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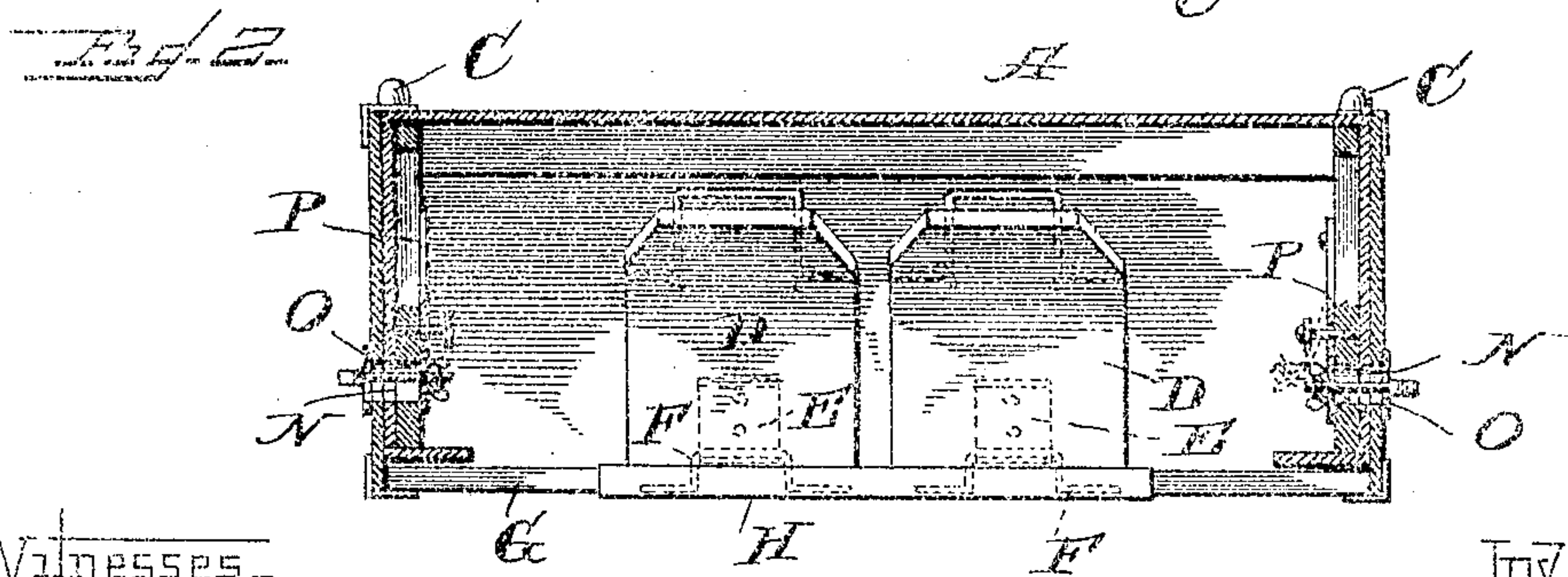
