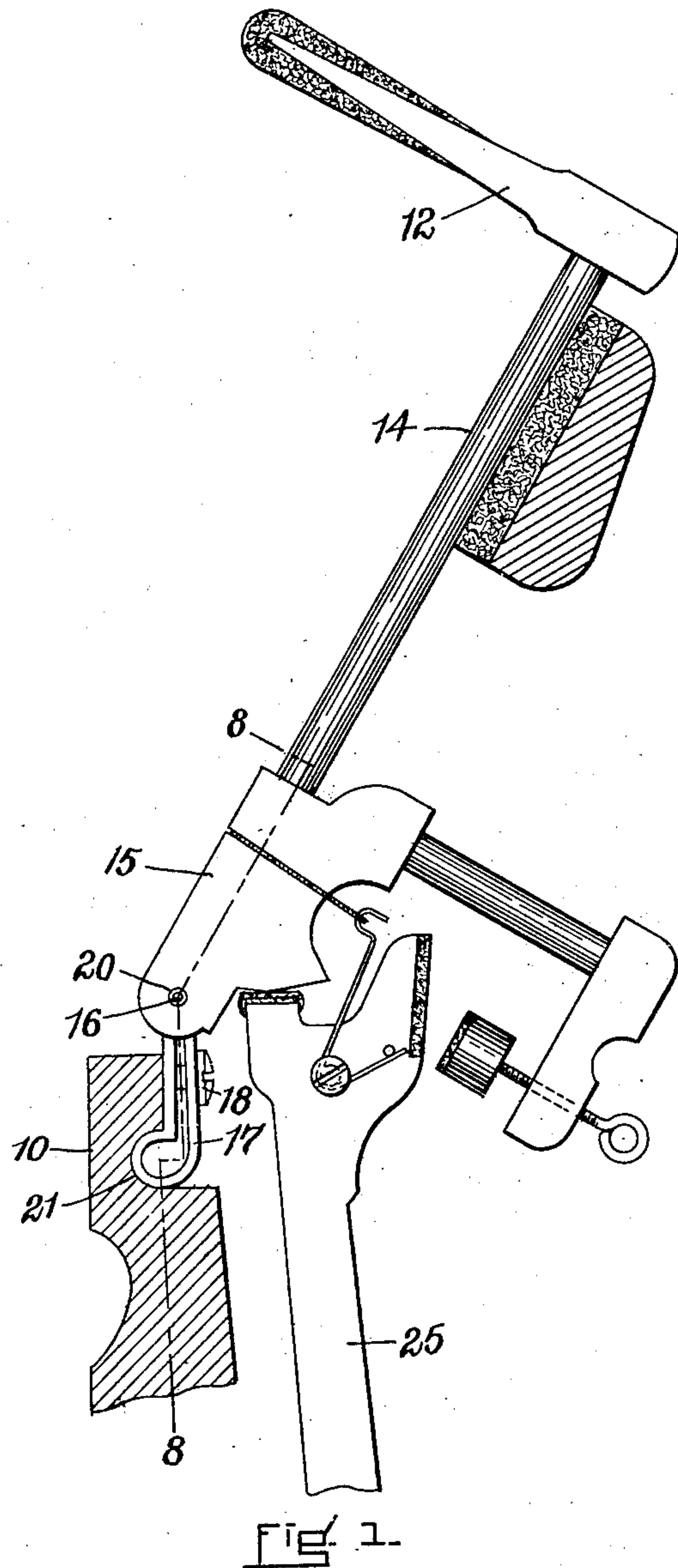


G. M. GUILD.
PIANO ACTION FLANGE.
APPLICATION FILED NOV. 24, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.

Fred. E. Dorr.

