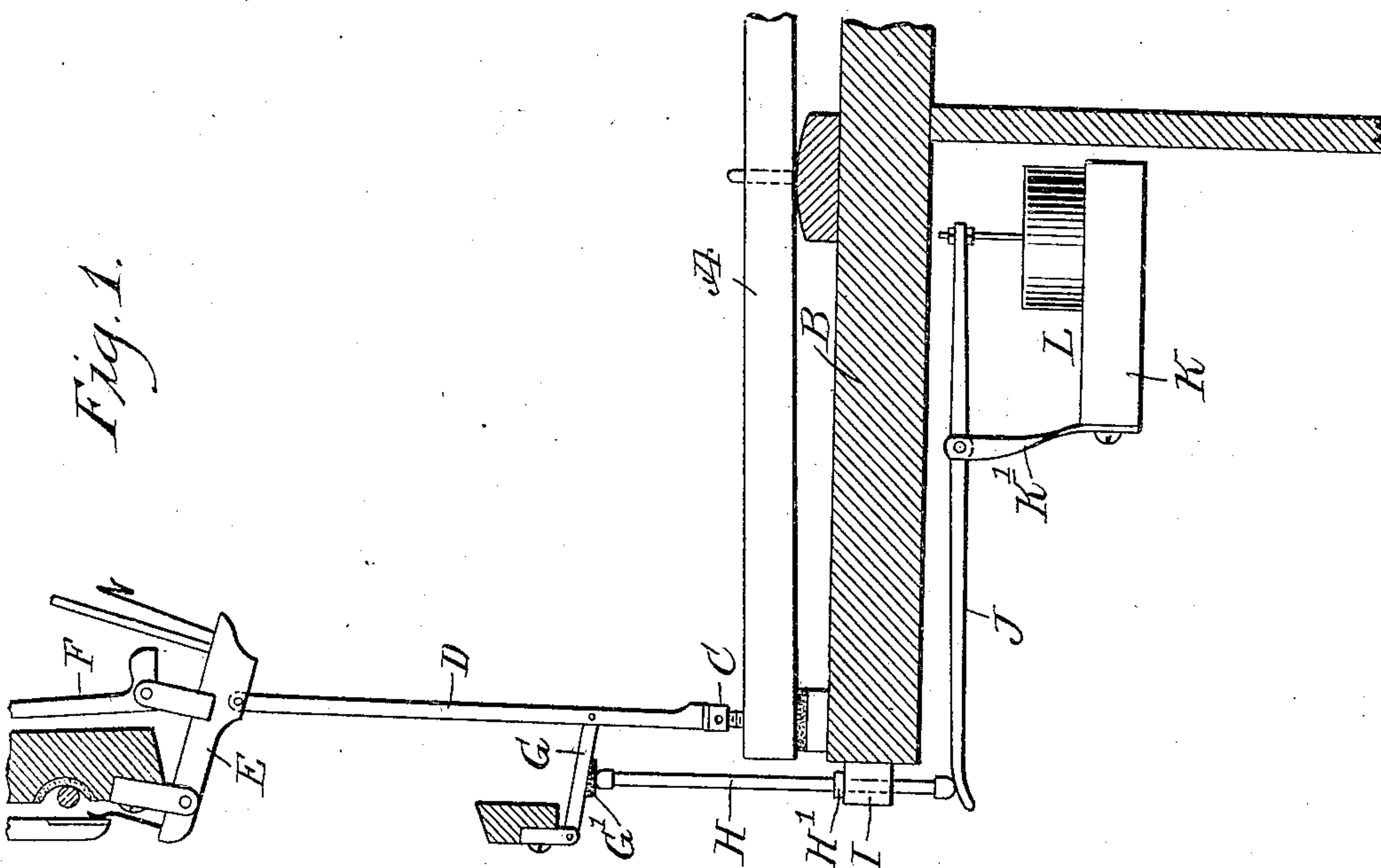
