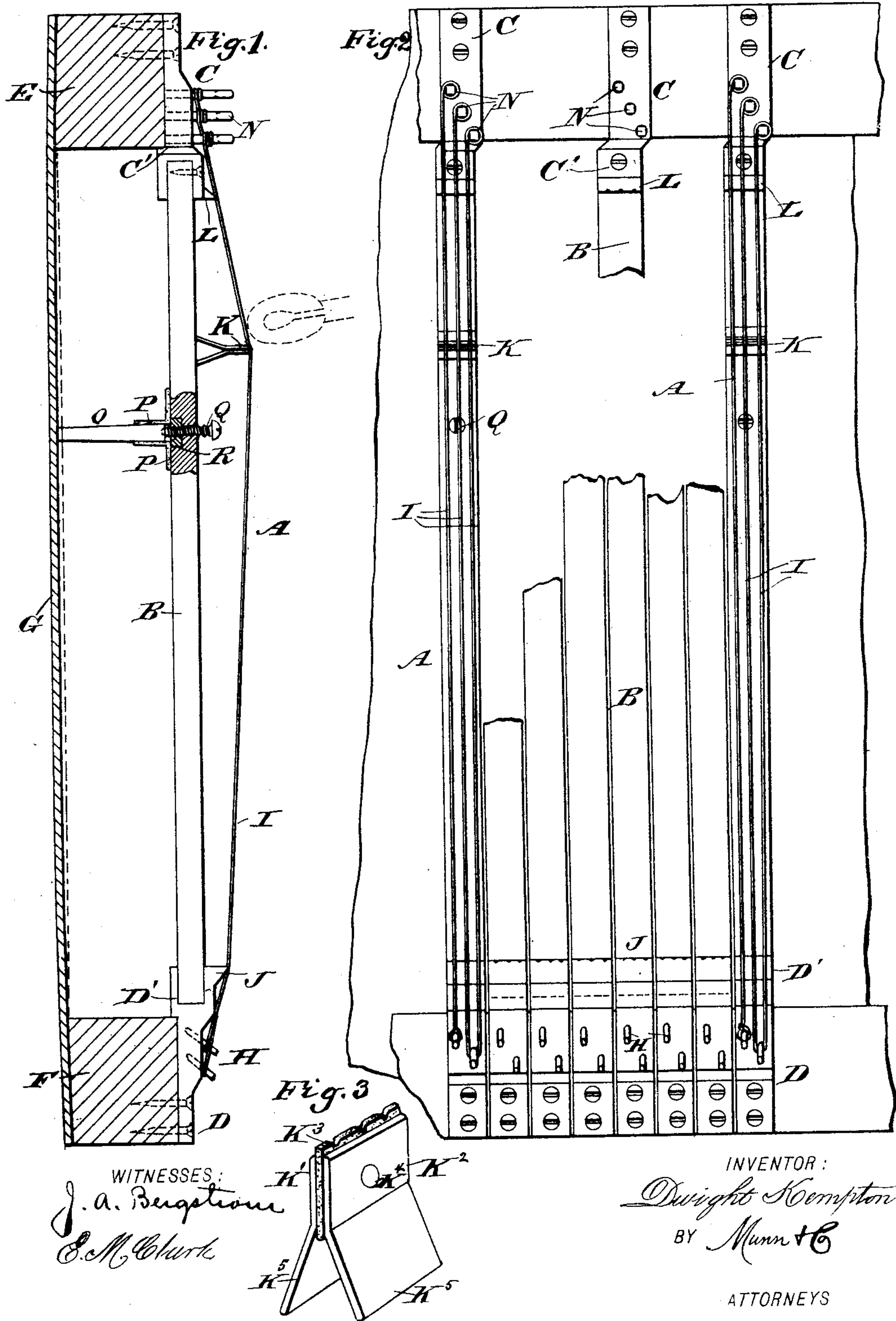


(No Model.)

D. KEMPTON.  
MUSICAL INSTRUMENT.

No. 481,035.

Patented Aug. 16, 1892.





# UNITED STATES PATENT OFFICE.

DWIGHT KEMPTON, OF SUMMERLAND, CALIFORNIA.

## MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 481,035, dated August 16, 1892.

Application filed February 3, 1892. Serial No. 420,160. (No model.)

*To all whom it may concern:*

Be it known that I, DWIGHT KEMPTON, of Summerland, in the county of Santa Barbara and State of California, have invented certain new and useful Improvements in Musical Instruments, of which the following is a full, clear, and exact description.

The invention relates to stringed musical instruments, such as pianos of upright or other form.

The object of the invention is to provide certain new and useful improvements in stringed musical instruments, whereby the tone is greatly enriched and the weight of the instrument greatly reduced.

The invention consists of a series of harmonic sections, each comprising an independent stringed supporting-bar provided with a bridge and pins for holding the strings in place.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a front view of the same with parts broken out, and Fig. 3 is an enlarged perspective view of the bridge.

