(No Model.) 6 Sheets—Sheet 1.

J. A. WESER.

PIANOFORTE.

No. 560,249. Patented May 19, 1896.

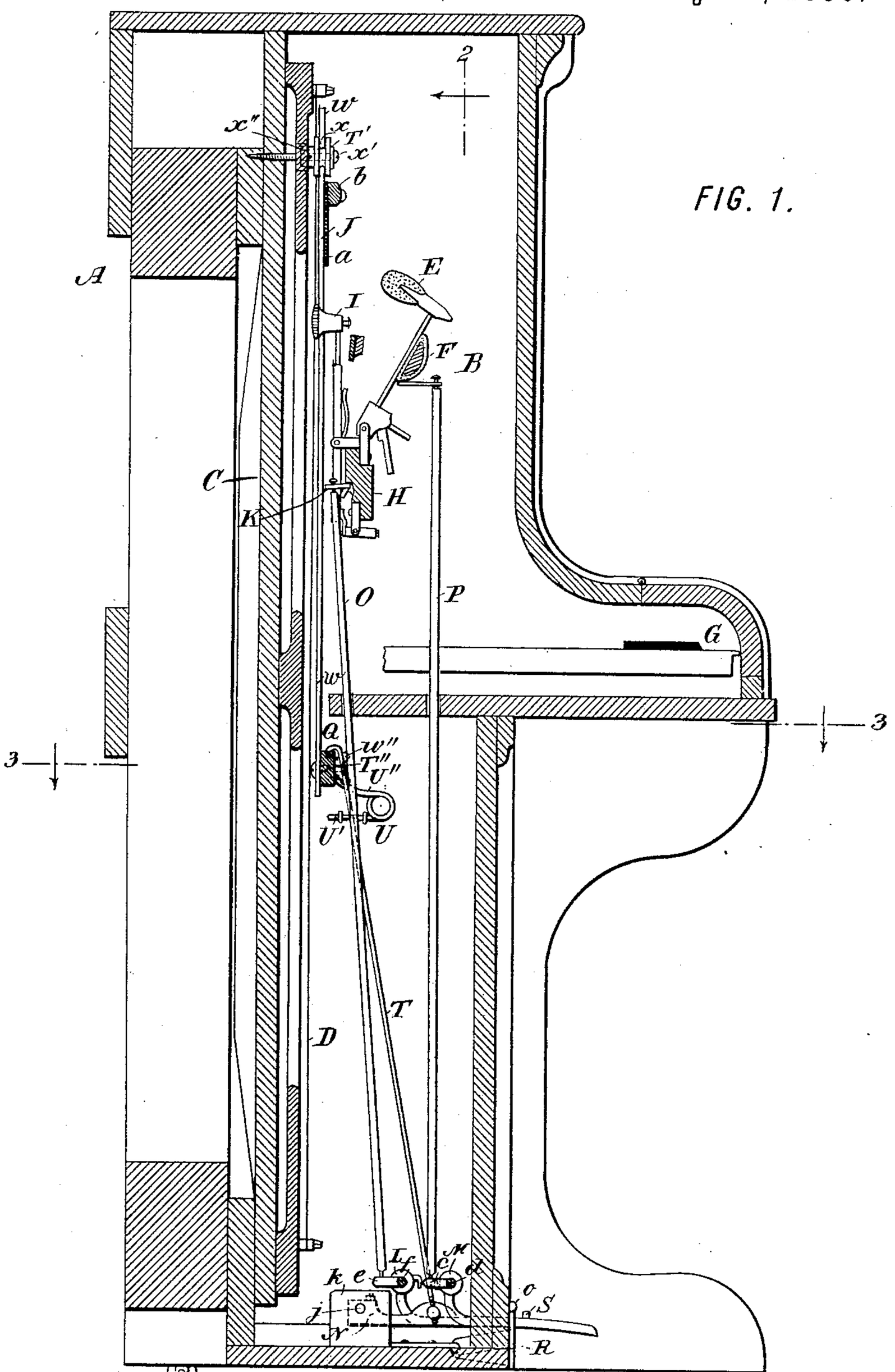


FIG. 1.

WITNESSES:

Fred Whitey

Thomas F. Wallace

INVENTOR:

John A. Weser,

By his Attorneys,

Dustin G. Dyson & Co.

(No Model.)

6 Sheets—Sheet 2.

J. A. WESER.

PIANOFORTE.

No. 560,249. Patented May 19, 1896.

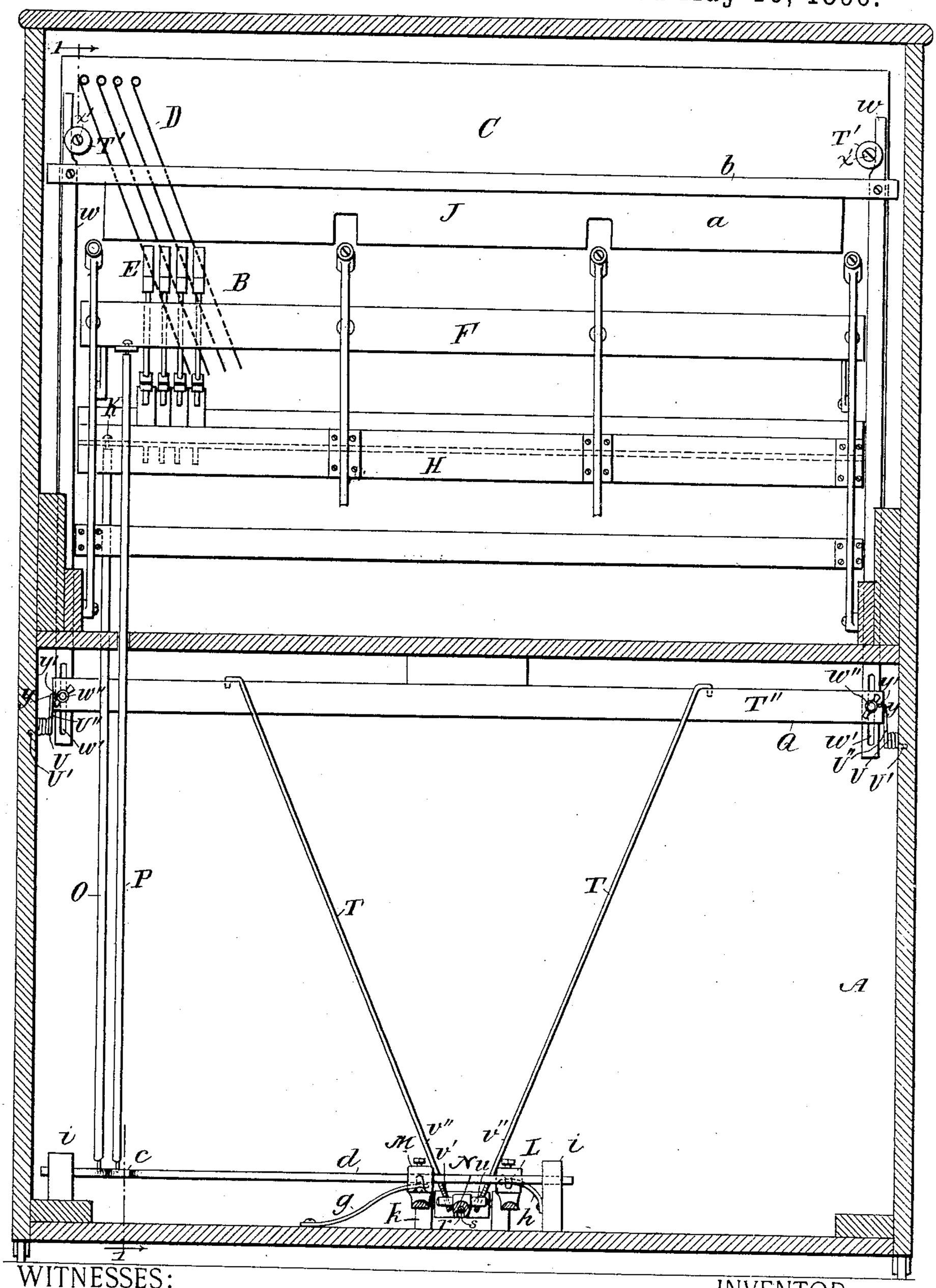


FIG. 2.