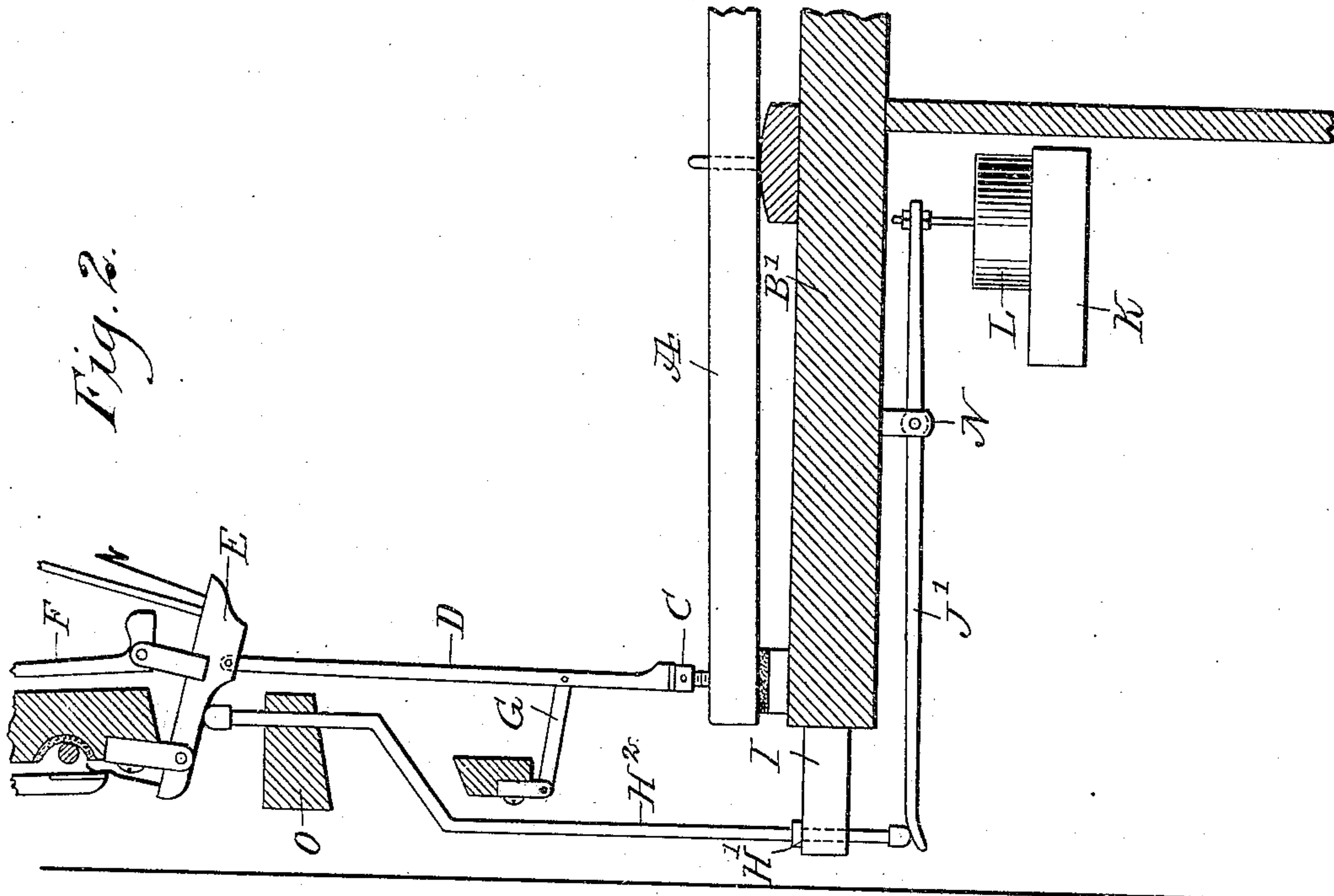


