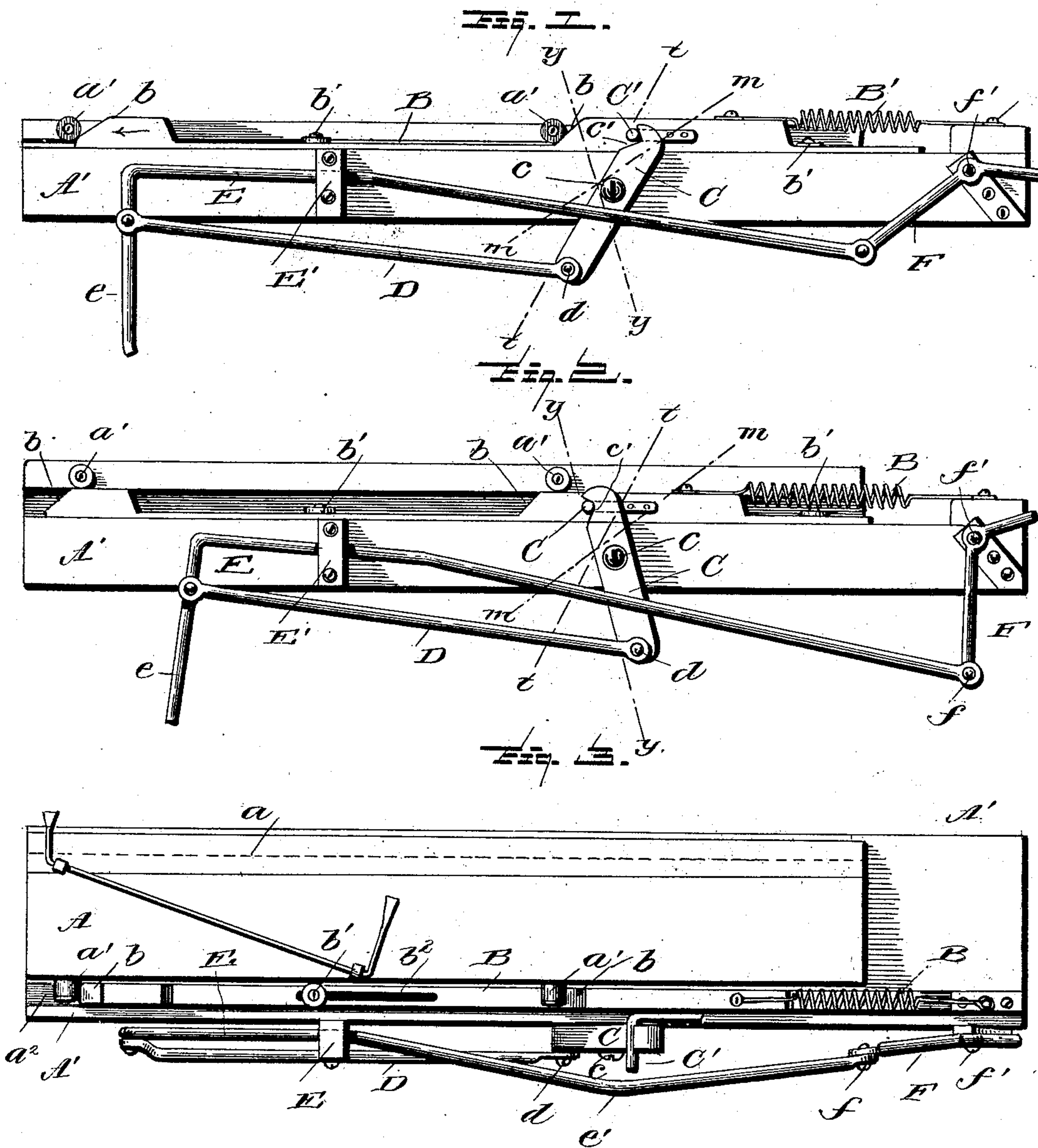


(No Model.)

H. LEHR & J. DIEHL.
COUPLER AND CONNECTION FOR ORGANS.

No. 509,914.

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UNITED STATES PATENT OFFICE.

HORACE LEHR AND JACOB DIEHL, OF EASTON, PENNSYLVANIA.

COUPLER AND CONNECTION FOR ORGANS.

SPECIFICATION forming part of Letters Patent No. 509,914, dated December 5, 1893.

Application filed July 29, 1893. Serial No. 481,825. (No model.)

