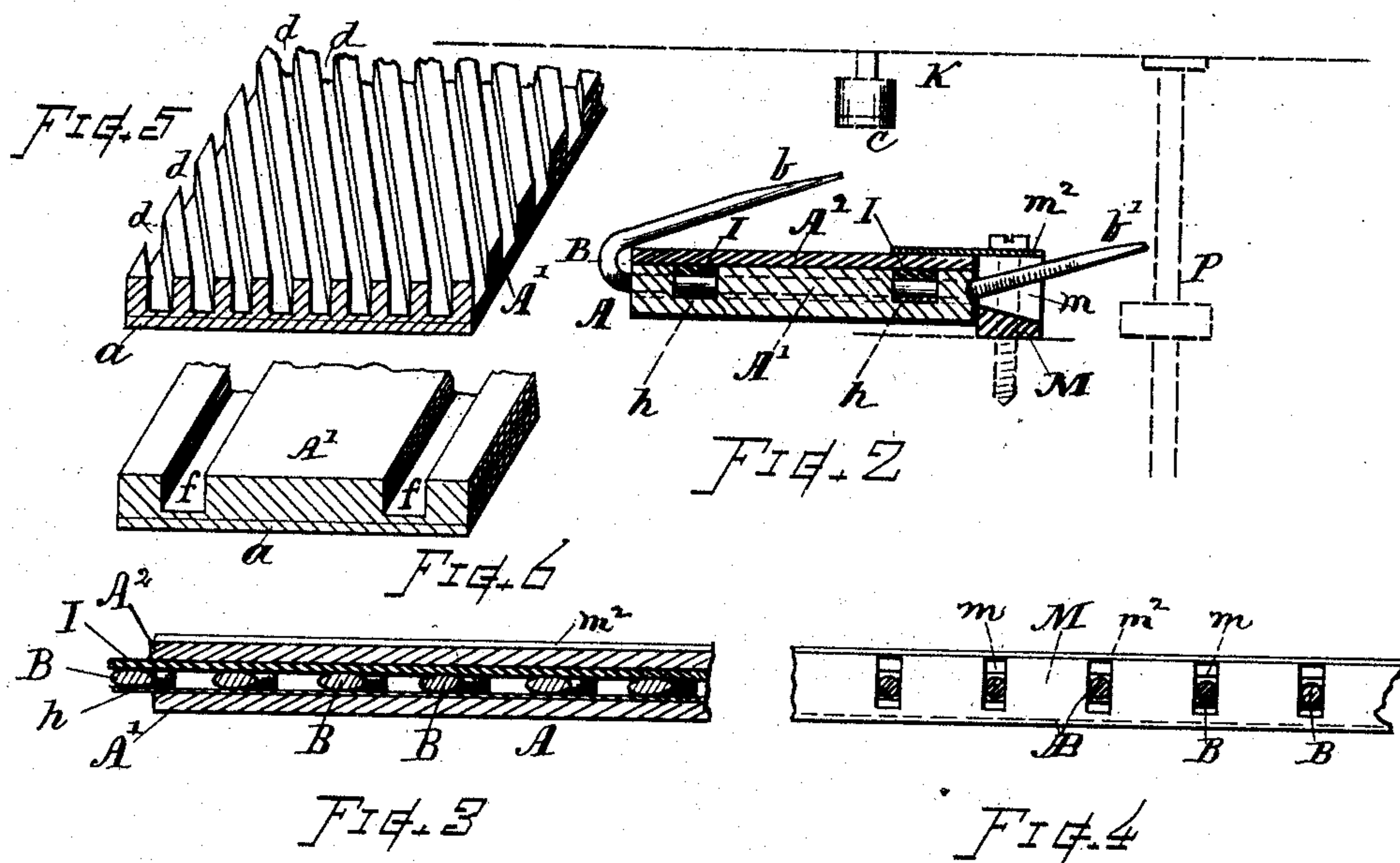
