

(No Model.)

2 Sheets—Sheet 1.

G. P. BENT.  
PIANO.

No. 561,083.

Patented June 2, 1896.

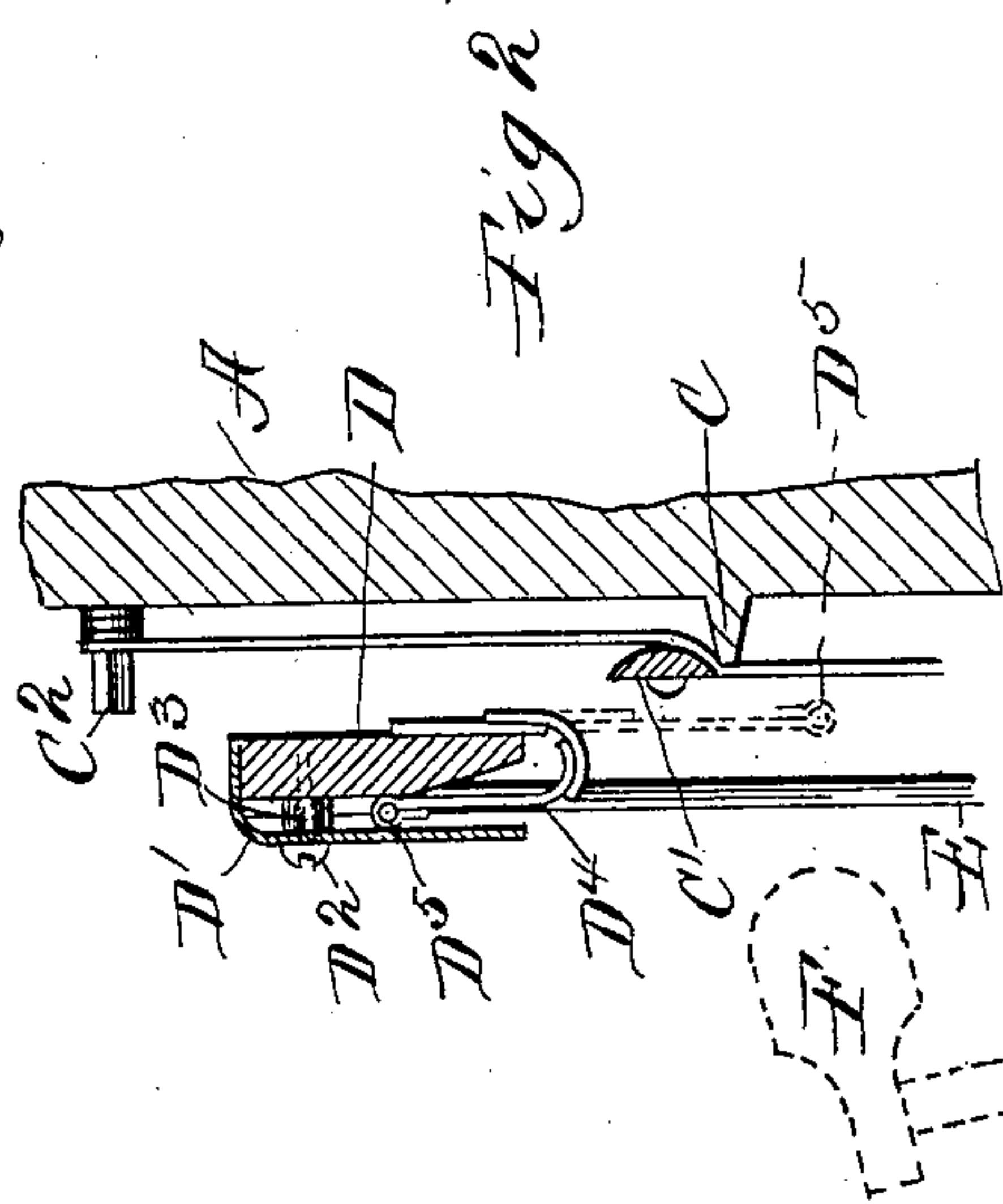
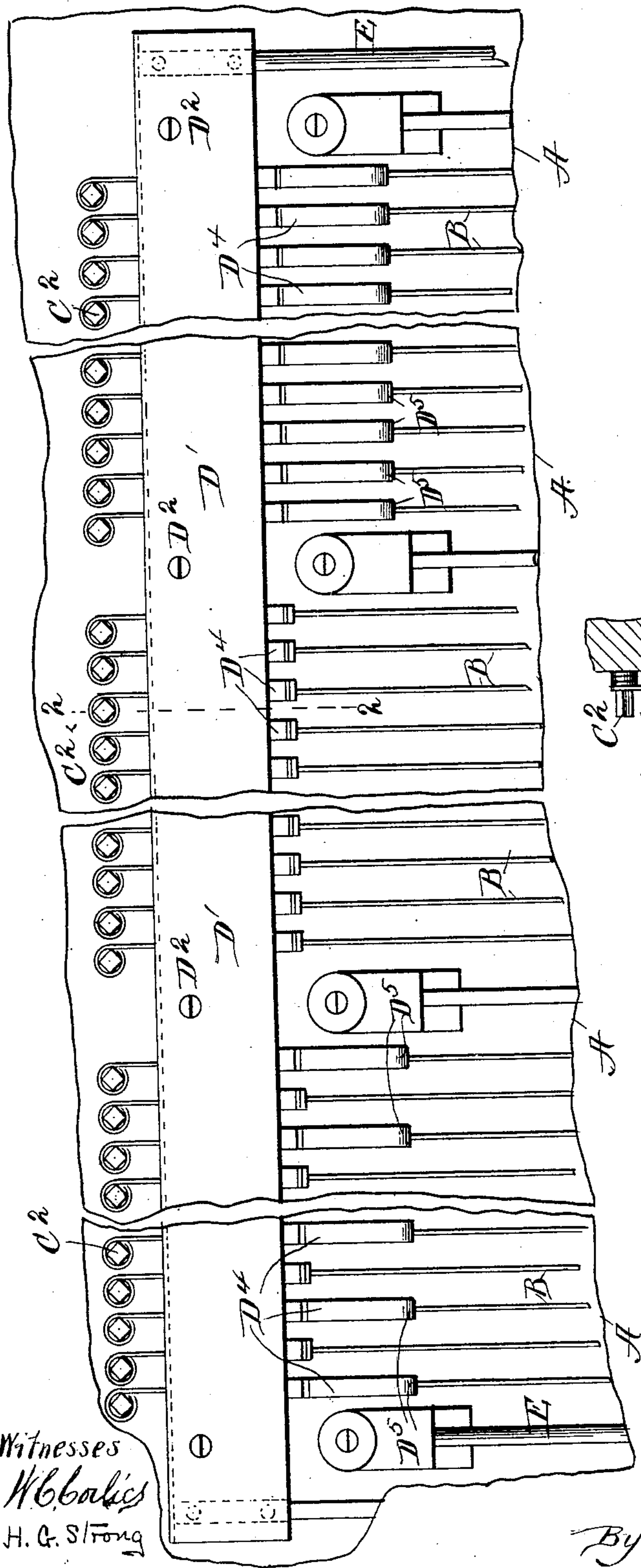