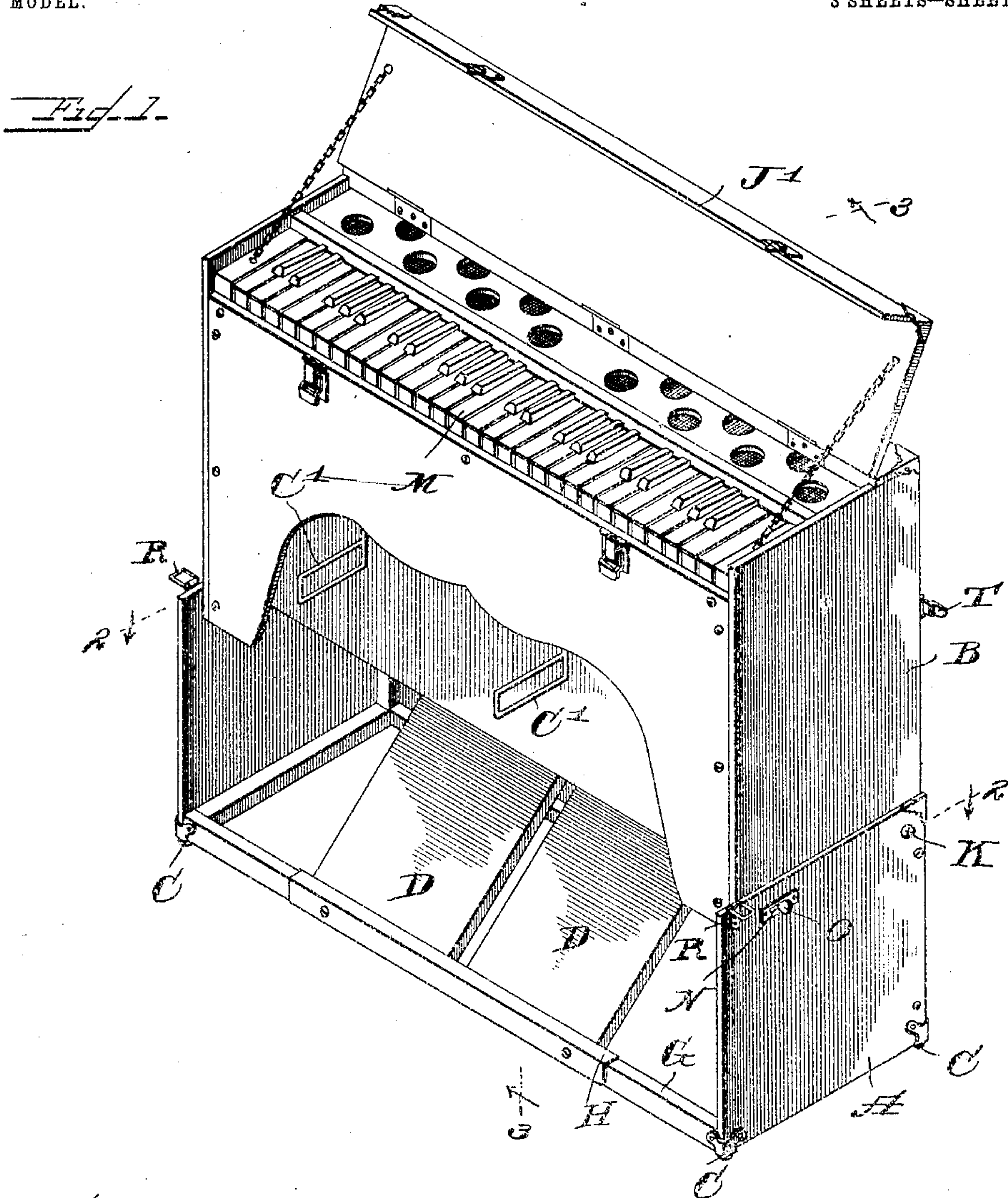
PATENTED NOV. 29, 1904.

