

P. Carbach,
Organ Swell,
No 57,472, *Patented Aug. 28, 1866.*

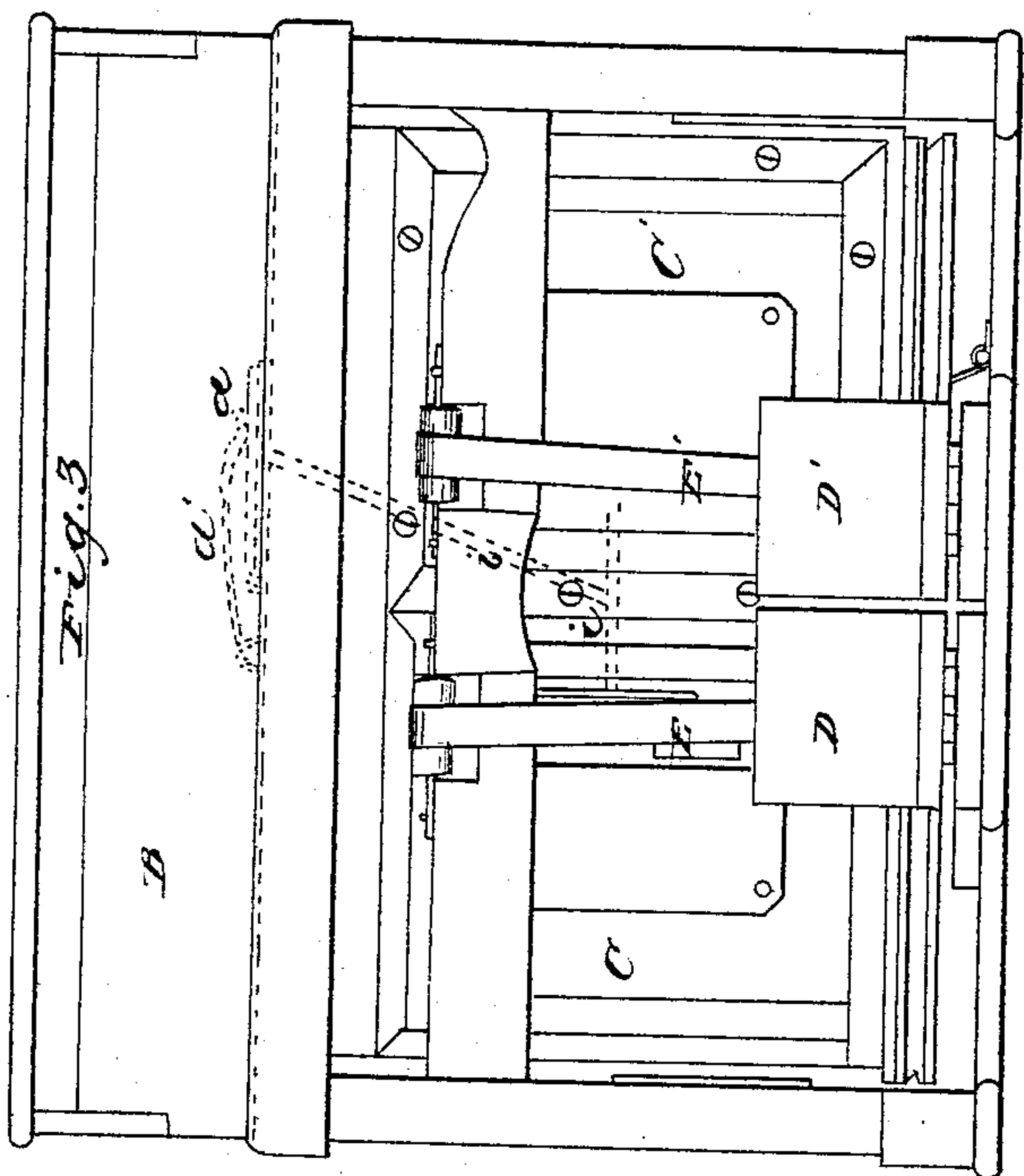


Fig. 4.