To all whom it may concern:

Be it known that we, HORACE LEHR and JACOB DIEHL, citizens of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Couplers and Connections for Organs, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in coupler connections for organs, and it has for its objects among others to provide a simple and cheap yet efficient connection between the knee lever and the coupler whereby, without the use of stops, or other means, the same motion of the knee lever which by use of the knee lever wire, opens the swells and valves causing the reeds to speak, also puts into play the coupler; certain loose play is provided whereby the coupler slide moves for a portion of its distance without affecting the coupler, so that when the knee lever shall have caused certain reeds to speak by its first partial movement, a continued or further movement of said knee lever shall thereupon add the coupler, thus allowing the performer to use first such certain sets of reeds as may be brought into play by the first partial movement of the knee lever and by simply a further push of the knee lever add thereto the coupler whenever desired. The connection is simple, easy of attachment, occupies but little space and can be set up by unskilled persons.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation showing the application of our improvements. Fig. 2 is a similar view with the parts in another position. Fig. 3 is a top plan with the parts in the position in which they are shown in Fig. 1.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the draw-

ings by letter, A designates the coupler which may be of any well known or preferred form of construction, hinged at one edge as shown at *a* to the support A'. Upon its front edge it is provided with the rollers *a'* which are suitably journaled thereon for a purpose which will soon be made apparent.

The support A', along near its front edge, is provided with a groove or channel *a²* as shown clearly in Fig. 3 in which is mounted to slide freely the coupler-slide B which is formed with the inclined faced lugs or projections *b* as seen in all of the views and up which the rollers *a'* are designed to travel as the said slide is moved in the direction of the arrow in Fig. 1. The slide is held against movement in the direction of the said arrow by a spring B' which is connected at one end to said slide and at its other end to some fixed part. The slide is further guided by means of the pins or projections *b'* held in the support A' and passing through longitudinal slots *b²* in the slide as seen best in Fig. 3.

C is a lever pivoted between its ends as at *c* to the front face of the support A' as shown in Figs. 1 and 2 and having at its upper end a notch *c'* as shown in Figs. 1 and 2 which is designed to engage a pin or lateral projection C' on the slide B as shown in the various views. This pin or projection is so arranged relatively to the lever that the latter has a predetermined amount of movement or play before engaging or actuating the said pin or projection and consequently the slide and the coupler. The lower end of this lever has pivotally connected therewith as at *d* one end of a link or rod D the other end of which is pivotally connected with the vertical portion *e* of the knee lever rod E which vertical portion is designed for connection with the knee lever, (not shown,) in any suitable manner. The horizontal portion of the rod E passes through a suitable guide E' on the front face of the support A' and after being bent outward as shown at *e'* to clear the lever C, has its other end pivotally connected as at *f* with the bell crank lever F which is pivoted at its elbow as seen at *f'* to the support A' and is designed for connection in any well known way for raising the mutes and swells over the reeds, thus allowing the latter to speak.

With the parts constructed and arranged substantially as hereinbefore set forth the operation will be as follows:—The parts normally are in such position that the lever C lies in the plane of the line $m-m$, being thus held by the mute and swell springs, (not shown,) in the usual manner; this is the position of rest. In moving the parts so that the lever C moves from the line $m-m$ to the line $t-t$ the knee lever performs certain duties, such as opening the mutes and swells and thereby adding certain sets of reeds, for which it is set and connected, without operating the slide B, owing to the loose play between the lever and the pin or projection c' , but when the knee lever is moved so as to move the lever C from the position in which it is shown in Fig. 1 to that in which it is shown in Fig. 2 coincident with line $y-y$ the slide is moved in the direction of the arrow, the inclines thereof ride under the rollers on the coupler and raise the same, thereby adding it to such reeds or sets of reeds as are already speaking and which the knee lever had already brought into play. As the pressure is removed from the knee lever the spring B' returns the parts to their normal position.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. By adjusting the projection C' on the slide the variance of time of bringing the coupler into action may be effected at will.

What is claimed as new is—

1. The combination with a coupler and its actuating slide, of a pivoted part having limited loose engagement with the slide, and a connection between said part and a knee lever, as set forth.
2. The combination with the coupler and its actuating slide, of a pivoted lever with a notch,

a rod connected with the knee lever wire and with the said lever, as set forth.

3. The combination with the knee lever rod and the coupler and its actuating slide, of the lever having a notch and pivotally connected with said rod and having a limited loose engagement with the said slide, as set forth.

4. The combination with a coupler, of a knee lever rod and connections substantially as specified embodying a loose engagement with the coupler slide whereby the said rod acts first to raise the mutes and swells and then add the coupler, as set forth.

5. The combination with the coupler, and its slide of a knee lever rod and connections substantially as described between said slide and rod and embodying a loose engagement with the slide whereby the knee lever may be caused to actuate the mutes and swells and coupler either simultaneously or successively, as set forth.

6. The combination with the coupler and its actuating slide, of the lever pivoted between its ends, the knee lever rod pivotally connected with the lever, and an adjustable projection on the slide to be engaged by the other end of the lever, as set forth.

7. The combination with the coupler and the slide with projection and inclined portions, of the rollers on the coupler, the pivoted lever with notch, the spring acting on the slide, the knee lever rod, and the rod pivotally connected therewith and with the said lever, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

HORACE LEHR.
JACOB DIEHL.

Witnesses:

H. D. MAXWELL,
WALTER LEHR.