A. L. WHITE.
FOLDING ORGAN.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.

3 SHEETS--SHEET 1.



Witness

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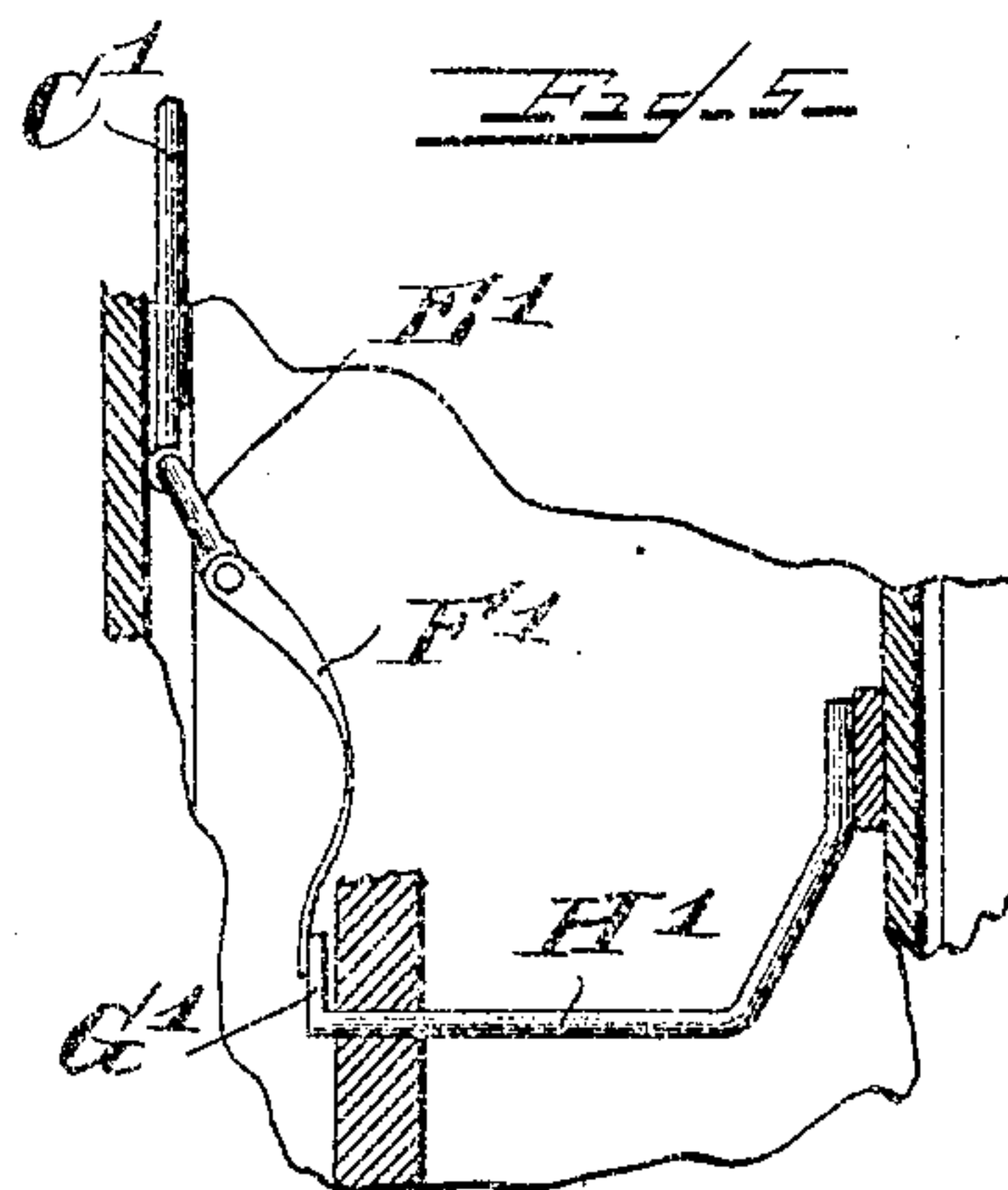
