

C. VINCENT.
PIANOFORTE.

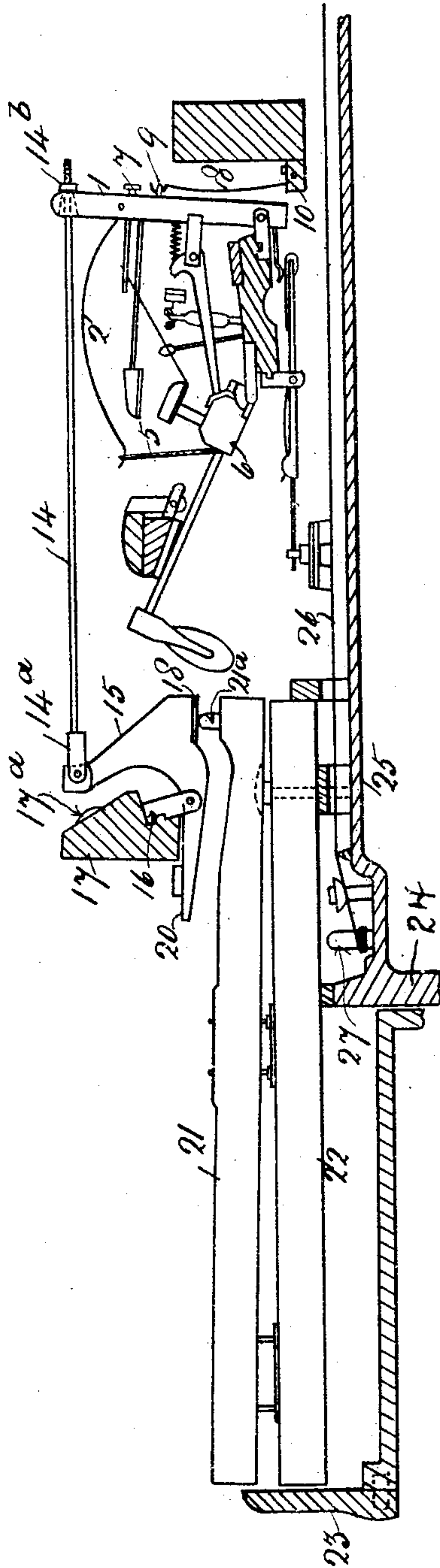
APPLICATION FILED JUNE 26, 1909.

956,003.

Patented Apr. 26, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

René Bowden

Car. H. Sawyer

Inventor:

Charles Vincent

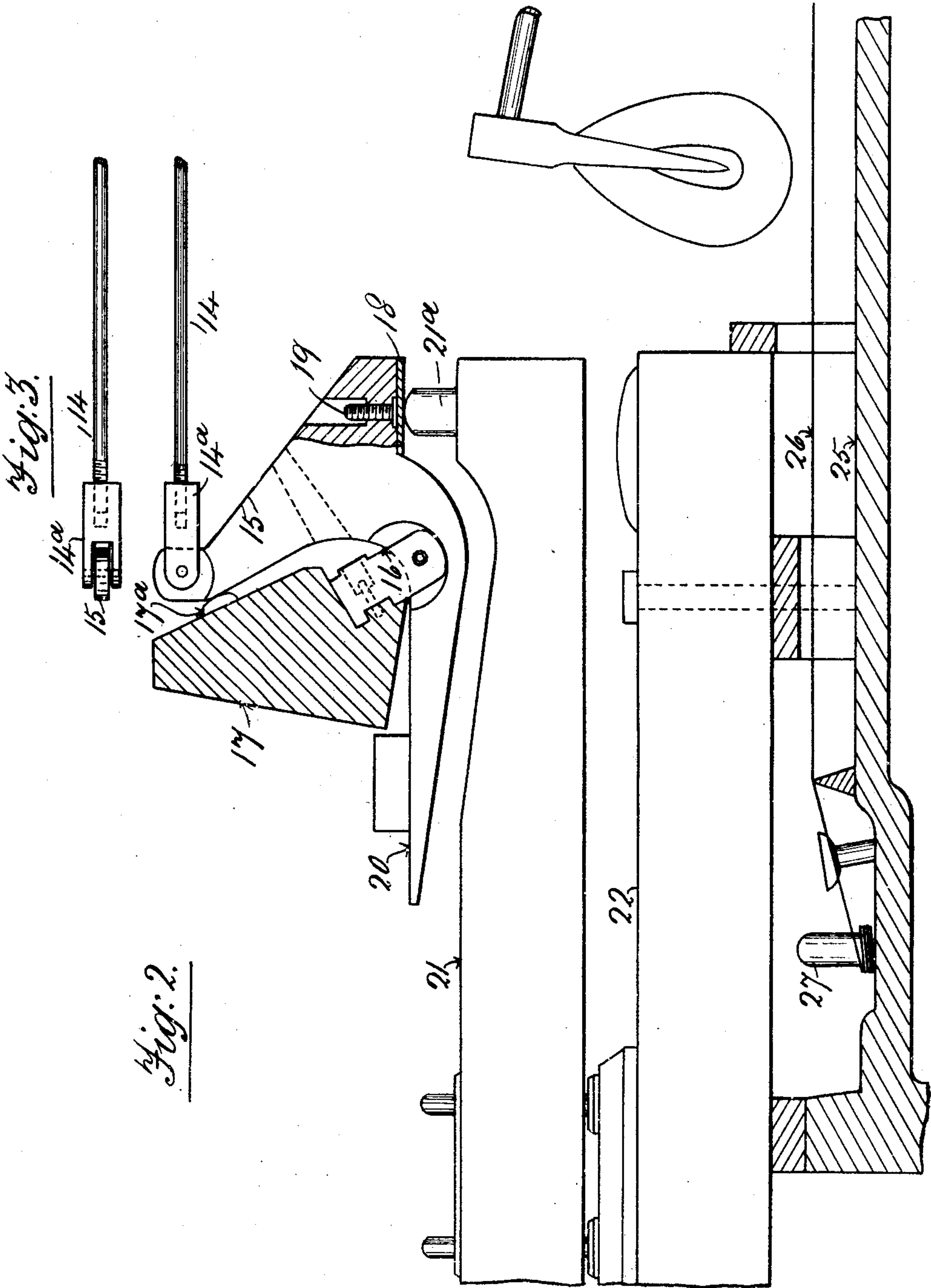
C. VINCENT.
PIANOFORTE.

APPLICATION FILED JUNE 26, 1909.

956,003.

Patented Apr. 26, 1910.

3 SHEETS—SHEET 2.



Witnesses:

Rene Bowen

Carl H. Sawyer

Inventor.

Charles Vincent

C. VINCENT.
PIANOFORTE.
APPLICATION FILED JUNE 26, 1909.

Patented Apr. 26, 1910.

3 SHEETS—SHEET 3.

956,003.

Fig. 5.