F. B. LONG & E. A. TAPPE.
 SELF PLAYING PIANO.
 APPLICATION FILED MAR. 19, 1909.

936,788.

Patented Oct. 12, 1909.



WITNESSES

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FRANK BENAIAH LONG AND EDWARD ARTHUR TAPPE, OF LOS ANGELES, CALIFORNIA.

SELF-PLAYING PIANO.

936,788.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 19, 1909. Serial No. 484,390.

To all whom it may concern:

Be it known that we, FRANK BENAIAH LONG and EDWARD ARTHUR TAPPE, citizens of the United States, and residents of Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Self-Playing Pianos, of which the following is a full, clear, and exact description.

The object of the invention is to provide certain new and useful improvements in self-playing pianos and like instruments, whereby a simple and effective connection is had between the pneumatics and the hammer action, to allow playing the piano automatically or by hand whenever desired and without interference by the connection. The desired result is obtained by the use of a lever, connected at one end with the movable member of the pneumatic, and an auxiliary lifter rod for engagement with one of the members of the hammer action, to lift the rod resting on the free end of the said lever.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a transverse section of part of a piano provided with the improvement; and Fig. 2 is a similar view of a modified form of the same.

The keys A of the piano are mounted in the usual manner on the key board B, and the rear end of each key A is provided with a capstan C, engaging the lifter rod D connected with the jack rocker E carrying the hammer jack F, for imparting a swinging motion to the hammer to sound the corresponding string of the piano. The lifter rod D is also connected with the abstract swing G, provided at its under side with a cushion G' of felt or other material, engaged by the upper end of an auxiliary lifter rod H, mounted to slide up and down in a bearing I secured on the key board B. The auxiliary lifter rod H is provided with a collar H', normally resting on the top of the bearing I, thus supporting the auxiliary lifter rod H in a lowermost position, that is, when the hammer action and key A are in a position of rest, as indicated in Fig. 1. The rod H rests on the rear or free end of a lever J, fulcrumed on a bracket K' attached to a support K, removably mounted on the piano frame below the key board B, and on the

said support K is mounted a pneumatic L having its movable member connected with the forward end of the lever J. The pneumatic L, illustrated in the drawings, may be of any approved construction, but is preferably of the form shown and described in the Letters Patent, No. 895,382, granted to us on August 4, 1908, so that further detailed description of the said pneumatic L is not deemed necessary. Now it will be seen that by the arrangement described the piano can be played in the usual manner by the operator actuating the keys A by hand, and when it is desired to play the piano by the use of a note sheet passing over a tracker board connected with the pneumatics L, then the latter are actuated so as to impart a swinging motion to the corresponding lever J, to move the auxiliary lifter rod H upward and thereby cause an upward swinging of the abstract swing G. When this takes place the lifter rod H is moved upward and thus the hammer action is actuated to cause the corresponding hammer to sound its string. When a pneumatic L is inflated the lever J swings back to its normal position, thus allowing the auxiliary lifter rod H to drop to normal position and with it the hammer action.

In the arrangement shown in Fig. 2, the lever J' is fulcrumed on a bracket N, attached to the under side of the key board B', and the auxiliary lifter rod H² in this case is mounted to slide in a bearing I and also in a rail O, and the upper end of the auxiliary lifter rod H engages the under side of the jack rocker E, so that when the pneumatic L is actuated and a swinging motion is given to the lever J' then the auxiliary lifter rod H² is lifted, to give an upward swinging movement to the jack rocker E, thus actuating the hammer for sounding its string. When the pneumatic L is inflated the lever J' returns to its normal position and the auxiliary lifter rod H² drops and with it the hammer action, to normal position.

By mounting the lever J together with the pneumatic L on the support K, as shown in Fig. 1, the pneumatic action can be readily removed from the piano for repairs or other purposes without disturbing the piano action or the auxiliary lifter rods H.

In the arrangement shown in Fig. 2 it is necessary to disconnect the pneumatic from the lever J' whenever it is desired to remove the pneumatic action.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In a piano or like instrument, the combination with the hammer action, the keys, key board, and main lifter rod for operating the hammer action from the keys, of an auxiliary lifter rod having limited sliding movement in a bearing carried by the key board and engaging a movable member of the hammer action, a pneumatic below the key board, and a pivoted lever having one end connected with the movable member of the pneumatic and with the other end of which the lower end of the auxiliary lifter rod has free contact.

2. In a piano or like instrument, the combination with the hammer action, the keys, key board, and main lifter rod for operating the hammer action from the keys, of a support below the key board and having a bracket, a pneumatic on the support, a lever fulcrumed on the bracket of the support and connected at one end with the movable member of the pneumatic, and an auxiliary lifter rod mounted to slide in a bearing carried by the key board, the said auxiliary lifter rod

having free contact at its lower end with the other end of the lever and engaging with its upper end a member of the hammer action.

3. In a piano or like instrument, the combination with the hammer action, the keys, and the main lifter rod for operating the hammer action from the keys, of a support mounted on the piano frame, a pneumatic on the support, a lever fulcrumed on the support and connected at one end with the movable member of the pneumatic, and an auxiliary lifter rod mounted to slide on the piano frame independent of the said support, said auxiliary lifter rod having free contact at one end with the free end of said lever and engaging at its other end a swinging member of the hammer action.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FRANK BENAJAH LONG.
EDWARD ARTHUR TAPPE.

Witnesses:

RALPH ROGERS,
E. RANKIN.