WITNESSES:

Fred Whitey

Thomas F. Wallace

INVENTOR:

John A. Weser,

By his Attorneys,

Arthur G. Orasen & Co.

(No Model.) 6 Sheets—Sheet 3.

J. A. WESER.

PIANOFORTE.

No. 560,249. Patented May 19, 1896.

FIG. 3.

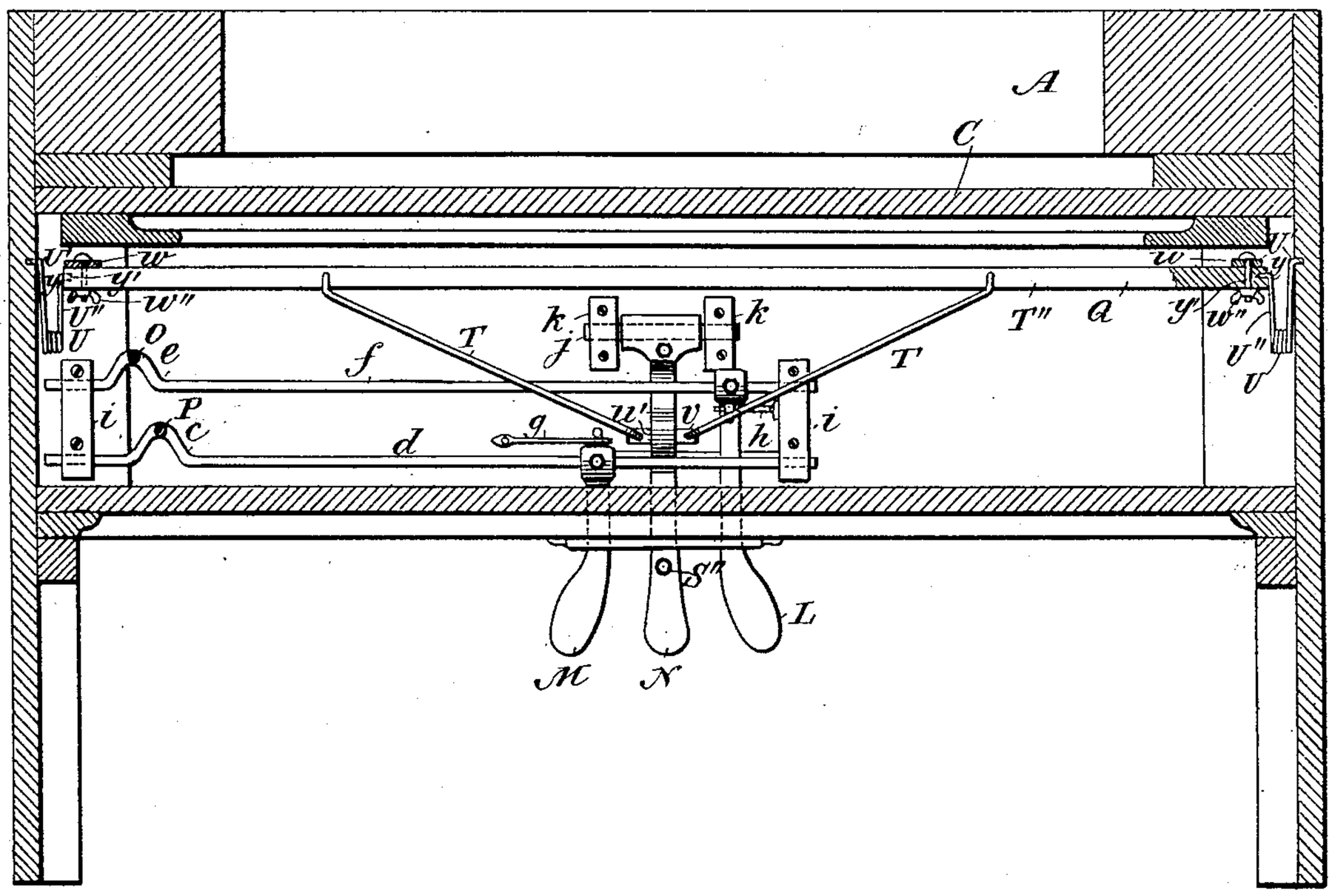
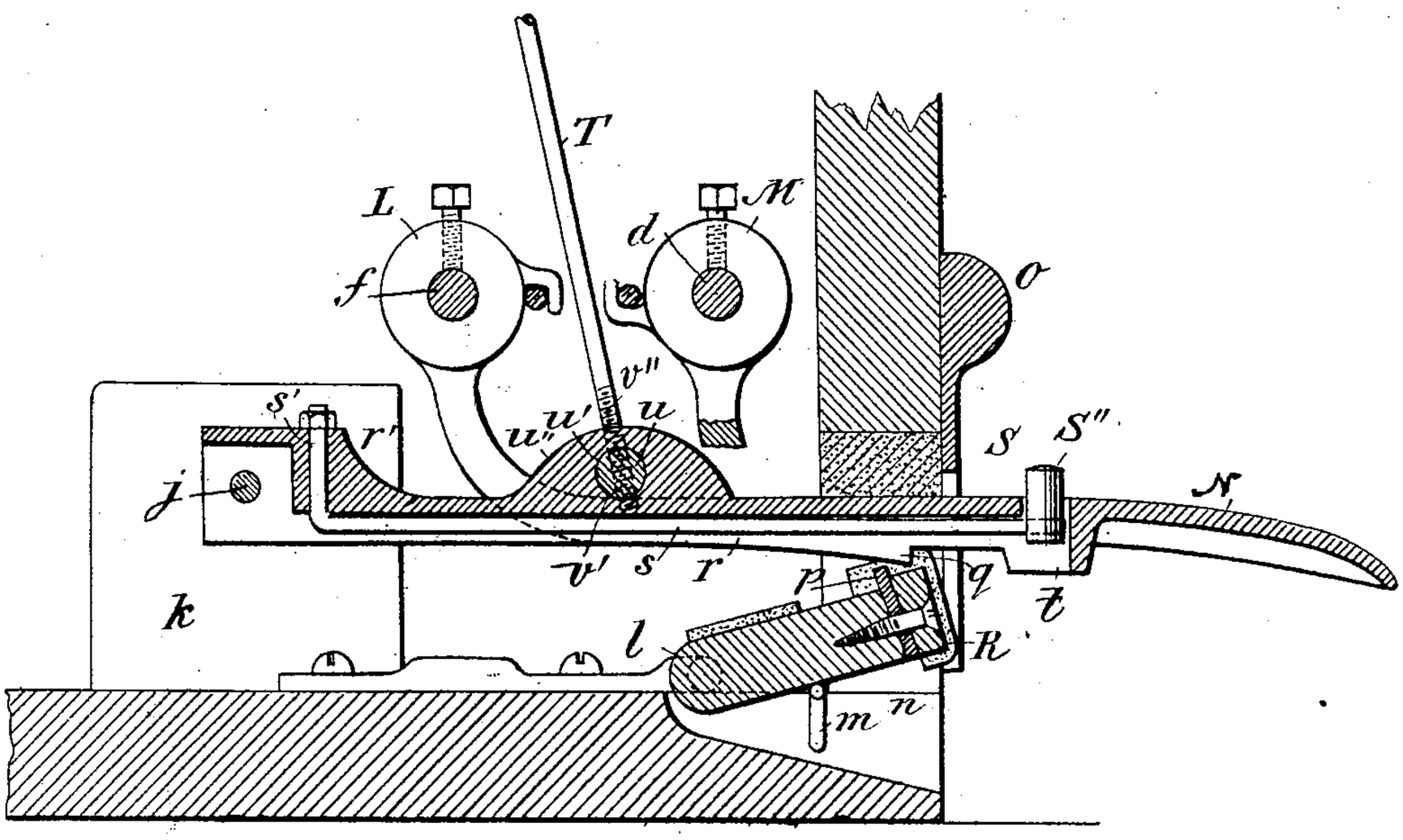


