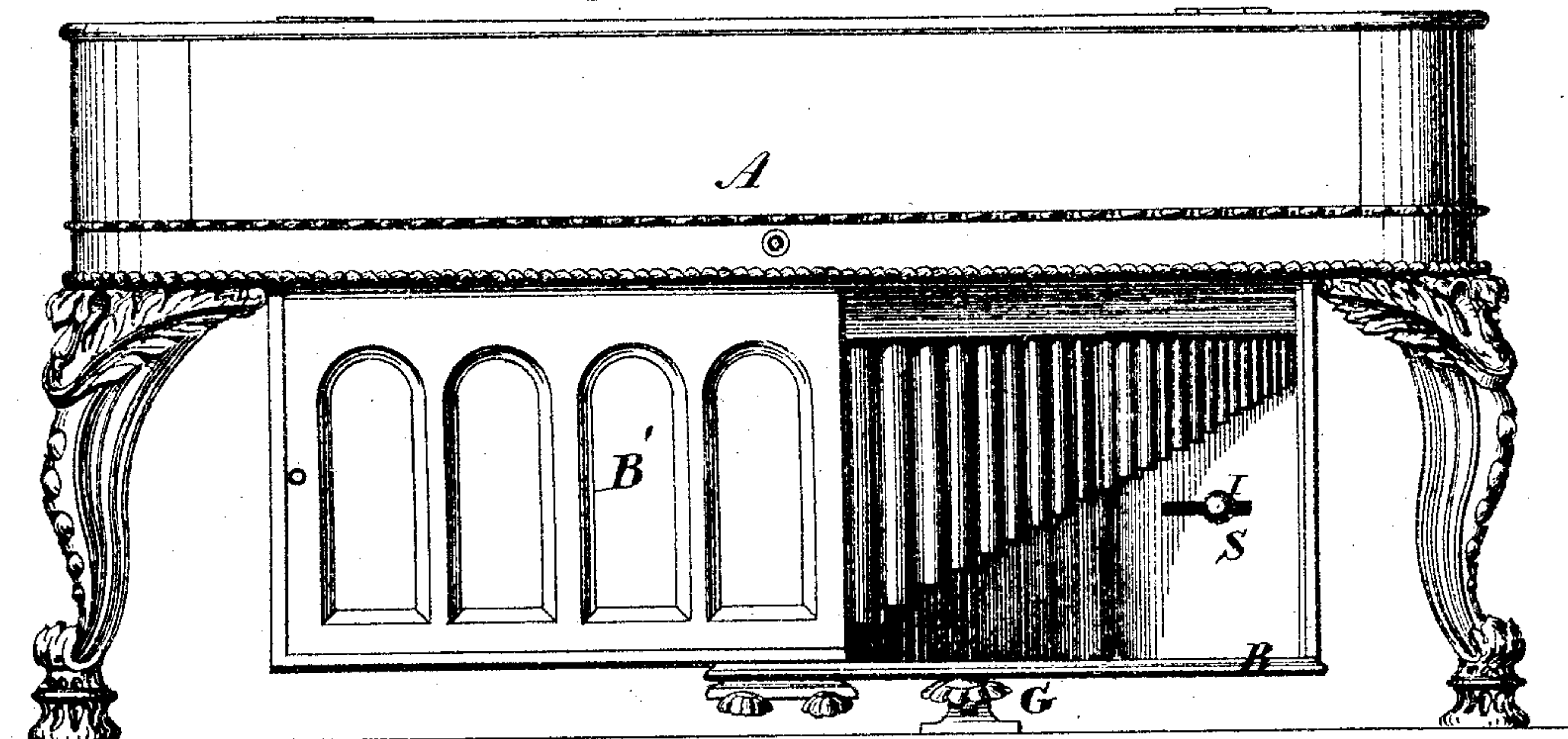


J. CORDLEY.  
Organ-pipe Attachments to Pianofortes.