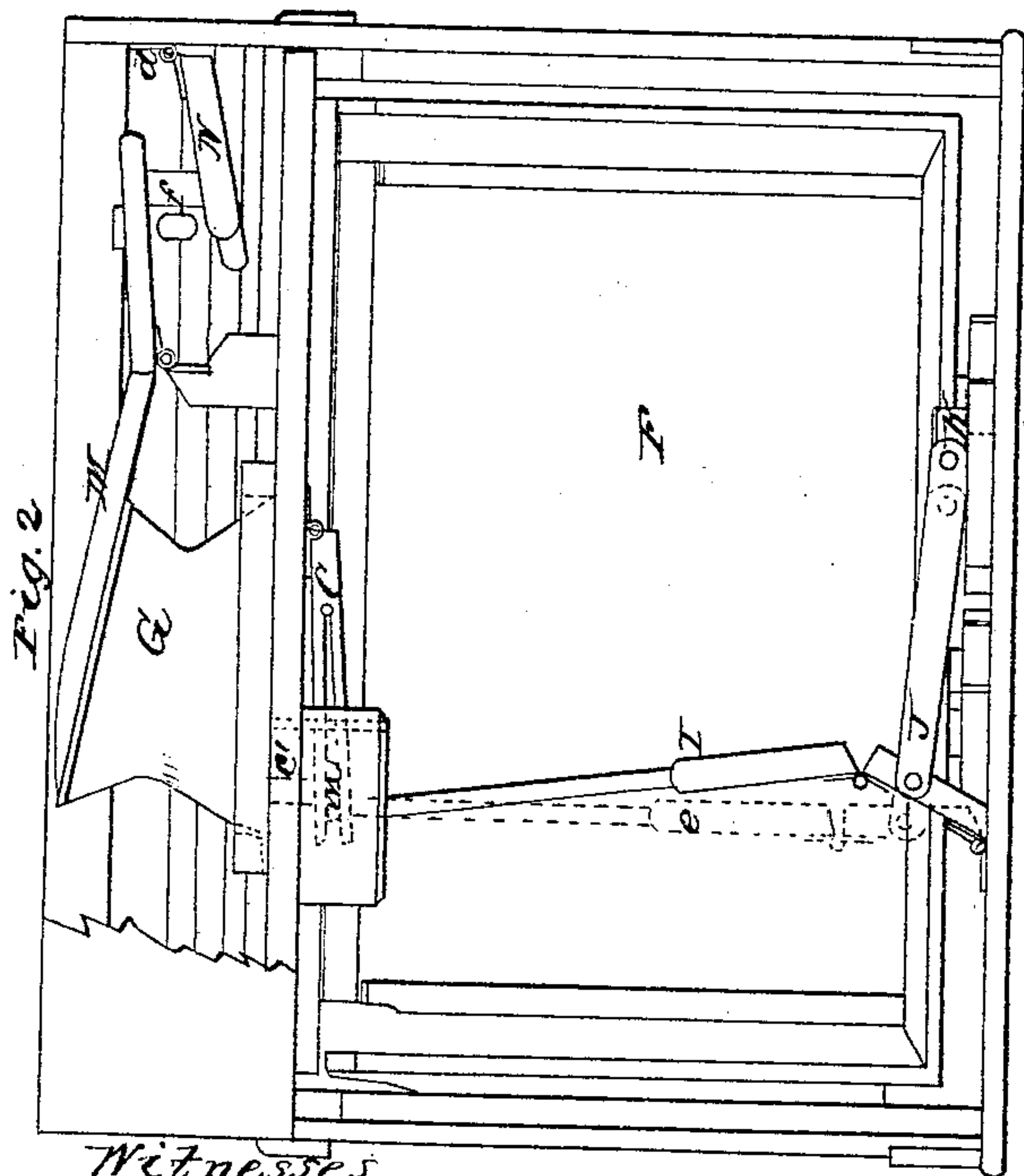
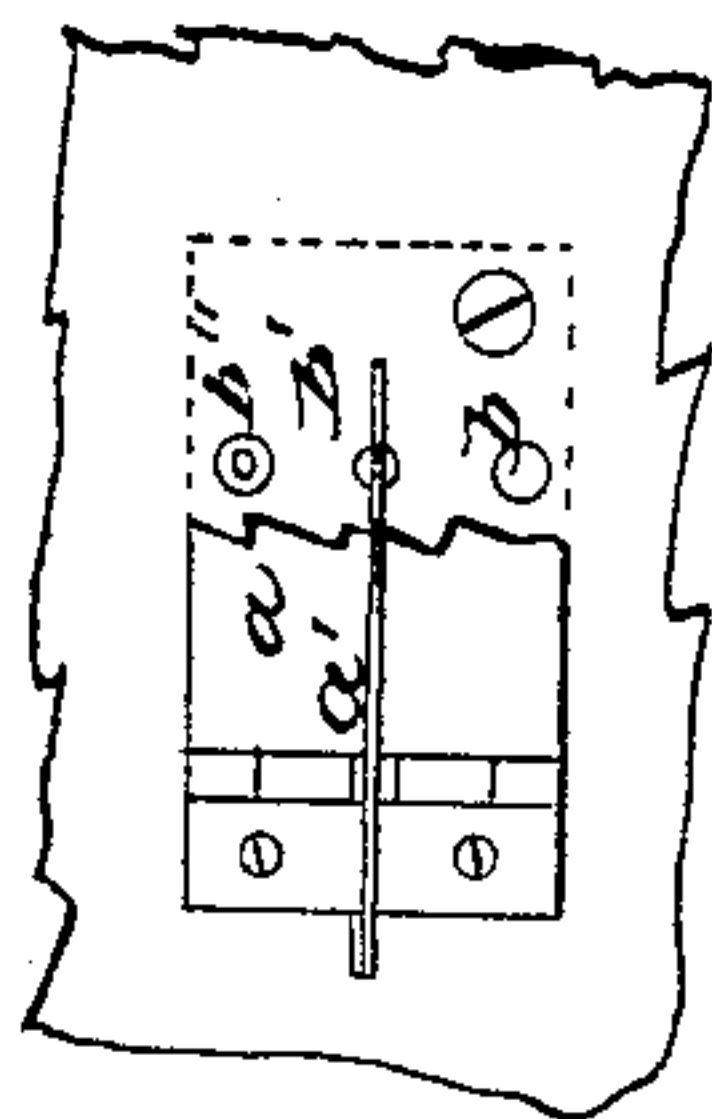