FIG. 4.



WITNESSES:

Fred Whitey

Thomas F. Wallace

INVENTOR:

John A. Weser,

By his Attorneys,

Arthur B. Dyer & Co.

(No Model.)

6 Sheets—Sheet 4.

J. A. WESER.

PIANOFORTE.

No. 560,249. Patented May 19, 1896.

FIG. 5.

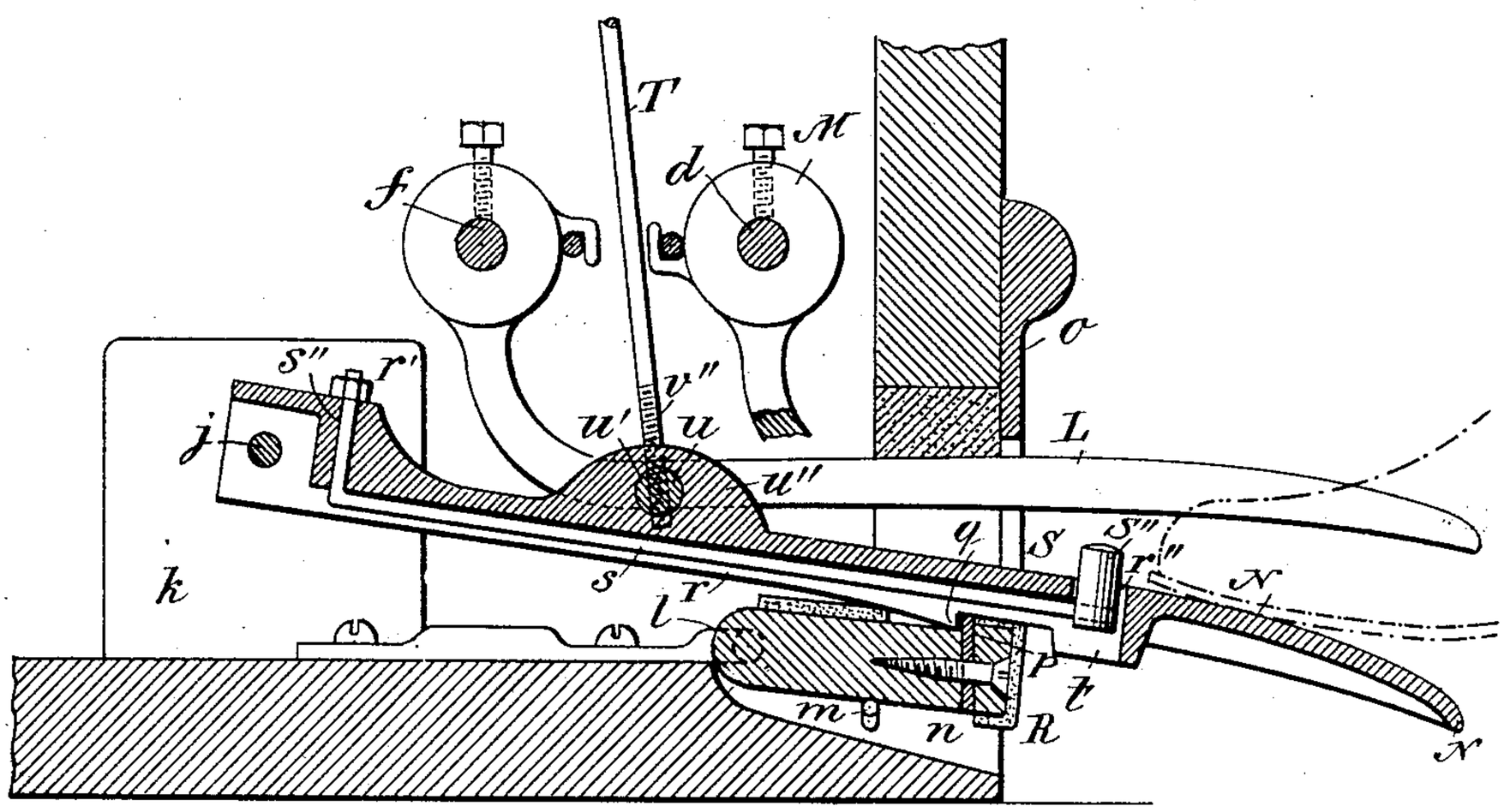
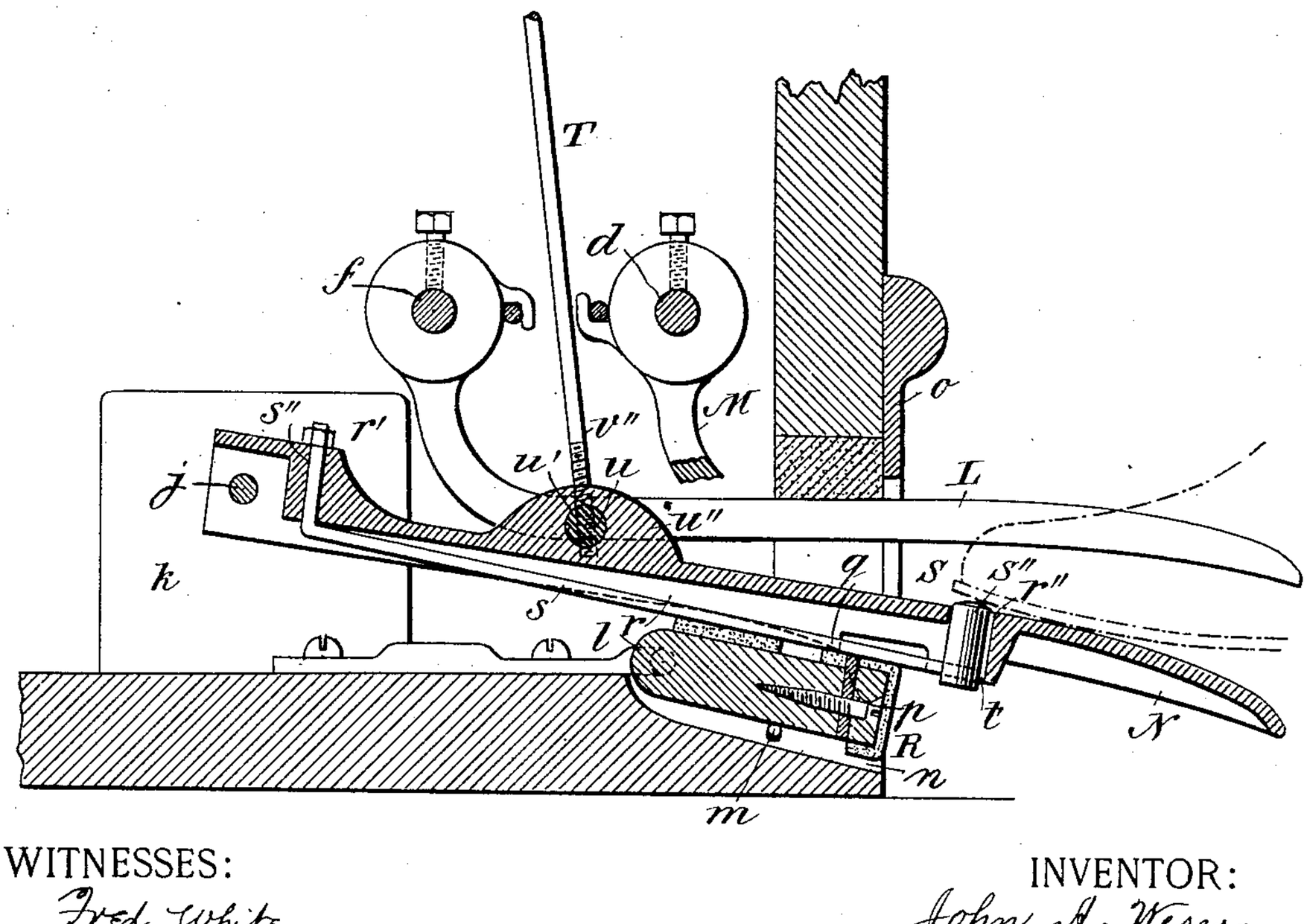


