No. 794,126. PATENTED JULY 4, 1905.

S. C. SHAW.

MUSIC LEAF TURNER.

APPLICATION FILED JULY 2, 1904.

6 SHEETS—SHEET 1.

Fig. 1.

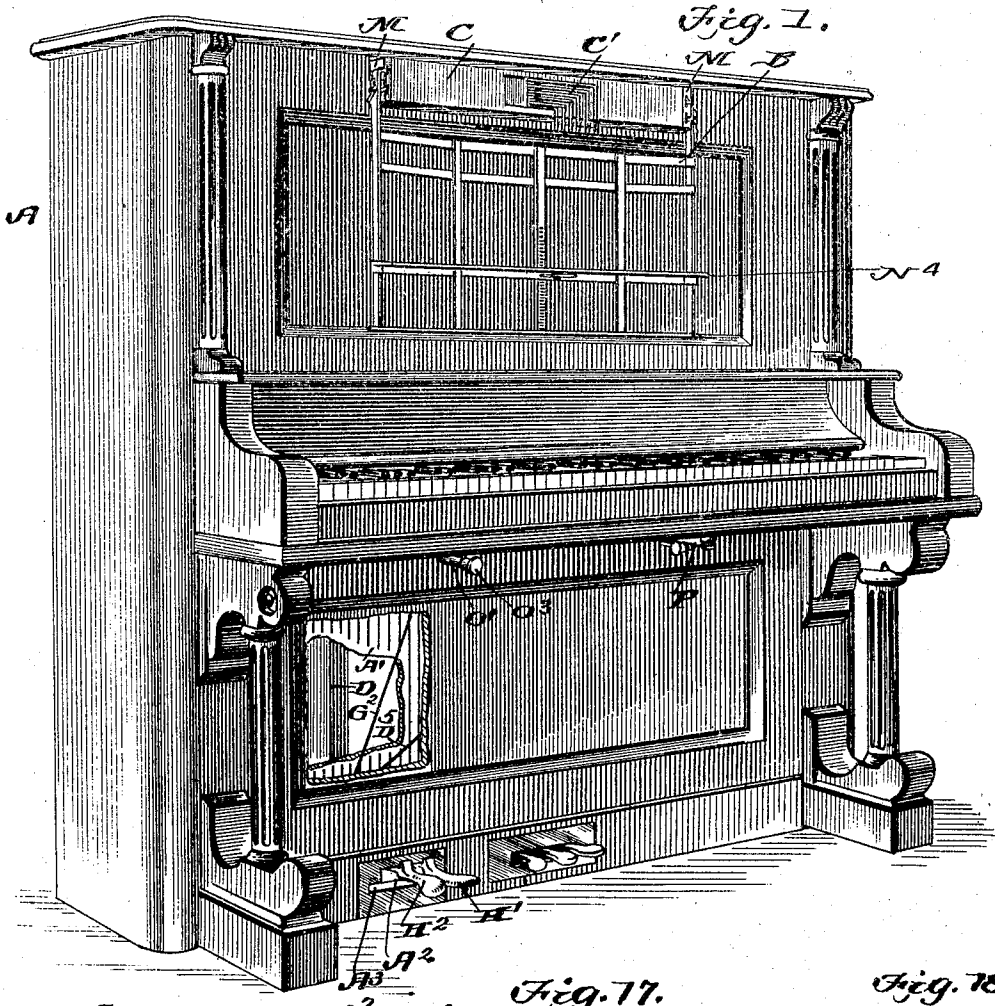


Fig. 17.

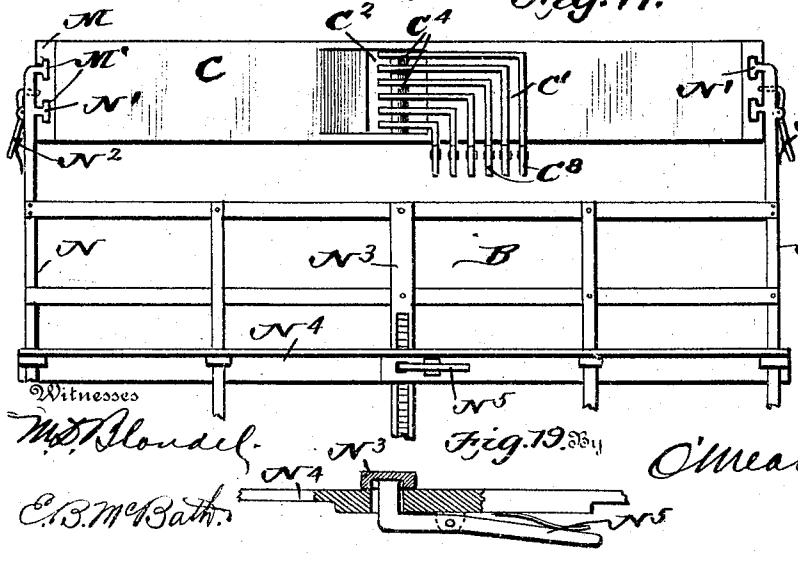


Fig. 18.

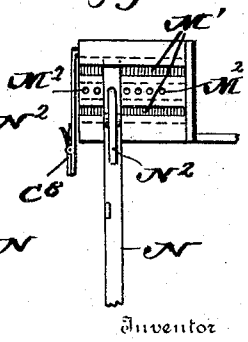


Fig. 19.

Witnesses

M. T. Blondel.

E. B. McGrath.

Inventor

S. C. Shaw.

By

O'Meara & Brock.

Attorneys

No. 794,126. PATENTED JULY 4, 1905.

S. C. SHAW.

MUSIC LEAF TURNER.

APPLICATION FILED JULY 2, 1904.

