

BEST AVAILABLE COPY

(No Model.)

A. GLEITZ.  
PIANO CASE.

No. 421,265.

Patented Feb. 11, 1890.

Fig. 2.

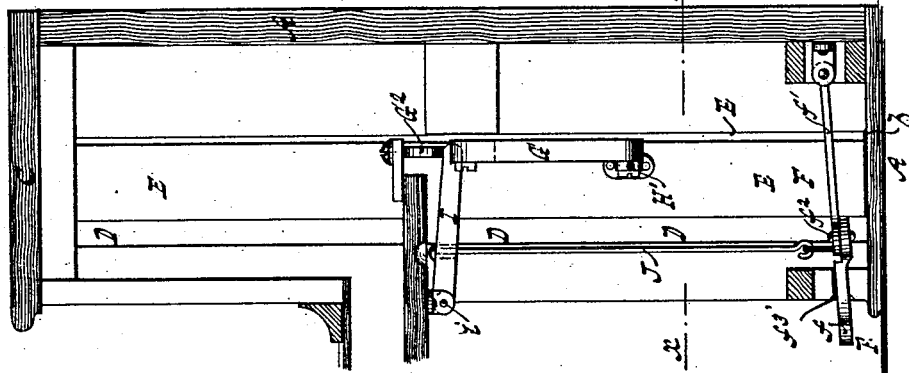
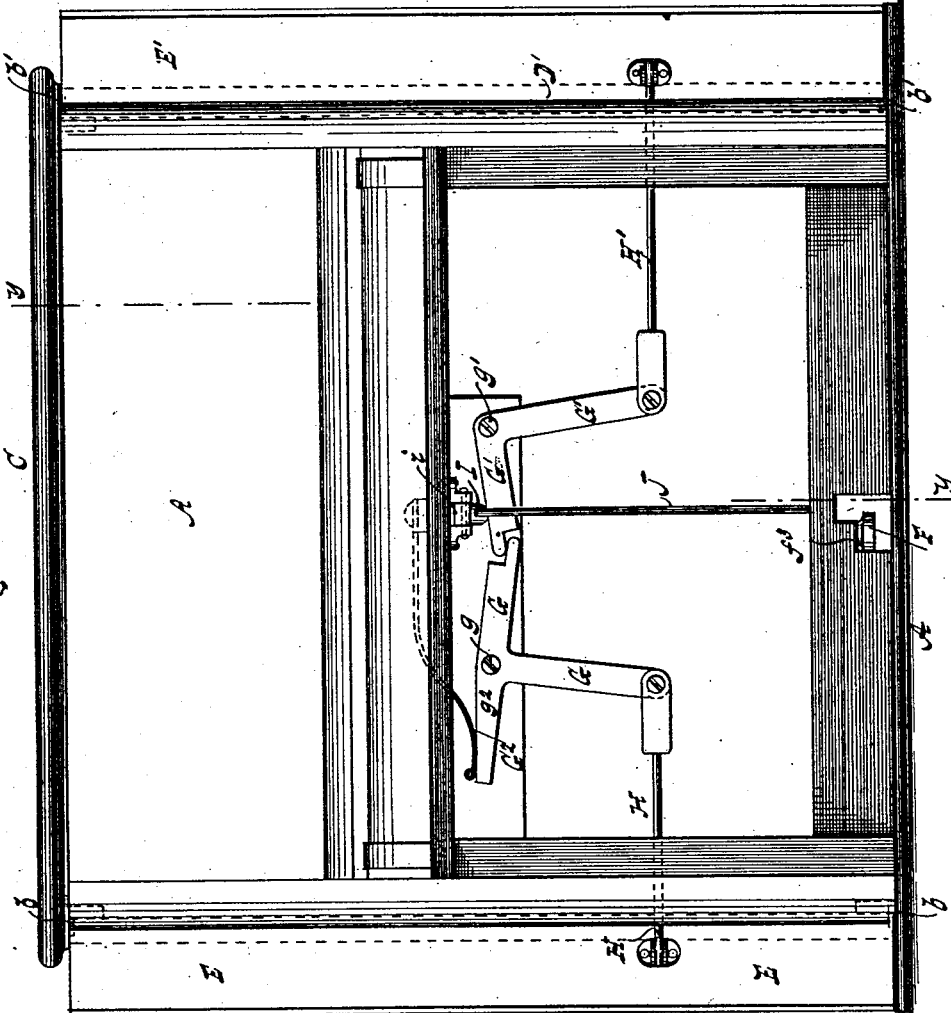
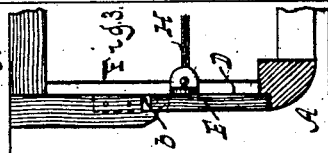


Fig. 1.