FIG. 6.



WITNESSES:

Fred Whitey

Thomas F. Wallace

INVENTOR:

John A. Weser,

By his Attorneys,

Arthur C. Fraser & Co.

(No Model.)

6 Sheets—Sheet 5.

J. A. WESER.

PIANOFORTE.

No. 560,249. Patented May 19, 1896.

FIG. 7.

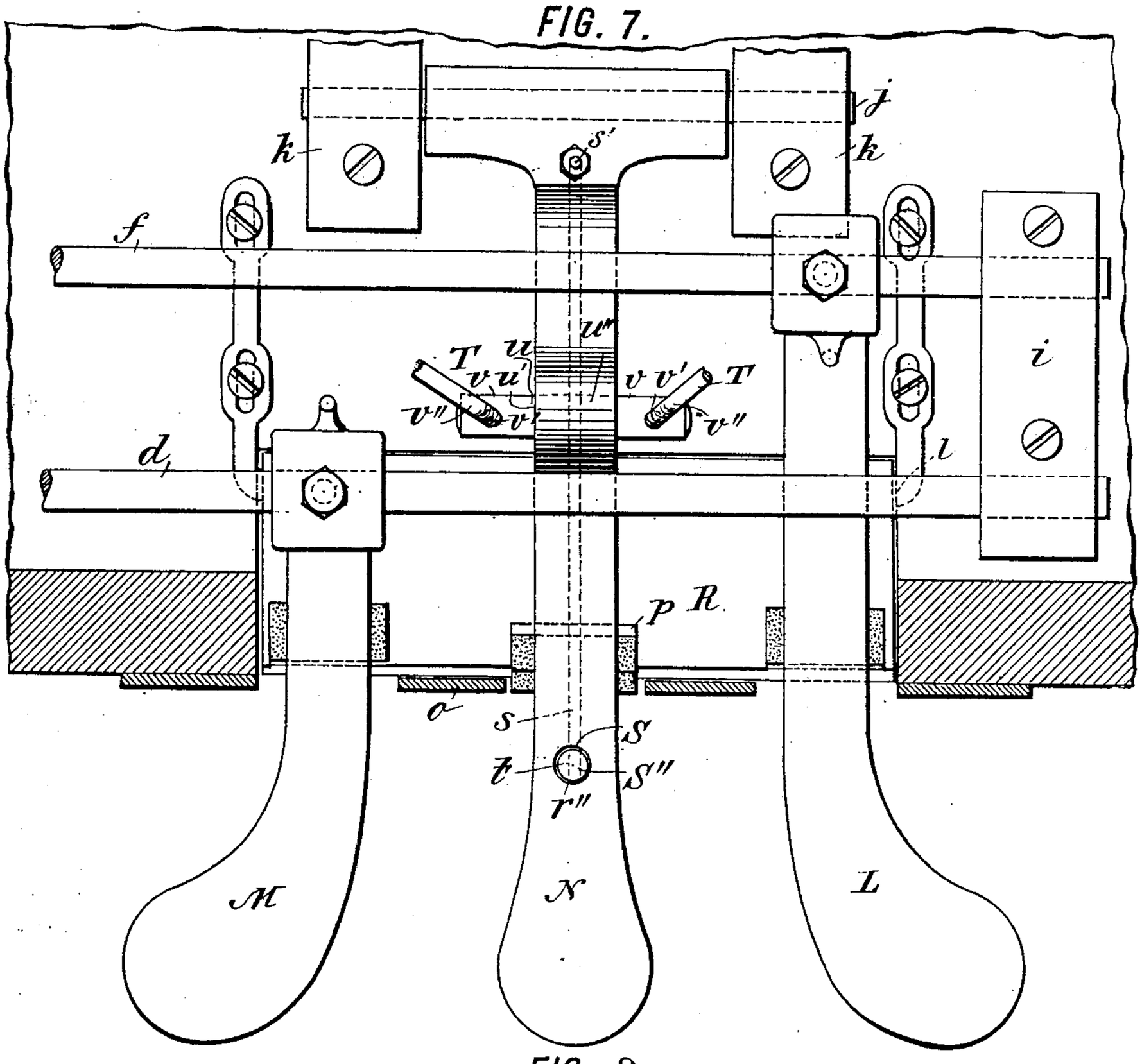
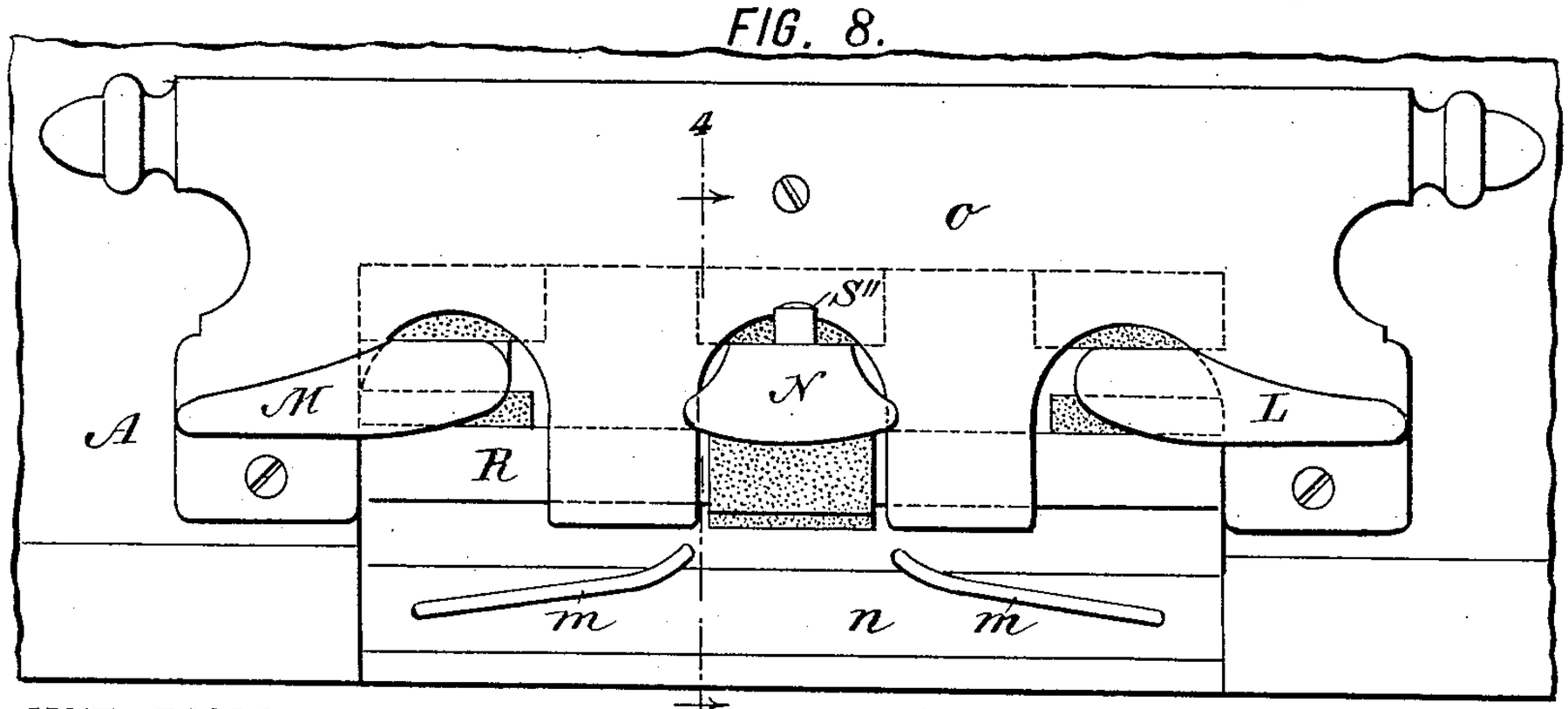


