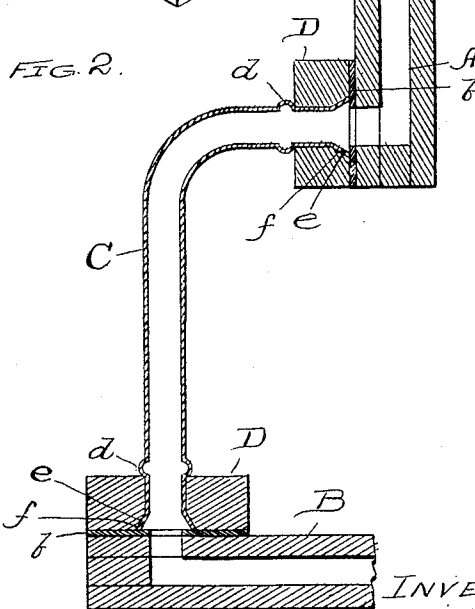
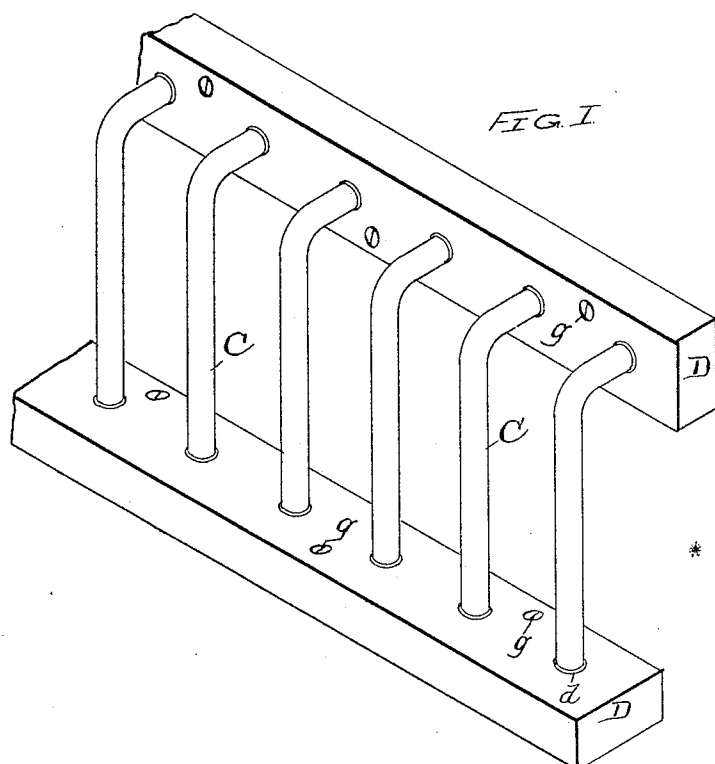


(No Model.)

F. W. HEDGELAND.
PNEUMATIC ACTION FOR ORGANS.

No. 580,048.

Patented Apr. 6, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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PNEUMATIC ACTION FOR ORGANS.

SPECIFICATION forming part of Letters Patent No. 580,048, dated April 6, 1897.

Application filed January 27, 1896. Serial No. 576,943. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. HEDGELAND, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Pneumatic Actions for Organs, of which the following is a specification.

In the construction of pipe-organs having pneumatic actions it is customary to employ metal tubing as parts of the air-channels whereby the keys and pedals are connected to and control the valves of the various speaking-pipes of the instrument. Such tubing is exceedingly useful as a means of transmitting the movement of the keys and pedals to said valves, because they are unaffected by the moisture of the weather, because they can be bent in any manner desired to accommodate the location of the parts which they connect and so as to avoid all sharp angles or turns, because they can be made of any length required, and because they require no repairs. As heretofore used each piece of the tubing is separately secured at its ends to the wind boxes, chests, or channels with which it is used, and as it is sometimes necessary to remove the boxes, chests, or channels for repairs or cleaning, and as the pieces of tubing are very numerous, there being one for each note, it is consequently a very laborious and tedious operation to disconnect the pipes from or to reattach them to the boxes, chests, or channels.