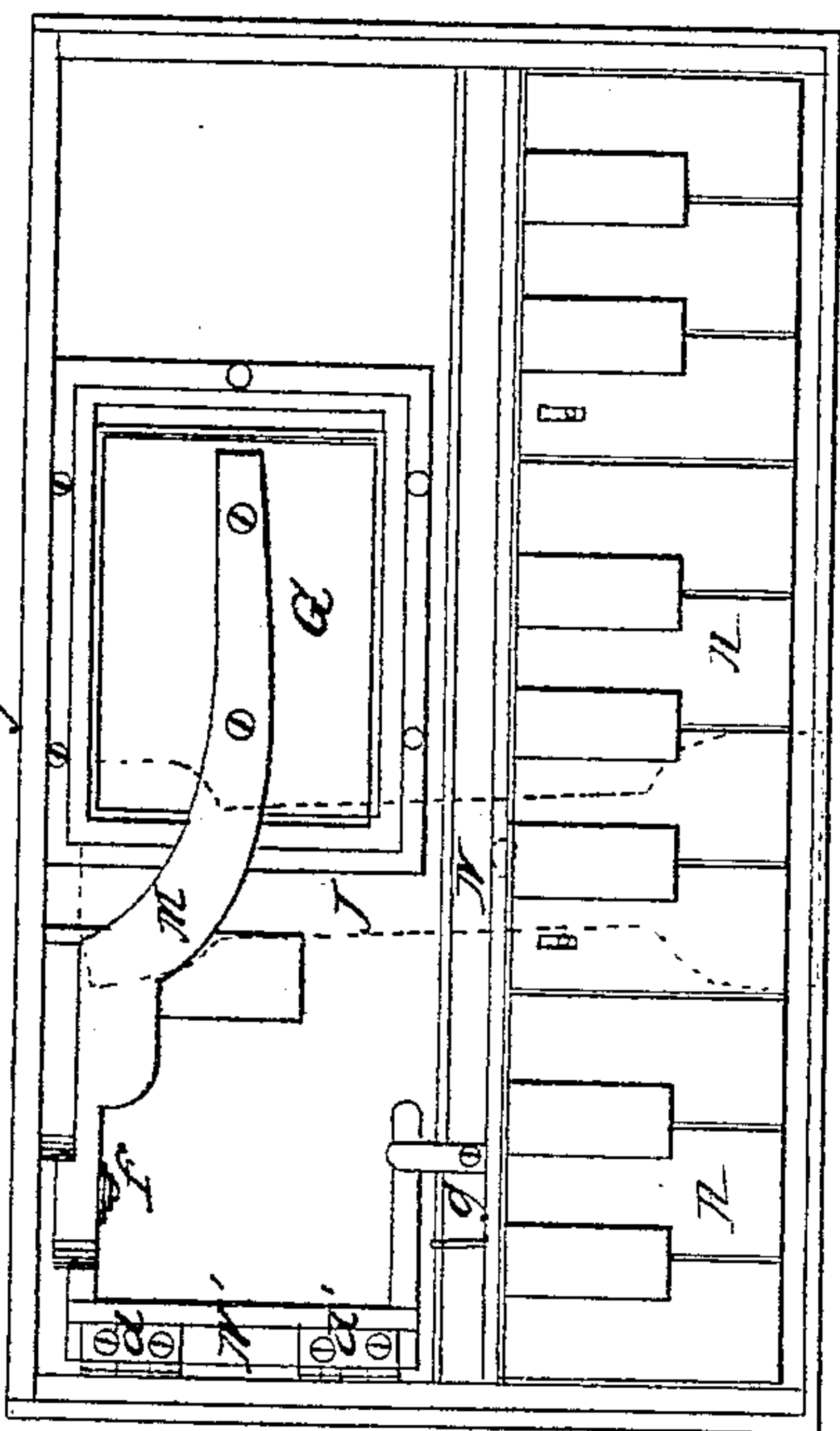