FIG. 8.



WITNESSES:

Fred Whitz

Thomas F. Wallace

INVENTOR:

John A. Weser.

By his Attorneys,

Arthur G. Dixon & Co.

(No Model.) 6 Sheets—Sheet 6.

J. A. WESER.

PIANOFORTE.

No. 560,249. Patented May 19, 1896.

FIG. 9.

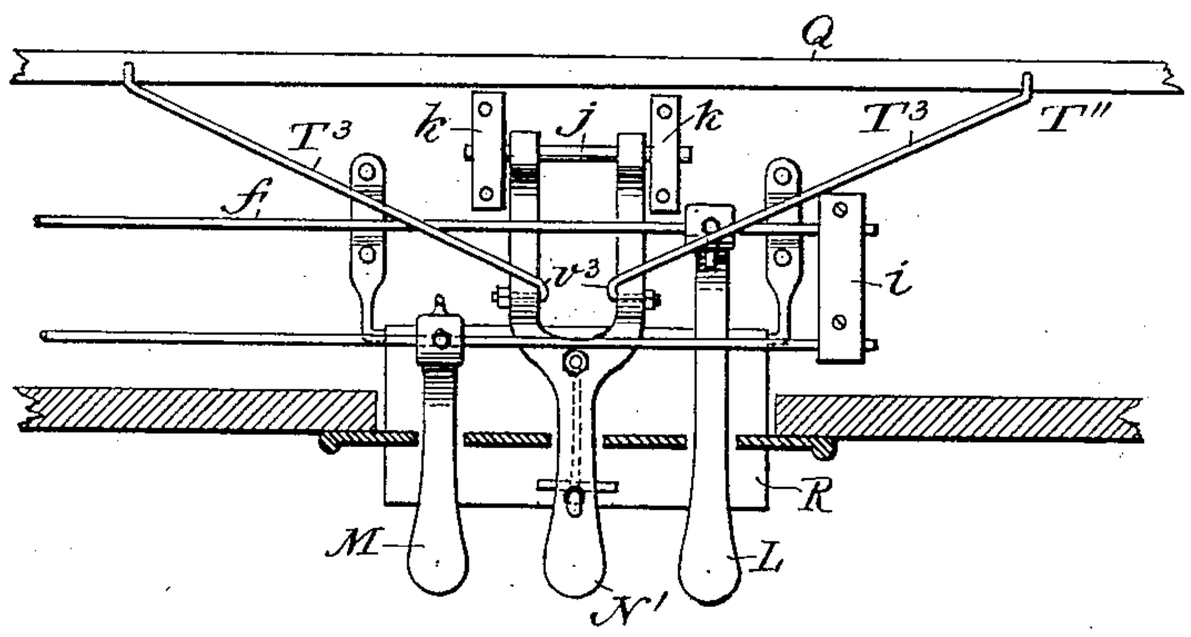


FIG. 10.