F. B. Spaulding

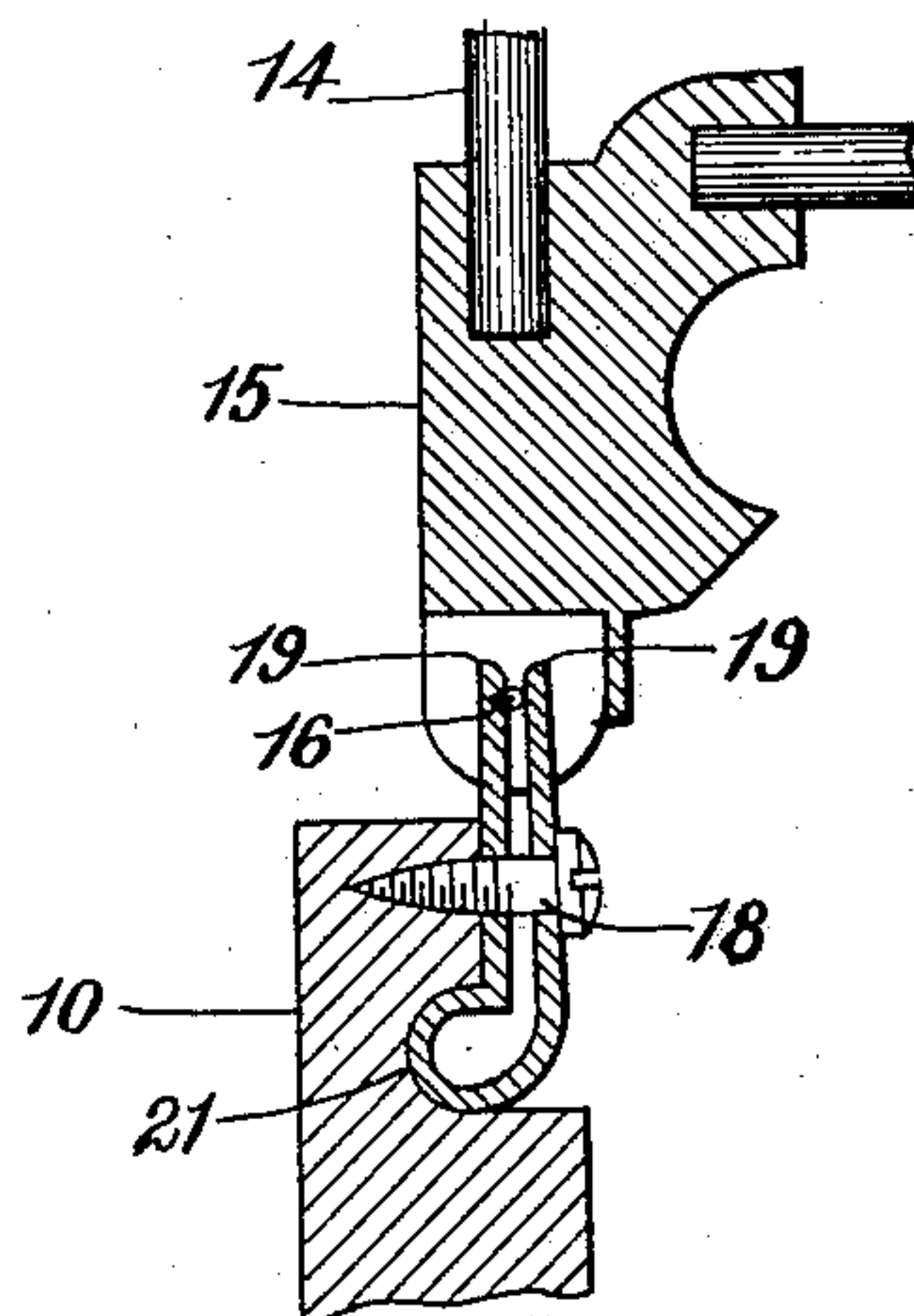
