

A. AMTHOR.

TUNE SHEET FOR AUTOMATIC MUSICAL INSTRUMENTS.

No. 529,995.

Patented Nov. 27, 1894.

Fig: I.

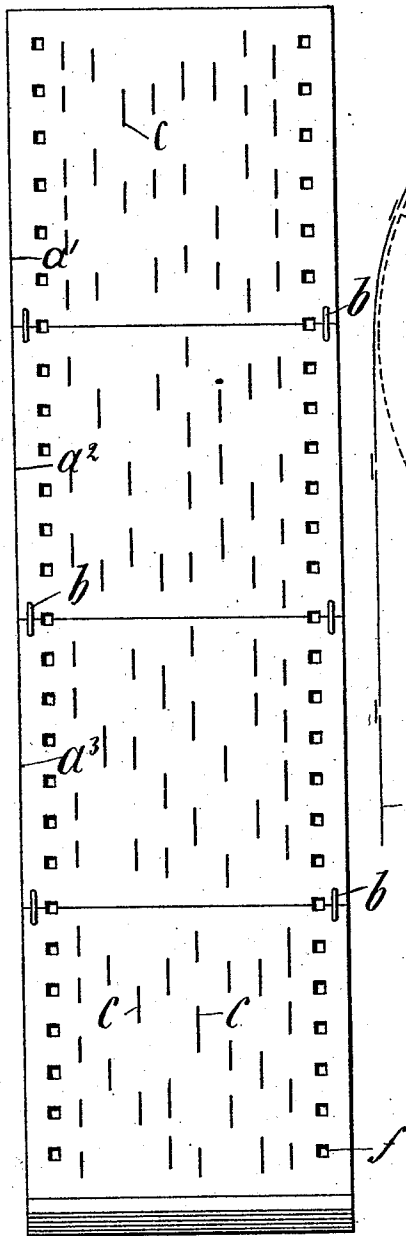


Fig: II.

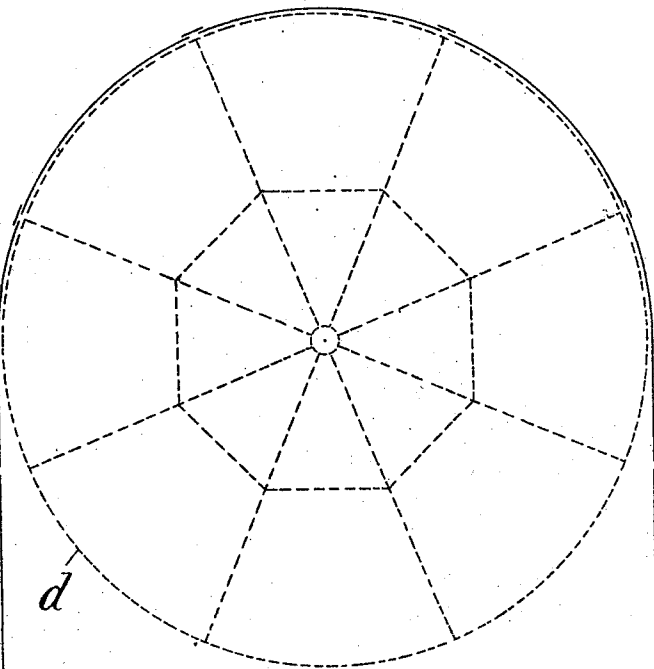


Fig: III.

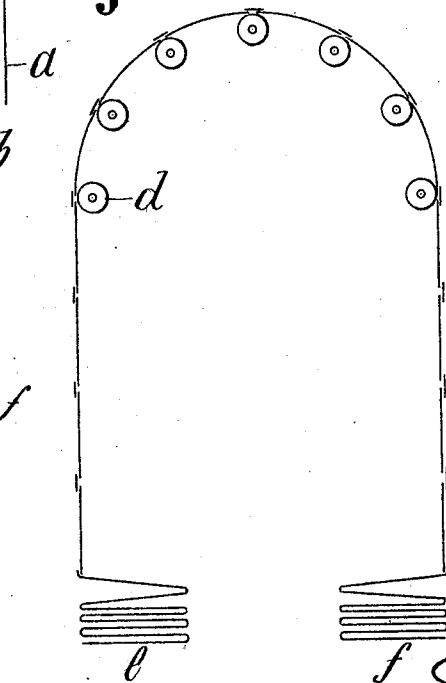


Fig: IV.