Witnesses:  
*Alfred du Ponce*  
*William Miller*



Inventor:  
*August Gleitz.*  
*Van Santen & Hauff,*  
his Attorneys.

## UNITED STATES PATENT OFFICE.

AUGUST GLEITZ, OF NEW YORK, N. Y.

## PIANO-CASE.

SPECIFICATION forming part of Letters Patent No. 421,265, dated February 11, 1890.

Application filed October 12, 1889. Serial No. 326,774. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST GLEITZ, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Piano-Fortes, of which the following is a specification.

This invention relates to improvements in that class of upright pianos which are provided with side openings controlled by hinged swell-panels operated by suitable lever-connections with a pedal.

The novel construction of the above-mentioned parts, together with other features of this invention, are more fully pointed out in the following specification and claim, and illustrated in the accompanying drawings, in which—

Figure 1 represents an interior view of the frame of an upright piano embodying my invention, which figure shows the swell-panels open. Fig. 2 is a vertical transverse section in the plane  $y y$ , Fig. 1. Fig. 3 is a horizontal section in the plane  $x x$ , Fig. 2, of part of the frame, showing the swell-panels closed.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the case of an upright piano constructed in the usual manner with a vertical sounding-board and a horizontal key-board and a lid or cover C, which may be hinged to the frame or rigidly secured thereto.

In the sides of the piano are formed discharge-openings D D', which afford communication between the outer air and the interior of the piano, and through which the sound-waves emanating from the strings can pass freely. In the example shown in the drawings one such discharge-opening is formed on each side of the piano, and the said openings extend through the entire height of the piano; but the length and number of the openings can be varied as desired. These openings are normally closed by swell-panels E E', hinged at  $b b'$ , Fig. 3, to the frame of the piano, and which are swung outward by a system of levers connected and operated by a pedal F, which is adapted to be depressed by the performer to swing open the said hinged panels E E'.

The connections of the hinged panels with the pedal F consist, in the example shown in the drawings, of a pair of bell-crank levers G G', pivoted at  $g g'$  to a stringer in a cas-

ing, and the horizontally-extending arms of these levers G G' are in a position to engage with each other, while to the vertical arms of the same are attached rods H H', which are attached to the doors. The arm  $g$  of the lever G' is acted upon by a lever I, which is pivoted at  $i$  to a socket on the casing, and is connected to the pedal F by a rod J, so that when the pedal is depressed, as shown in the drawings, Figs. 1 and 2, the lever I will depress the arm  $g$  of the lever G', and both swell-panels E E' will be swung outward, so as to allow the sound-waves to leave the instrument through the discharge-openings D D'. The area of these discharge-openings varies with the extent of depression of the pedal F, so that the performer can increase or reduce the swell of the sound at pleasure.

In order that the swell-panels E E' may be held stationary when wide open, I construct the pedal F of two parts  $f f'$ , which are pivoted together at  $f^2$ , so that the part  $f$  or pedal proper can be turned about the pivot  $f^2$  when depressed and brought under a suitable stop  $f^3$ , formed in the frame, whereby the pedal is held depressed and the swell-panels are wide open. To close the said swell-panels when the pedal F is released, I provide the bell-crank lever G with an extension  $g^2$ , which is subjected to the force of a spring G<sup>2</sup>, acting in the proper direction. However, other means may be employed to effect this same purpose.

The swell-panels E E' when closed have the appearance of ordinary panels and do not in the least affect or mar the general appearance of the piano.

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

The combination, with the case of an upright piano, of the discharge-openings D D', the hinged panels E E', bell-crank levers G G', one arm of each of which is connected with one of the panels, the lever I, the rod J, and pedal F, for operating the bell-crank levers, substantially as shown and described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

AUGUST GLEITZ. [L. s.]

Witnesses:

E. F. KASTENHUBER,  
WILLIAM MILLER.