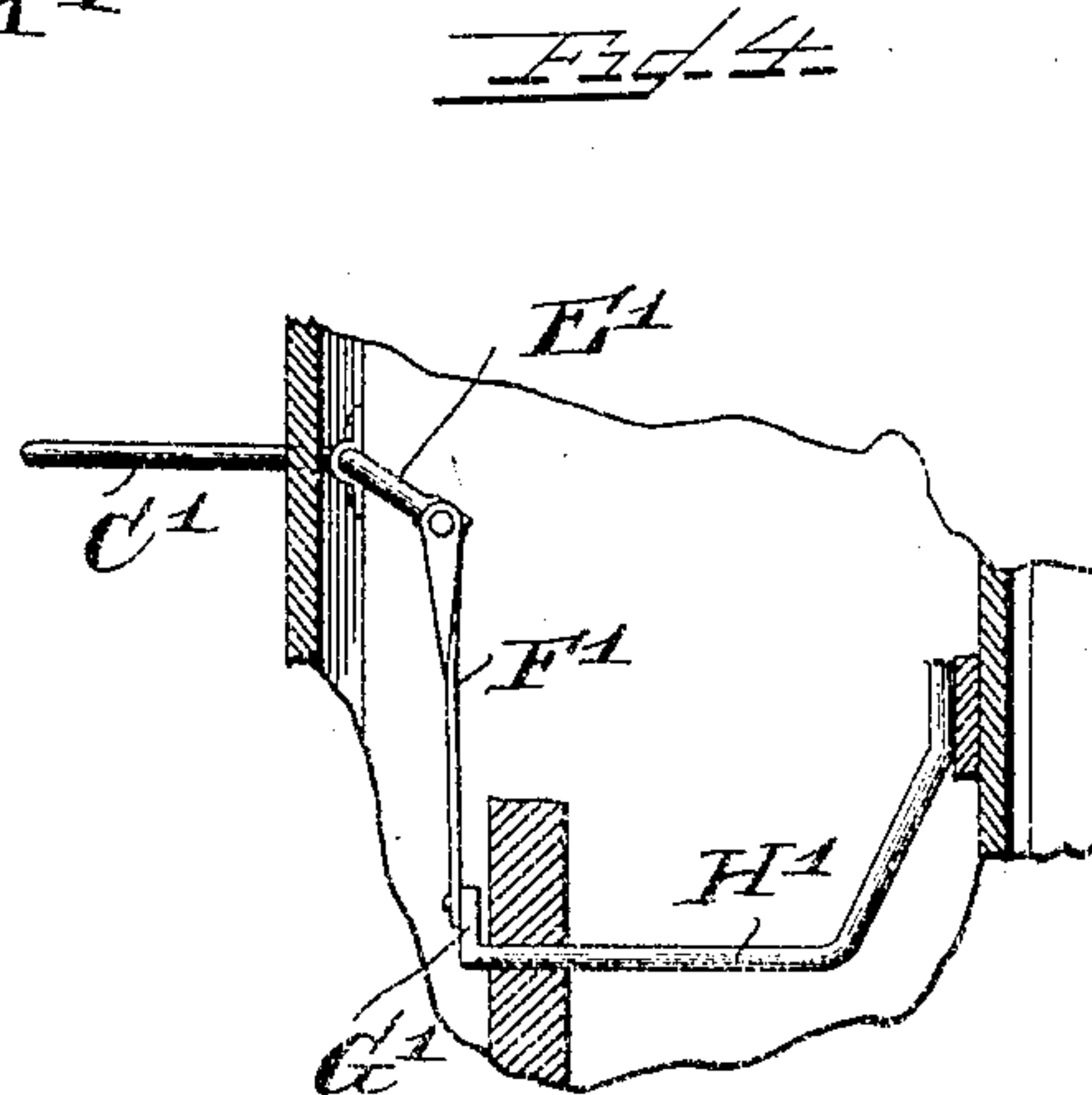
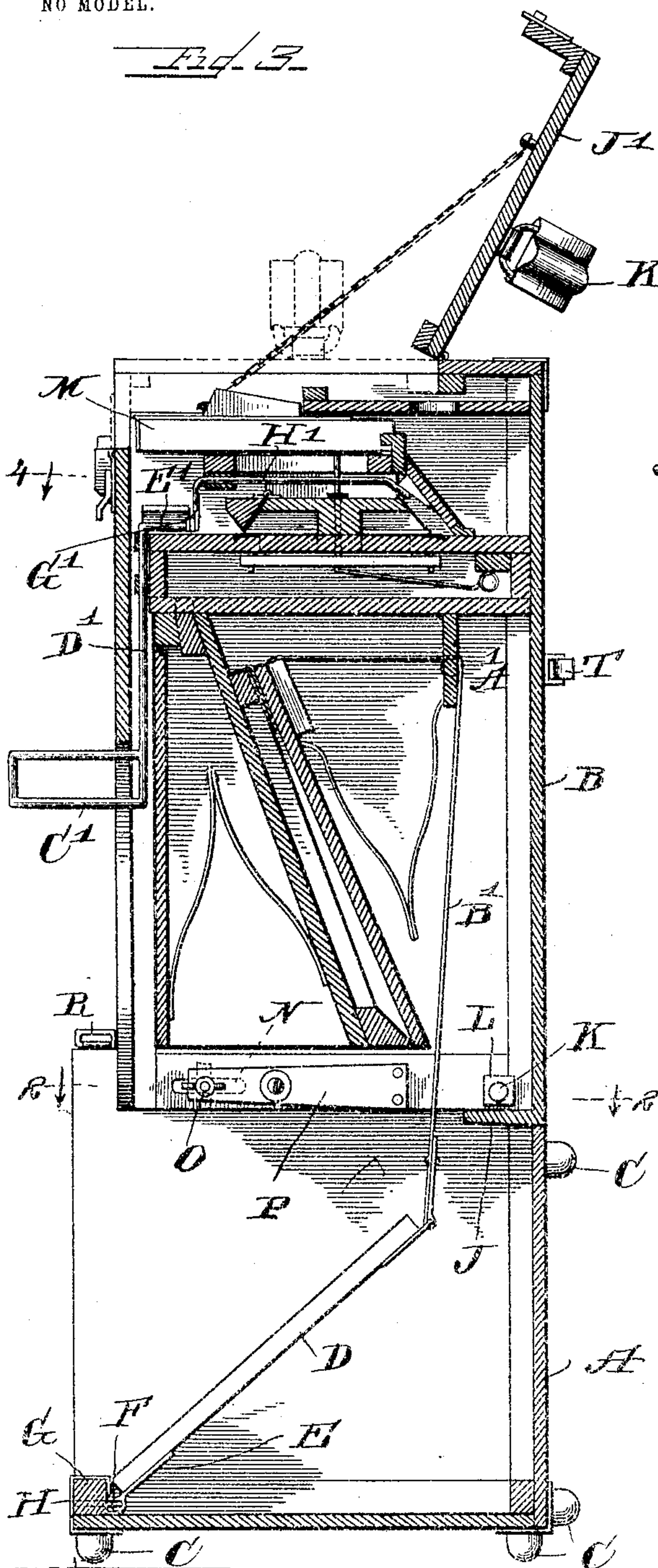
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3 SHEETS—SHEET 2.