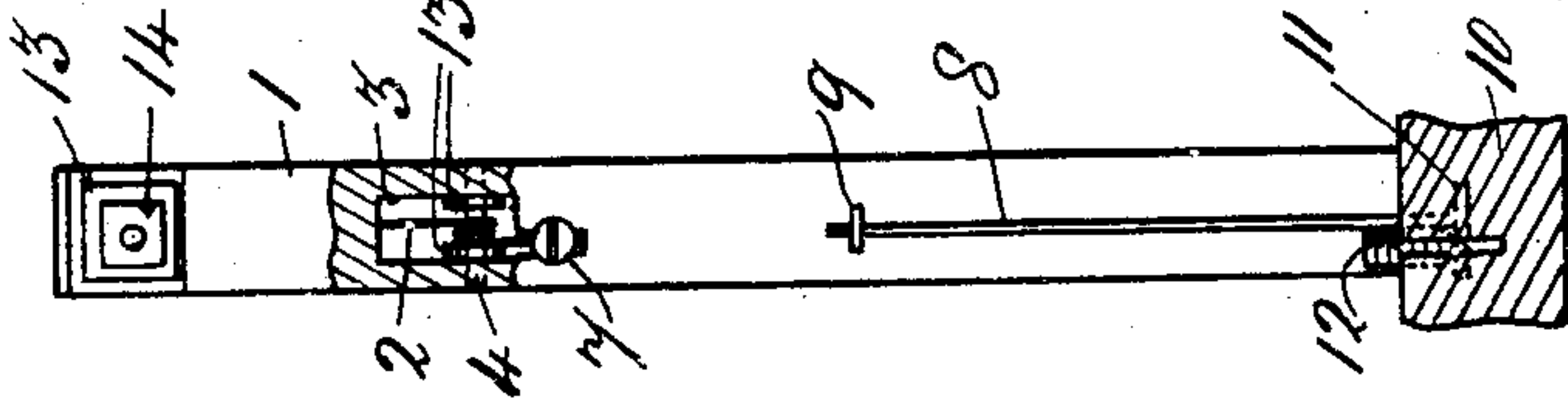
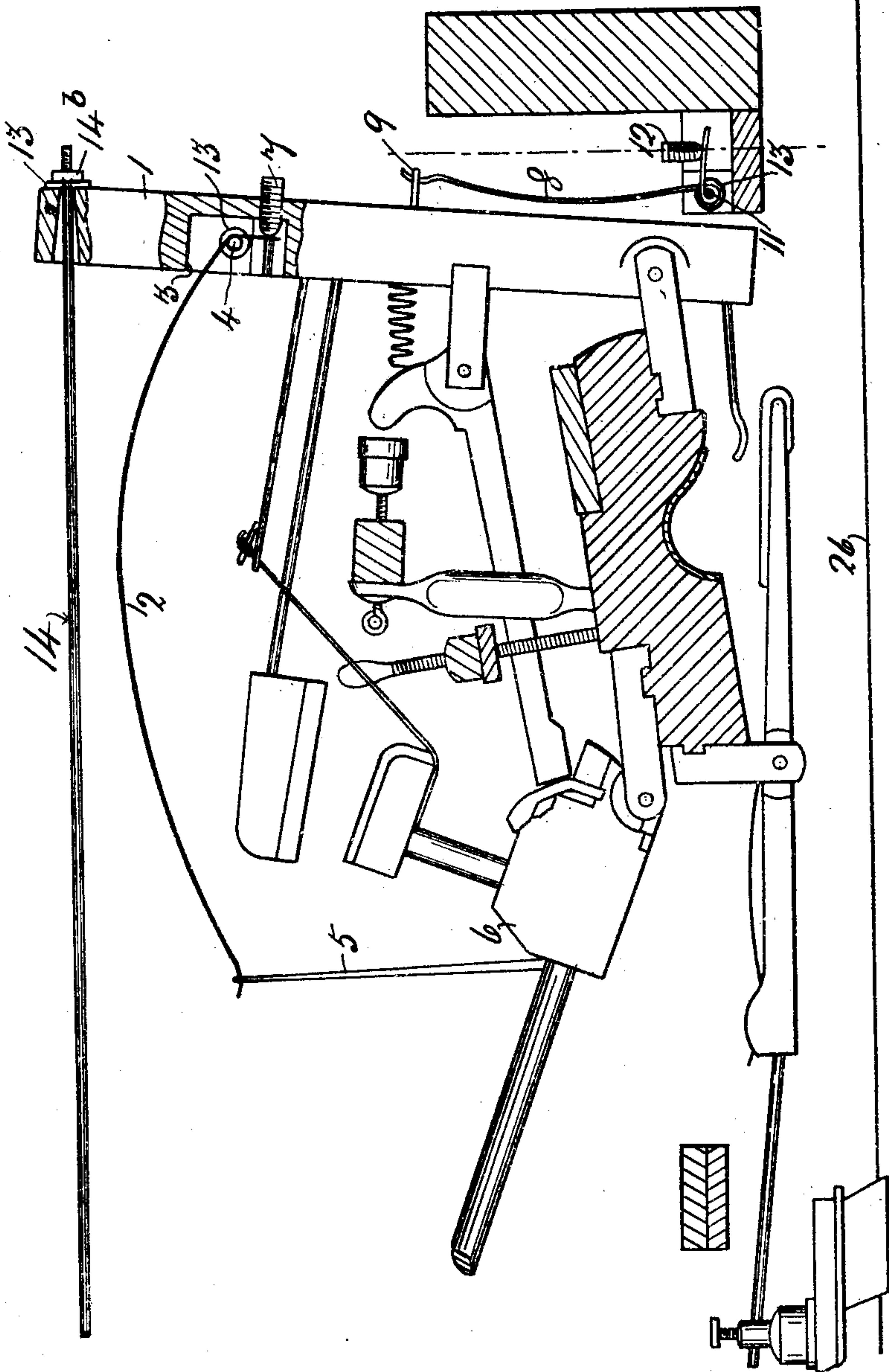


Fig. 4.



