

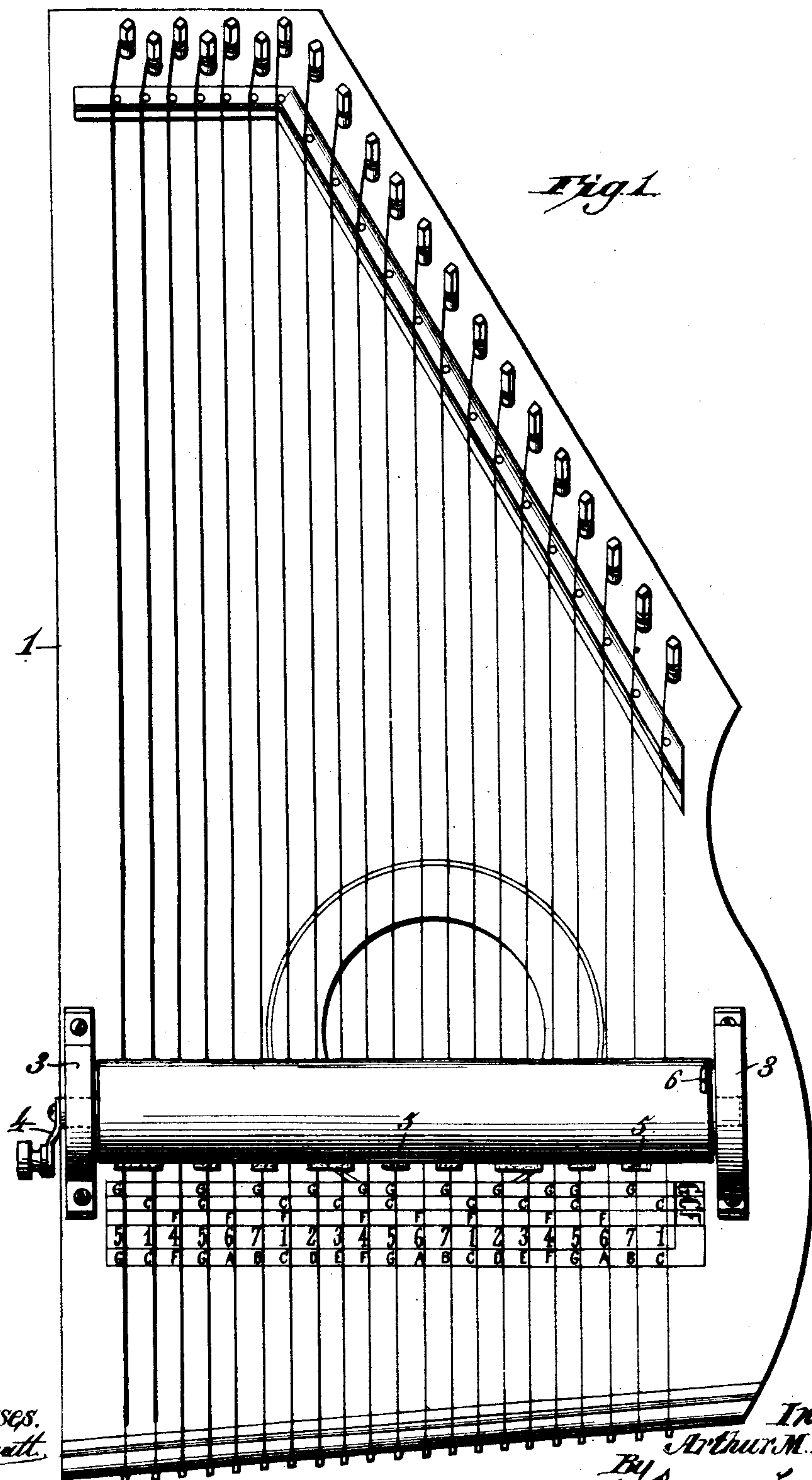
(No Model.)

2 Sheets—Sheet 1.

A. M. PHELPS.  
MUSICAL INSTRUMENT.

No. 538,931.

Patented May 7, 1895.