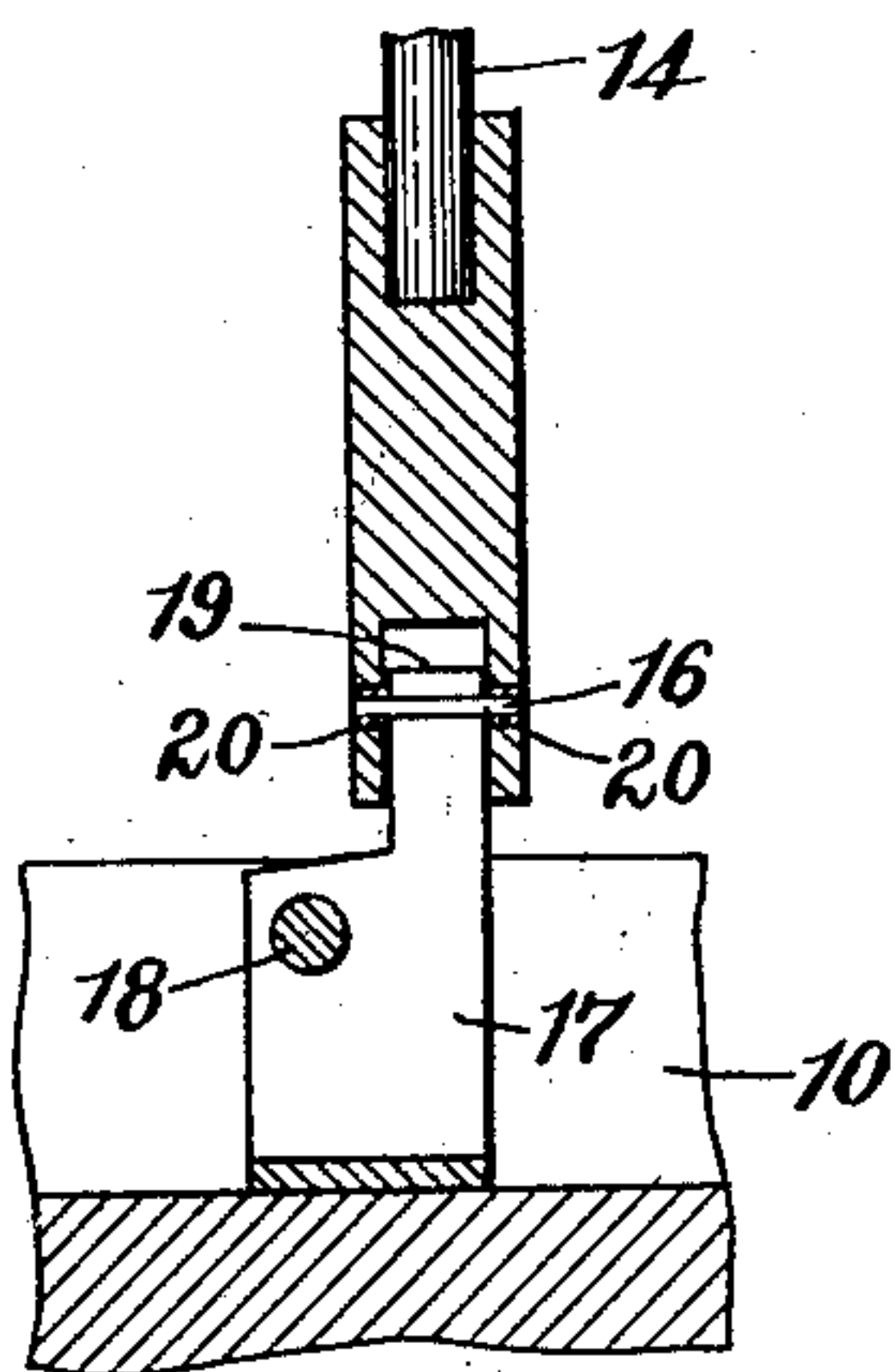
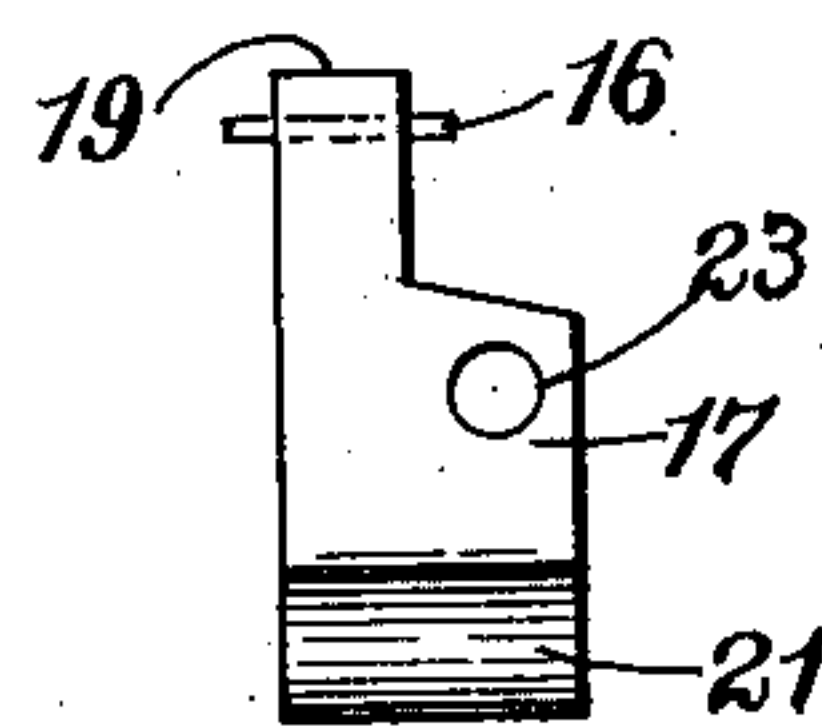