6 SHEETS—SHEET 2.

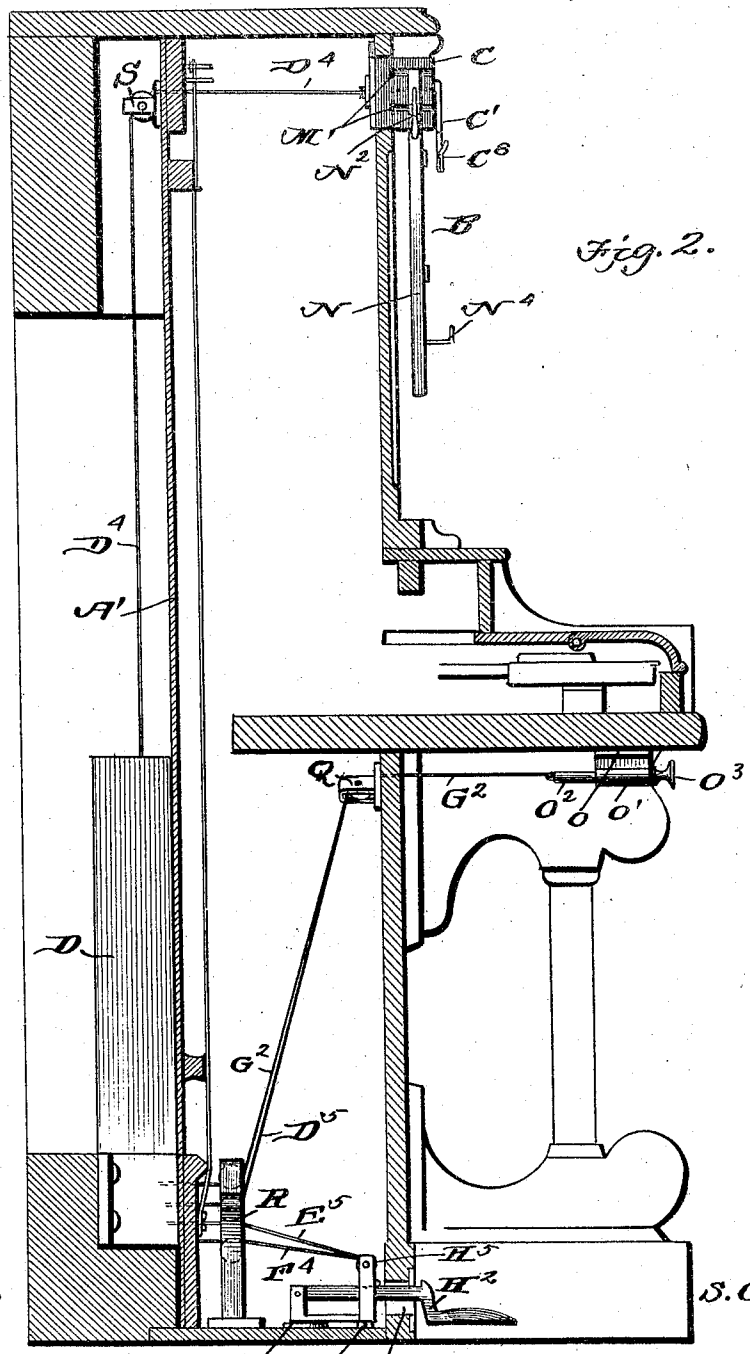


Fig. 2.

Witnesses

W. L. Blondel.

E. B. McBath

Inventor

S. C. Shaw

By

Allen & Brock

Attorneys

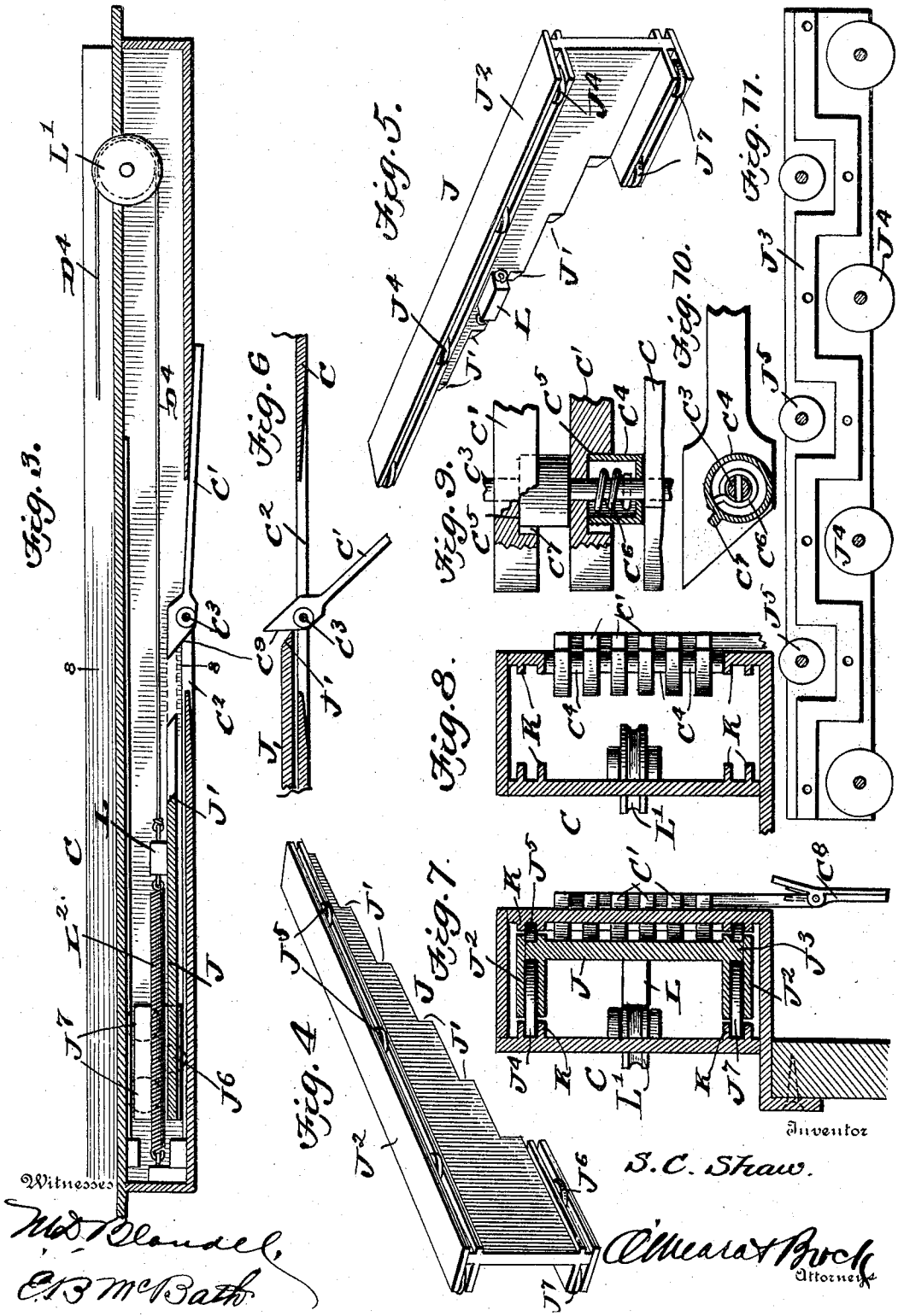
No. 794,126. PATENTED JULY 4, 1905.