Witnesses:
Rene Bowden
Care H. Sawyer

Inventor.
Charles Vincent

UNITED STATES PATENT OFFICE.

CHARLES VINCENT, OF PINNER, ENGLAND.

PIANOFORTE.

956,003.

Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed June 26, 1909. Serial No. 504,577.

To all whom it may concern:

Be it known that I, CHARLES VINCENT, residing at Pinner, in the county of Middlesex, England, have invented new and useful Improvements in Pianofortes, of which the following is a specification.

This invention relates to improvements in horizontal pianofortes having down-striking actions, and has for its object to avoid the heavy touch hitherto characteristic of such instruments, and likewise to provide auxiliary means for manipulating the instrument when the keyboard is removed so as to facilitate tuning.

To effect this according to my invention the action levers are lengthened, while the sustaining and returning springs of the hammers (hereafter referred to as "the hammer springs") are mounted therein so that they move with the hammers and offer less resistance when the keys are depressed than when the latter are in their normal position. The action levers are sustained and returned by adjustable springs carried on a rail in the action frame, which frame is furnished with an auxiliary series of keys and bell crank levers that are pivoted therein and connected by adjustable connecting rods to the lengthened action levers.

The key frame slides in and out of the case in the ordinary manner and is so arranged that it passes over and conceals the tuning pins, and when the instrument is to be tuned such frame together with the ordinary keyboard is removed and the auxiliary series of keys in the action frame then serves to manipulate the instrument.

In the accompanying drawings wherein similar reference numerals indicate corresponding parts:—Figure 1, is a longitudinal section of a "down-striking" action illustrating the application of my invention thereto, while Figs. 2, 3, 4 and 5, are detail sectional views drawn to an enlarged scale, which are hereafter more particularly referred to.

1, is the action lever, which is lengthened to allow the hammer spring 2, to be mounted therein, and is recessed as indicated at 3, (Figs. 4 and 5) to receive one end of the spring which is pivoted therein on a pin 4. Such spring is connected by a silken cord

or its equivalent 5, to the hammer butt 6, while its tension is regulated by means of a set screw 7. The action is kept in position by a spring 8, and flexible tie 9: the spring 8, being mounted in a recessed cross rail 10, of the action frame, on a pin 11, and adjusted and regulated by a set screw 12, as indicated in Figs. 4 and 5. The pins carrying the springs 3 and 8, are fitted with felt or other suitable washers 13, and such springs are graded in strength according to the weight of the hammers.

14, 14^a, are a connecting rod and flange by which the action lever 1, is connected to a bell crank lever 15, pivoted in a flange 16, which latter is mounted on a rail 17, in the action frame as indicated in Figs. 1 and 2. A shoulder on such bell crank lever is fitted with a felt pad 18, and with an adjusting screw 19, that bears against the inner face of such pad. The rail 17, is fitted with a pad 17^a which limits the action of the bell crank lever 15, while the free end of the latter terminates in a supplementary key 20 (Figs. 1, 2) that forms a complementary key to the corresponding key on the keyboard. In Figs. 1 and 2, 21, indicates one of such latter keys, 22, the key frame, 23, the lock board, 24 the case of the instrument, 25, the iron frame, 26, one of the strings thereon—and 27, the tuning pin for such string. The action frame is so arranged that when the key-frame is in position the pilot dowel 21^a, of each key bears on the padded shoulder of the corresponding bell crank lever, so that when the key is depressed the bell crank lever is raised (as indicated at Fig. 2). This movement causes the corresponding action lever 1 to be drawn forward by the connecting rod 14, against the pressure of the spring 8, and the hammer is operated by the ordinary action mechanism against the pressure of the hammer spring 2. This spring moves with the hammer and at the moment the hammer contacts with the string, it gives the hammer an instantaneous set-off. This allows rapid repetition of the note being obtained with the minimum lift of the key.

The connecting rod 14, is adjusted by the nut 14^b, which is furnished with a felt or other suitable washer, while the adjusting

screws 19, (Fig. 2) of the bell crank levers 15, serve to regulate the contact between the same and the pilot dowels 21^a, on the keys.

