

(No Model.)

J. C. ST. JOHN.

ATTACHMENT FOR STRINGED INSTRUMENTS.

No. 546,408.

Patented Sept. 17, 1895.

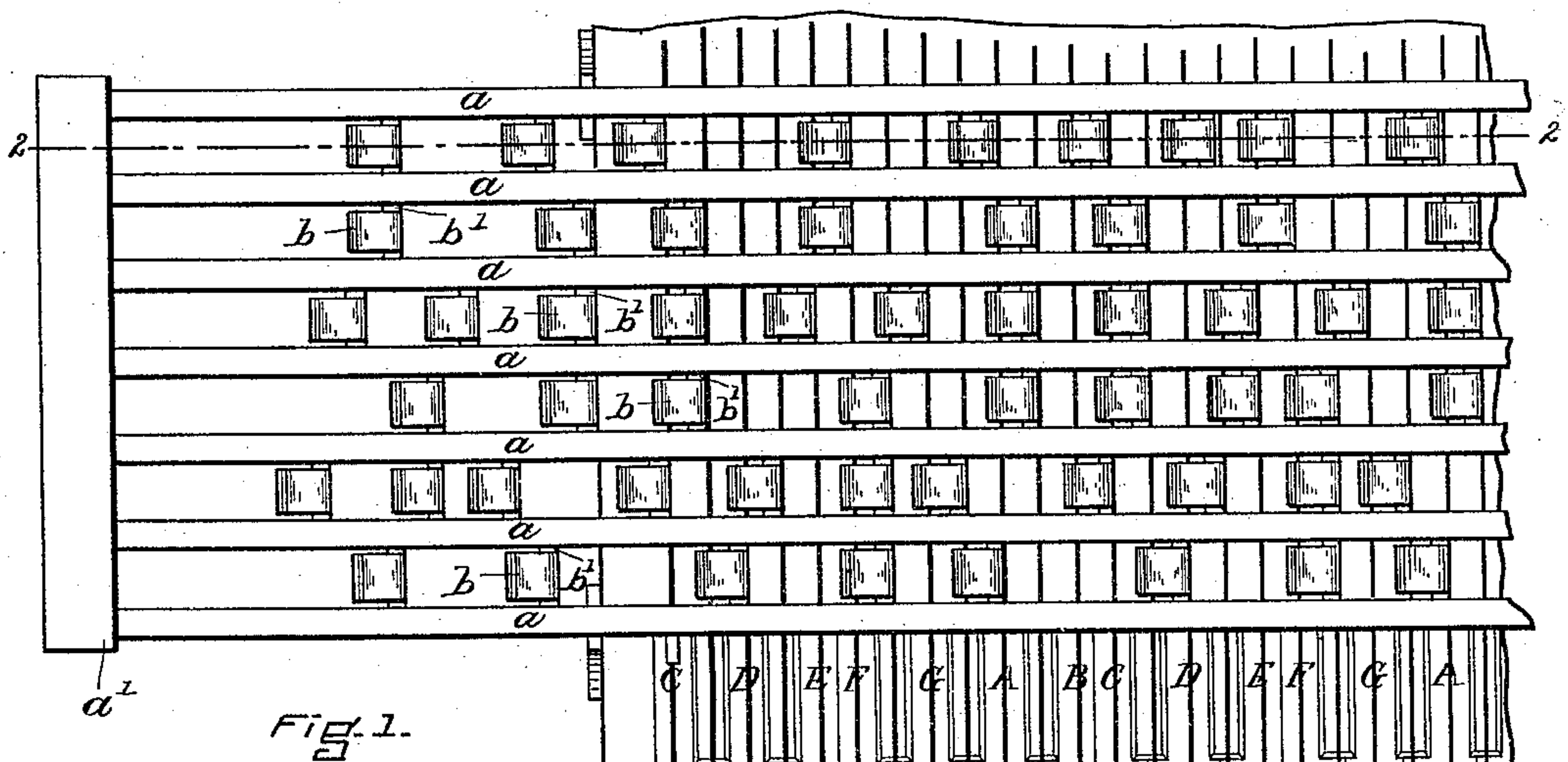


Fig. 1.