S. C. SHAW.

MUSIC LEAF TURNER.

APPLICATION FILED JULY 2, 1904.

6 SHEETS—SHEET 3.



No. 794,126. PATENTED JULY 4, 1905.

S. C. SHAW.

MUSIC LEAF TURNER.

APPLICATION FILED JULY 2, 1904.

6 SHEETS—SHEET 4.

Fig. 72.

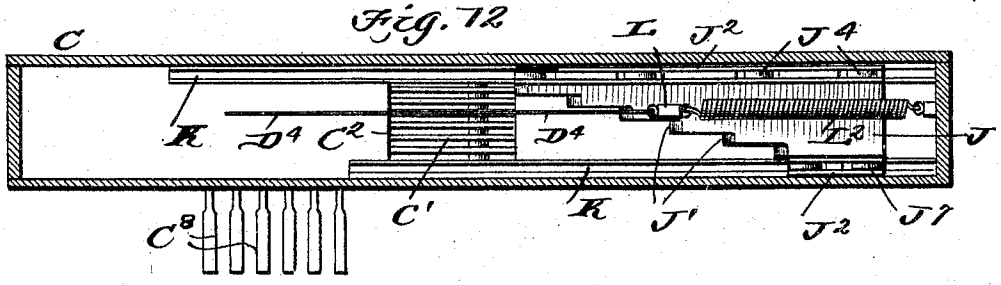


Fig. 74.

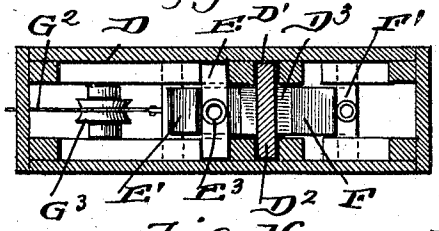


Fig. 73.

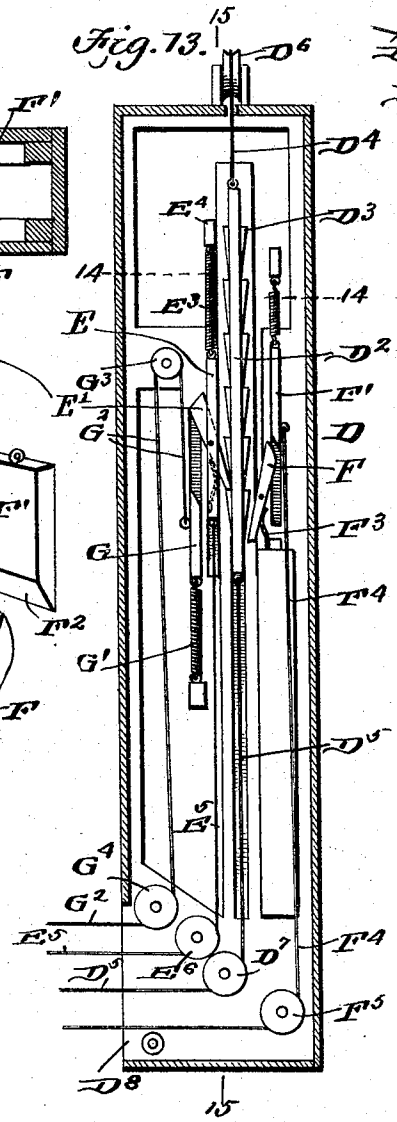


Fig. 75.

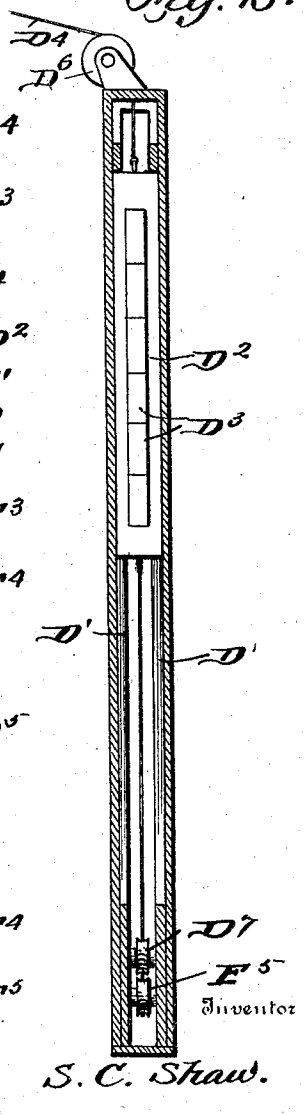
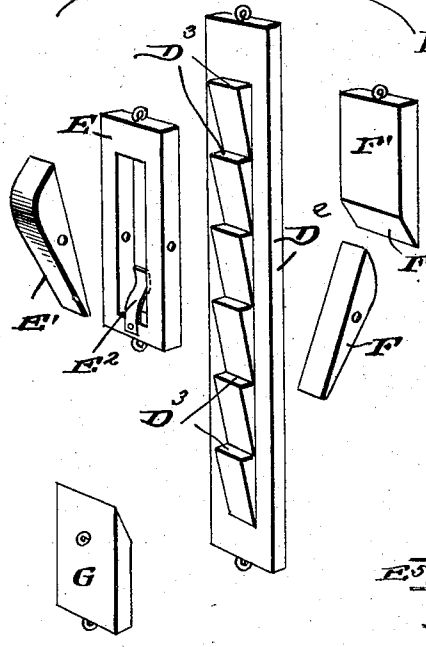


Fig. 76.