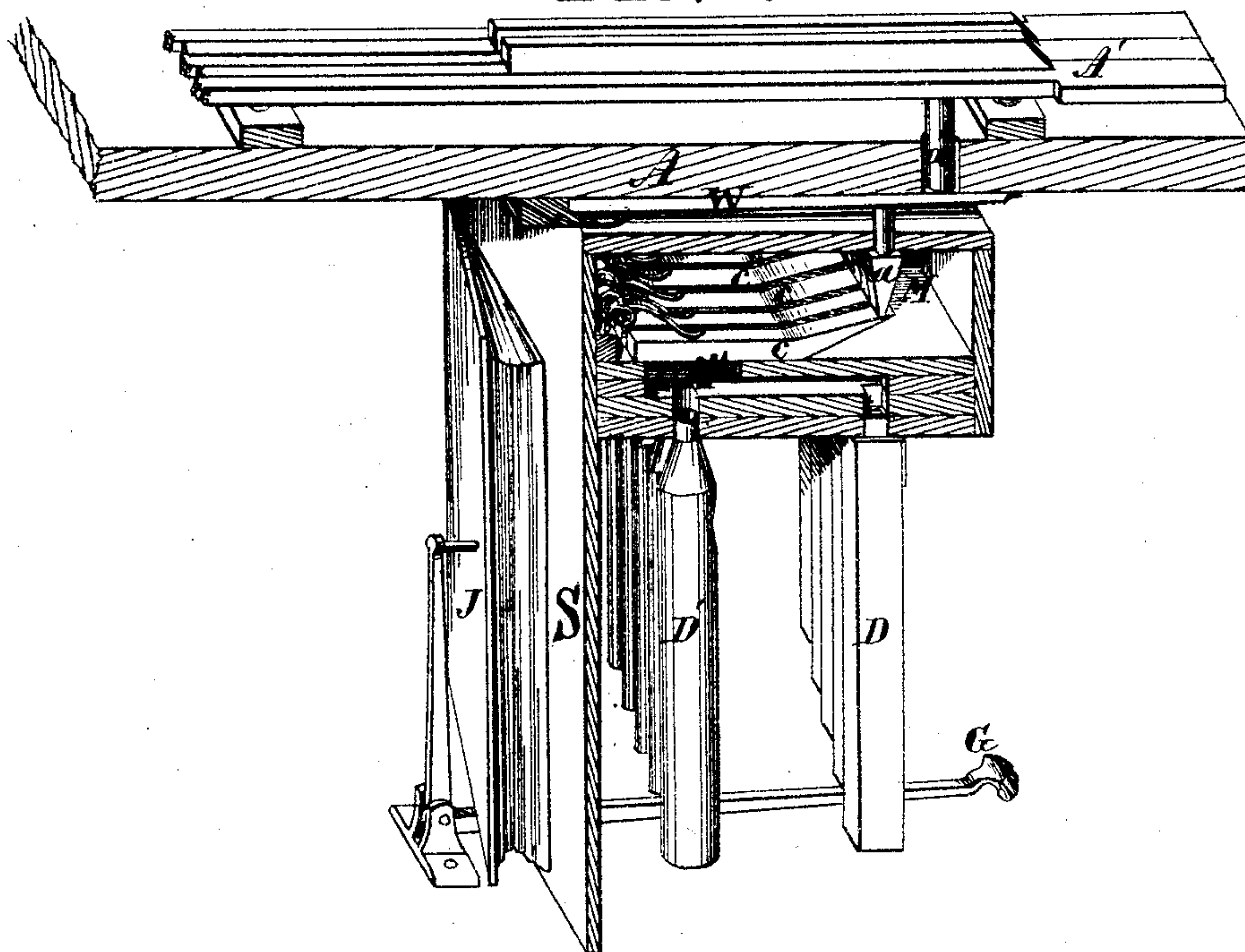
No. 154,022.

Patented Aug. 11, 1874.

**FIG. 1.**



**FIG. 2.**



WITNESSES:

*Geo. L. Ewin.*

*Walter Allen.*

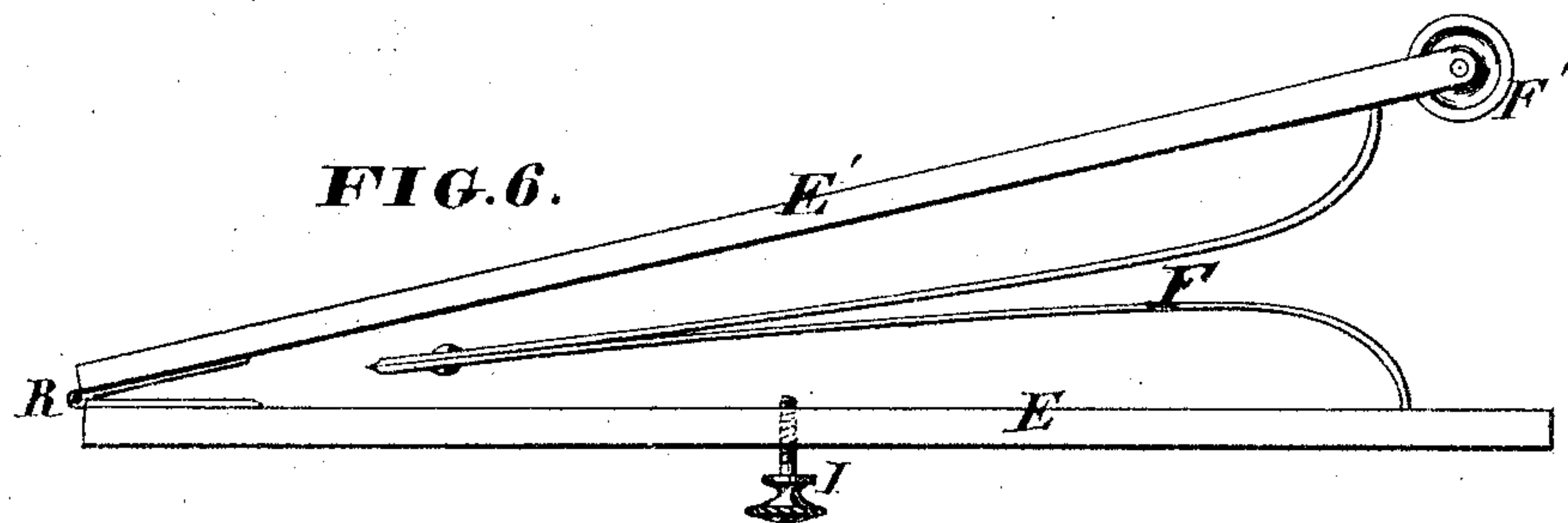