Fig 1

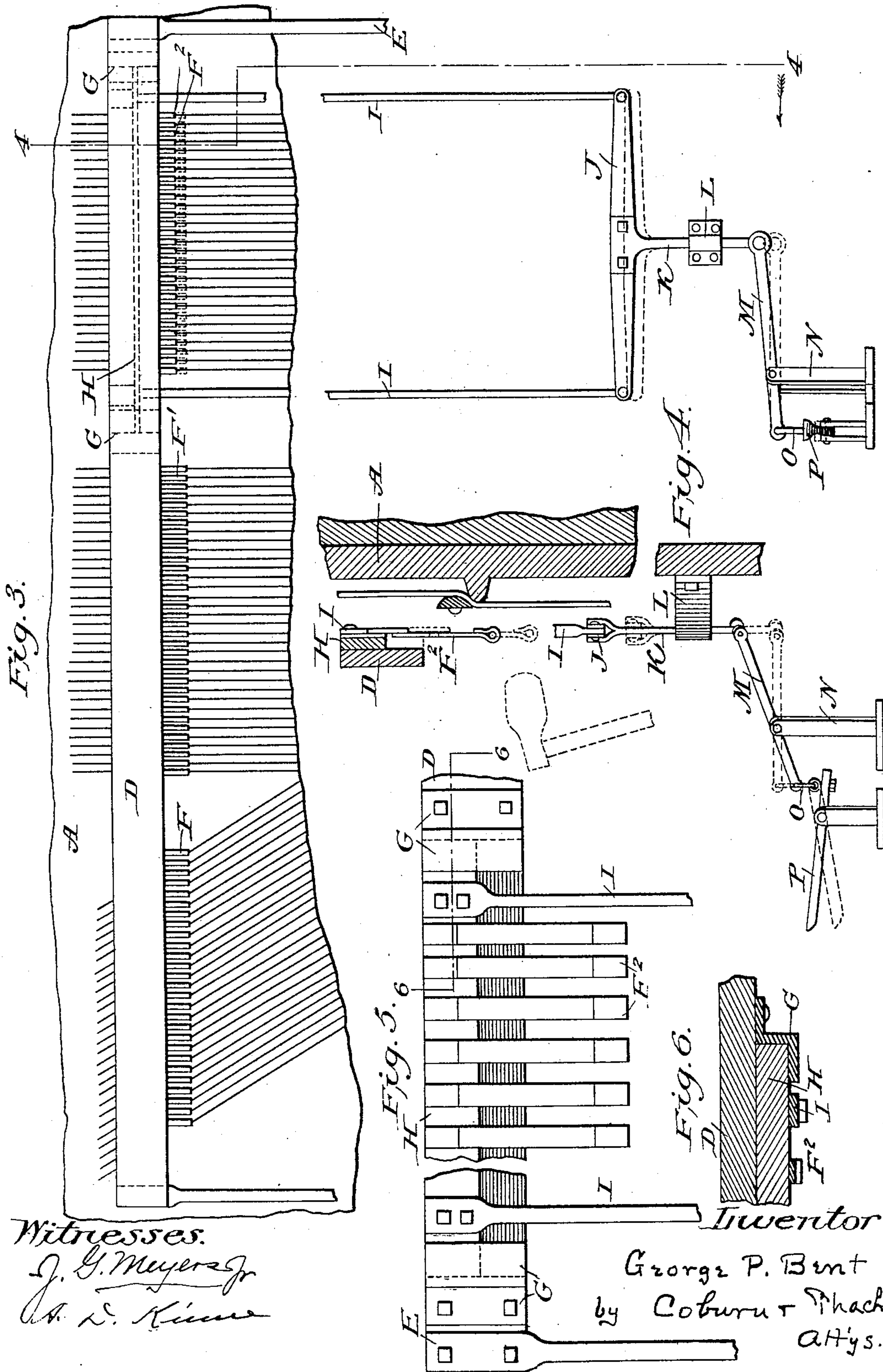
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# UNITED STATES PATENT OFFICE.