Witnesses

W. B. Blouse Jr.

C. B. McBath.

Inventor

S. C. Shaw.

By O'Meara & Brock, Attorneys

No. 794,126. PATENTED JULY 4, 1905.

S. C. SHAW.

MUSIC LEAF TURNER.

APPLICATION FILED JULY 2, 1904.

6 SHEETS—SHEET 5.

Fig. 20.

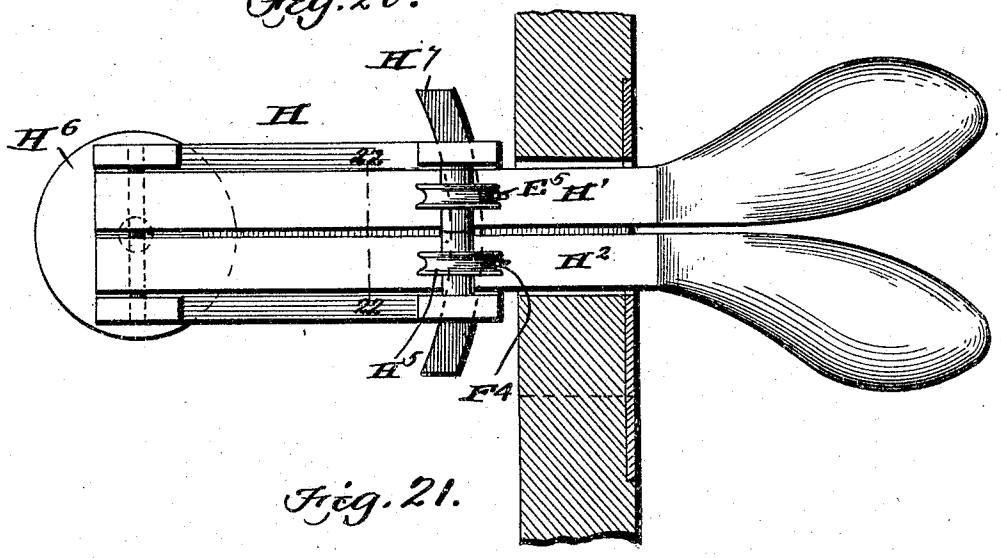


Fig. 21.

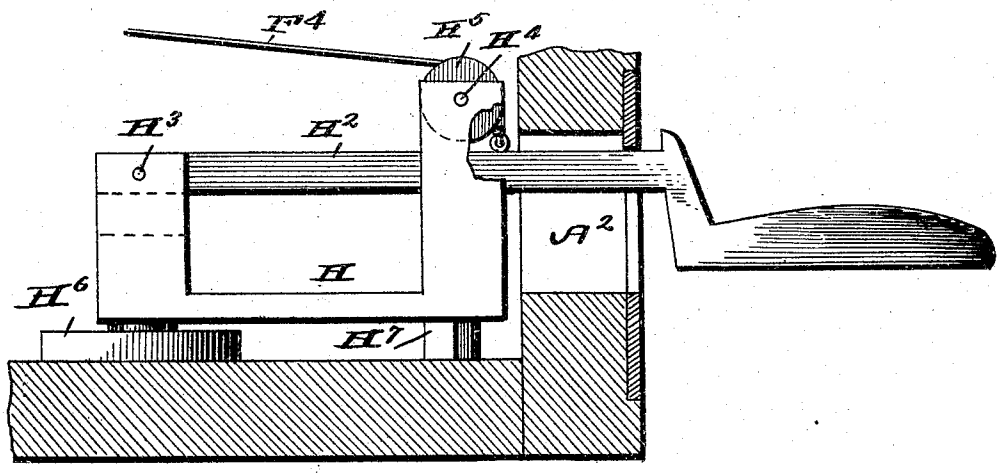
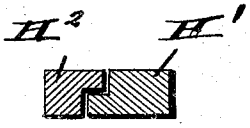


Fig. 22.



Inventor

S. C. Shaw.

Witnesses

W. B. Blondel,

E. B. McBath.

By O'Meara & Brock, Attorneys

No. 794,126. PATENTED JULY 4, 1905.

S. C. SHAW.

MUSIC LEAF TURNER.

APPLICATION FILED JULY 2, 1904.

6 SHEETS—SHEET 6.

Fig. 23.

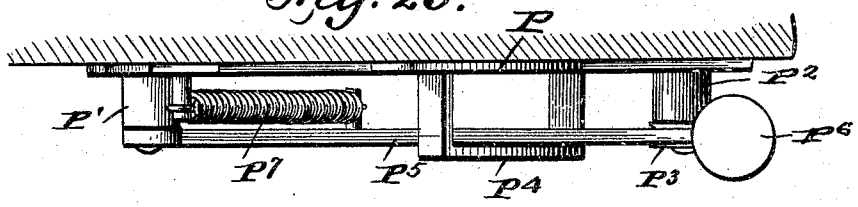


Fig. 24

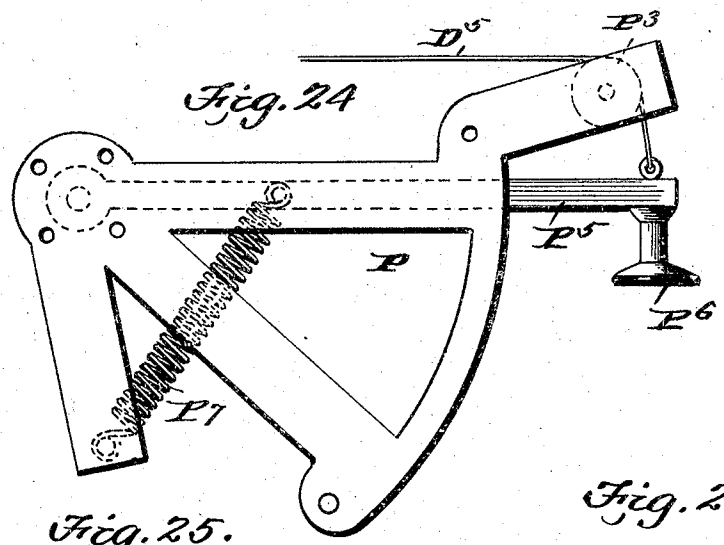


Fig. 25.

