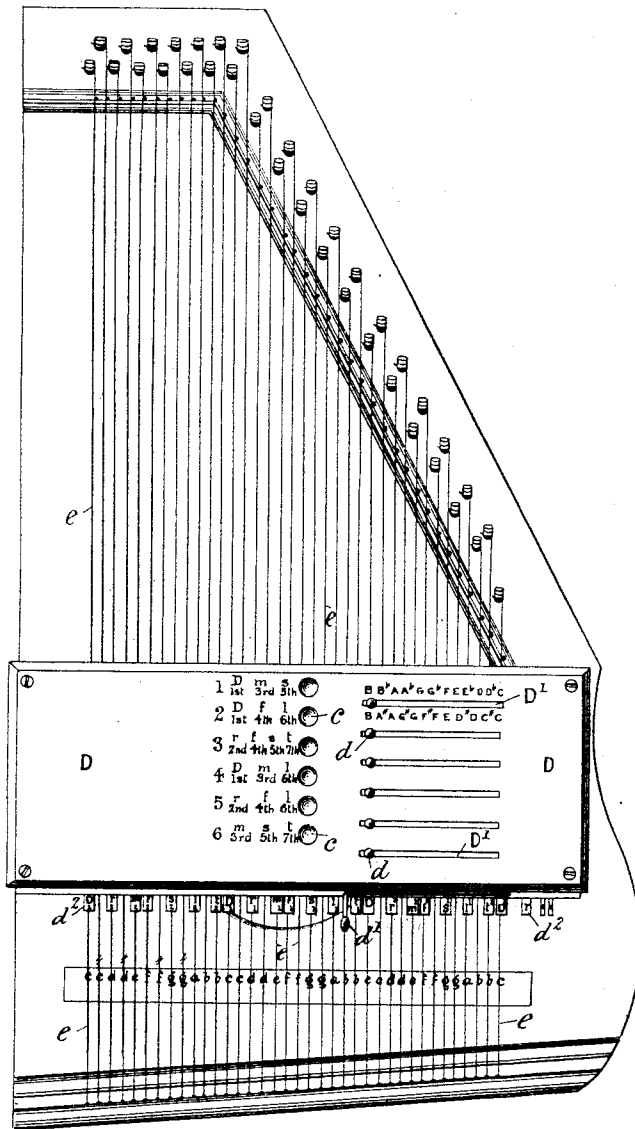


A. GOVAN & J. WORTON, Jr.  
AUTOHARP.

No. 541,352.

Patented June 18, 1895.

FIG. 1.



Witnesses:  
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 George Baumann

Inventors  
 Alexander Govan  
 John Worton, Jr.  
 By their Attorneys  
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FIG. 2.

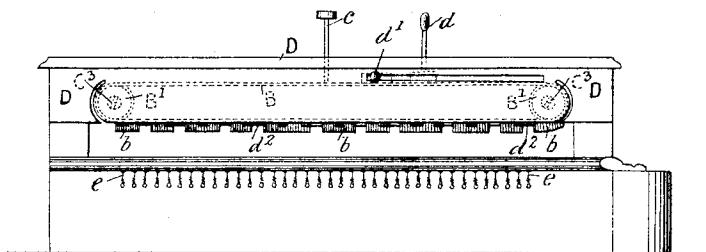


FIG. 3.

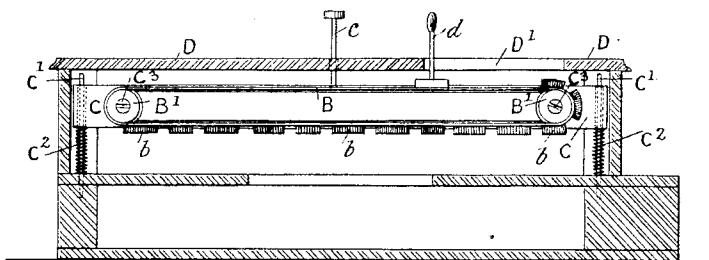
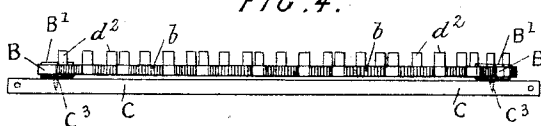


FIG. 4.