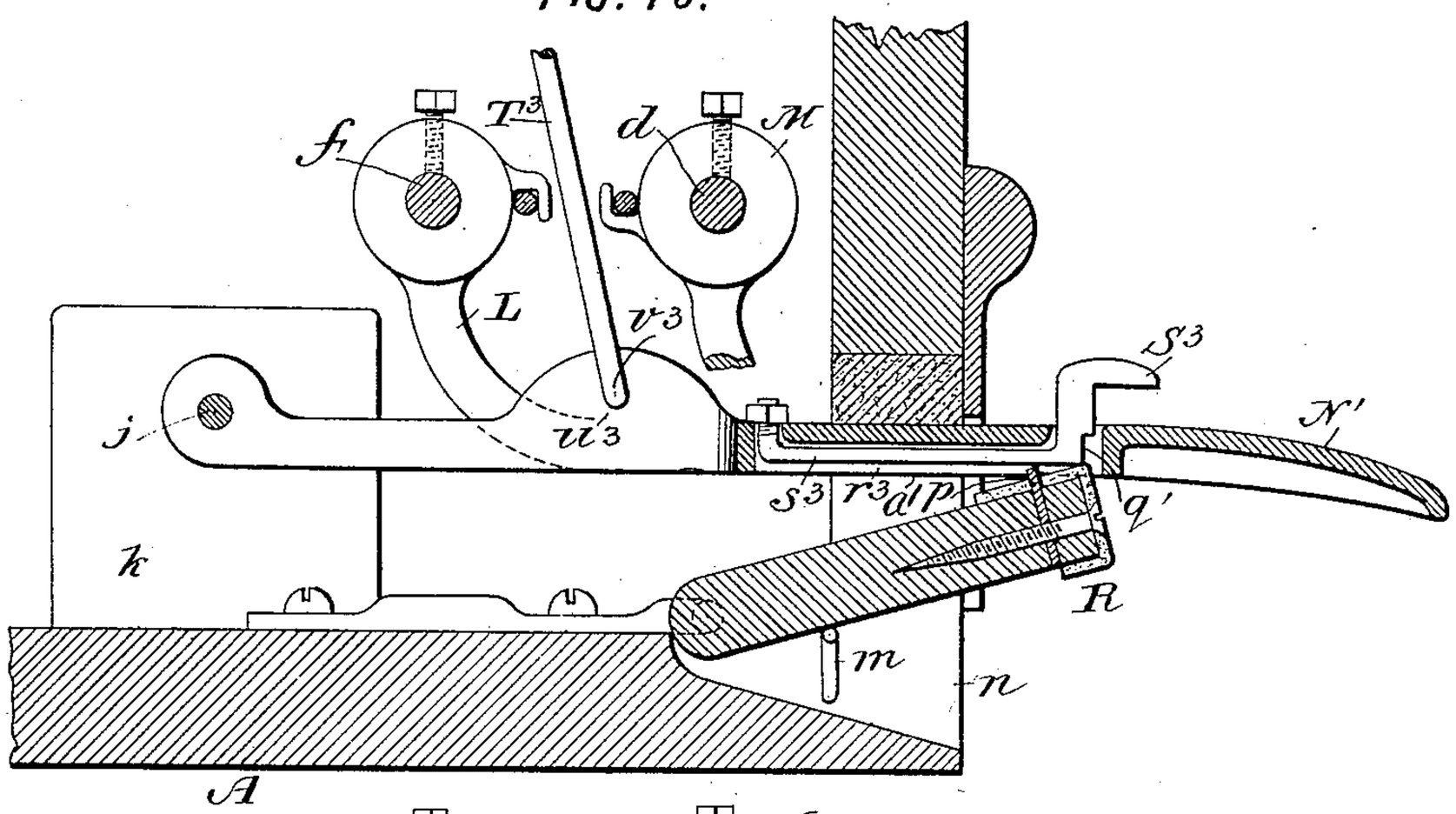
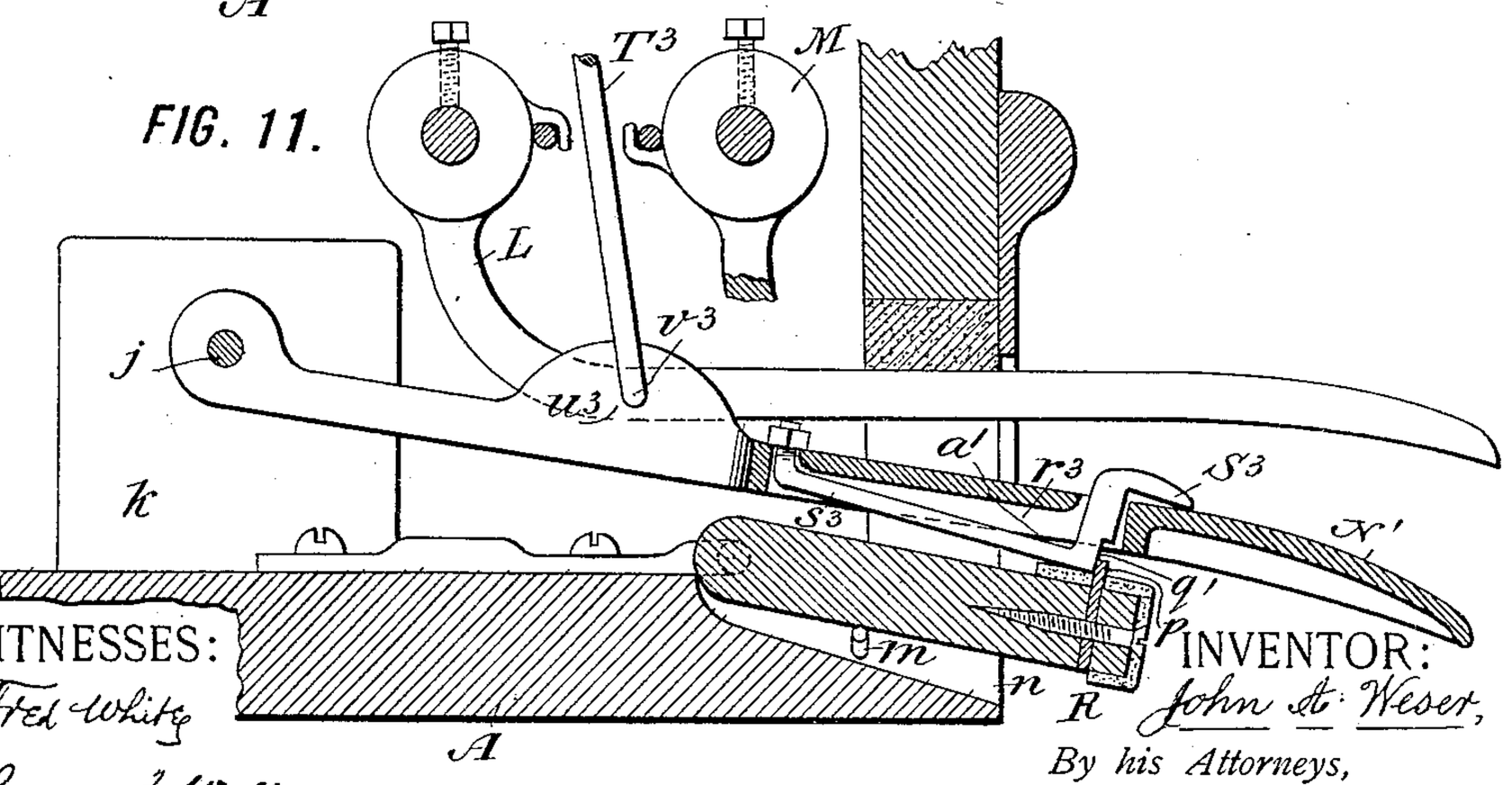


FIG. 11.



WITNESSES:
Fred White
Thomas F. Wallace

INVENTOR:
John A. Weser,
By his Attorneys,
Arthur G. Fraser & Co.

UNITED STATES PATENT OFFICE.

JOHN A. WESER, OF NEW YORK, N. Y.

PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 560,249, dated May 19, 1896.

Application filed November 24, 1894. Serial No. 529,818. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WESER, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Pianofortes, of which the following is a specification.

This invention relates especially to pedal-actions for pianofortes and to the parts operated thereby, and is particularly applicable for use with upright pianos.

Heretofore it has been customary to use in pianos three pedals, the usual soft and forte pedal and an additional pedal operating a harmonic or soft stop device, such as a felt extending in front of the strings and movable between these and the hammers, and in such constructions locks for the auxiliary pedal, retaining it in the depressed position and operated by the depression of the other pedals or by some special unlocking provision, have been employed. One example of such a construction is shown in my United States Letters Patent No. 523,092, dated July 17, 1894.

My present invention aims to provide improvements in pianofortes operating on this general principle, and particularly those of the construction shown in my said patent.

In carrying out the invention in its preferred form I provide an improved pedal-lock and an improved releaser therefor, by means of which the pedal to be locked can be released by pressure upon itself as well as by the depression of a companion pedal. I also provide an improved construction of movable frame for the soft stop or harmonic device and an improved connection between this frame and its pedal, and certain other features of improvement which will be hereinafter fully set forth.