GEORGE P. BENT, OF CHICAGO, ILLINOIS.

## PIANO.

SPECIFICATION forming part of Letters Patent No. 561,083, dated June 2, 1896.

Application filed August 3, 1895. Serial No. 558,086. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE P. BENT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Pianos, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a front elevation of the upper portion of the stringing of a piano made according to my invention. Fig. 2 represents a sectional view taken along the line 2 2 of Fig. 1 and shows also a portion of a hammer. Fig. 3 is a front elevation, with parts broken away, of a tongue-bar made in two sections according to a modification of my invention. Fig. 4 is a vertical section along the line 4 4 of Fig. 3, showing also a hammer. Fig. 5 is a rear elevation of the right-hand end of the tongue-bar shown in Fig. 3 with parts thereof broken away. Fig. 6 is a horizontal section along the line 6 6 of Fig. 5.

My invention relates to that class of pianos in which tongues may be interposed between the strings and the striking-heads of the hammers, whereby tones are produced differing from those resulting from the striking of the hammers directly against the strings. Hitherto it has been customary to suspend these tongues from a tongue-bar, which tongue-bar may be lowered by a pedal and so bring all the tongues simultaneously between their respective strings and hammers, while upon the release of the pedal the tongue-bar is raised by a spring to its normal position, in which position the tongues are not interposed between the strings and hammers. I am not aware, however, and do not believe that it has been attempted so to arrange the tongues and tongue-bar that only certain selected tongues, which selection can be changed at will, may be interposed between their respective strings and hammers, while the remaining strings will be struck directly by the hammers, thus producing various combinations of the effect of the piano and of the other instruments which the interposition of the said tongues causes the piano to simulate.

In the annexed drawings I have disclosed one of the several possible methods of construction whereby the above result may be obtained.

A represents the ordinary framework of an upright piano. In Fig. 1 three octaves of strings B are shown attached, as usual, at C, C', and C<sup>2</sup>. The tongue-bar, according to my construction, comprises the rear portion or bar proper, D, the metallic plate D', attached to D by the bolts D<sup>2</sup> and washers D<sup>3</sup> in such manner as to leave a space, the size of which may be regulated as desired, between the inner surface of D' and the adjacent surface of D. This space is clearly shown in the sectional view in Fig. 2. To the rear surface of the tongue-bar D are attached the tongues D<sup>4</sup>. As shown here, these tongues are flexible leather strips, the lower end D<sup>5</sup> of each strip folded on itself and inclosing a metallic core. To this form of tongue I make no claim, nor, on the other hand, is the application of my invention limited to this form of tongue. By means of the form of tongue-bar I have described each tongue may be brought up around the lower edge of the bar D and tucked or inserted securely into the space between the bar D and the plate D', as shown in full lines in Fig. 2, the dotted lines in the same figure showing the tongue in its pendent position. By beveling the lower part of the bar D, as shown in Fig. 2, the space between the said bar and the plate D' may be made to contract toward the top and so give rise to a wedging effect as the tongue is inserted into the said space.