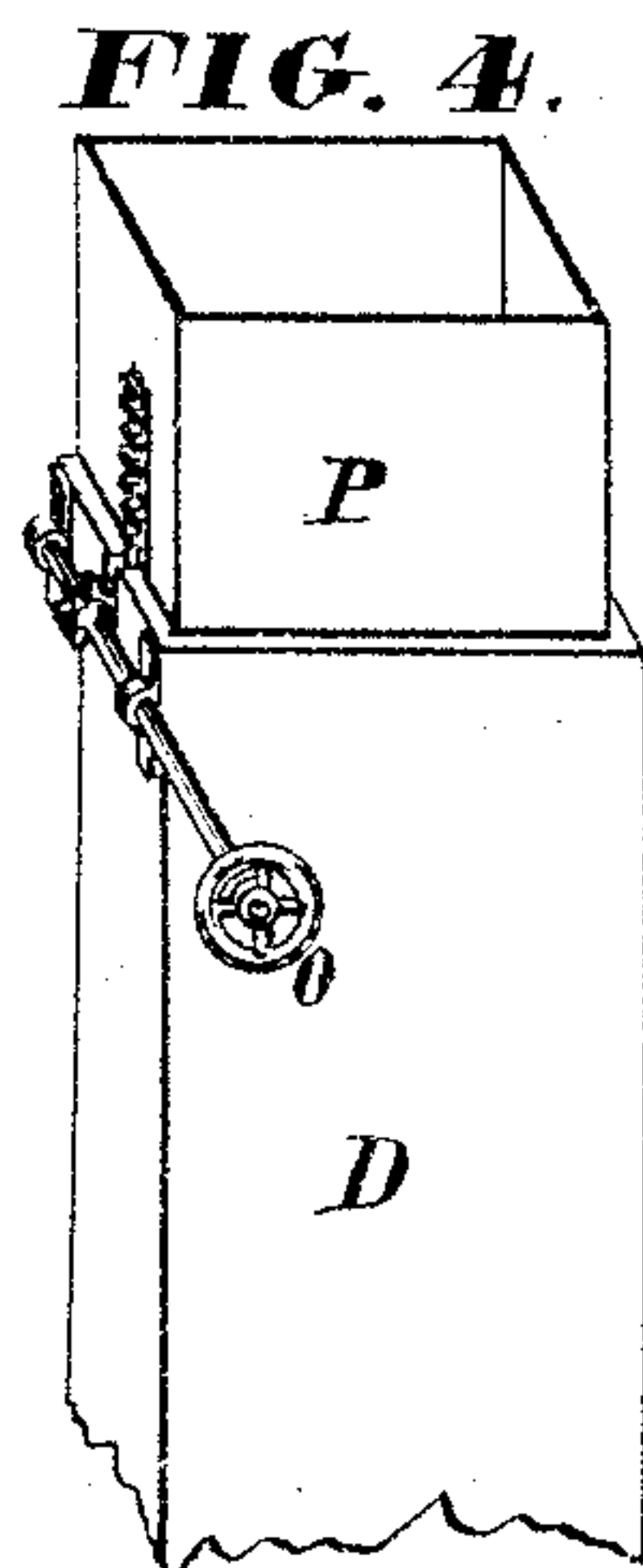