Fig. 1



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PETER CARBACH, OF CLEVELAND, OHIO.

IMPROVEMENT IN MELODEONS.

Specification forming part of Letters Patent No. 57,472, dated August 28, 1866.

To all whom it may concern:

Be it known that I, P. CARBACH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Melodeons; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the instrument; Fig. 2, a rear-side view; Fig. 3, a front view; Fig. 4, a detached section.

Letters of reference refer to like parts in the views presented.

The instrument to which my improvement is attached may be constructed in the ordinary manner, A, Fig. 1, being the key-board; B, Fig. 3, the case; C C', the exhaust-bellows; D D', the pedal; E E', straps connecting the pedal to the bellows, and by which they are operated. F, Fig. 2, is the reserve bellows, all of which may be constructed in the ordinary manner.

G, Figs. 1 and 2, is a bellows, under which is a valve, *a*, as indicated by the dotted lines, Fig. 3. *a'* is a spring for holding down the valve. This valve covers three air-holes, *b b'*, as shown in Fig. 4, a portion of the valve being represented as broken away in order to show them.

c, Fig. 2, is a spring stop or valve, one end being connected to the case of the instrument by a hinge, the other being free and supported by the jointed arm I. Between the fingers of this valve is a rubber spring, *m*, for the purpose of softening the action *g* of the valve. On the upper side of this spring-valve is a stem, *c*. (Indicated by the dotted lines.) This stem reaches up through the induction-hole *b''* into the bellows G, for a purpose hereinafter shown. This valve or stop is operated as follows: The lower section of the jointed arm I is attached by a link, J, to a lever, K, Fig. 1. This lever reaches across the bottom of the instrument, and is connected to the pedal D, by which it is operated sidewise by the foot of the player. As the front arm of the lever is pushed to the left, the rear arm at the same time pushes the jointed arm I into a vertical position, as indicated by the dotted line *e*, Fig. 2. This, in turn, pushes the stop *c* against the bottom of the induction-hole *b''* and the stem into the

bellows, thereby opening the valve *a*, above described.