In the accompanying drawings, which illustrate the preferred form of my improvements, Figure 1 is a vertical section of an upright piano, cut on the line 1 1 in Fig. 2 and looking toward the right. Fig. 2 is a vertical section thereof cut on the line 2 2 in Fig. 1 and looking toward the left. Fig. 3 is a horizontal section thereof cut on the line 3 3 in Fig. 1. Fig. 4 is an enlarged fragmentary vertical cross-section cut through the center of the auxiliary pedal. Fig. 5 is a similar view showing the pedal in the normally locked position. Fig. 6 is a similar view showing the pedal in the depressed but unlocked position. Fig. 7 is a plan view of the pedals; and Fig. 8 is a fragmentary front elevation of the piano-case, showing the pedals and the pedal-lock. Figs. 9, 10, and 11 show a modification.

Referring to the drawings, let A indicate the case of the instrument; B, the action; C, the sounding-board; D, the strings; E, the hammers; F, the hammer-rest; G, the keys; H, the action-rail; I, the damper; J, the harmonic device; K, the damper-lifter, operated by the forte pedal; L, the forte pedal; M, the soft pedal; N, the harmonic pedal; O, the forte-pedal post; P, the soft-pedal post, and Q the frame of the harmonic device.

The case, strings, damper, lifter, and the harmonic device may be of any known or suitable construction, and are shown as ordinarily constructed. The harmonic device consists of a narrow vertical strip of felt *a*, suspended from the rear side of a cross-bar *b* in front of the strings D and just above the hammers E, but movable to a point opposite the latter, so that the felt will receive the blow of a hammer which strikes when the felt is depressed. The rest F is the usual swing-bar, swung toward the strings by the raising of the post P, which latter is raised by a crank *c* on the rod *d* of the soft pedal M when the latter is depressed. The damper-lifter K is tilted by the raising of the post O, which is raised by the crank *e* on the rod *f* of the forte pedal L when the latter is depressed. The frame Q is a vertically-movable frame engaging the bar *b* to move it, and connected to the auxiliary pedal N to be moved downwardly as the latter is depressed. The soft and forte pedals are maintained in the elevated position in any usual manner, the provision shown in this instance being a spring *g*, pressing downwardly on an ear at the rear of the pedal M, and a similar spring *h*, pressing upwardly on an ear at the front of the pedal L. The rod *d* of the pedal M and the rod *f* of the pedal L are each mounted in bearings in blocks *i* at their respective ends. The auxiliary pedal N is between the other pedals and fulcrumed at rear on a rod *j*, having bearings in blocks *k*. The locking-plate R is pivoted on a horizontal adjustable axis *l* beneath the pedals, and swings vertically under the impulse of

springs *m* within a socket *n* beneath the pedals and communicating with the pedal-spaces in the front plate *o*. The lock R has a sear *p* at its upper front edge beneath the pedal to be locked, and the latter has a reciprocal nose, catch, or equivalent provision on its under face engaging said sear when the pedal is depressed and thereby locking the parts together so that the pedal cannot rise. The plate R extends across two or more of the pedals, so that the depression of another than the pedal-lock will lower the plate until its sear disengages the nose of the locked pedal, whereupon the latter is released. Thus the usual pedals can be swung without locking, the auxiliary pedal can be considerably depressed without locking, and when locked can be released by the full depression of either of the other pedals. As thus far described the parts are of known construction.

According to one feature of my present invention I provide improved lock operating and releasing means for locking and unlocking one of the pedals, either through itself or through the action of one or both the other pedals. This is accomplished by an improved pedal constructed in two parts, one a catch engaging the lock, and the other a guard or throw-off disengaging the lock from the catch. These parts are separately movable and capable of independent operation.

My improved releaser permits the unlocking of the locked pedal independently of the position of the others and its operation without locking when this is desired. To this end it consists of a guard preventing the engagement of the sear of the lock with the nose of the pedal and of means for operating this under the control of the foot used to depress the pedal. Various constructions for accomplishing this may be employed, but I prefer the construction shown in Figs. 1 to 8, wherein the pedal N has a longitudinal groove *r* in its under side, a vertical hole *r'* at rear, and an aperture *r''* at front, the nose *q* being formed in the side walls of the pedal at the sides of this groove, and the guard consists of a rod *s* extending longitudinally of the pedal, seated in the groove thereof, having an upturned end *s'* entering the hole *r'* and held therein by a nut at rear and carrying a pin S'' projecting through the aperture *r''* at front, to which pin it is connected by a loose connection formed by boring a diametric hole *t* through the pin S'' and then slipping the end of the rod *s* therein before its rear end is fixed in place. The aperture *r''* is best formed by a cylindrical bore vertically through the pedal slightly in front of the plate *o*, and the pin or other equivalent projecting part of the guard is a loose fit in this aperture and can be depressed within the bore thereof by placing the toe of the foot on the end of the pin. Such depression carries down the forward end of the rod *s* until its lower side is flush with or passes beneath the nose *q*, where the rod stays until the pressure on the pin is released, when by its elasticity the rod returns to the top of the groove *r*, restoring the pin to its outwardly-projecting position. When the rod passes below the nose it receives and rides on the sear *p* of the lock and prevents the latter from engaging with the nose, or if the latter is already in engagement therewith, the pedal being depressed and locked, the depression of the guard by the foot will throw down the sear until it passes beneath and frees the nose.

My invention provides an improved connection between the pedal of a piano and the parts moved thereby. This consists in the construction shown of a cylindrical pin *u* rotatively seated in a cylindrical socket *u'* in an enlargement or portion *u''* of the pedal, which pin has exposed portions *v*, having diametric or inclined screw-threaded holes *v'*, preferably at the sides of the pedal, which holes receive and engage the screw-threaded ends *v''* of the pedal links or hooks T or other connection between the pedal and the part to be moved thereby. By this means the cylindrical piece *u* serves both as a nut through which the links may be adjusted and as a rocker for taking up the motion of the pedal, and the links by engaging the nut prevent its displacement laterally of the pedal.

My invention comprises an improved frame Q for the harmonic device capable of adjustment to adapt it to different sizes of pianos or to the particular requirements of any instrument, and I also provide improved means for guiding and maintaining this frame and its pedal. Preferably the frame is constructed of thin flat vertical rods *w*, which at top are connected to the cross-bar *b* and guided by rollers T', and at bottom have slots *w'* receiving thumb-screw clamps *w''*, carried by cross-piece T'', and locking the latter to the upright bars by an adjustable connection. The links T connect the frame with its pedal N, and to give guidance against endwise motion to the frame are outwardly inclined at their upper ends where they hook into the top edge of the cross-piece T'' and converge at their lower ends, engaging the nut of the pedal close to the sides of the latter. Thus the pedal through the links prevents endwise displacement of the lower end of the frame Q. The upper end thereof is guided against both endwise and forward displacement by the rollers T', which also provide for adjustment of the frame and harmonic device toward and from the strings. These ends of the bars *w* project above the bar *b* as thin strips and the rollers have deep grooves engaging the front and rear sides and inner edges of the strips and thereby retain them in position. These grooves are lettered *x*. Each roller is mounted on a screw *x'*, which screws into the framework of the piano, and to provide for backward and forward adjustment of the frame and safety device the rollers are secured on the screws to move therewith while rotating freely relatively thereto by collars *x''* at rear, so that when a screw *x'* is adjusted inwardly

or outwardly the roller and its frame Q must move therewith, as best seen in Fig. 1.