WITNESSES.

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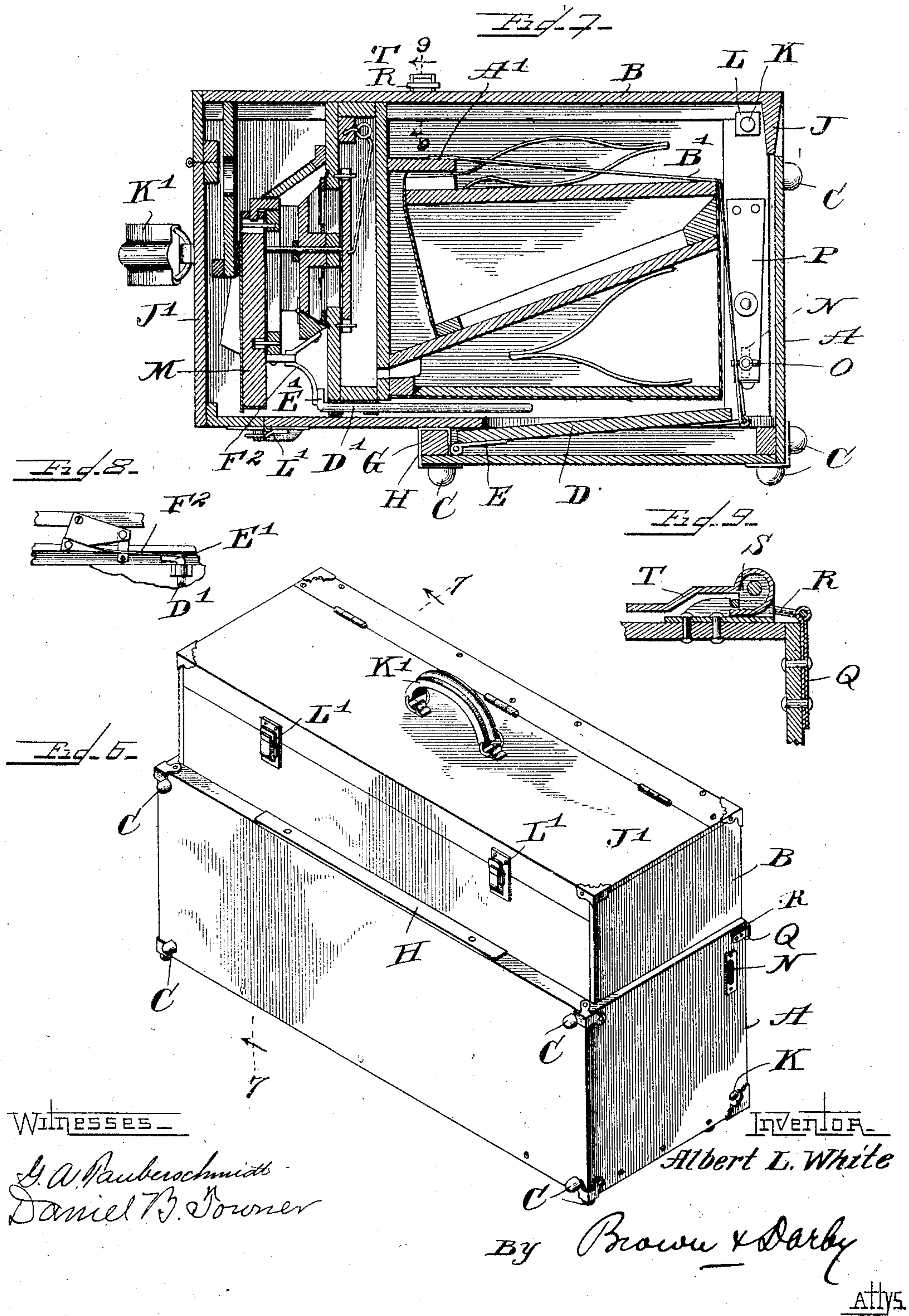
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

ALBERT L. WHITE, OF CHICAGO, ILLINOIS.

FOLDING ORGAN.

SPECIFICATION forming part of Letters Patent No. 776,004, dated November 29, 1904.

Application filed February 24, 1903. Serial No. 144,846. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. WHITE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Folding Organ, of which the following is a specification.

This invention relates to folding organs.

The object of the invention is to provide a construction and arrangement of parts which is simple and wherein the action, bellows, pedal mechanism, and the lever which actuates the swell, all of suitable and efficient size, may be compactly folded and inclosed within a case of small size capable of being readily carried by hand.

A further object of the invention is to provide efficient means which are simple whereby the folding or hinged parts of the inclosing case may be readily and detachably locked in inclosing or open position.

A further object of the invention is to provide means which are simple and efficient whereby the swell-actuating lever may be folded into convenient position to be compactly contained, with the other parts, within the inclosing case when folded and without disturbing the swell plate or board.