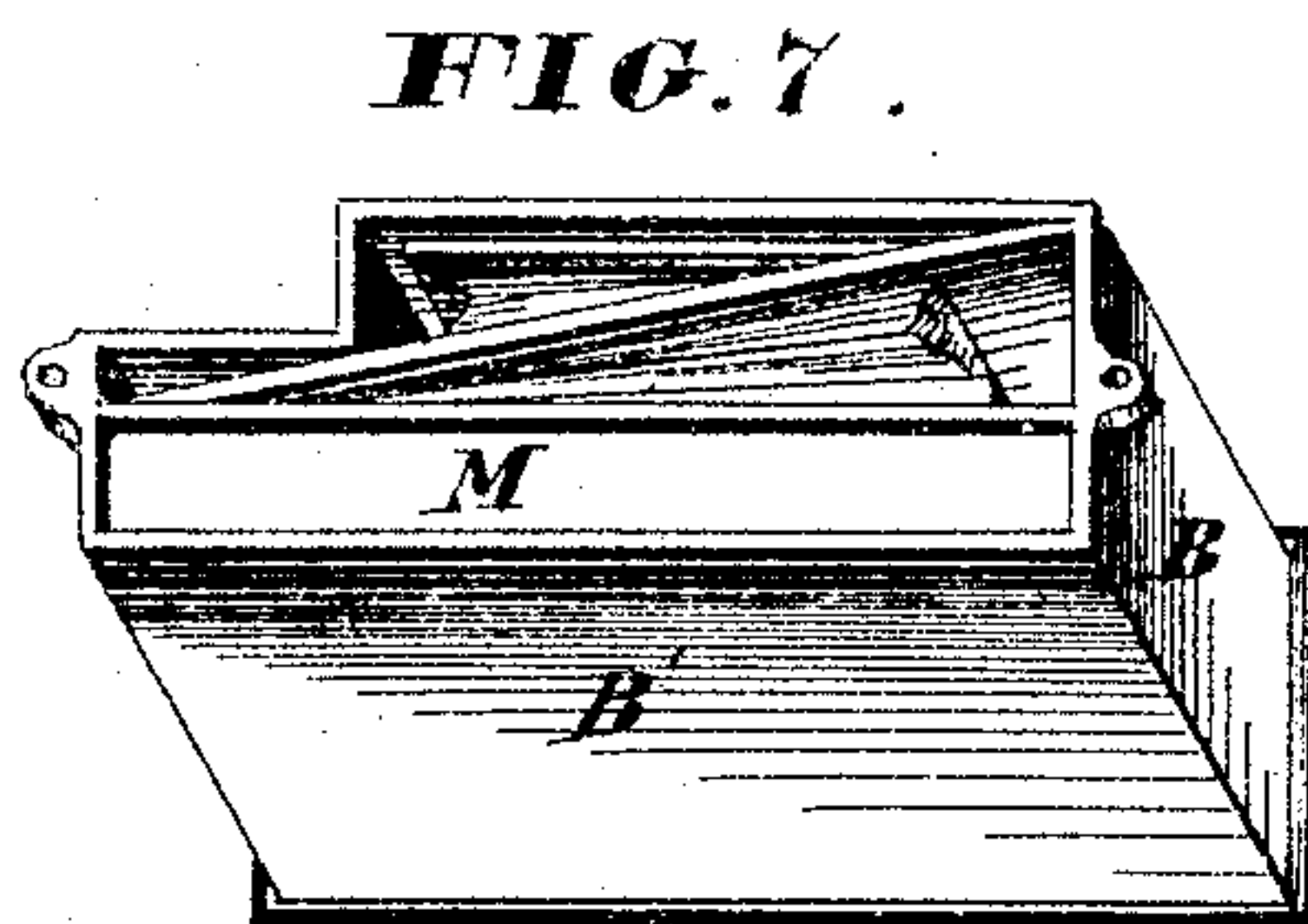
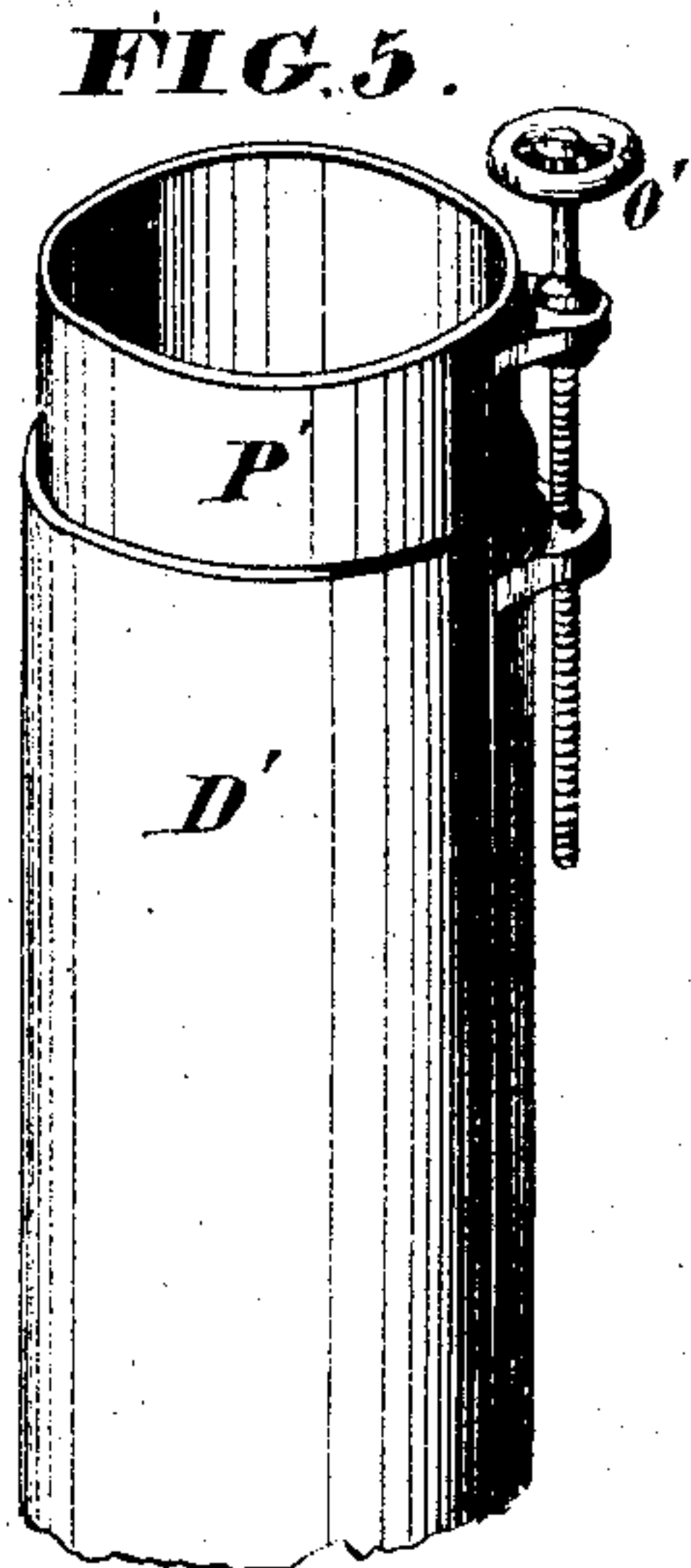