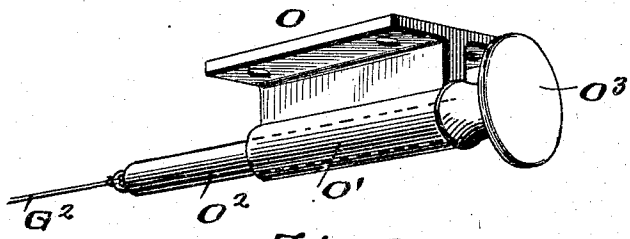


Fig. 27.

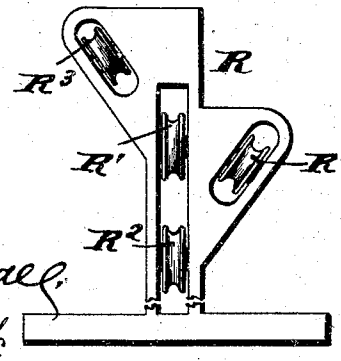


Fig. 26.

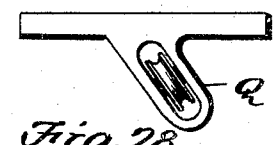


Fig. 28.

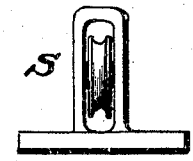
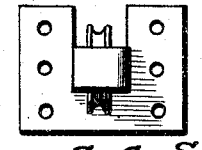


Fig. 29.



Witnesses

W. D. Blondell.

E. B. McBath.

Inventor

S. C. Shaw.

By O'Meara & Brock

Attorneys

No. 794,126. Patented July 4, 1905.

UNITED STATES PATENT OFFICE.

SLATER COWART SHAW, OF NORFOLK, VIRGINIA.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 794,126, dated July 4, 1905.

Application filed July 2, 1904. Serial No. 215,164.

To all whom it may concern:

Be it known that I, SLATER COWART SHAW, a citizen of the United States, residing at Norfolk, in the county of Norfolk and the State of Virginia, have invented a new and useful Music-Leaf Turner, of which the following is a specification.

This invention relates to an attachment especially designed for use on pianos, though not limited to use in combination with such instruments, the object of which is to turn the leaves of a musical composition, either in book or sheet form.

An object of the invention is to provide such an attachment which can have its operating mechanism in the main incased within the musical instrument to which it is attached and of which it is practically a part.

A further object is to provide means for operating the mechanism, or for setting free springs which will operate it, within easy reach of the hands and feet of the player, and by thus dividing the operative means between foot-pedals and hand-stops a multiplicity of either, which would be confusing to the player, is avoided, and the entire mechanism is controlled by two pedals and two stops.

The invention consists in the novel features of construction and combination of parts hereinafter described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a piano, parts being broken away and having my music-leaf turner applied thereto. Fig. 2 is a vertical section taken through the sounding and key boards and showing the position occupied by the various parts of my device with reference to the sounding-board and keyboard of the piano. Fig. 3 is a longitudinal section through the casing containing the finger-moving mechanism and carrying the leaf-turning fingers, the fingers being shown in plan. Figs. 4 and 5 are detail perspective views of the finger-tripping slide. Fig. 6 is a detail sectional view. Fig. 7 is a transverse section through the casing and tripping-slide. Fig. 8 is a section on the line 8 8 of Fig. 3, the slide being omitted. Figs. 9 and 10 are detail views, partly in section, showing the manner of pivoting the fingers. Fig. 11 is a side view of the finger-tripping slide, partly in section, an outer cover-plate being removed. Fig. 12 is a view in elevation of the leaf-turning fingers and the actuating mechanism, the casing being in section. Fig. 13 is a vertical section through the casing containing the mechanism inclosed within the piano-case. Fig. 14 is an irregular section on the line 14 14 of Fig. 13. Fig. 15 is a section on the line 15 15 of Fig. 13. Fig. 16 is a detail perspective view of various portions of the mechanism shown in plan in Fig. 13, the various parts being detached from the casing and from each other. Fig. 17 is a front face view of the music-rack and casing carried by piano. Fig. 18 is a partial end view. Fig. 19 is a detail view, partly in section, showing the manner of locking the end rack-bars to the finger-carrying casing. Fig. 20 is a plan view of the pedals controlling the finger-actuating mechanism. Fig. 21 is a vertical elevation of the pedals, the piano-casing being shown in section. Fig. 22 is a section on the line 22 22 of Fig. 20. Fig. 23 is a side elevation of the hand-operated release mechanism arranged under the keyboard of the piano, shown in section, the release being actuated by the right hand. Fig. 24 is a plan view of the attachment shown in Fig. 23. Fig. 25 is a detail perspective view of the attachment controlled by the left hand. Figs. 26, 27, 28, and 29 are detail views of pulley-holding brackets.

The above-described invention will be more clearly understood by bearing in mind that the leaf-turning fingers are carried by an exterior casing mounted upon the front of the piano A and actuated by spring-actuated mechanism arranged in the said casing, and the action of the said mechanism is regulated by mechanism carried in an interior casing arranged in the rear of the sounding-board A′ and which is controlled by foot and hand operated attachments projecting from the front of the piano below the keyboard.

In Fig. 1 of the drawings the piano A carries above the keyboard a specially-constructed music-rack B, and above the music-rack is arranged the casing C, carrying the leaf-turn-

ing fingers C′, the rack B depending from the casing C and being adjustable with reference to the casing C.