M, Fig. 1, is a curved lever connecting the bellows G to the long reed stop or valve N through the intervention of the two-armed lever N'. This lever is attached to the side of the case by the hinges *d d'*, which allow to it a vertical movement, and is operated by the lever M by having its short arm attached to the rear arm of the lever N' by the connecting-link *f*, Fig. 2. The front arm of the lever N' in turn operates the reed stop or valve N by its action upon a short arm projecting out from the top of the valve, lifting or opening it in its upward movement, and a spring, *g*, closing it on the reverse action of the lever.

Thus far having described the several parts of my improvement and its general structure, I will now explain the action of the bellows upon the reeds of the instrument, which is as follows:

The action of the exhaust and reserve bellows upon the reeds is the same as in the common melodeon. The intensity and volume of sound being in proportion to the intensity and volume of air drawn through the reeds, to assist in accomplishing this result the bellows G is introduced, which, like the reserve bellows, is inflated when at rest, the air being admitted through the induction-opening *b''*, the valve *a* being opened for this purpose by pushing the pedal D, to which the lever K is attached, in the way above described. The valve *a*, Fig. 3, stops the two openings *b b'*, so that the air cannot escape through them. This valve does not stop the induction-opening *b''* when down, there being no packing on the face of the valve immediately over the hole, so that when the valve closes the holes *b b'* there is a sufficient space left to admit a current of air into the bellows through the induction-opening.

On pushing the pedal to the left the jointed arm I is, in the manner above described, brought to the position indicated by the dotted lines *e*, the valve *c* closing the induction-hole *b''* at the under side, the stem *c'* at the same time pushing up the valve *a*, and thereby opening the holes *b b'*, through which the air escapes, that through the opening *b* through the pipe *i* and the cross-pipe *i'*, into the exhaust-bellows, and

that through the opening *b'* into the receiver. As the air leaves the bellows the top is pressed down by the external pressure of the air upon it, at the same time opening the reed-valve *N* in the manner as above described, thereby admitting an increased volume of air through the reeds, giving to them an increased volume of sound, which may be prolonged or shortened at the will of the player.

Pushing the pedal to the right causes the valve *a* to close the holes *b b'*, at the same time opening the induction by dropping the valve *c*, and thereby shutting the air off from the bellows. The bellows *G* then expands by the air passing into it through the induction-opening *b''*, and as it expands the reed-valve closes, thereby diminishing the volume of sound; but it is again increased by pushing the pedal to the left, closing the valve *c*, and opening the holes *b b'*, the exhausting of the bellows causing the reed-valve to open, and thereby increases the volume of sound by an increased volume of air being drawn through the reeds.

The player may graduate the degree of sound at will by opening and shutting the valve more or less, as the nature of the music may demand.

Should it be required to produce a swell or crescendo, an increased action of the pedals increases the action of the exhaust-bellows,

which, as a consequence, increases the action of the bellows *G*, producing a greater flow of air through the reeds. Hence the swell or crescendo is produced and continued at the will of the player.

Should a ritardo-diminuendo be wanted, the action of the pedal is checked, and thereby diminishes the volume of air through the reeds, the receiving-bellows and the bellows *G* continuing the sound, both of which are under the immediate and entire control of the player.

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

1. The bellows *G*, valve *a*, exhaust-pipes *i i'*, and valve-openings *b b' b''*, in combination with the valve *c*, jointed arm *I*, link *J*, and lever *J'*, and pedal *D*, as and for the purpose set forth.

2. The bellows *G*, arm *M*, and link *f*, in combination with the two-armed lever *N'*, valve *N*, and spring *g*, as and for the purpose set forth.

3. The valve *a*, spring *a'*, bellows *G*, in combination with the induction-pipe *b''*, reserve-bellows *F*, exhaust-bellows *C C'*, as and for the purpose set forth.

PETER CARBACH.

Witnesses:

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