Witnesses,  
By W. Rea.  
Thos. A. Green

Inventor:  
August Amthor,  
By J. L. Norris  
att'y

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Fig. V.

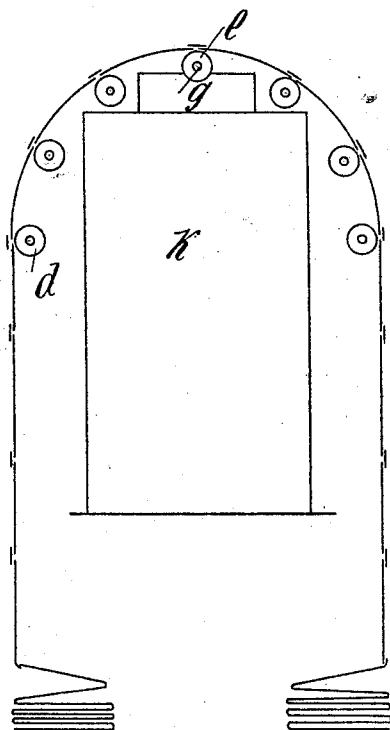
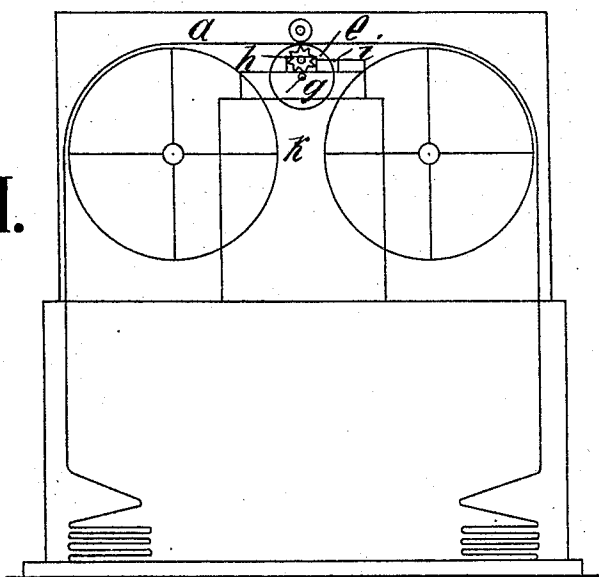


Fig. VI.



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Thos. A. Green

Inventor:  
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By James L. Norris,  
Atty.

(No Model.)

4 Sheets—Sheet 3.

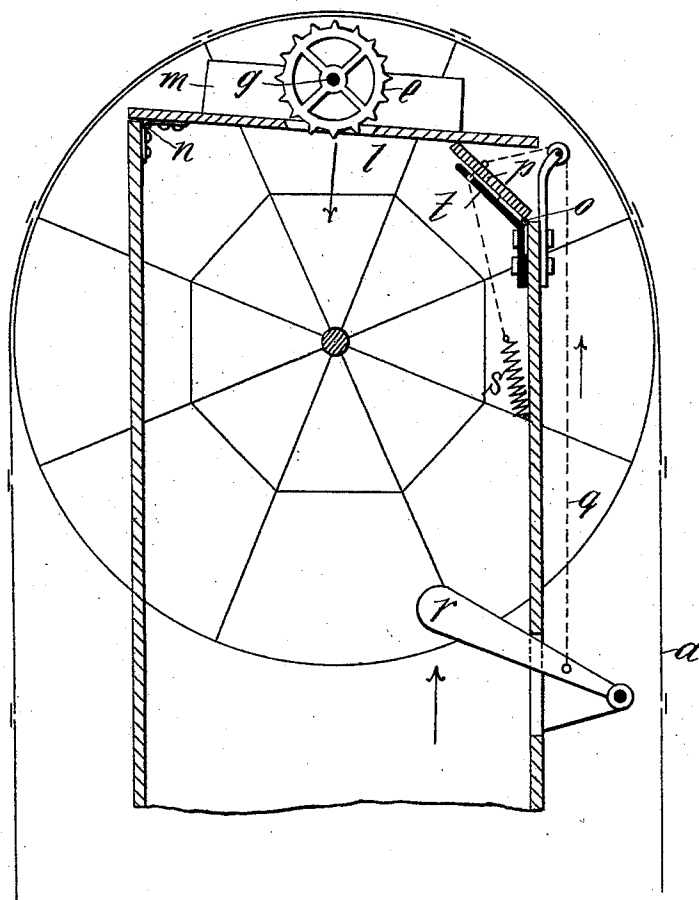
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Fig: VII.