The operation of the various parts will be best understood by first considering in detail the mechanism carried by the casing D, arranged within the piano-case. Sliding in vertical guideways D′, arranged in the casing D, is a block D^2, having on opposite sides wedge-shaped rack-teeth D^3, all of which are downwardly inclined. Eyes are attached to each end of the block D^2, and to these eyes are secured cables D^4 and D^5, the cable D^4 extending upwardly through an opening in the top of the casing and passing over a pulley D^6, carried upon the top of the casing D. The cable D^5 extends downwardly and passes over the pulley D^7, one of a number secured in the lower portion of the casing D, and passes out through an opening D^8, formed in the lower portion of the casing D. Arranged within the casing and parallel to the block D^2 is an open rectangular slidable frame having eyes carried in its upper and lower end members, and this frame E is adapted to be moved vertically, and pivoted between the side members of the frame E is a pawl E′, wedge-shaped, and a curved spring E^2, carried by the lower end member of the frame E, normally holds the pawl E′ in engagement with one of the rack-teeth D^3 of the block E^2. A coil-spring E^3 has its upper end secured to a block E^4, carried by the casing D, and its lower end is connected to the eye carried by the upper member of the frame E. To the eye carried by the lower end member of the frame E is connected the cable E^5, which passes downward and over the pulley E^6 and thence out the opening D^8, parallel to the cable D^5. On the opposite side of the block D^2 from the frame E there is pivoted within the casing D a pawl F, the lower end of which is adapted to engage the teeth D^3, formed on that side of the block D^2, and the upper end of the pawl is curved, and when the lower end is in engagement with a tooth D^3 the curved upper end projects over a suitable slot, channel, or guideway in which a block F′ is adapted to slide, and the block F′ has a beveled lower end F^2, adapted to engage the curved end of the pawl F and to force the pawl F out of engagement with the teeth D^3, a spring F^3 bearing on the lower end portion of the pawl F and tending to normally hold the same in engagement with the teeth D^3. An eye of the usual kind is secured to one side of the block F′, and to this eye is secured an end of a cable F^4, which extends downwardly and over a pulley F^5 and thence outwardly through the opening D^8. The pawl E′ is also rounded upon one side adjacent its upper end, and when its lower end is in engagement with a tooth D^3 the rounded end portion of the pawl is projected over a suitable channel-way in which slides a block G, similar in construction to the block F′. A coil-spring G′ is secured at its lower end to a suitable block carried by the casing D below the block G, and at its upper end it is secured to an eye carried by the lower end of the block G. The upper end of the block G is beveled and is adapted to engage the upper end portion of the pawl E′ and force the lower end of the said pawl out of engagement with the teeth D^3. To an eye carried by the side of the block is secured a cable G^2, which passes upwardly and over a pulley G^3 and thence downwardly and over a pulley G^4 and thence outwardly through the opening D^8. The upwardly-extending cable D^4 extends to the casing C, and the cables E^5 and F^4 run to the right and left pedals, respectively.

Referring more especially to Figs. 20, 21, and 22, it will be noted that within the piano-casing A is arranged on the floor of said casing a bracket H, comprising a base-plate and parallel upwardly-extending arms at each corner of the plate. The foot-pedals H′ and H^2 are pivotally hung adjacent their inner ends on a pintle H^3, carried by the rear arms of the bracket H. The forward arms project above the pedals and on each side of same, and in these arms are journaled the ends of a shaft H^4, on which are mounted idle pulleys H^5. Eyes are inserted in the upper face of the pedals adjacent and in advance of the pulleys, and the cable E^5 runs over one of these pulleys and is connected to the eye carried by the right-hand pedal H′, and the cable F^4 runs over the other pulley and is connected to the eye carried by the pedal H^2 on the left-hand side. It will be noted from Fig. 22 that the portion of the pedals within the casing A are angled in cross-section, the angled portion of the pedal H^2 overhanging or overlapping that of the pedal H′, the latter being the main pedal and capable of independent operation; but when the pedal H^2 is depressed both pedals are actuated. The pedals project through a suitable opening in the piano-casing *a* and exterior of same may have any desirable configuration.

The casing C is connected in any desired manner to the front of the piano-casing and adjacent the upper edge or top of the same. The casing C has an opening C^2 formed in its front and intermediate its ends, and in this opening is arranged vertically a shaft C^3, and on this shaft, which is fixed, is arranged alternately the fingers C′ and cups or bearings C^4. One side, preferably the lower side, of each finger C′ is recessed, as shown at C^5, the shaft C^3 passing through the recesses. Cylindrical cups are arranged on the shaft, the cups resting on one of the fingers and projecting into the recess of the adjacent finger, and in each cup is arranged a spring C^6, one end of which is secured in an aperture formed in the shaft C^3 and the opposite end being secured in the wall of the cup C^4. Each cup is also formed with a lug C^7, which projects into a supplemental recess or socket formed in the wall of the re-

cess C^5. By this arrangement each finger is independent of the other and may be swung pivotally on the shaft C^3 without having a tendency to move the other fingers. When a finger is swung, however, out of its normal position, which is shown in Fig. 3, the spring C^6, arranged in the cup C^4, connected to the said finger by means of the projecting lug C^7, is twisted on the shaft, and when the force actuating the finger C′ is removed the tension of the spring C^6 returns the finger C′ to its normal position.

The fingers C′ are of varying lengths, as shown in Figs. 1 and 17, and are angled, their outer free end portions extending downwardly, and to the lower end of each finger, the fingers all terminating in the same horizontal plane, is secured a spring-clip C^8, adapted to engage the leaf of music to be turned. The inner end of each finger C′ is in the shape of an arrow-head and is provided with a beveled edge C^9. To actuate these fingers singly and successively, I arrange in the casing C a sliding plate J, which has one side cut away to form a series of steps J′, each step being beveled and adapted to coact with the beveled edge C^9 of one of the fingers C′. The plate J is arranged on edge, and the steps are so formed that the first or upper step will engage the upper or longest of the fingers C′ and the lowest and shortest finger C′ will be engaged last. In order that the plate J may slide smoothly, it is provided with double sides or flanges J^2, those along the upper edge of the plate extending the entire length of the plate and those along the lower edge from the rear end of the plate to a point adjacent the lowest and rearmost step J′. The flanges J^2 along the upper edge are spaced apart by the skeleton frame J^3, and between the two flanges are arranged sets of rollers J^4 and J^5, the rollers J^4 being of greater diameter than those upon the opposite side of the frame J^3 and marked J^5. A roller or disk J^6 is also mounted between the lower set of flanges corresponding to the rollers J^5, and rollers J^7 are carried between the said flanges corresponding to the rollers J^4. By referring to the sectional view in Fig. 7 it will be noted that the plate J lies adjacent the front side of the casing C. By means of parallel cleats K, secured to the inner sides of the casing C, grooves are formed, in which run the rollers just described, the smaller rollers J^5 and J^6 running between the cleats K, carried by the front plate of the casing, and the larger rollers J^4 and J^7 extending to and running in the grooves or guideways formed by the cleats K, carried by the rear side of the casing C. The plate J carries on its inner side a block L, having eyes connected thereto, and the cable D^4 is brought into the casing over a pulley L′ and connected to one eye of the block L. A coil-spring L^2 is connected at one end to the other eye of the block L and at its opposite end is secured in the end of the casing C to the rear of the plate J.