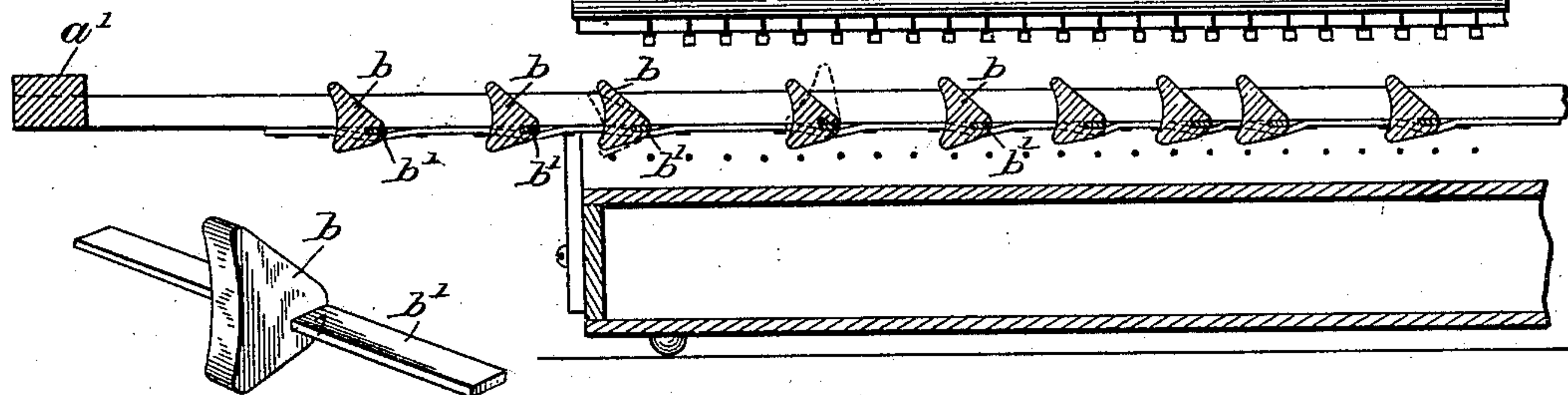


Fig. 2.

Fig. 3.

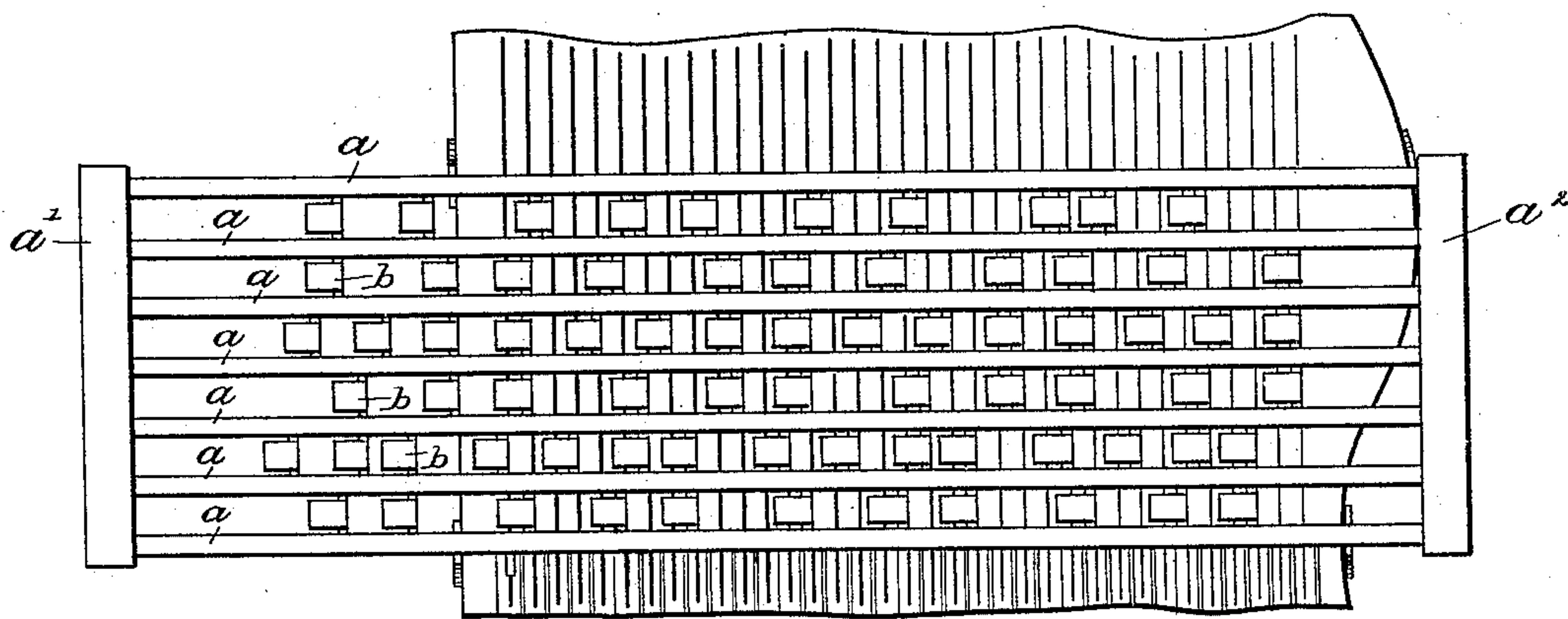


Fig. 4.