Witnesses.  
Philo Cratt.

Tennis Sundry.

*Inventor.*

*Arthur M. Phelps.*

By James L. Norris

*Atty*

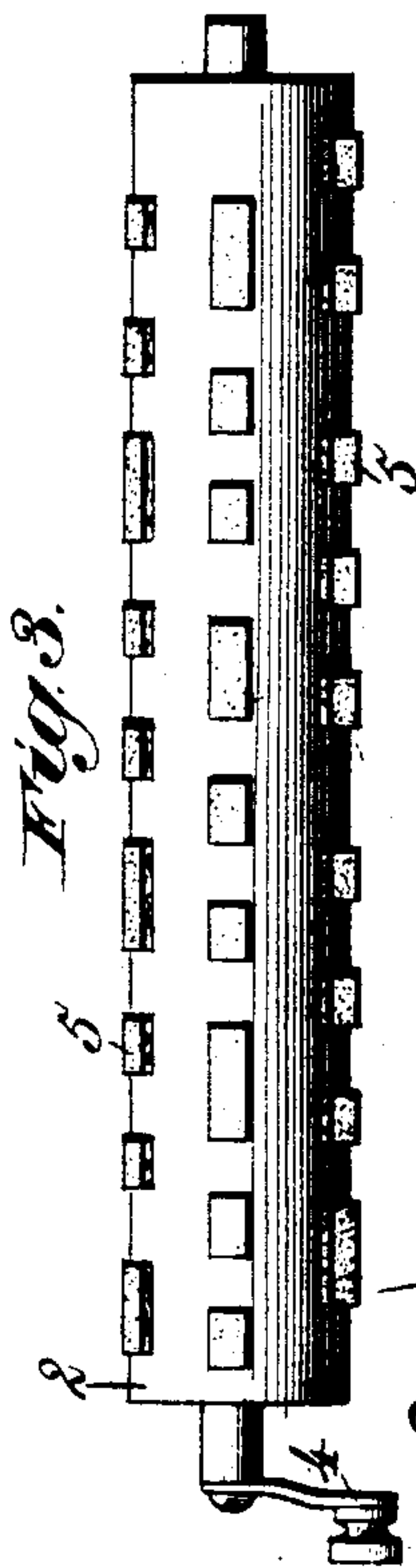
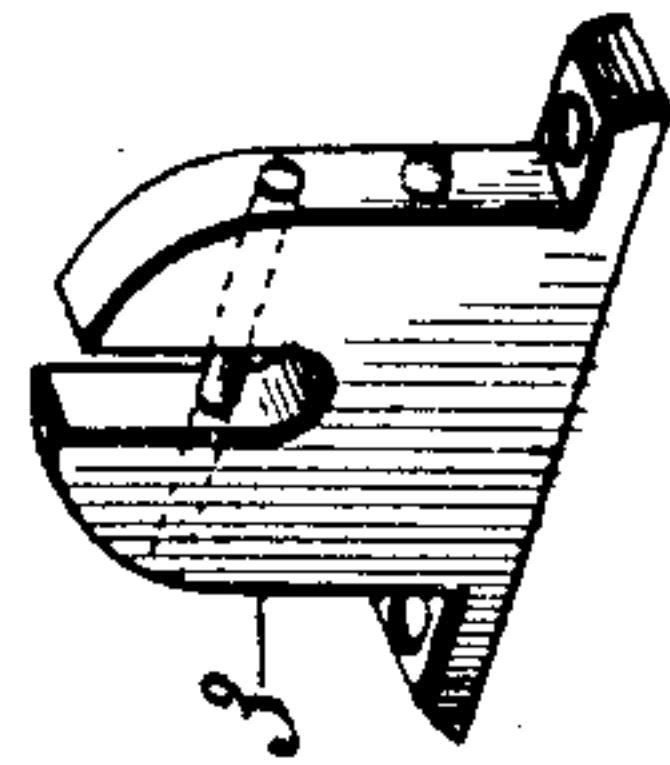