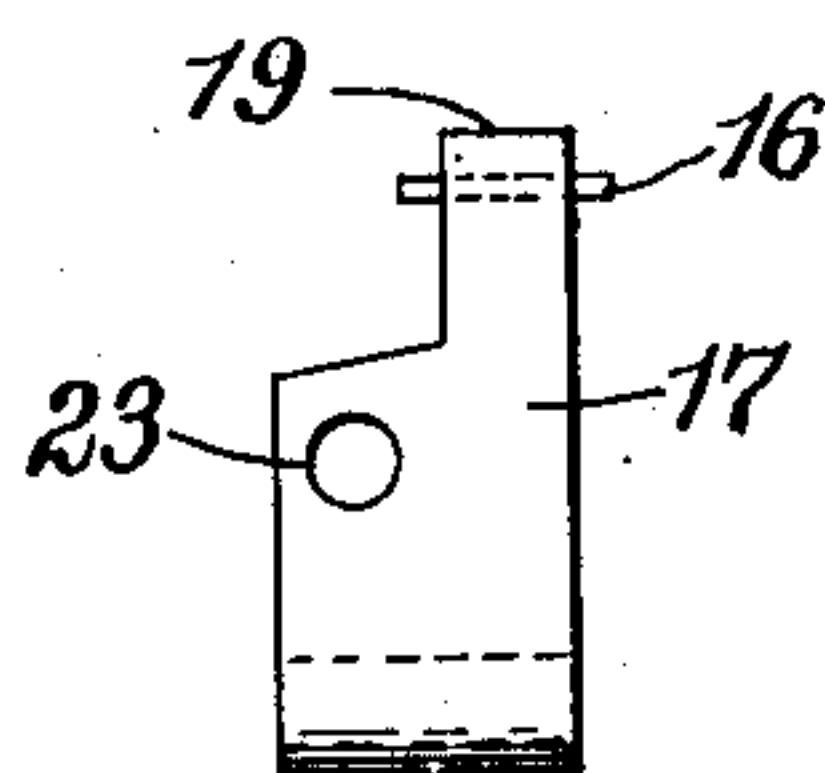
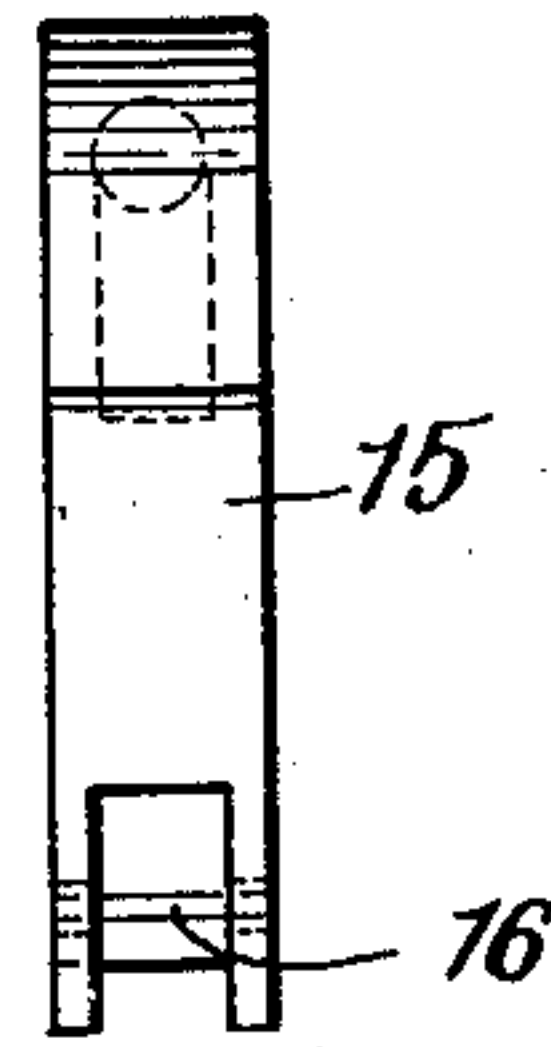
