arms *e*, that project beyond the stop-board A.

H H are the mutes, fitted on cell-board E in the usual manner, and provided at their ends with rigid arms *f*, from which rods *g* pass to and are connected with arms *h*, which are pivoted to a piece, L, fixed on the seat-block B. The arms *h* extend beneath the respective arms *e* of the flaps, so as to be moved down by the flaps, and are held up by the springs of the mutes. This disconnection between the flaps and the arms that operate the mutes allows removal of the stop-board without the trouble of disconnecting the several mutes.

The piece or block L, to which the arms *h* are pivoted, is secured to block B by screws, the stop-board A being cut away to give space for the piece. The piece L is thicker than the stop-board, so that the arms *h* can be pivoted on a common center with the hinges *d'*. The piece L is slotted crosswise for the screws by which it is held, so that when the screws are loosened the piece can be moved out to clear the screw-heads, the rods *g* yielding sufficiently for that purpose. This allows removal of both the stop-board and key-frame.

In the inward position of the drawers F the wheels *c* are above the arms *d* of the flaps, so that when the drawers move out the wheels bear down the arms and tip the flaps, and the wheels being carried forward of the hinges, they retain the flaps down and the mutes open until the drawers are pushed back. At the outward movement of the drawers the links *a* act to raise the rear end as soon as the links move forward of their pivots on the posts. This occurs when the drawers are half out, and allows the flaps to rise slightly by the action of the mute springs with the effect to make the further movements of the drawers easier, and giving a desirable "touch" to the movements. In the forward position the links *a* assist in retaining the stop-drawers open, and I thus obtain the advantage of a spring-toggle.

The action of the drawers on the arms *d*, as described, gives the fully opened mutes. To obtain variety of partly-opened mutes by the same drawers the construction is as follows: On the flaps G are arms *i*, pivoted to blocks *k*, and provided with screws *l*, tapped through

the arms, that bear on the flaps for regulating the position of the arms, as shown most clearly in Fig. 6. By turning the screws their projection below is varied and the arms thus raised or lowered, and the extent of movement of the flaps by the wheels *c* thus regulated. In place of the screws *l*, cams, as shown at *m* in Fig. 5, may be used, or a screw, *n*, entered into the flap for the arm to rest upon, as shown in Fig. 7, will serve the same purpose.

By providing the flaps with the arms *d* and the stop-drawers with a suitable number of wheels two or more mutes can be acted on at once by one drawer, either as partly-opened mutes (soft or dulcet stops) or as fully-opened and partly-opened mutes, so that a great variety of combinations is possible with a limited number of drawers. The wheels roll over the arms, and not being connected the flaps are independent of each. The action is that of a wedge without the friction.

For opening all the mutes simultaneously, to obtain the grand-organ effects, I provide cranked wires *p*, held in place and turning in boxes *g*, and also having bearings in blocks *D*. The ends of the crank-wires extend above a lifting-lever, *I*, which is pivoted at the rear side of the reed-board, and the forward end of lever *I* is connected, through the medium of a bell-crank, *r*, and rod *r'*, to the knee-lever *K*. (See Figs. 3 and 4.) The inner ends or portions of wires *p* are bent and extend over the ends of the mutes at the point where the mutes are divided, the ends of the mutes being beveled to allow free movement. On the mutes are arms *s*, extending above the wires *p*, one arm *s* being at the point where the mutes are divided and the other at the outer end, close to the point where the crank-pin takes on the lever *I*. It will be seen that when the knee-lever is moved in the direction of the arrow the front end of the lever *I* is raised, and the crank-wire *p* being thus turned the mutes are raised. The long lever *I* gives great power, and the twisting strain on the wires is so nearly neutralized by the long leverage and the position of arms *s* that light and inexpensive wires can be used.

In organs with more than two sets of reeds the additional mutes can be raised by connect-

ing them to an arm or arms pivoted to the inner bent ends of wires *p*.

This construction admits of the mutes being operated by the stop-drawers without interfering with the grand-organ connections.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In organs, the combination, with the stop-board *A* and the stop-drawers *F*, provided with the wheels *c*, of the flaps *G*, hinged to the said boards and provided with the fixed arms *d*, projecting beneath the wheels of the said stop-drawers, substantially as and for the purpose set forth.

2. In organs, the combination, with drawer *F* and the block *L*, of the hinged flaps *G*, provided with the fixed arms *e*, the mutes *H*, provided with the rigid arms *f*, the pivoted arms *h*, and the connecting-rods *g*, substantially as and for the purpose set forth.

3. In organs, the combination, with the grooved post *b* and the stop-drawer *F*, of the link *a*, suspended from the said post and pivoted to the stop-drawer, substantially as and for the purpose set forth.

4. In organs, the combination, with the stop-board *A* and the hinged flaps *G*, provided with the fixed arms *e*, of the block *L*, provided with the pivoted arms *h*, and the means for connecting said arms to the mutes, substantially as shown and described, whereby the stop-board is adapted to be removed without disconnecting the several mutes, as set forth.

5. The adjustable arms *i*, combined with the flaps *G* and stop-drawers *F*, substantially as and for the purposes set forth.

6. In organs, the combination, with the stop-drawers *F*, provided with the wheels *c*, of the flaps *G*, provided with the rigid arms *d* and the adjustable arms *i*, substantially as and for the purpose set forth.

7. In organs, the combination, with the block *D*, the mutes *H*, provided with the arms *s* and the crank-wires *p*, of the lever *I* and the means for operating said lever, substantially as and for the purpose set forth.

BROOKS FRENCH.

Witnesses:

G. E. BRUSLEY,
R. F. KEETH.