In the usual manner of attaching the tubes they are secured directly in the wood of the boxes, chests, or channels, and this is generally done by inserting their ends in openings in the wood of the box, chest, or channels and then fastening them in the openings by means of glue or shellac or some similar substance intended also to render the joint airtight and prevent leakage. This feature is objectionable, because the glue or shellac shrinks as it dries and sometimes leaks air, and sometimes, too, the pipes move in the openings and even pull out of them. In still other cases the metal of the tubing is injuriously affected by the composition used to hold it in place. Such joints also do not permit a quick and ready disconnection of the tubes.

My present invention is intended to remove these various objections, and I accomplish that result by my improved method of attaching the tubes to the wood wind-boxes or parts which they connect, which consists, first, in connecting the tubes in groups to removable boards or plates serving as a head for all the tubes and adapted to be readily attached to or detached from the wind chest, box, or channel instead of attaching them directly to the latter, and, secondly, in securing them to the removable boards or plates by expanding them preferably both inside and outside of said board or plate, thereby forming retaining-shoulders which render impossible any drawing out or movement of the tubes with respect to the supporting board or plate, and also rendering the joint or tube between the board and tubes air-tight. With this improvement a series or group of the action-tubes attached to a supporting or fastening board or plate may be simultaneously secured to a wind-chest by putting a few screws through the board into the chest, or they may be simultaneously disconnected from the chest by removing the same screws. A group or series of tubes thus attached to boards at each end may also be handled without danger of injury to the tubes, and in shipping and putting up organs the work is greatly facilitated, because the numerous tubes comprised in each group are by my invention converted from a small army of disconnected parts into a single compact device or assemblage.

The accompanying drawings show at Figure 1 a perspective of a series of action-tubes and their supporting-boards, to which they are attached, disconnected from the other parts of the instrument. Fig. 2 is a sectional view showing the same attached to the wind-containing parts of the organ.

In said drawings, A and B may represent two wind boxes, chests, or channels which the action-tubes C C are employed to connect. The latter are metal and are given any bend or number of bends necessary to enable them to serve as connections between the parts A and B. They are secured, preferably at both ends, to attaching-boards D, which are provided with openings to receive them and in which the tubes are inserted and then ex-

panded, as shown, whereby a retaining-bead *d* upon the outside of the board and a flange *e* upon the inside thereof are formed adapted to immovably fix the tube in the board. I
5 prefer to countersink the opening in the board upon the inside, as shown at *f*, and the flange *e* corresponds to this countersink. The shoulder *d* and flange *e* not only firmly secure the
10 joint between the two practically air-tight, so that no leakage of air occurs around the end of the tube.

In attaching the boards to the wood of the wind-chest or channel-boxes A and B a packing *b* is inserted between the two, and screws
15 *g* are passed through the board and into the boxes, thereby causing a clamping action upon the packing *b* and preventing leakage of air between the boards and boxes or chests.

20 Good results may be obtained by expanding the metal of the tubes upon the inside of the supporting device only.

I claim—

1. In a pneumatic action for organs the combination with a group of pipes C, of heads 2 D in which said pipes are secured at both their ends and which serve as a means whereby they may be detachably connected to the wind chests, boxes or channels, said heads having no connection to the other pipes of 3 the action, substantially as specified.

2. In a pneumatic action for organs a series or group of pipes C immovably secured at both ends in heads D and such heads serving as a means of removably attaching the pipes 3 to their supports, substantially as specified.

3. In a pneumatic action for organs, the combination with the group of metal tubes C of the detachable head or board D having openings in which the tubes are inserted and 4 wherein they are secured by expanding the metal of the tubes, substantially as specified.

FREDERICK W. HEDGELAND.

Witnesses:

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