Blocks M are carried by the ends of the casing C and are grooved, as shown at M′, perforations M^2 being formed between the grooves. A music-rack B has vertical side members N, provided with shoes N′, adapted to slide in the grooves M′, the edges of the grooves being undercut. The side members of the rack B are also perforated to aline with the perforations in the blocks M and carry spring-pressed hook members N^2, having ends adapted to pass through the perforations in the said side members of the rack and engage the perforations M^2. The rack B can therefore be adjusted a varying distance from the case of the piano A for a purpose to be hereinafter specified. The music-rack also carries a central vertical bar N^3, having ratchet-teeth formed thereon. The music-rest N^4, carried by the rack B, is slidable upon the vertical members of the rack and carries a pawl or hook member N^5, similar to the hook members N^2, which has a hook end adapted to project through a perforation in the rest N^4 and engage the teeth in the bar N^3, thereby locking the music-rest N^4 in its adjusted position.

The leaf-turning mechanism is operated by the pedal heretofore described; but it is also necessary to provide for turning back all or any of the leaves, either when the piece has been finished or when it has been partly played through and it is necessary to repeat one or more of the pages already played. This is provided for by two pieces of mechanism operated by the right and left hands, respectively, and which control mechanism already described in connection with casing D. On the under side of the keyboard within easy reach of the left hand of the player I secure a bracket O, having a central depending rib, which carries a sleeve O′. A piston or plunger O^2, considerably longer than the sleeve, is adapted to slide in the sleeve and carries on its outer end a circular disk or head O^3, which serves as a handle to be grasped by the fingers. The inner end of the piston is formed with an eye, and to the same is secured the upper outer end of the cable G^2. Under the keyboard and to the right of the player is secured a metal bracket-frame P, from the inner end of which depends a stud or pivot-pin P′. Adjacent the forward end of the bracket-frame one of its arms carries a depending stud P^2, on which is mounted a pulley P^3. An open rectangular frame P^4 depends from the bracket, the frame being curved on the arc of a circle and forms a slideway for a lever P^5. The inner end of this lever is pivoted to the pin P′ and adjacent its outer end carries on the side a vertically-arranged disk P^6, adapted to be pressed by the thumb. A coil-spring P^7 is secured at one end to a pin projecting downwardly from

an arm of the frame P and at its opposite end to the lever P^5 and normally holds the lever to the left-hand end of the frame P^4—that is, the end adjacent the player. The outer end portion of the cable D^5 passes over the pulley P^3 and is secured to the lever P^5. The various cables in passing from the casing D to the front of the piano are passed over suitably-arranged pulleys held in brackets, as shown at Q in Fig. 26, S in Figs. 28 and 29, and at R in Fig. 27. As the bracket R carries all of the cables, it may be stated that the pulley R′ carries the cable E^5 to the main or right-hand side pedal, the pulley R^2 the cable F^4 to the left or reversing pedal, the pulley R^3 the cable G^2 to the releasing device, and the pulley R^4 the cable D^5 to the release-control stop.

Having described the various parts in full, their operation may be briefly summed up as follows: Assuming that the parts are as shown in the drawings, by pressing down the main pedal H′ the frame E in the casing D is drawn downward by the cable E^5, and the pawl E′ engages a tooth D^3 of the block D^2 and forces the block one step downward, and the tooth D^3 on the opposite side of the block D^2 to the step engaged by the pawl E′ is engaged by the pawl F, and when the spring E^3 draws upward the frame E on removal of the foot from the pedal the block D^2 is held from returning to its normal position by the pawl F. It is obvious that by repeated movements of the foot the block D^2 is successively moved downwardly step by step, and each of these downward movements exerts a pull upon the cable D^4. As this cable is connected to the sliding plate J in the casing C, each downward step in the movement of the block D^2 imparts a forward step to the plate J, and each of these steps on the part of the plate J brings a step J′ into engagement with one of the fingers C′, which is forced through an arc of approximately one hundred and eighty degrees and is held in such position against the torsial pull of the spring C^6 by pressure of the plate J. In the drawings I have shown a device with six of the fingers C′ and of course an equal number of steps on the plate J and of teeth on each side of the block D^2; but it will be obvious that any number can be employed within reasonable limits. When the composition has been finished or it is desired to turn back to a former page, the left pedal H^2 is depressed, and this also depresses the right or main pedal H′, so that cables E^5 and F^4 are both acted upon. The cable F^4 draws down the block F′, which strikes and throws the pawl F out of engagement with the teeth D^3; but as the block E has also been drawn downward the block D^2 is held in position and does not immediately fly back, thereby turning the pages instantaneously and running the risk of tearing them and making more or less noise; but as the pedal H^2 is pressed down the plunger-head O^3 is grasped by the fingers and drawn outward, and through the medium of the cable G^2 the block G is drawn upward and, striking the pawl E′ adjacent its upper end, releases the same from engagement with the teeth D^3 of the block D^2. It will be noted that as the block D^2 is moved downward the slack in the cable D^5 is taken up by the spring P^7 gradually throwing the lever P^5 to the left; but it will be understood that the spring P^7 is not strong enough to have any appreciable effect on the action of the spring L^2. The right hand in the meantime grasps the disk or handle P^6 and permits the same to be gradually drawn back to its normal position, and the leaves are thus turned back as slowly as desired, and the backward movement may be stopped at any point desired by releasing the pedal H^2. When all of the pages are to be turned back, it is not necessary to retain the foot on the pedal H^2, as it will be noted that the bracket H is pivoted at its rear end on the plate H^6, its forward end swings on the segmental wear-plate H^7, and the opening A^2, from whence the levers H′ and H^2 project, is reduced in height at one end, as shown at A^3, and by means of a lateral pressure on the pedals they are swung into this reduced portion of the opening A^2 and held in their depressed position.