A further object of the invention is to provide coöperating locks for the opposite ends of the folding case, one of which operates automatically to spring into locking relation with respect to the parts of the casing when they are brought into their opened position and the other operating automatically to spring out of locking relation when released to unlock or disengage the parts of the casing when it is desired to fold up the same.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will more fully appear hereinafter, as shown in the accompanying drawings and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in perspective of a folding organ embodying the principles of my invention with the hinged

parts or sections of the inclosing case locked in open position and the organ ready for use. Fig. 2 is a transverse section on the line 2 2, Figs. 1 and 3, looking in the direction of the arrows. Fig. 3 is a view in vertical section on the line 3 3, Fig. 1, looking in the direction of the arrows. Fig. 4 is a broken detail view in plan, parts in horizontal section, on the line 4 4, Fig. 3, looking in the direction of the arrows and showing the arrangement of the swell-actuating lever and its connections. Fig. 5 is a view similar to Fig. 4, showing the lever and associated parts when the former is rocked into position for the organ to be folded up. Fig. 6 is a view in perspective of a folding organ embodying the principles of my invention when in folded condition. Fig. 7 is a view in section on the line 7 7, Fig. 6. Fig. 8 is a broken detail view showing a means for operating the mute. Fig. 9 is a broken detail view in section on the line 9 9, Fig. 7.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

The inclosing casing is formed in two parts, (designated in the drawings, respectively, by reference-signs A and B.) The part A may properly be termed the "base" part and is in the form of a rectangular box or frame having closed ends and two adjacent sides, the other two adjacent sides being omitted, as clearly indicated. One of the closed sides of this base part of the casing forms a supporting-bottom for the entire organ when opened up ready for use, as seen in Figs. 1 and 3, and the other closed side of the base part of the casing forms a supporting-bottom for the entire organ when it is folded, as shown in Figs. 6 and 7. If desired, these sides of the base part of the casing may be provided with rubber or other studs (indicated at C) for a well-understood purpose. Hinged or pivoted to the base A along the outer edge of one of the closed sides thereof are the foot-treadles or bellows-pedals D. This hinge connection may be of any suitable or convenient arrangement. I have shown a simple arrangement which I have found efficient for the purpose, wherein clips or butts E are secured to the foot-treadles

and are sleeved upon the bent portions of hinge-rods F, the latter being suitably secured in or to a bar G, attached to and extending lengthwise along the edge of a closed side or bottom from end to end of the base and also serving to stiffen the base-frame. If desired, and in order to conceal the hinge connection of the foot-treadles, thereby enhancing the neatness of appearance while at the same time affording means for protecting the surface or covering of the base-frame or its strengthening-bar against scarring or abrasion by the foot of the operator when the organ is in use, I may employ, as shown, a protecting-plate H, of metal or other suitable material.

The part B of the casing may be properly termed the "body" part and is formed into a box-like frame having front and back as well as side walls. The front wall is cut out, as is clearly shown in Fig. 1, to afford access to the foot-treadles as well as to the knee-actuated levers for controlling the swell of the organ. The rear or back wall of the part B of the casing terminates at the edge thereof, which is the lower edge when the organ is opened up, as shown in Figs. 1 and 3, in a lateral flange J (see Figs. 3 and 7) of sufficient width to close the space left between the parts A and B along the edges thereof adjacent to this lateral flange when said parts A and B are folded together, as clearly shown in Fig. 7. This flange also serves the purpose of affording additional strength and rigidity to the part B of the casing.

The parts A and B of the casing are hinged together by short hinge stud-bolts K at points adjacent to the ends of the lateral flange J. By employing short hinge-bolts instead of a hinge-rod extending from end to end or from side to side transversely across the casing I am enabled to materially reduce the weight of the organ without sacrificing strength or efficiency, and in order to prevent the hinge stud-bolts from working loose or out of place I provide them with squared nuts or heads L, with a planed surface thereof in such close proximity to the surface of the flange J as to be prevented from turning.

At the lower front corners of the part B and the upper front corners of part A of the casing, as viewed in Figs. 1 and 3, are provided registering openings through the side or end walls of these parts, as indicated at N, through which operate locking-bolts O. These locking-bolts are engaged by the free ends of spring plates or straps P, suitably secured upon the inside of the side walls of part B of the casing, the locking-bolts passing through said springs and provided on the inner ends thereof with heads against which the springs bear. On their outer ends, which project through the registering openings N, these locking-bolts are provided with thumb-wings, which afford means for turning the locking-bolts and which when said bolts are properly