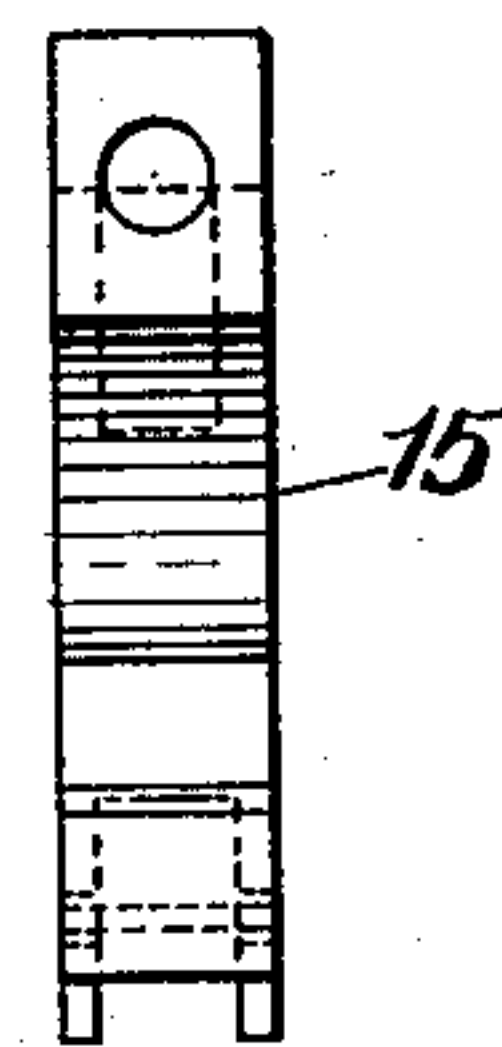
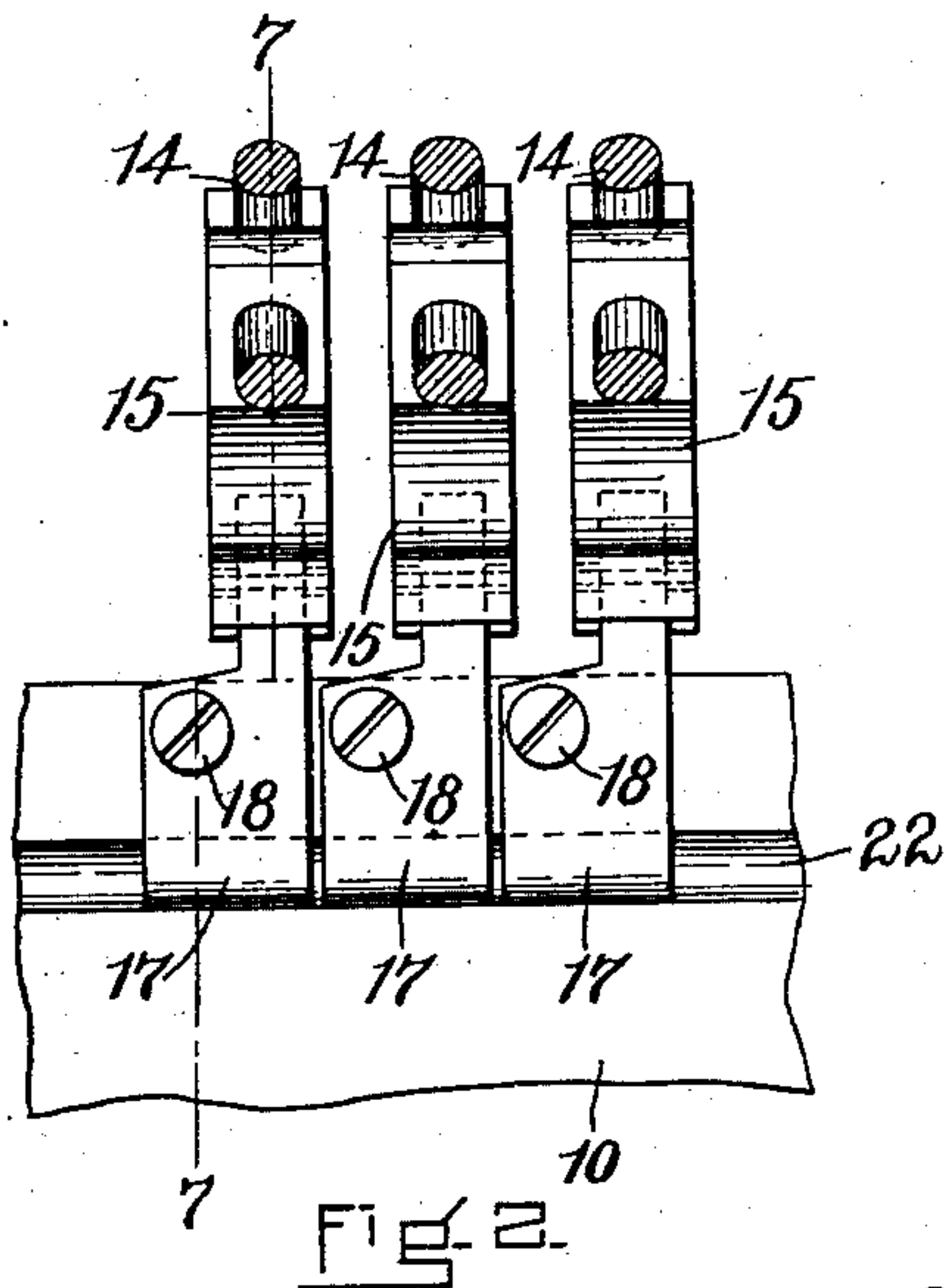
INVENTOR