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# UNITED STATES PATENT OFFICE.

ALEXANDER GOVAN AND JOHN WORTON, JR., OF GLASGOW, SCOTLAND.

## AUTOHARP.

SPECIFICATION forming part of Letters Patent No. 541,352, dated June 18, 1895.

Application filed December 4, 1894. Serial No. 530,771. (No model.) Patented in England March 16, 1894, No. 5,526.

*To all whom it may concern:*

Be it known that we, ALEXANDER GOVAN and JOHN WORTON, Jr., subjects of the Queen of Great Britain and Ireland, and residents of Glasgow, Scotland, have invented certain new and useful Improvements in Autoharps, (for which we have obtained a patent in Great Britain, No. 5,526, bearing date March 16, 1894,) of which the following is a specification.

This invention has reference to improvements in and relating to musical instruments of the class known as auto-harps; and comprises an improved method of mounting and operating the sound stoppers, and combination of devices connected therewith; and in order to enable others skilled in the art to which our invention relates to understand how it may be carried into practice, we have hereunto appended two sheets of explanatory drawings in which the same reference letters are used to indicate corresponding parts in the several figures where shown.

Figure 1 is a plan view of an autoharp as fitted with our improvements. Fig. 2 is a front elevation corresponding to Fig. 1, and Fig. 3 a corresponding sectional elevation, while Fig. 4 is a detached inverted plan view of one of the endless bands carrying the stoppers and the harmony-bar to which the pulleys are screwed.

Referring to the drawings, our improvements relate to an improved method of enabling the keys of the usual musical scale to be played on the instrument, and consists in mounting the sound stoppers *b* on endless bands *B* which travel around at right angles across the line of parallel wire strings *e* used in the instrument. We string the instrument with twelve semitone wires in the octave, and the semitone wires which are not in the key to which the instrument is set for, have their sounds stopped by the stoppers *b* on the aforesaid endless bands *B*. The stoppers on the endless bands are set on them to suit the musical scale, and to produce harmony. When the instrument is set to any particular key on one of the bands the other bands can be similarly shifted to give harmony on the same key.

Harmony bars *C* (each secured to an endless band *B*) are fitted between the endless bands *B*, and are adjustably mounted at their ends on vertical pins *C'* around which are

coiled helical springs *C*<sup>2</sup>, and the pulleys *B'* around which the endless bands *B* travel are loosely mounted on pins *C*<sup>3</sup> screwed to each bar *C*. A boxed cover *D* is screwed to the frame of the instrument, and vertical stem rods *d* are secured one to each band *B* and project up through slots *D'* formed in top of cover *D*. Key graduations are formed at the sides of each slot *D'*, so that if it is desired to play on any particular key, the band can be moved around by the hand operated stem *d* until said stem comes opposite the letter of that key on the graduated board. Vertical stem rods *c* are fitted through holes in the cover *D* and have their lower ends attached to the bars *C* so as to depress said bars, and with them the particular bands *B* with their stoppers *b* to stop out the wires *e* over which these stoppers bear to give the desired harmony. A similar endless band *B* carries the tickets *d*<sup>2</sup> with the musical notes so that these latter may project outside the cover *D*, and this band would be operated to travel by a stem rod *d'* so as to be adjusted to indicate the notes for each change of scale.

What we claim is—

1. In auto-harps an endless traveling band having sound stoppers, substantially as set forth.

2. In auto-harps, the combination comprising endless bands, stoppers mounted on said bands, and depressible harmony bars having rollers mounted on them over which the endless bands travel, substantially as set forth.

3. In auto-harps, the combination comprising endless traveling bands carrying the sound stoppers, vertical stem rods attached to said bands, and graduated key boards past which the stem rods travel, substantially as set forth.

4. In auto-harps, the combination comprising endless traveling bands carrying the sound stoppers, an endless traveling band carrying the musical notes, stem rods for operating said bands and a boxed in top cover, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALEX. GOVAN.  
JNO. WORTON, JR.

Witnesses:

JOHN SIME,  
R. C. THOMSON.