turned will pass readily through the registering openings and when still further turned serve to lock the bolts from withdrawal in a manner well understood. The important feature of this part of my invention is that both springs P exert their tension in a direction to constantly press and normally hold or retain both the locking-bolts projected toward the left as viewed in Fig. 2 and as shown in full lines at the left-hand side of Fig. 2 and in dotted lines at the right-hand side of said Fig. 2. The purpose of this peculiar arrangement, and I regard it as a valuable feature of my invention, is to facilitate the locking together and unlocking of the parts of the casing when opened up or when it is desired to close the same. Thus it will be seen that when it is desired to open up the organ from its folded and closed position, as viewed in Figs. 6 and 7, the fastenings, presently to be referred to, are detached, and the part B of the casing is rocked or swung about its pivotal stud-bolts K until the openings N are brought into register. When this occurs, one and only one of the locking-bolts O will spring through under the influence of its tension-spring or plate, thus affording a support for the part B of the casing in its upright or open position until the other locking-bolt is forced by hand and against the action of its spring through its cooperating registering openings, and both locking-bolts may then be properly turned to cause the thumb-wings to engage crosswise of the openings, thereby retaining the locking-bolts in position to lock the parts A and B of the casing in open position. In this manner the danger is avoided of the part B collapsing before an efficient engagement of the locking-bolts is effected or while the operator is trying to insert or engage said bolts. Again, in closing up the parts into their folded position by merely turning one of the locking-bolts until the winged thumb-piece on its outer end will pass through the openings N said bolt will be automatically snapped or withdrawn from locking relation by its associated spring, while the other bolt will not be so automatically withdrawn, but must be manually pulled or withdrawn from the openings in connection with which it is used. Thus, again, the danger is avoided of the part B untimely collapsing or folding up while closing the casing. It will thus be seen that one of the locking-bolts operates automatically to spring into locking relation when opening up the casing, while the other operates automatically to spring out of locking relation when the thumb-wings thereon are suitably registered with the openings when the casing is to be folded, and in either case the danger is avoided of the part B unduly or untimely collapsing or closing up.

When the parts A and B of the casing are folded into their closed position, it is desirable that they be efficiently locked together,

so that the organ may be conveniently carried by hand without danger of opening up in transportation. I have provided a simple and efficient construction of fastening for accomplishing this purpose, comprising a hinge butt or clip Q, (see Fig. 9,) riveted or otherwise secured to one of the parts of the casing, and to which is pivotally connected a loop-link R, arranged to loop over a stud or lug S, riveted or otherwise secured to the other part of the casing when these parts occupy their closed or folded up positions, and in order to guard against accidental displacement or detachment of the link from engaging relation over the stud or lug I pivotally mount on the stud or lug a spring locking plate or strip T, arranged to be rocked into position to be threaded through the link previous to the application of the link over the stud and then to be rocked into position to form a keeper for said link to retain the same on or over the lug, as will be clearly understood from the drawings.

From the foregoing description it will be seen that I provide an exceedingly simple and efficient arrangement, wherein the parts of the casing may be folded up into small compass or opened up for operation of the organ at pleasure and wherein provision is made for efficiently locking and retaining the same in either closed or open position.

Upon and within the part B of the casing is mounted the organ-keyboard, (indicated generally at M,) the organ-action, and the air-bellows and air-chambers. These parts may be of the usual or any well-known construction, and in the details thereof, except in the particulars hereinafter pointed out, form no part of my present invention.

In practice and as usual I prefer to employ two sets of bellows, each operated from a foot treadle or pedal through a strap-band or other flexible connection, the movable part of the bellows vibrating horizontally when the organ is opened up. With such an arrangement I am enabled to secure a wider range of action of the bellows and to maintain a more desirable degree of air-pressure in the associated air-chambers, thereby securing better results without occupying an undue extent of room or space than is possible where the movable part of the bellows vibrates vertically. In order to accomplish this result, which is specially desirable in a folding organ designed to be folded or closed up into a small compass, while at the same time permitting the folding up of the inclosing casing without interference or derangement of the band or strap connection between the foot-treadles and the bellows, I arrange a transverse bar A' to extend from end to end or side to side of the casing B, at a point substantially over the free ends of the foot-treadles D (see Fig. 3) when the organ is in opened-up position and opposite or at about the height of the free

end of the vibrating bellows. The flexible straps B' are secured at one end in any suitable or convenient manner to the free ends of the foot-treadles and are lead therefrom in a substantially vertical line to and through suitable lateral openings in the bar A' and thence horizontally to their points of attachment to the movable parts of the bellows. In this manner I am enabled to maintain the flexible connections straight when the organ is opened up, as viewed in Fig. 3, and also when folded, as seen in Fig. 7, in the latter case these connections folding over the edge of the box or frame of the bellows, as clearly shown, and the danger of their interference with other parts or derangement is avoided. The bar A' may also serve the purpose of a brace for stiffening or strengthening the foundation-board of the organ.