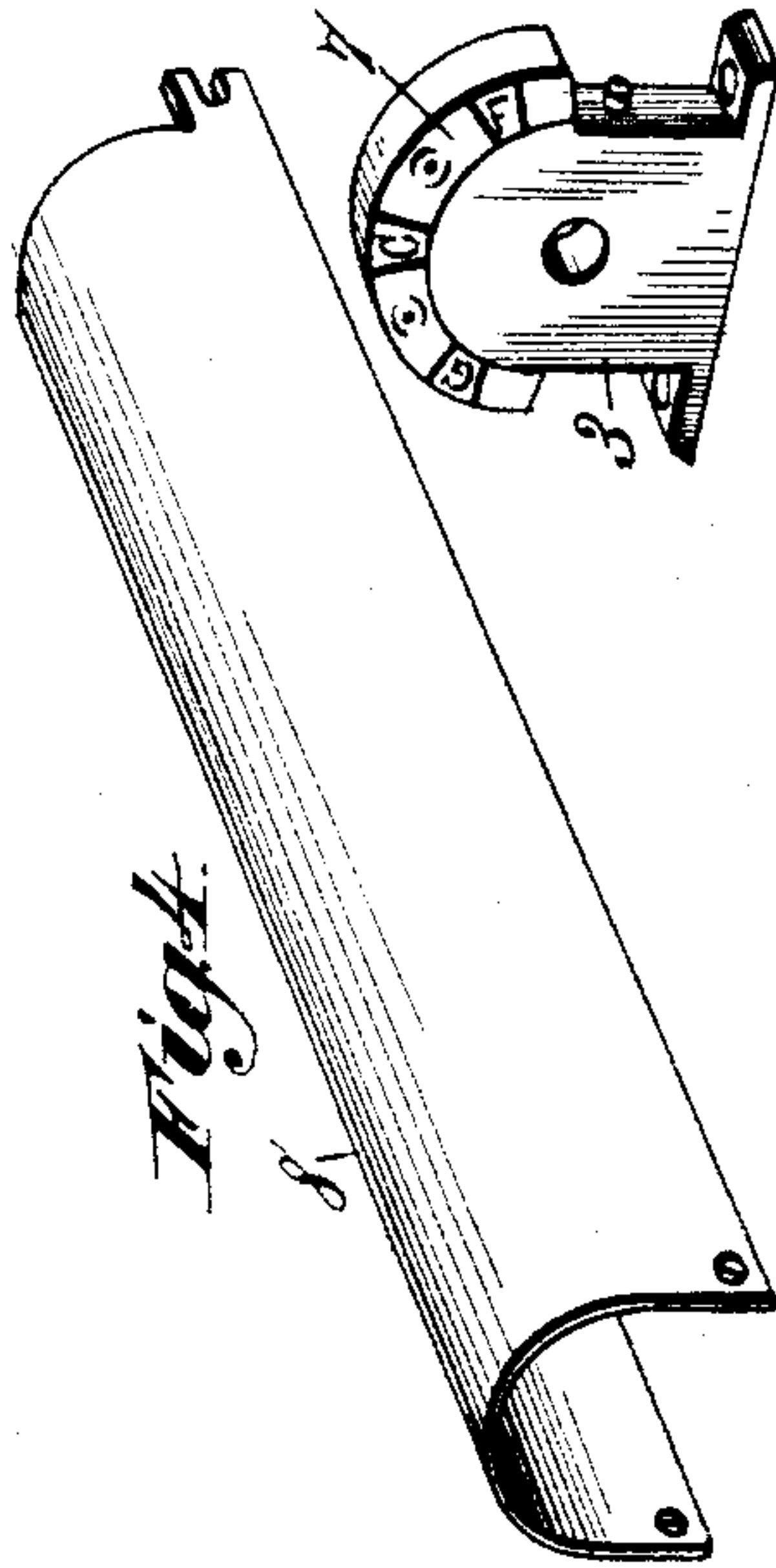
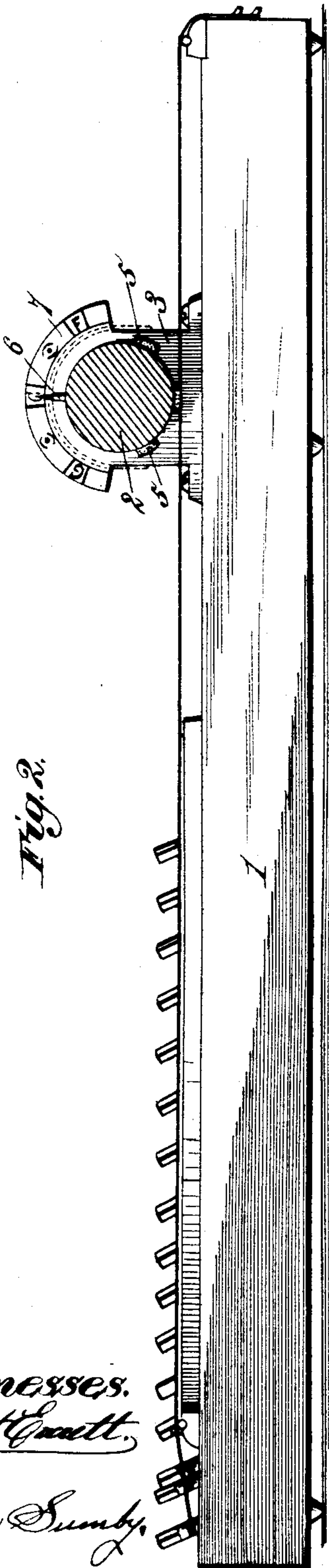
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2 Sheets—Sheet 2.