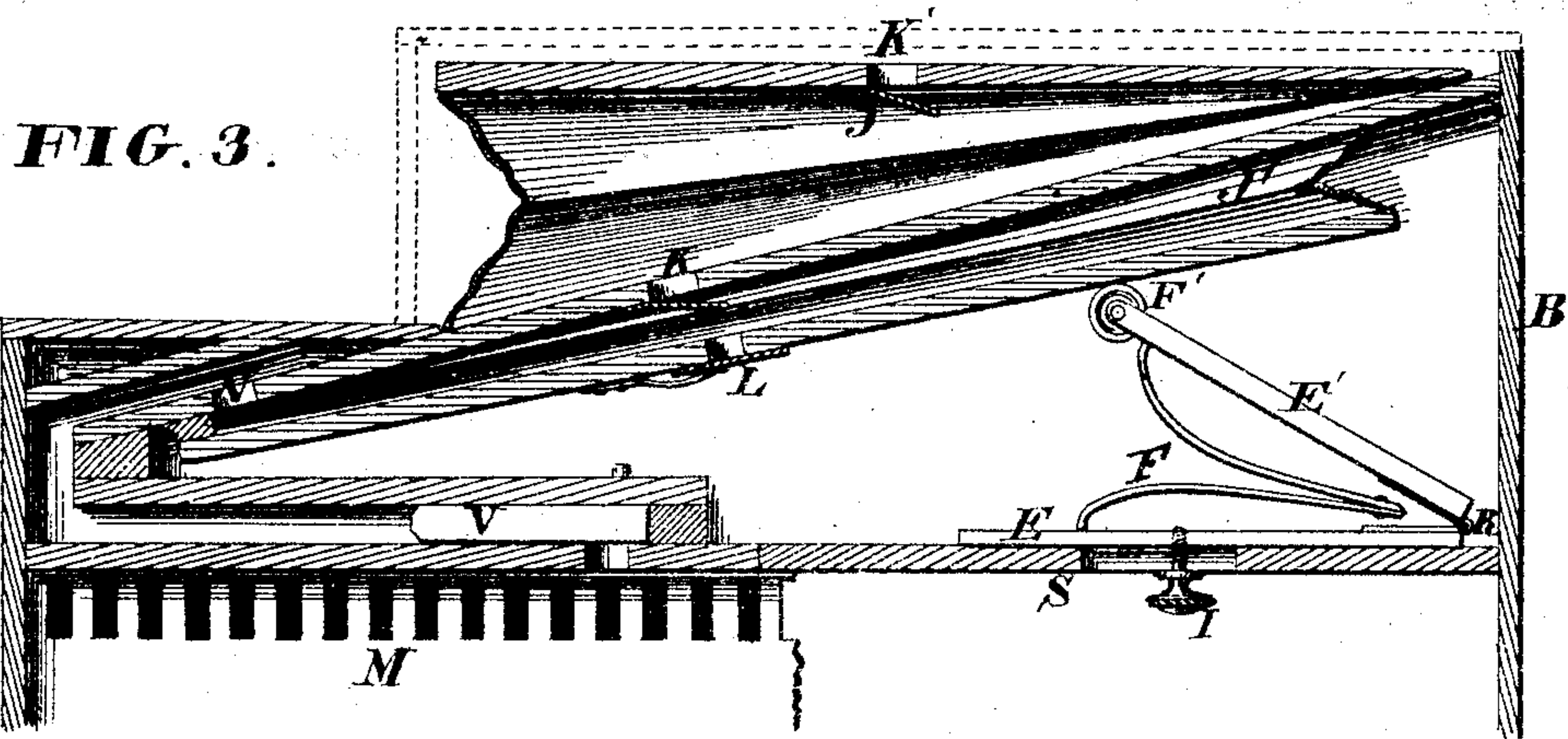
INVENTOR:

*James Cordley*  
By *Knightsley* Attorneys.

J. CORDLEY.  
Organ-pipe Attachments to Pianofortes.

No. 154,022.

Patented Aug. 11, 1874.



WITNESSES:  
Jas. L. Ewins.  
Walter Allen.

INVENTOR:  
James Cordley  
By *Knight & Pugh* Attorneys.



# UNITED STATES PATENT OFFICE.

JAMES CORDLEY, OF ADRIAN, MICHIGAN.

## IMPROVEMENT IN ORGAN-PIPE ATTACHMENTS TO PIANO-FORTES.

Specification forming part of Letters Patent No. **154,022**, dated August 11, 1874; application filed March 7, 1873.

*To all whom it may concern:*

Be it known that I, JAMES CORDLEY, of Adrian, in the county of Lenawee, Michigan, have invented a new and useful Improvement on a Flute Attachment for Piano-Fortes, of which the following is a specification:

My invention relates to a flute or other organ-pipe attachment to the piano-forte. Its object is to enlarge the capacity of said piano-forte by combining therewith one or more sets of organ-pipes, and devices for operating the same, thereby enabling the performer to produce at will a flute or other pipe accompaniment to the said piano-forte.

My invention consists, first, in the combination of one or more sets of organ-pipes with suitable bellows and appliances for operating the same, in the manner hereinafter described; second, in the novel construction of a treble wind-chest upon a small scale, whereby the pipes are located under their relative keys, thereby dispensing with the ordinary appliances heretofore used for the purpose of opening the valves, and in the location of the pipes in an inverted position under the piano-forte, whereby the original tone of said piano-forte is preserved; third, in the novel construction of an adjustable spring, whereby the pressure upon the bellows is regulated; and, in connection with said spring, the novel construction of suitable tuning-tubes, and the parts belonging thereto, whereby the same are operated, thus enabling the performer to conveniently and rapidly tune the pipes.

In the accompanying drawings, Figure 1 is a perspective view of the piano-forte and flute attachment which forms the subject of this invention. Fig. 2 is a sectional perspective view of some of the operating parts. Fig. 3 is a horizontal section of the bellows, and a portion of the flute attachment, the plane of section being near the upper part thereof. Fig. 4 is a perspective view of a section of a flute-pipe, showing the tuning-tube and the thumb-shaft. Fig. 5 is a perspective view of a section of a metallic pipe, showing a similar tuning-tube and thumb-screw. Fig. 6 is a top view of the adjustable spring. Fig. 7 is a separate perspective view of the flute attachment. Figs. 4, 5, and 6 are on a larger scale.

A is the piano-forte; A', the keys belonging

thereto. B is the case inclosing the attachment. M is the wind-chest; c, the valves belonging thereto. a a' W are the appliances whereby the keys are made to open the valves. M' is the throat. D D' represent the pipes. J is the pressure-feeder. G is the pedal whereby the same is operated. J' is the pressure-bellows, and receives its wind from the pressure-feeder J, which wind inflates said bellows J'. Suitable valves K K' are provided to prevent any return of the wind thus transmitted by the pressure-feeder J. The pressure-bellows J' being thus inflated, and by means of the adjustable spring E R F E' F' pressed inward, the wind is pressed through the wind-stock V into the wind-chest M, and the keys A' being pressed downward, the valve c is opened, causing the wind to pass through the throat M' into the pipes D D', whereby they are made to sound in unison with the piano-forte. L is a regulating-valve, which is made to open when the pressure-bellows J' becomes filled with wind, thereby preventing any undue pressure upon said bellows. The adjustable spring (which is shown detached in Fig. 6) is located on the inner side of the middle boards, the lever E being held in position by means of the thumb-screw I, said thumb-screw passing through a slot in the middle board S, and operated upon the front side of said board, as shown in Figs. 1 and 3. In Fig. 4, D is a perspective view of a section of a flute-pipe, showing the tuning-tube P and thumb-shaft o, whereby the pipes are tuned. In Fig. 5, D' is a similar view of a section of a metal pipe, showing its tuning-tube P' and thumb-screw o'. Said thumb-screws may be used to operate either of the above-named tuning-tubes when desirable.

As the tune of all organ-pipes is changed by and with the temperature, it becomes necessary, in order to make this invention successful, that some device be used whereby the pipes may be conveniently and rapidly tuned; therefore, when the temperature changes only a few degrees, the pipes are tuned by increasing or reducing the pressure upon the pressure-bellows J', by means of the adjustable spring mentioned, and when greater changes of temperature take place the said pipes are tuned by raising or lowering the tuning-tubes by means of the appliances above named. I

also contemplate using the tuning-tubes without the said appliances above named when desirable. The tuning-tubes may be raised or lowered in a body by means of a bar of wood running between them, and suitably connected, so as to elevate the tubes by raising either end of the bar.

What I claim as new is—

1. The wind-chest M and levers W, in combination with the valves *c*, throat M', pins *a a'*, wind-stock V, bellows J J', valves K, K', and L, pedal G, and middle board S, as shown and described, for the purpose set forth.

2. The levers E E', hinge R, spring F, roller F', and thumb-screw I, in combination with the bellows J J' and middle board S, as shown and described, for the purpose specified.

3. The combination and arrangement of the tuning-tubes P P', shaft *o*, and thumb-screw *o'*, as shown and described, for the purpose specified.

JAMES CORDLEY.

Witnesses:

JAMES THOMSON,  
HEMAN LOOMIS.