To guide the lower end of the frame Q and to maintain it in the upper position according to my invention, I provide springs U, which are fixed to the side walls of the casing A at their ends U′ by staples or in any other suitable manner and have free ends U″, which engage the frame and lift it and also guide it in its movements. The ends U″ are preferably turned at right angles at their extremities to form hooks y, which removably enter sockets y' in the ends of the cross-piece T″, thereby connecting the latter and the spring together. By this construction the springs are also utilized to sustain the middle or auxiliary pedal used with the frame, which pedal they support through the links T.

In operation the soft and forte pedals are used as circumstances indicate, and the auxiliary pedal is depressed with the foot on the projecting end of the guard when it is desired to be depressed only temporarily or without the foot on this end when it is to be depressed and locked. In the latter case when the depressed pedal is locked the other pedals are used independently of it, except when in connection with the depression of either it is desirable to release the locked pedal, in which case an excessive depression of either will free the pedal which is locked. If there is reason for not depressing either of the side pedals and the locked pedal should be released, the operator will depress the guard, thereby freeing the pedal.

The frame Q will be adjusted to the instrument by separate adjustment of the rollers T′ at top and of the clamps w'' at bottom, and then the links T will be adjusted to the proper degree by screwing their ends into or out of the nut u until they are properly disposed, when their upper ends will be hooked to the cross-piece T″ and the apparatus will be ready for use. The adjustment of the links or of the frame Q can be very readily and easily accomplished.

It will be seen that my invention provides improvements in pianofortes which can be variously availed of, and it will be understood that the invention is not limited to the particular arrangement, details of construction, or combination of parts set forth as constituting its preferred form, as it may be employed according to such modifications as circumstances or the judgment of those skilled in the art may indicate without departing from the spirit of the invention.

One modification is shown in Figs. 9 to 11, in which the nose (lettered q') is formed on the wire rod s^3, having the foot-piece or end S^3, and mounted in the groove r^3, while the guard or throw-off consists of a wall or edge a' on the pedal. To lock the pedal, the foot is pressed on the part S^3 and the pedal and rod are depressed until the nose engages the sear of the plate R, whereupon if the foot is raised the pedal will rise slightly until stopped by the rod, which is retained in the downward position by the engagement of its nose or catch with the sear of the lock. To release the pedal, it is depressed against the plate without further depressing the rod, whereupon the guard portion a' lowers the lock until its sear is below the catch or nose, when the latter springs upwardly into the groove and out of reach of the sear, after which the pedal may rise without catching when released. These views show another modification relating to the construction of the pedal lettered N′ and the rods lettered T^3. The pedal is bifurcated at its inner end and its branches traversed by holes w^3, and the lower ends of the rod are hooked outwardly at v^3, passed through these holes from the inside outwardly, and then fastened by nuts or otherwise. This gives a simple method of obtaining endwise guidance for the bar T″ of the frame Q. In other respects the construction shown in these figures is analogous to that before described.

What I claim is—

1. In a pianoforte, the pedals, in combination with a lock beneath and engaging and locking one of the pedals and operated by the depression of the pedal to free that locked, and a releaser carried by the pedal engaged by said lock and swinging downwardly against said lock when depressed, projecting at the front of the pedal engaged by said lock, and when depressed disengaging said lock from the pedal.

2. In a pianoforte, a pedal having a nose on its under face, a lock having a sear engaging said nose to lock the pedal, and a releaser carried by the pedal, swinging downwardly at the nose thereof, and when so swung engaging said lock and preventing engagement between the sear thereof and said nose.

3. In a pianoforte, a pedal having a nose on its under side, and a lock having a sear engaging said nose, in combination with a releaser extending longitudinally of said pedal, projecting at front, depressible, and when depressed passing beneath said nose and engaging said sear to disengage the latter therefrom.

4. In a pianoforte, a pedal having a nose, and a lock having a sear engaging said nose to lock the pedal, in combination with a rod s at the under face of said pedal, means for depressing said rod below said nose, and means normally holding said rod away from said nose, whereby normally said nose will be engaged by said sear, but when said rod is depressed said nose and sear cannot engage.

5. In a pianoforte, a pedal N having a groove r on its under face, and an aperture r'' near its front end, in combination with a releaser within said groove fastened to the pedal at its rear end and projecting through said aperture and vertically movable under the pedal at its outer end, and a lock for said pedal engaged and released by said releaser.

6. In a pianoforte, the pedal N having a

nose q, groove r and aperture r'', in combination with an elastic rod s in said groove, fixed in position at its rear end and movable at its front end, a pin S'' in said aperture, engaging said rod for moving the latter, and a lock having a sear engaging said nose, said rod when depressed by the depression of said pin passing beneath said nose and protecting it from the action of said sear.

7. In a pianoforte, the combination with a pedal-link, of a pedal having a cylindrical socket, a cylindrical nut entering and oscillating in said socket and having a screw-threaded hole v' and an exposed portion v, said link having a screw-threaded end entering said hole and engaging the screw-threads thereof, substantially as and for the purpose set forth.

8. In a pianoforte, a harmonic device, in combination with a frame therefor, having upright bars, and rollers T' having grooves x embracing the front and rear of said bars, and screws x' carrying said rollers and adjustable therewith toward and from the strings of the instrument, substantially as and for the purpose set forth.

9. In a pianoforte, a harmonic device, and a frame Q therefor consisting of vertical bars w having slots w', and a cross-piece T'' having clamps w'' entering said slots for clamping said parts together, substantially as and for the purpose set forth.

10. In a pianoforte, a harmonic device, in combination with a frame Q therefor, and springs U at the ends of said frame, fixed to the casing of the piano, engaging said frame, and lifting and guiding the latter.

11. In a pianoforte, a harmonic device, a frame Q therefor having a cross-piece T'', and a pedal for depressing said frame, in combination with pedal-links T connected to said pedals at their lower ends, diverging thence upwardly, and connected to said cross-piece near its ends, whereby said frame is guided from said pedal by reason of the divergence of said links.

12. In a pianoforte, the pedals and a pedal-lock beneath and locking one of said pedals, the pedal to be locked consisting of two parts, one having a catch at the under side of the pedal and engaging the pedal-lock, and the other having a guard at the under side of the pedal and riding on top of and disengaging the lock from the catch, said parts separately movable, substantially as and for the purpose set forth.

13. In a pianoforte, the pedals and a pedal-lock beneath and locking one of said pedals, the pedal to be locked having two parts, one a rod movable vertically below and relatively to the pedal, and the other the lower side of the shank of the pedal, one of said parts having a catch engaging the lock, and the other of said parts having a guard engaging the upper side of the lock and disengaging the lock from said catch, said rod movable independently of said pedal, substantially as and for the purpose set forth.

14. In a pianoforte, a pivoted pedal, and a vertically-movable frame operated thereby, in combination with pedal-links between said frame and pedal communicating the motion of the latter to the former, said links connected at their lower ends to said pedal, extending thence upwardly and outwardly and connected at their upward ends to said frame, whereby said links guide said frame from said pedal, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN A. WESER.

Witnesses:
JAMES MCWALTERS,
WINFIELD S. WESER.