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MUSICAL INSTRUMENT.

No. 538,931.

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Witnesses.  
*Robert G. Watt.*  
*Thomas S. Sully.*

Inventor:  
*Arthur M. Phelps.*  
By  
*James L. Norris.*  
*Atty.*



# UNITED STATES PATENT OFFICE.

ARTHUR M. PHELPS, OF SEABROOK, MARYLAND, ASSIGNOR OF ONE-HALF TO  
CHARLES ROWLAND, OF WASHINGTON, DISTRICT OF COLUMBIA.

## MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 538,931, dated May 7, 1895.

Application filed December 27, 1894. Serial No. 533,096. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR M. PHELPS, a citizen of the United States, residing at Seabrook, in the county of Prince George's and State of Maryland, have invented new and useful Improvements in Musical Instruments, of which the following is a specification.

My invention relates to certain new and useful improvements in musical instruments, but more particularly instruments of the zither type, which are played by vibrating the strings with the fingers or a thumb "pick."

It is my purpose to provide a simple attachment for instruments of this class and others to which it can be made applicable consisting in part of a muffling roller that will enable a person, though unable to read ordinary notes, or one who knows nothing whatever about music to easily produce various chords in different keys, which can be used to accompany the voice in singing or accompany other instruments, and which will also enable a person, with a very little practice, to play melodies and at the same time sound the various chords necessary to harmonize with said melodies.

My invention further comprises an index and pointer to guide the performer in sounding any chords which any particular attachment may be capable of producing.

It is my purpose, also, to simplify the playing of a stringed instrument of the type described, by providing a "string chart" which may be used in connection with my attachment, and by providing a simplified method of writing music by means of figures which may be used in connection with my attachment and for which the said "chart" is a "key," making the reading and rendering of music, by aid of my method and attachment, exceedingly simple and easy.

It is a further purpose of my invention to provide an attachment for stringed instruments which may consist in part of an interchangeable muffler or damping roller whereby a series of rollers containing various melodies and chords may be attached and detached at will, enabling a person to easily perform any melody that a certain roller may be arranged to produce without the aid of notes, or music

written by figures or any other method, and without the aid of any "chart" or figures placed in connection with the strings.

My invention also comprises certain other features of novelty will which be fully explained in the following specification.

To enable others to fully understand and to make and use my said invention, I will proceed to describe the same in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a plan view of a stringed instrument provided with my attachment. Fig. 2 is a vertical longitudinal section. Fig. 3 is a view showing a modified construction of the muffler or damper roller. Fig. 4 is a covering or cap for the muffler or damper roller. Fig. 5 is a view of a modification of the roller.