WITNESSES.

O. R. Mitchell.
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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR STRINGED INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 546,408, dated September 17, 1895.

Application filed January 14, 1895. Serial No. 534,753. (No model.)

To all whom it may concern:

Be it known that I, JOHN CORNELIUS ST. JOHN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Attachment for Stringed Instruments, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of a portion of a harp with a portion of my attachment in place. Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is a perspective of one of the keys and of the strip of rubber by which it is held and which serves as a spring. Fig. 4 is a plan on a smaller scale illustrating the attachment in place on a harp.

Attachments for harps and other instruments with many strings have long been known, and one class of such attachments consists of what is called a "bridge," extending across and above the strings and divided into a number of grooves, commonly six, in such wise that a pick, commonly of hard rubber, can be drawn along any groove of the bridge, so that it will sound only certain of the strings, there being a hole through the bridge for each string to be sounded, and these holes are usually arranged to produce one chord of a key when the pick is drawn along one groove and another chord of that key when the pick is drawn along another groove, as will be well understood by all skilled in this art. Moreover, these bridges have heretofore been made so that chords of different keys can be sounded when the bridge is moved endwise, one of its positions enabling chords of one key to be readily sounded and other chords of another key, and so on.

My invention is a bridge with a plurality of rows of spring-hammers in slots in the bridge and held normally by their springs above and clear of the strings, but projecting so far above the upper surface of the bridge that each hammer is also a key—that is, has a finger-piece by which it can be moved on its axis against the force of its spring by a motion of the finger of the player, so that when released its inner end will strike a blow upon the string under it and its spring will draw it back from the string as soon as it strikes its blow. The simplest construction and arrange-

ment of the keys is to notch or groove each one to receive a strip of rubber, by which it is secured to the bridge, as shown in the drawings.

The fact that the keys are in rows enables them to be grouped to sound chords by a single motion of the hand, and, what is still more important, gives ample space between the keys of each row without making the spaces between the strings so wide as to make the harp of clumsy shape.

In the drawings I have shown the bridge as composed of a number of parallel bars *a*, connected at their ends by cross-pieces *a'* *a*². The keys *b* are connected to the bars *a* by the strips *b'*, of sheet-rubber, which not only hold each key securely in its place, but are also admirable springs for causing the keys to strike their strings, as will be clear from the dotted lines in Fig. 2, one of the keys being shown by dotted lines in the position to which it is brought by the player, and another being shown, also in dotted lines, in the position to which it is brought by the resiliency of its spring at the instant it strikes its string. Of course the key after giving its blow at once assumes its normal position. The relative arrangement and the number of the keys depend upon the number of the strings and the different musical effects desired, as also means for shifting the bridge endwise and other details of construction, some of which are shown in the drawings, but which are not here described, as they have no necessary relation to my present invention, which is a keyed bridge, whether of six or other number of rows of keys and whether adapted for endwise movement across the strings for change of key or not.

Bridges embodying my invention are applicable not only to "harps," so called, but also to instruments with strings arranged as in a piano, and generally to all stringed instruments, although mainly useful with instruments having many strings.

The keys are best made as clearly shown in Fig. 3, and of wood or hard rubber. The rubber strip *b'* when extended will become thin enough to readily enter the groove in the key, and will then expand to fill that groove, and this is the simplest way of connecting the keys

and the rubber strips. The strips are then secured to the bars *a* of the bridge by tacks or otherwise.

What I claim as my invention is—

- 5 1. The attachment for stringed instruments above described consisting of a bridge with a plurality of rows of keys, each key consisting of a hammer extending below the bridge, and a finger piece projecting above the bridge,
10 and each provided with a spring by which it is held normally above and clear of its string in a position to strike a blow on its string when moved on its axis through the finger

piece against the force of its spring and then released, rebounding by the force of its spring 15 when it strikes its blow, all substantially as described.

2. The key *b*, composed of a hammer and finger piece, notched as shown, in combination with the spring strip *b'*, substantially as set 20 forth.

JOHN C. ST. JOHN.

Witnesses:

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JOHN R. SNOW.