The improved stringed musical instrument is provided with a series of harmonic sections A, each provided with a bar B, preferably made of wood, and fastened at its ends in the heads C' and D' of brackets C and D, respectively, secured to the top and bottom beams E and F, respectively, of the piano-frame. At the back of the frame is secured the usual sounding-board G, stretched over the entire frame in the rear of the several harmonic sections A. On each of the lower brackets D are secured pins H, on which are fastened the lower ends of the strings I, forming one tone and belonging to one section A. The strings I after leaving the pins H pass through notches in the bar J, secured on the upper end of the bracket D, and then the strings extend in front of the bar B to pass over a bridge K, resting on the bar, as plainly shown in Fig. 1. The strings then pass

through notches in a bar L on the bracket C, to then connect with the tuning-pins N, mounted to turn in the usual manner in the bracket C. The hammer of the instrument strikes the series of strings of each section at their small ends near the bridge K, as indicated in dotted lines in Fig. 1. The bridge K is preferably constructed as shown in detail in Fig. 3, being composed of two metallic plates K' and K<sup>2</sup>, between which is clamped a piece of soft material K<sup>3</sup>, made of leather, felt, or like material, the several parts being fastened together by a rivet or bolt K<sup>4</sup>, as shown.

The lower ends K<sup>5</sup> of the plates K' and K<sup>2</sup> are spread apart, so as to form a foot for resting the bridge K on the bar B. Each bar B is connected by a post O with the sounding-board G, the said post being provided with two flexible strips P, attached to the rear face of the bar B, as plainly indicated in Fig. 1. A set-screw Q screws in a nut R, held in the bar B against the front end of the post O, so that the latter may be pressed with more or less force against the sounding-board G, and consequently more or less tension is given to the bar B.

It is understood that each harmonic section A carries as many strings I as are necessary to produce the desired tone, the hammer striking the series of strings simultaneously. The several sections are placed sufficiently apart to make the sections independent one of the other, as indicated in Fig. 2. By adjusting the several posts O by means of the screw Q all rattling noise can be prevented. The flexible connection P permits of holding the respective post O to the bar B when taking out the section, the said flexible material permitting of adjusting the post O by the set-screw Q, as previously described.

It is further understood that the distance on the strings I between the bar J and the bridge K is as many times the distance from bridge K to bar N as is necessary to tune the string to the desired tone. Thus when a harmonic section is made with a sufficient number of strings of the desired tones it gives a more sonorous ring than is possible by any other arrangement when the strings are not damped by the pedal. It will further be seen that by this arrangement a long pure ringing



tone can be produced by extending the strings a sufficient number of octaves on the long end or harmonic side of the bridge K. By stringing the musical instrument in this manner the workman is enabled to fully control the timbre of each note and by using harder or softer wood and increasing or diminishing the depth of the bar he is enabled to vary the timbre of the notes as desired.

10 As each bar B vibrates without being disturbed by the adjacent one, the workman is enabled to vary the size and hardness of the material without greatly affecting the timbre of the note, thus giving the workman a basis upon which to work in grading the quality of the tone.

It is understood that the ring of the note sounded is reinforced by extending the string proportionately, as above described, beyond the bridge. By stringing each note or group of strings upon a movable section the instrument can be readily repaired by removing a defective section. By providing each bridge K with a notched leather section K<sup>3</sup> the strings readily pass over it without sticking, thus producing a purer tone than can be produced by passing the strings over metallic bridges. The tension arrangement for each sound-post permits of giving whatever pressure is necessary to each section after the latter is placed in position.

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

35 1. A musical instrument provided with a series of harmonic sections, each comprising a bar, pins held on the said bar and carrying the strings, and a bridge held on the said bar and over which pass the strings, substantially as shown and described.

40 2. In a musical instrument, a harmonic section having an independent bridge over which pass the strings, substantially as shown and described.

45 3. A musical instrument provided with a series of harmonic sections arranged alongside each other, but independent one of the other, each section supporting its strings or group of strings for the respective note, substantially as shown and described.

50 4. A musical instrument provided with a series of harmonic sections arranged along-

side each other, but independent one of the other, each section supporting its strings or group of strings for the respective note, and a bridge held on each of the said sections to permit of giving the string or group of strings the desired tones, substantially as shown and described.

5. In a musical instrument, the combination, with a frame and a sounding-board secured thereto, of a series of harmonic sections secured to the said frame in front of the sounding-board, the said sections being arranged alongside each other, but independent one from the other, substantially as shown and described.

6. In a musical instrument, the combination, with a frame and a sounding-board secured to the back thereof, of a series of harmonic sections secured to the front of the said frame, each section supporting a string or group of strings forming one tone, the said sections being arranged alongside each other, but independent one from the other, substantially as described.

7. In a musical instrument, the combination, with a frame and a sounding-board secured to the back thereof, of a series of harmonic sections secured to the front of the said frame, each section supporting a string or group of strings forming one tone, the said sections being arranged alongside each other, but independent one from the other, and a post extending from each section to the said sounding-board, substantially as shown and described.

8. In a musical instrument, the combination, with a frame and a sounding-board secured to the back thereof, of a series of harmonic sections secured to the front of the said frame, each section supporting a string or group of strings forming one tone, the said sections being arranged alongside each other, but independent one from the other, a post extending from each section to the said sounding-board, and means, substantially as described, for adjusting the said post, as set forth.

DWIGHT KEMPTON.

Witnesses:

WM. J. A. BEJAR,  
J. C. SCHOONOVER.