The reference-numeral 1 in said drawings, indicates a stringed instrument, the form selected, for illustrative purposes, being a simple form of a harp or zither, though my invention is readily applicable to many other forms of this type of instrument. As my invention does not contemplate, or require any change in the instrument itself, and as the latter is a form well known, no further description thereof is necessary for the purposes of this specification.

Above the strings of the instrument and extending across the same is a roller 2, journaled in any suitable form of supports or uprights 3, which may be mounted directly upon the top or sounding board. The under surface of this roller closely approaches but does not come in contact with the strings. It may be revolved in either direction by means of a crank 4, or other suitable means. Upon this roller is arranged one or more series of damping or muffling cushions, or pads 5, arranged in substantial parallelism with the axis of the roller. These cushions are formed of felt, rubber, or any other material adapted for the purpose, and they project from the surface of the roller in the same vertical planes with the strings of the instrument, so that when said roller is turned to bring the series of cushions directly over the strings, they will press upon the latter with sufficient force to prevent them from producing musical



tones. The series, or each series of cushions when a plurality of such series is used—is arranged in reference to the strings, so as to muffle or damp all the strings save those required to sound in order to produce a musical chord or a given series of notes in a melody when the fingers or a "pick" or similar instrument is swept across the wires. It will be readily seen and understood how, by providing the roller with several series of such cushions around its surface each series being properly arranged with reference to the strings, and by giving a rotary movement to the roller, a series of musical chords will be produced by running the fingers or the "plectrum" across the strings as each series of cushions come in contact with the wires. Any one chord may be produced as many times as desired by holding the roller stationary with the proper series of cushions resting upon the strings, and sweeping the "pick" across them as many times as necessary. Thus a roller may be provided with a number of series of cushions that will enable any one to produce the major and minor chords of any one or all keys, or any chord known in harmony. When two or more adjacent strings are to be muffled it is preferable to use one cushion instead of several small ones.

In order to enable one to produce a certain chord at once, I have provided a pointer 6, mounted on the roller to revolve the same, moving over an index disk or strip 7, on one of the supports 3. This index disk, or strip shows at a glance what chords the particular instrument is capable of producing and by revolving the roller so as to have the "pointer" rest over any one letter on the disk for instance "C," and running the plectrum across the strings, the chord of "C" will be produced, and the same with the other letters. Of course letters or any characters preferred can be used on the index.

If preferable, the index disk may be attached to the roller and the pointer be attached to the support 3 or body of instrument. In either case the registering is the same to produce the same result.

When the pointer stands between any two letters on the index disk or strip, the strings are all free from contact with the cushions and any number of adjacent strings can be thus sounded very rapidly. I may cover the damping roller with a shield or housing 8 to hide from view the series of cushions and also prevent their being damaged from any cause. This shield is cut away at the index end so as to provide space for pointer 6 to revolve. This end is provided with small projections slotted to engage small pins which support said shield at that end. The other end of the shield is provided on each side with a small hole, or slot, that engages two small pins which support and hold that end. This is a simple means of attaching the shield as it can thus be put on or removed at once, though of course any other suitable way can be em-

ployed; or, if preferred, the shield may be left off entirely. It is intended to be used only with an attachment that produces certain chords the roller of which is permanently attached to it, and not with an attachment having an interchangeable roller, as it would hinder or retard the rapidity with which a roller could be detached from the instrument and another attached, though if desired it can be supplied with either style of attachment.

Under the strings of the instrument in suitable proximity to the roll, is placed a scale chart 9, consisting of a series of letters and figures placed immediately under the strings, the former, being used to indicate the pitch of each string and the compass of the instrument, and serves as a guide should the instrument be played by "note," and the latter serves as a guide in performing music written by the figure method.