By my invention an ordinary upright pianoforte action together with the keys and keyframe for use with same can be readily adapted for use as a "down-striking" action in a horizontal pianoforte, thus combining the simplicity of an upright action and key-
board with the advantages attendant upon the best "up striking" horizontal piano actions.

I claim—

1. A down striking piano action comprising a casing, keys, action-levers in said casing, hammers pivoted in said casing, springs carried by said action-levers and projecting over the butts of said hammers, flexible means connecting said springs and said hammer-butts and means for operating said action-levers.

2. A down striking piano action comprising a casing, keys, action-levers in said casing, springs carried by said action levers projecting over the butts of the hammers, means for regulating the stress of said springs, flexible means connecting said springs and said hammer butts and means for operating said action levers.

3. A down striking piano action comprising a casing, keys, action-levers in said casing, springs carried by said action levers projecting over the butts of the hammers, means for regulating the stress of said springs, flexible means connecting said springs and said hammer butts, means for operating said action levers, and springs connected to the rear of the casing and to said levers whereby they are returned to their normal position.

4. A down striking piano action comprising a casing, a frame, keys therein, levers above the rear ends of said keys, action levers in the rear end of said casing, rods connecting said first-mentioned levers and said action levers, hammers pivoted in said frame, springs carried by said action levers and connected to the butts of said hammers and means for operating said hammers from said action levers.

5. A down striking piano action comprising a casing, a removable frame, keys carried by said frame, levers in said casing pivoted above the rear ends of said keys, action levers pivoted in the rear of said casing, rods connecting said first mentioned levers and said action levers, hammers pivoted in said frame, springs carried by said action levers and connected to the butts of said hammers, and means for operating said hammers from said action levers.

6. A down striking piano action comprising a casing, a removable frame, keys carried by said frame, levers in said casing pivoted above the rear ends of said keys,

said keys being in contact with said levers, means carried by said levers for adjusting the contact with said keys, action-levers in the rear end of said casing, rods connecting said first mentioned levers and said action levers, hammers pivoted in said frame, springs carried by said action levers and connected to the butts of said hammers and means for operating said hammers from said action levers.

7. A down striking piano action comprising a casing, a removable frame, keys carried by said frame, bell crank levers in said casing pivoted above the rear end of said keys and adapted to be contacted thereby, one arm of each of said levers extending out over said keys, action levers pivoted in said casing, means connecting said action levers and said bell crank levers and hammers connected to said action levers, said hammers being operated by said keys when said frame is in position and by said downwardly extending arms when said frame is removed.

8. A down striking piano action comprising a casing, a removable frame, keys carried by said frame, bell crank levers in said casing pivoted above the rear ends of said keys, shoulders on said levers engaged by said keys, means in said shoulders for adjusting the contact points, one arm of each of said levers extending out over said keys and forming complementary keys, action levers pivoted in said casing and hammers connected to said action levers, said hammers being operated by said keys when said frame is in position, and by said complementary keys when said frame is removed.

9. A down striking piano action comprising a casing, a frame, keys in said frame, levers in said casing pivoted above the rear ends of said keys and engaged thereby, action levers in the rear end of said casing, rods connecting said first levers and said action levers, hammers in said casing extending from the rear toward the front thereof and adapted to contact the strings in rear of said keys, said hammers connected to said action levers and means for operating said hammers.

10. A down striking piano action comprising a casing, a frame, keys in said frame, levers in said casing pivoted above the rear ends of said keys and engaged thereby, action levers in the rear of said casing, rods connecting said first levers and said action levers, said rods being longitudinally adjustable, hammers in said casing extending from the rear toward the front thereof, and adapted to contact the strings in rear of said keys, said hammers connected to said action levers and means for operating the hammers.

11. A down striking piano action comprising a casing, strings in said casing, tuning

pins in the front of said casing, a frame adapted to overlie said tuning pins, action levers, hammers pivoted in said casing extending toward the front thereof and
5 adapted to strike said strings in rear of said frame, means for operating said hammers, said frame being removable whereby access

may be had to said tuning pins, and auxiliary keys adapted to operate said hammers when said frame is removed.

CHARLES VINCENT.

Witnesses:

RENÉ BOWDEN,
CAN H. SAWYER.