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Thos. A. Green

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(No Model.)

4 Sheets—Sheet 4.

A. AMTHOR.

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**Fig: VIII.**

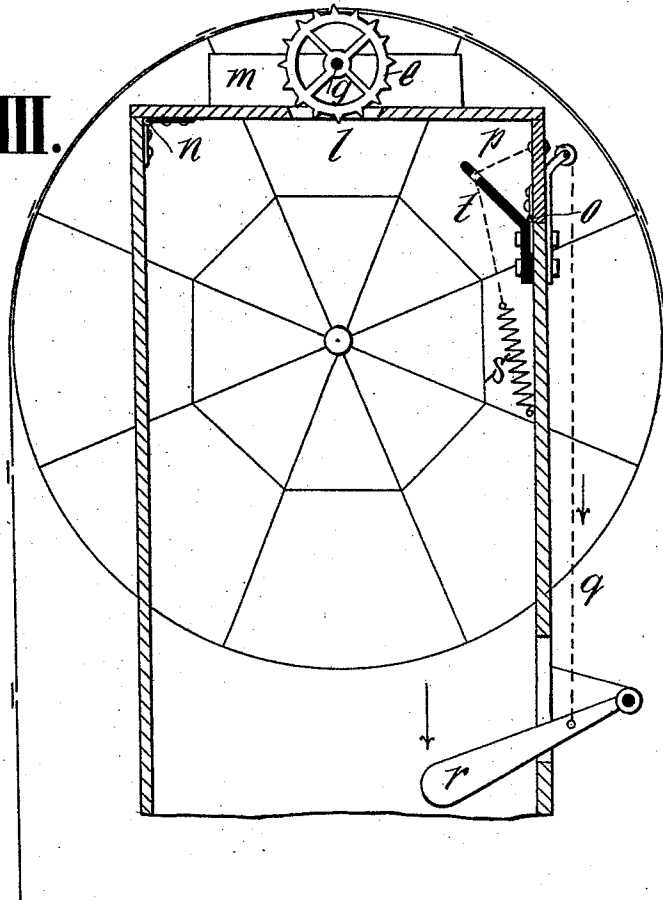
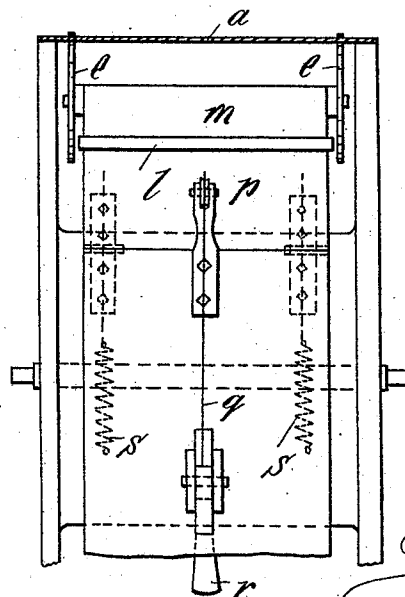


Fig:IX.



Witnesses:

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# UNITED STATES PATENT OFFICE.

AUGUST AMTHOR, OF WALTERSHAUSEN, GERMANY.

## TUNE-SHEET FOR AUTOMATIC MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 529,995, dated November 27, 1894.

Application filed July 12, 1894. Serial No. 517,307. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST AMTHOR, a subject of the Duke of Saxe-Coburg-Gotha, residing at Waltershausen, in the Duchy of Saxe-Coburg-Gotha and German Empire, have invented new and useful Improvements in Tune-Sheets for Automatic Musical Instruments, of which the following is a specification.

My invention relates to tune sheets for automatic musical instruments as I will now proceed to explain by reference to the accompanying drawings, in which—

Figure I is an elevation of the tune sheet. Fig. II shows the mode of guiding the tune sheet over a drum or barrel. Fig. III shows the mode of guiding the tune sheet over guide pulleys or rollers. Fig. IV illustrates the manner of connection of two plates of the tune sheet. Fig. V is an elevation showing the manner of actuating the tune sheet. Fig. VI shows a modified method of actuating the tune sheet in elevation. Fig. VII shows the tune sheet with movable plate in the position of out of gear. Fig. VIII shows the tune sheet with movable plate in the position of in gear. Fig. IX is a side elevation of Fig. VIII.