E E are the upright arms or bars supporting the tongue-bar D. These are connected with the pedal, (not shown,) permitting a vertical adjustment of the tongue-bar in the usual way. In the figures the tongue-bar is shown depressed in its lower position, so that those tongues which are not tucked up are interposed between their respective strings and hammers.

F is a hammer-head.

By means of the above construction many variations in the arrangement of the tongues are possible. Thus in the left-hand octave in Fig. 1 alternate tongues only are tucked up. In the central octave all the tongues are tucked up. In the right-hand octave all are left pendent. By these or the many other various arrangements conceivable, which are all within the scope of my invention, various effects may be produced.



The foregoing description and the figures to which it refers set forth only one form of construction whereby the improvement which constitutes my invention may be attained, whereas there are many and obvious additional ways in which the same or similar advantages may be secured. Thus the bar D may be made in sections and so constructed that one or more sections can be lowered so as to interpose the tongues of that section between their respective strings and hammers, while the remaining sections and their tongues remain raised. I have illustrated such a construction in Figs. 3 to 6, inclusive, in which D represents a tongue-bar extending across the piano and supported by the uprights E in the usual way, which are vertically reciprocated by a pedal, as in the construction already described. The tongues F for the strings of the base section and the tongues F' for the strings of the middle section are mounted upon the tongue-bar D in the usual manner, as shown, for example, in Letters Patent No. 527,533, dated October 16, 1894, granted to Martin H. McChesney and Joseph C. Kunze. To the rear side of the right-hand end I attach two guides G G, (shown in section in Fig. 6,) which inclose and guide the ends of a subsidiary tongue-bar H, provided with tongues F<sup>2</sup>, mounted in the usual manner thereon. To the rear of the subsidiary tongue-bar H and at each end thereof is bolted the upper end of a supporting upright arm or bar I. The lower ends of the bars I are secured to a cross-piece J, which is carried by an upright rod K, mounted in the guide L. The lower end of the rod H is pivoted to one end of a diagonally-disposed lever M, pivotally mounted on the standard N. The other end of the lever M is connected by the link O with the pedal P, the said pedal P being located adjacent to the other pedals of the piano. When it is desired to interpose all the tongues between their respective strings and hammers, both of the pedals will be depressed simultaneously. When it is desired to interpose only the tongues of the upper section, the pedal P is alone depressed. When it is desired to interpose only the tongues of the middle and base sections, only the main tongue-bar pedal is depressed. In each case when only one section is depressed the subsidiary tongue-bar H slides upward or downward, as the case may be, in the guides G upon the main tongue-bar D. The construction hereinabove described is, of course, only one method of practicing my invention with a tongue-bar formed in more than one section. The number of sections

might be multiplied and their mutual connections modified, all within the scope of my invention. I do not therefore restrict my claims of invention to the particular construction shown; but

What I do claim, and desire to secure by Letters Patent, is—

1. In a piano, a tongue-bar in one or more sections carrying tongues that may be interposed between the strings and the hammers, and devices adapted to retain one or more of the tongues away from interposition between their respective strings and hammers, while the rest of the tongues remain so interposed, substantially as described.

2. In a piano, a tongue-bar carrying tongues which, by the movement of the tongue-bar may be interposed between the strings and hammers; and a device upon said tongue-bar for retaining one or more of said tongues away from interposition between their respective strings and hammers, while the rest of the tongues remain so interposed, substantially as described.

3. In a piano, a tongue-bar carrying tongues which, by the movement of the tongue-bar may be interposed between the strings and hammers; a plate secured to said tongue-bar, between which and the said tongue-bar any one or more of the tongues may be retained away from interposition between their respective strings and hammers, while the rest of the tongues remain so interposed, substantially as described.

4. In a piano, a tongue-bar carrying tongues adapted to be interposed between the strings and hammers; a plate secured to the front of said tongue-bar, in such manner as to leave a space between the said plate and said bar within which the ends of any one or more of the tongues may be inserted and retained away from their position between the strings and hammers, substantially as described.

5. In a piano, the tongue-bar D; the plate D'; and the tongues D<sup>4</sup>, substantially as described.

6. In a piano, the tongue-bar D; the plate D'; bolts D<sup>2</sup>; washers D<sup>3</sup>; and tongues D<sup>4</sup>, substantially as described.

7. In a piano, the tongue-bar D, its lower portion beveled; the plate D'; bolts D<sup>2</sup>; washers D<sup>3</sup>; and tongues D<sup>4</sup>, substantially as described.

GEORGE P. BENT.

Witnesses:

ALOYSIA HELMICH,  
HENRY GORDON STRONG.