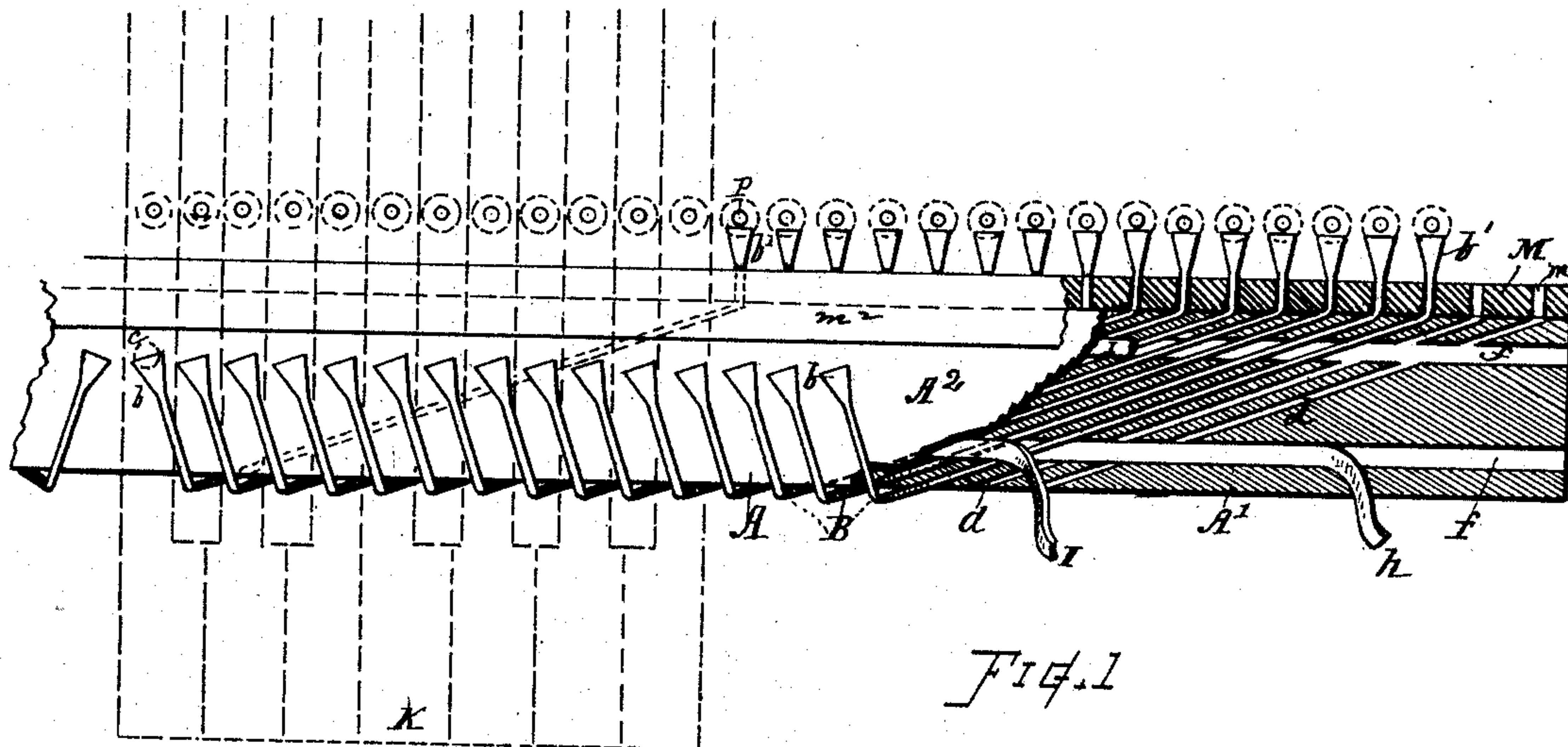