George Morse Guild
by J. E. Schenck
Att'y

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2 SHEETS—SHEET 2.



WITNESSES.

Fred. E. Dorr.
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INVENTOR.

George Morse Guild
by J. E. Teschemacher
Atty

UNITED STATES PATENT OFFICE.

GEORGE MORSE GUILD, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO
LOUISE ADAMS GUILD, OF CAMBRIDGE, MASSACHUSETTS.

PIANO-ACTION FLANGE.

SPECIFICATION forming part of Letters Patent No. 736,384, dated August 18, 1903.

Application filed November 24, 1902. Serial No. 132,687. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MORSE GUILD, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Piano - Action Flanges, of which the following is a specification.

The piano-action flanges in most general use are composed of wood and are attached to their wooden rails by means of screws. This construction is, however, open to the objection that both the flanges and the flange-screws become loose and rattle by reason of the shrinking and swelling of the wood resulting from climatic changes, thus requiring constant care and continual expense to keep the action in repair. To remedy this defect, metal flanges have been employed consisting of a long strip provided with a series of upwardly-extending tongues or projections, one for each hammer-butt, to each of which projections on its rear side was secured by a screw a small metal plate, said tongue and plate forming jaws for clamping and holding between them the flange-pin of the hammer-butt corresponding thereto. These screws, however, frequently worked loose from the jar to which they were subjected, causing the parts to rattle and required constant attention to keep them tight, while as the entire series of projections was made integral with a single plate instead of a separate flange for each hammer-butt, as when made of wood, much trouble and inconvenience were experienced in making repairs, as the clamping-screws being on the rear side of the flange-plate could not be reached except by removing the action from the piano. To remedy all of these defects is the object of my invention, which consists in the combination, with a piano-action rail, of a flange composed of a piece of spring metal doubled upon itself to form jaws for gripping the flange-pin and a flange-screw passing through apertures in the two members of the flange and engaging the rail, said screw acting on the outer member of the flange to cause the jaws of said flange to clamp the flange-pin and said outer member acting as a spring against the under side of the head of the flange-screw, whereby it is prevented from working loose by reason of

climatic changes, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a piano-action having my improved flanges applied thereto. 55
Fig. 2 is a front elevation of a portion of the flange-rail of a piano-action having my improved flanges applied thereto. Fig. 3 is a front view of one of the hammer-butts of a piano-action. Fig. 4 is a rear view of the same, showing the flange-pin in place therein. Fig. 5 is a front view of one of the hammer-butt flanges, showing a flange-pin held between its jaws. Fig. 6 is a rear view of the same. Fig. 7 is a vertical section on the line 7 7 of Fig. 2. Fig. 8 is a vertical section on the line 8 8 of Fig. 1. 60