From the above description it will be noted that the turning of the leaves is under the control of the player, not only as to the direction in which they are turned and the number turned, but in turning them back they can be turned quickly or slowly, as may be desired, and all may be turned back or only a portion of them.

It is obvious that the cables may be of cord or wire, that pulleys may be placed as may be found necessary in various makes of pianos, and that weights might be substituted for some of the springs without departing from the spirit of my invention. It will also be obvious that the music-rack B can be adjusted outwardly to accommodate books of varying thickness and vertically to adjust the rack for use with music in book and sheet form.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device of the kind described comprising a casing adapted to be secured to a piano, said casing having an opening in the front thereof, a shaft secured vertically in the opening, a plurality of leaf-turning fingers loosely mounted in vertical alinement on the said shaft, each finger being recessed adjacent the shaft, a plurality of cups loosely mounted on the shaft and alternating with the fingers, each cup extending in the recess of a finger, a spring arranged in each cup, the said spring having one end secured to the cup and the

other end to the shaft, means connecting the cups and fingers, and means for successively moving the said fingers.

2. The combination with a piano, of a casing having an opening therein, a plurality of leaf-turning fingers having their inner ends projecting into the said opening, a slidable finger-tripping plate having a series of steps formed on one of its sides adapted to engage successively with the inner ends of the fingers, and means for moving the plate step by step.

3. The combination with a piano, a casing having an opening therein and adapted to be secured to the piano-front, pivoted leaf-turning fingers carried by the said casing and having beveled end portions projecting into the opening, springs adapted to normally hold the fingers adjacent the side of the casing to the right of the opening, a slidable plate carried within the casing and having a series of beveled steps adapted to successively engage the beveled ends of the fingers, means for moving the plate step by step, and means for entirely or partially retracting the plate at the will of the operator.

4. A device of the kind described comprising a casing having an opening therein, a shaft in the opening, a plurality of leaf-turning fingers mounted loosely on the shaft and having end portions projecting into the opening, longitudinally-arranged guideways arranged within the casing, a plate cut to form a series of steps along one edge, rollers mounted on the plate and adapted to travel in the guideways, and means for advancing the steps of the plate into engagement with the inner projecting ends of the fingers, as and for the purpose set forth.

5. A device of the kind described comprising a piano-casing carrying a music-rack, a casing arranged upon the piano above the said rack, the casing having an opening therein, leaf-turning fingers pivotally carried by the casing, said fingers having end portions projecting from the opening, said fingers being angled and of varying lengths, spring-clips connected to the outer, lower ends of the fingers, a sliding plate having a series of steps formed thereon, an operating mechanism arranged within the piano, a foot-pedal adapted to actuate the said mechanism step by step, a cable connecting the mechanism to the sliding plate and adapted to draw the steps of the plate into engagement with the fingers, a spring adapted to withdraw the plate from engagement with the fingers, and springs adapted to return the fingers to their normal position on withdrawal of the plate.

6. A device of the kind described comprising a casing, a toothed block adapted to slide therein, a movable block carrying a pawl adapted to engage the teeth of the slidable block, a pivoted pawl adapted to engage the teeth of the block, a pedal, a cable connecting the pedal and the movable block, leaf-turning fingers, mechanism adapted to actuate the said fingers, a cable connecting the toothed block to said finger-actuating mechanism, and means for returning the block and fingers to their normal positions.

7. In combination with a casing carried by the front of a piano and carrying fingers and finger-actuating mechanism, a casing carried within a piano, a toothed block adapted to slide in said casing, a cable connecting one end of the said block to the finger-actuating mechanism in the first-mentioned casing, a lever pivoted upon the under side of the piano-keyboard, a cable connecting the opposite end of the toothed block to the said lever, a spring connected at one end to the lever and adapted to move the lever to take up the slack in the last-mentioned cable, means for moving the toothed block step by step in the direction of the last-mentioned cable, and means for returning it to its normal position, as and for the purpose set forth.

8. In combination with a piano-casing having an opening reduced in height adjacent one end, pedals pivoted within the casing and projecting from the opening, pivoted leaf-turning fingers, a sliding plate having steps formed thereon adapted to successively engage the fingers, a movable toothed block, a movable block carrying a pawl adapted to engage the toothed block, a pivoted fixed pawl adapted to engage the teeth of the block, a movable block adapted to engage the fixed pawl, a cable connecting the pawl-carrying block to one of said pedals, a cable connecting the block adapted to engage the fixed pawl to the other pedal, a cable connecting the toothed block to the slidable stepped plate, a spring adapted to retract said plate, a release-controlling lever, a cable connecting the release-controlling lever to the toothed block, and means for releasing the toothed block from engagement with the pawl carried by the movable block.

9. In a music-leaf turner comprising a toothed movable block, means for moving the block step by step means for returning the block to its normal position, and a release-controlling device comprising a bracket secured below the piano-keyboard, a lever pivoted to said bracket, a spring connected at one end to the bracket and at the opposite end to the lever, and a cable connecting the lever and the movable block, as and for the purpose set forth.

10. A music-leaf turner adapted to be attached to a piano comprising pedals having overlapping flanges, said pedals being pivoted within the piano-casing and projecting through an opening reduced in size adjacent one end, leaf-turning fingers carried adjacent the music-rack of the piano, a slidable plate adapted to engage and turn the fingers, a movable toothed block, pawls adapted to engage the said block, a cable connecting the toothed block and the slidable plate, a movable frame

carrying one of the pawls, a cable connecting the movable frame to one of the pedals, a block adapted to engage the other pawl, a cable connecting the block and the remaining pedal, a movable block adapted to engage the pawl carried by the movable frame, a sleeve carried by the under side of the piano-keyboard, a plunger in said sleeve, a cable connecting said plunger to the last-mentioned block, a lever carried by the under side of the keyboard, a cable connecting the toothed block and the said lever, and a spring connected to the lever and adapted to take up the slack in the last-mentioned cable.

SLATER COWART SHAW.

Witnesses:
O. C. DAWSON,
GEO. M. HERBERT.