(No Model.)

F. STONE.
ORGAN COUPLER.

No. 353,895.

Patented Dec. 7, 1886.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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ORGAN-COUPLER.

SPECIFICATION forming part of Letters Patent No. 353,895, dated December 7, 1886.

Application filed July 8, 1886. Serial No. 207,404. (No model.)

To all whom it may concern:

Be it known that I, FRANK STONE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Organ-Couplers, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

This invention relates to certain improvements in the construction of organ-couplers, whereby greater economy is attained in their manufacture and a more desirable and efficient coupler is produced.

One feature of the invention consists in inclosing the shafts of the coupling-levers within the supporting-bar, to protect them from an accumulation of dust, and to render the construction more compact and less subject to derangement when in use.

Another feature of my invention consists in constructing the bearings for the coupling-levers of continuous strips of felt, or other suitable fabric, extending across the series of levers and confined within longitudinal grooves formed in the supporting-bar.

Another feature of my invention consists in providing slots or recesses in the hinging strip attached to the rear edge of the supporting-bar, whereby said bar is adapted for confining the levers, as hereinafter more fully explained.

The particular subject-matter claimed is hereinafter definitely specified.

In the drawings, Figure 1 is a plan view of so much of an organ-coupler as will illustrate the nature of my invention, a portion thereof being shown in section, or with the top removed, and the position of a part of the manual keys in their relation to the coupler being indicated by dotted lines. Fig. 2 is a cross-sectional view illustrating the detail of construction of the coupler. Fig. 3 is a longitudinal section of a portion of the coupler, taken through one of the grooves and bearing-strips. Fig. 4 is a back view of the hinge-strip along the rear edge of the supporting-bar. Fig. 5 is a view illustrative of the manner in which the diagonal channels for containing the coupler levers or wires are formed in the support-

ing-bar. Fig. 6 is a view illustrative of the manner in which longitudinal grooves for containing the bearing-packings are formed on the supporting-bar.

Referring to parts, A denotes the supporting-bar, and B the coupler-levers, which levers are preferably formed of wires having a straight body portion, and with their front ends, *b*, bent upward and backward over the support-bar, and with their rear ends, *b'*, bent so as to stand outward at the back of the support-bar in the manner illustrated. The form of the wires B may be the same as that heretofore employed in organ-couplers, in connection with other means of support. The ends of the wires or levers are flattened, as indicated. The end *b* is disposed to receive the action from the lug or button C of the manual-key K, while the end *b'* is disposed in a manner to transmit the movement to the pitman P of the coupled note when the coupler is in position for operation.

For the construction of the supporting-bar I employ a straight strip of wood or a thin board, A', of about three-eighths inch (more or less) in thickness, which, if preferred, may be composed of two or more thicknesses or veneers glued together. In this board I form a series of parallel diagonal channels or saw-kerfs, *d*, of suitable size to receive the shaft or straight part of the wire of the coupling-levers. The channels *d* can be formed by means of a suitable cutting-tool or by a gang of saws, and said channels are cut to a depth somewhat greater than the diameter of the wire of which the coupling-levers are made. Near the edges of the board I form longitudinal grooves *f*, which are cut to substantially the same depth as the channels *d*, and which extend from end to end of the bar, crossing the several diagonal channels in the manner illustrated in Fig. 1. Long strips of fabric *h*—such as blotting-paper or other suitable material—are laid into the bottom of the grooves *f*, to form bearings for the series of levers. The wires or levers B are then placed within the respective channels *d*, resting on the said strips of fabric, and continuous strips of felt or packing I are inserted in said grooves *f* above the wires, to form the top bearings, the strips thus serving for the bearings of a whole series of

levers and the packings being simply confined in the longitudinal grooves *f*. A plain top plate or veneer, A^2 , preferably of the same width as the channeled board, and extending throughout the length of the coupler, is then fixed to the board A' , covering the bearing felts or packings *I*, for confining and incasing the shafts or straight portions of the lever-wires, so that a bar having a plain smooth exterior both top and bottom is produced, with the wires passing through the bar and lightly pressing the felt *I* upon their surfaces, so as to give slight friction at the bearings to hold the levers steady, but not so as to interfere with their free action.

The plate or veneer A^2 may be fixed to the part A' by gluing it on, or by means of screws, nails, or other suitable fastenings. I prefer, however, to glue the said parts together.

In couplers as heretofore constructed the coupling-levers have each been attached to the bar by means of independent bearings or fastenings for each lever, or for each end of each lever, thus making a number of parts, and requiring many operations and considerable labor to construct and assemble the parts in manufacturing the couplers, whereas by my invention the several bearings of the entire series of levers are made by two continuous packing-strips, and the entire series of levers are confined by the single plate A^2 .