My improved tune-sheet is composed of separate parts  $a'$ ,  $a^2$ ,  $a^3$  adapted to be detachably connected together by any suitable means such as hooks, hinges, or links  $b$ , so as to form a band or strip of any desired length, the parts, links, or members  $a'$ ,  $a^2$ ,  $a^3$  of which can be detached and replaced as desired in an easy manner.

The parts  $a'$ ,  $a^2$ ,  $a^3$  of the tune-sheet may be made in any ordinary or suitable manner so as to adapt them to actuate a musical instrument it may be by punching in them holes  $c$ , which may if desired be formed at their edges with serrations for instance by being punched with serrated dies. Each of the separate parts  $a'$ ,  $a^2$ ,  $a^3$  of the tune-sheet may correspond to the whole or a portion only of a musical piece or composition. A tune-sheet of this kind may consist of any convenient number of parts  $a'$ ,  $a^2$ ,  $a^3$  and thus enable a very large number of separate musical compositions to be played on a suitably constructed automatic musical instrument and the several musical pieces contained in the tune-sheet can be played in succession or out of their turn or be repeated without its being

necessary as it has been heretofore to take out by hand one tune-sheet and to replace it or to substitute therefor another tune-sheet. 55

A tune-sheet  $a$  composed in this manner of a number of separate parts may, when in use, conveniently be passed over drums  $d$  (Fig. II) or a series of rollers  $d'$  (Fig. III) and the tune-sheet may then be allowed automatically to fold up at one of its ends  $e'$  or  $f'$ , as shown in Fig. III, which it will do without taking up any appreciable space. 60

A tune-sheet of this kind composed of a number of detachable parts enables a practically unlimited number of musical pieces to be played in succession in a suitably constructed mechanical musical instrument or to be therein repeated or played out of their turn, which has not been possible with the tune-sheets or tune-disks hitherto used. 65 70

Parts  $a'$ ,  $a^2$ ,  $a^3$  of the tune-sheet may be made of metal or of any other suitable material. They can be easily put together and they may be sold separately so that any person may be able to make up a tune-sheet according to his own taste. 75

The movement of the tune sheet is effected by means of toothed wheels  $e$  engaging with their teeth in tooth-spaces  $f$  arranged on both sides of the tune sheet. The toothed wheels  $e$  are mounted on axles  $g$ , which are driven in any suitable manner from the works of the musical instrument (Figs. V, VI, VII and VIII). The tune sheet then actuates the striking wheels  $h$  in the well known manner and the latter strike and cause the tongues or reeds  $i$  to sound, Fig. VI. 80 85

The striking wheels  $h$ , the toothed wheels  $e$ , the tongue-comb and the driving axle  $g$  are situated below the tune sheet  $a$  inside the drum or barrel casing  $k$ , which is fitted with a plate  $l$  for the reception of the clockwork. The plate  $l$  may be arranged in such a manner as not only to enable the musical works to be kept at rest, but also to enable the note-drum or small toothed wheels  $e$  to be conveniently rotated, without thereby affecting the tongue-mechanism. The plate  $l$ , on which the tongue-mechanism  $i$  and the clock movement  $m$  are situated is adapted to pivot about a hinge at  $n$  and bears with its other end on a flap  $p$  pivoted at  $o$ , which can be raised by means of a cord  $q$  from the lever  $r$  thereby straining a 90 95 100

- spring *s*. The pull of the spring *s* when the lever *r* is raised, causes the flap *p* to turn about its pivot *o* and fall back against the plate *l*, Fig. VII. Then the plate *l* moves down and with it the small toothed wheel *e* with axle *g* and the clock-movement *m*, so that the small toothed wheel is caused to pass out of gear with the tune sheet *a* and may then be shifted as desired.
- 10 Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim, and wish to secure by Letters Patent, is—
- 15 1. A tune sheet *a* composed of separate plates in combination with small toothed wheels *e* on axles *g*, which are rotated by a clock-movement *m* arranged on a plate *l*, pivoted at one end in the barrel-casing *k* and adapted to be raised and depressed at the other end substantially as described.
2. An automatic musical instrument provided with a music sheet *a*, in combination with toothed wheels *e*, a clock movement mounted on plate *l*, which is pivoted at one end to the casing *k* and supported at the opposite end by a flap *p*, the spring *s* arranged to turn the flap in one direction and the cord *g* operated by lever *r* for turning the flap in the opposite direction, substantially as described.
- 25 30
- In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.
- AUGUST AMTHOR. [L. S.]
- Witnesses:  
P. TEICHMANN,  
FANNIE MOORE.