In the said drawings, 10 represents the center rail of a piano-action; 12, the hammer; 14, the hammer-stem, and 15 the hammer-butt, which is pivotally connected, by means of a flange-pin 16, with the flange 17, the latter being secured to the rail 10 by means of the flange-screw 18. The flange 17 is composed of a flat strip of spring metal, preferably steel, doubled or folded over upon itself, as shown in Figs. 1 and 7, and forming at its upper end a pair of jaws 19 for gripping and immovably holding the flange-pin 16, the projecting ends of which fit within bushed holes 20 in the cheeks or forks of the hammer-butt, as shown in Fig. 8. The lower portion of the flange 17 is bent around in the arc of a circle in such manner as to form a rearwardly-extending projection 21, which is adapted to fit snugly within a semicircular longitudinal groove 22, Fig. 2, formed in the front side of the rail 10, said groove and the projection serving to steady the flange and preventing any possibility of its being moved out of its proper vertical position when held by the single flange-screw 18, which passes through a hole 23 in each of the two members of the flange and is screwed into the rail 10, as shown in Fig. 7. 75
As the two spring members of the flange are normally spaced apart or separated from each other, as shown, when the jaws are gripping the flange-pin, it will be seen that when the head of the flange-screw is brought into contact with the outer member of the flange and tightened to cause the jaws to firmly grip the 80
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flange-pin by which they are held apart the said outer or front member of the flange under compression of the screw will exert a strong outward spring-pressure against the screw-head, the constant tension on which will keep the flange tightly against the rail and at the same time prevent the screw from becoming loose by reason of the shrinking or swelling of the wood or the jar to which it is subjected, thereby avoiding all liability of the rattling of the parts and reducing the cost of repairs to a minimum. With this construction if the flange-pin should become loose in the bushed bearings of the hammer-butt or if the bushing "fills up," causing the pin to stick in its bearings, it is merely necessary to loosen the flange-screw 18, when the pin can be removed and replaced by one of larger or smaller diameter, as may be required.

The upper portion of the flange is partially cut away, leaving the gripper-jaws 19 on one side of the median line, while the hole 23 for the flange-screw is located on the opposite side of said line, and consequently the flange-screws can be easily reached through the spaces between the jacks 25, and the necessity of removing the same to reach the flange-screws, as has heretofore been necessary, owing to their location directly behind the jacks, is entirely avoided and the making of repairs or the adjustment of the parts thereby greatly facilitated.

Although I have described my invention as applied to hammer-butt flanges only, it will be obvious that my improved flanges may be employed in connection with any other portion of the action of a piano or other musical instrument to which they may be found applicable.

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

1. The combination with a piano-action rail, of a flange composed of a piece of spring metal doubled upon itself to form jaws for gripping the flange-pin, and a flange-screw passing through apertures in the two members of the flange and engaging the rail, said screw acting on the outer member of the flange to cause the jaws of said flange to clamp the flange-pin, and said outer member acting as a spring against the under side of the head of the flange-screw to thereby prevent the loosening of the screw and flange.

2. A piano-action flange composed of a piece of spring metal doubled upon itself to form jaws for gripping the flange-pin, and having an aperture in each of its members for the passage of the flange-screw, said jaws being located on one side of the median line of said flange and the apertures for the flange-screw being located on the opposite side of said line.

3. The combination with a piano-action rail, of a flange composed of a piece of spring metal doubled upon itself to form gripping-jaws, a flange-pin immovably held between said jaws, a screw passing through both members of said flange into the rail and serving to secure the flange thereto and at the same time cause the jaws to clamp the flange-pin, and a hammer-butt bifurcated to embrace the gripping-jaws and pivotally connected therewith by the flange-pin held between said jaws.

Witness my hand this 20th day of November, A. D. 1902.

GEORGE MORSE GUILD.

In presence of—

P. E. TESCHEMACHER,
F. B. SPAULDING.