In addition to the above series of letters and figures the chart contains a series of columns of letters, there being one column for each full chord on the instrument. At the head of each column is a letter showing what chord the column represents, as, for example, if the instrument produces three chords say "C," "F" and "G" there will be three columns headed "C," "F" and "G" and in the "C" column will be placed under each string that sounds in that chord the letter "C" showing just what strings constitute that chord and can be played when the "pointer" is over "C" on the index disk. In column "G" will be indicated by letter "G" all the strings that constitute that chord, and that can be played when the pointer is placed over "G," and so on with all the keys of the instrument no matter how many there may be.

In Fig. 4 I have shown one way in which the muffler roller is detached from the supports 3 when the attachment is arranged for interchangeable rollers. This interchangeable system is intended to be used when various rollers are prepared to either produce various chords, or contain a complete melody.

From my description of the operation of the instrument it will be seen how easily the series of cushions may be so arranged around the circumference of the roller in reference to the strings, that they will produce any melody or melodies, in the manner heretofore described. I show a simple form of attaching and detaching the roller though any suitable method can be used. An instrument can contain two rollers if preferable, one roller having set chords and permanently attached to the instrument and the other roller being interchangeable for producing melodies or special sets of chords. The roller 2, may be formed of wood, metal, or any suitable material, and it may be hollow or solid and where but a few series of cushions are used, the roller need not be entirely circular, a simple segment being used as shown at Fig. 5. The cushions are preferably glued to the



surface of the cylinder, but may be attached in any suitable manner.

My invention provides an extremely simple, cheap and easily operated attachment for 5 stringed instruments which is capable of an indefinite variation of the music that can be produced thereby, and which enables any person without a knowledge of music to easily play the instrument. The simplicity of construction of my attachment makes its operation noiseless, there being no movable push- 10 bars, triggers, or springs, or other devices to rattle, or screech, which always tend to mar the melody of the instruments on which they are used. 15

What I claim is—

1. A stringed musical instrument provided with a muffling attachment consisting of a roll having a number of longitudinal series of 20 cushions upon its face, said cushions being of substantially uniform thickness and having their outer faces concentric with the face of the roll, the several series of cushions being arranged to muffle certain strings and produce a series of successive chords, or a complete melody, by turning the roll in the same 25 direction, or in opposite directions, substantially as described.

2. An attachment for a stringed instrument, 30 consisting of a roll journaled in suitable supports and extending across the strings out of contact therewith, its surface being provided with cushions arranged in a number of longitudinal series, said cushions being of substantially uniform thickness and having their 35 outer faces concentric with the face of the roll, and means for revolving the latter intermittently in one, or both directions, substantially as described.

3. The combination with a stringed instrument of a roll journaled in suitable supports and extending across, but out of contact with the strings, its face being provided with cushions of substantially uniform thickness arranged in a number of longitudinal series 45 each concentric with the roll, and in such

manner as to muffle certain strings, means for revolving said roll intermittently in one or both directions, and an index consisting of a series of letters arranged concentrically with 50 the roll and a finger which registers at each movement of the roll with one of the letters to denote the key of the chord which may be struck in said position of the roll, substantially as described. 55

4. An attachment for a stringed instrument, consisting of a removable roll journaled in suitable supports and provided on its face with cushions of substantially uniform thickness their outer faces being concentric with 60 the face of the roll, said cushions being arranged in such manner as to muffle certain of the strings, means for turning the roll intermittently in one, or both directions, and an index consisting of a series of letters arranged 65 concentrically with the roll and a finger which is caused to register with one of said letters at each intermittent movement of the roll, to denote the key of the chord which may be sounded at each movement, substantially as 70 described.

5. An attachment for a stringed instrument, consisting of a roller journaled in suitable supports and capable of turning intermittently, throughout a complete revolution, or 75 through any part thereof and in both directions, its face extending across and near the strings, and provided with one or more longitudinal series of cushions of substantially uniform thickness having their outer faces 80 concentric with the face of the roll, and adapted to muffle certain of the strings, and a housing to inclose the roll, said housing and roll being removable and replaceable, substantially as described. 85

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

ARTHUR M. PHELPS. [L. S.]

Witnesses:

JAMES L. NORRIS,  
G. W. REA.