Along the rear edge of the support-bar *A* is a hinging-strip, *M*, by which the coupler is attached to the action-frame of the instrument. Said strip *I* provide with a series of slots or recesses, *m*, corresponding to the spacings of the pitman, and the arms or rearwardly-off-setting portions *b'* of the several levers *B* project through said slots, and are thereby retained in proper relation to each other, and longitudinal sliding movement of the wires in their bearings is prevented, and the free action up and down of the rear ends, *b'*, is permitted. The hinging-strip being continuous gives proper adjustment to all of the series of levers *B* by the single operation of fixing it in place. The strip *M* can be attached to the support-bar by a continuous hinge, m^2 , of fabric, or by small metal hinges at intervals. The strip *M* may be fixed in position on the instrument by means of screws, nails, glue, or other fastenings, as desired. The coupler, when thus hinged to the action-frame, is brought into operative position by elevating the front edge of the bar by any suitable means and substantially in the ordinary manner heretofore employed with couplers of this class.

If desired, the channels *d* can be formed in the under side of the board A' , the levers being introduced into the channels from below and the veneer or covering piece fixed on the bottom instead of on the top of the channeled board.

Among the advantages incident to my invention may be mentioned the greater facility in manufacture, as there are few parts, and

the channels for the levers can be formed quickly and simply, and the continuous longitudinal grooves and packing strips permit of all of the bearings for the series being conveniently made at once instead of making a number of separate bearings for the levers. A single top plate or veneer confines the entire series of both levers and packings, while the single back strip, *M*, which is required for hinging, also gives adjustment location of all the levers to their proper relative positions, and confines them from longitudinal movement in their bearings without an extra piece. The levers being inclosed within the support-bar in the manner shown prevents an accumulation of dust in the bearings. The top plate makes a neat smooth finish, while it also strengthens and stiffens the bar. This construction of the coupler-bar is thinner and narrower than the couplers heretofore in use, there are no projecting portions, the bar being plain and smooth externally, and consequently the coupler occupies less space in the organ, thus giving compactness to the action.

The fabric hinge m^2 covers the tops of the recesses *m*, and serves to prevent the levers swinging up far enough to allow their front ends to catch under the key-buttons *C*, as is sometimes the case with other couplers.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In an organ-coupler, the combination, with the series of wire coupling-levers, having their ends *b* and *b'* bent as shown, of a supporting-bar composed of a thin board having a series of parallel diagonal channels of sufficient depth to receive the wire formed therein, within which the shaft or body portion of the lever-wires is inclosed, and a thin veneer covering said channels from side to side of the bar, and confining the wires therein throughout their straight portion, substantially as shown and described.

2. The combination, with a series of torsional coupling-levers, of a supporting-bar having a series of diagonal channels, and a continuous hinging-piece provided with a series of openings for longitudinally confining the several levers in the series, joined by a flexible connection with the supporting-bar, substantially as set forth.

3. An organ-coupler having a series of torsional acting wire coupling-levers, the shafts or straight portion of which are inclosed within an externally-plain supporting-bar, within which are disposed a series of bearings formed by strips of fabric extending across said wires and confined by grooves against lateral displacement, and a hinging-strip having openings through which the wires extend, as set forth.

4. An organ-coupler wherein the support-bar is provided with longitudinal internal grooves, *f*, containing continuous upper and under packing-strips of felt or similar fabric, as *I* and *h*, extending across and forming bear-

ings for the series of coupling-levers, substantially as set forth.

5 5. The combination, with the supporting-bar and wire coupler-levers, of the back strip, M, provided with slots or recesses *m*, and the hinging fabric disposed for covering said recesses, substantially as and for the purpose set forth.

10 6. An organ-coupler consisting of the board A', having the series of diagonal kerfs or channels *d* extending across it, and the longitudinal grooves *f* formed therein, combined with the wire levers B, respectively disposed for

torsional action within said diagonal channels, the felt packing-strips I, disposed in said longitudinal grooves, the plate A², covering and confining said packing-strips and levers, and the recessed hinging-bar M, all constructed and arranged substantially as and for the purpose set forth. 15 20

Witness my hand this 19th day of June, A. D. 1886.

FRANK STONE.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.