Another feature of my invention which I will now describe is the provision of means whereby the knee-pedals through which the swell is operated may be folded, so as to avoid interference with other parts when the organ is folded up. This result I secure by providing the knee-pedals C' with a rod D', having a crank-arm extension E'. The shank may be journaled to rock in suitable bearings, as clearly shown in the drawings, and is connected through a flexible band or strap F' with the crank-arm G' of a rocking rod H', (see particularly Figs. 3, 4, and 5,) through which the swell-stop is operated. In Fig. 8 I have shown a slightly-modified arrangement wherein the flexible strap F² is connected directly between the crank-arm E' and the swell-stop. From the foregoing description it will be readily seen that the knee-pedals are free to rock in both directions—in one to operate the swell-stops, the flexible straps becoming in that case taut, as seen in Fig. 4, and in the other to be folded within the casing B, the flexible strap F' in the latter case becoming loose, as shown in Fig. 5, and hence the knee-pedals can be folded within the casing to enable the latter to be folded up without interference therewith.

Reference-sign J' designates a hinged or folding top or cover for the keyboard, and which top or cover when the organ is opened up may also serve the purpose of a music-rest, as shown in Figs. 1 and 3. If desired, this hinged top may be provided with a handle K' to afford convenient means for carrying the organ like a satchel or dress-suit case when folded up. When this top or cover is folded down into closed position, as shown in Figs. 6 and 7, it may be fastened in such position by fastenings (indicated at L') which may be similar in all respects to the fastenings shown in Fig. 9 and as above described.

From the foregoing description it will be seen that I am enabled to employ a continuous keyboard—that is, one that is not made in hinged sections—the keyboard extending

transversely from end to end of the casing B and being limited in length only by the transverse length of the casing without in the least detracting from compactness in folding up
5 the organ into a small space or compass.

It is believed that the construction, arrangement, and operation will be fully and clearly understood from the foregoing description when taken in connection with the accompanying
10 drawings.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—
15

1. In a folding organ, a casing formed in two parts suitably hinged together, the upper section having a cut-away portion on its front side, and the lower section having two sides
20 adapted respectively to close over the bottom and the open front side of the top section, catches arranged at opposite sides of said casing parts, and corresponding springs arranged to press said catches respectively into locking
25 and unlocking position, as and for the purpose set forth.

2. In a folding organ, a casing formed of two parts, one of said parts having a lateral flange along the bottom edge of its back wall,
30 and short pivot-studs for pivotally connecting said parts at the ends of said lateral flange, said pivot-studs having squared nuts or heads on their inner ends arranged to engage said lateral flange, as and for the purpose set forth.

3. In a folding organ, a casing formed in two parts, said parts being hinged or pivoted together along the rear edges thereof, and snap-catches arranged at opposite sides adjacent the front edges of said casing parts, and
40 springs arranged to press said catches respectively into locking and unlocking relation, as and for the purpose set forth.

4. In a folding organ, a casing comprising a base part and a body part, said parts being
45 hinged together along their rear edges, and having openings in the ends or sides thereof adjacent to their front edges, locking-bolts arranged to enter said openings when the latter are brought into register, and springs operating to exert a tension on said bolts, said
50 springs arranged to press said bolts in the same direction, whereby one of said bolts

tends to snap into and the other tends to snap out of its respective cooperating openings, as and for the purpose set forth. 55

5. In a folding organ, the combination with a casing comprising a base and a body part, said parts being hinged together, an organ keyboard and action and bellows mounted in
60 said body part, a foot-treadle pivotally mounted in said base part, a brace-bar arranged within said body part at a point vertically over the free end of said treadle, and a flexible strap connecting the free end of said treadle
65 and the bellows, said strap leading through said brace-bar, as and for the purpose set forth.

6. In a folding organ, a casing including a base and a body part suitably hinged together, an organ action and keyboard and a bellows
70 mounted within said body part, said bellows having a horizontally-vibrating part, a foot-treadle arranged within said base, a brace-bar carried by said body part over the free end of said treadle and a flexible strap attached at
75 its ends respectively to the free end of said treadle and to the horizontally-vibrating part of said bellows, said strap intermediate its ends passing through said brace-bar, as and
80 for the purpose set forth.

7. In a folding organ, and in combination with the base and body part of the inclosing casing suitably hinged together, and an organ-
85 action including a swell-stop, of a knee-pedal, pivotally mounted to fold into the casing, and a flexible connection intermediate said pedal and stop, as and for the purpose set forth.

8. In a folding organ, a casing comprising a base and a body portion suitably hinged together, and an organ-action including a swell-
90 stop inclosed within said body portion, in combination with a knee-pedal, a shank therefor said shank being journaled to rock and provided with a crank-arm, and a flexible connection between said crank and swell-stop,
95 whereby said knee-pedal may be folded within the casing, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 20th day of February, 1903, in the presence of the subscribing witnesses.

ALBERT L. WHITE.

Witnesses:

C. H. SEEM,
S. E. DARBY.