

No. 697,821.

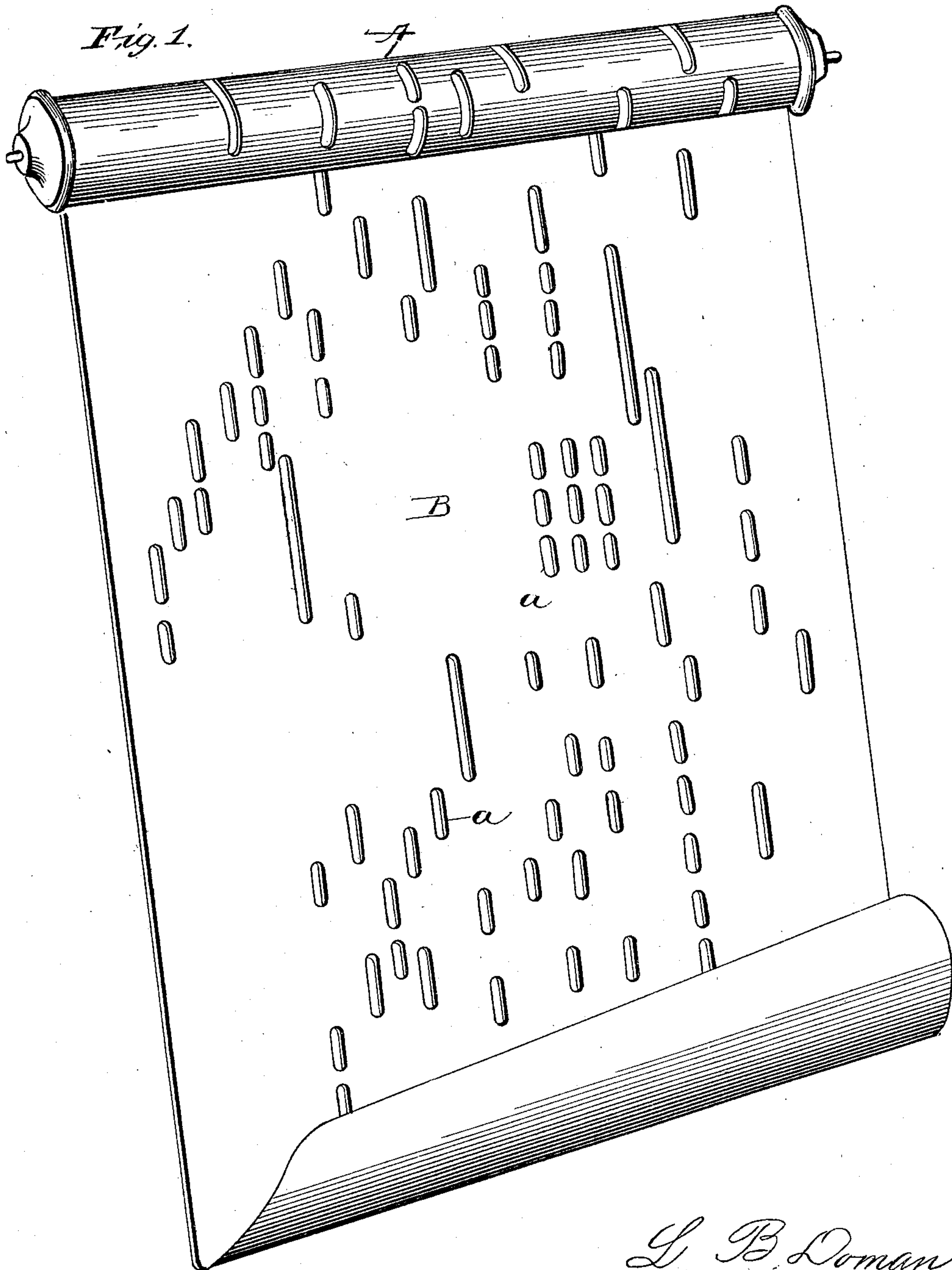
Patented Apr. 15, 1902.

L. B. DOMAN.
MUSIC ROLL.

Application filed July 22, 1901.

(No Model.)

3 Sheets-- Sheet 1.



Witnesses:
J. M. Fowler Jr.
Gales Thoms.

L. B. Doman
Inventor

By *[Signature]* Moore
Att'y

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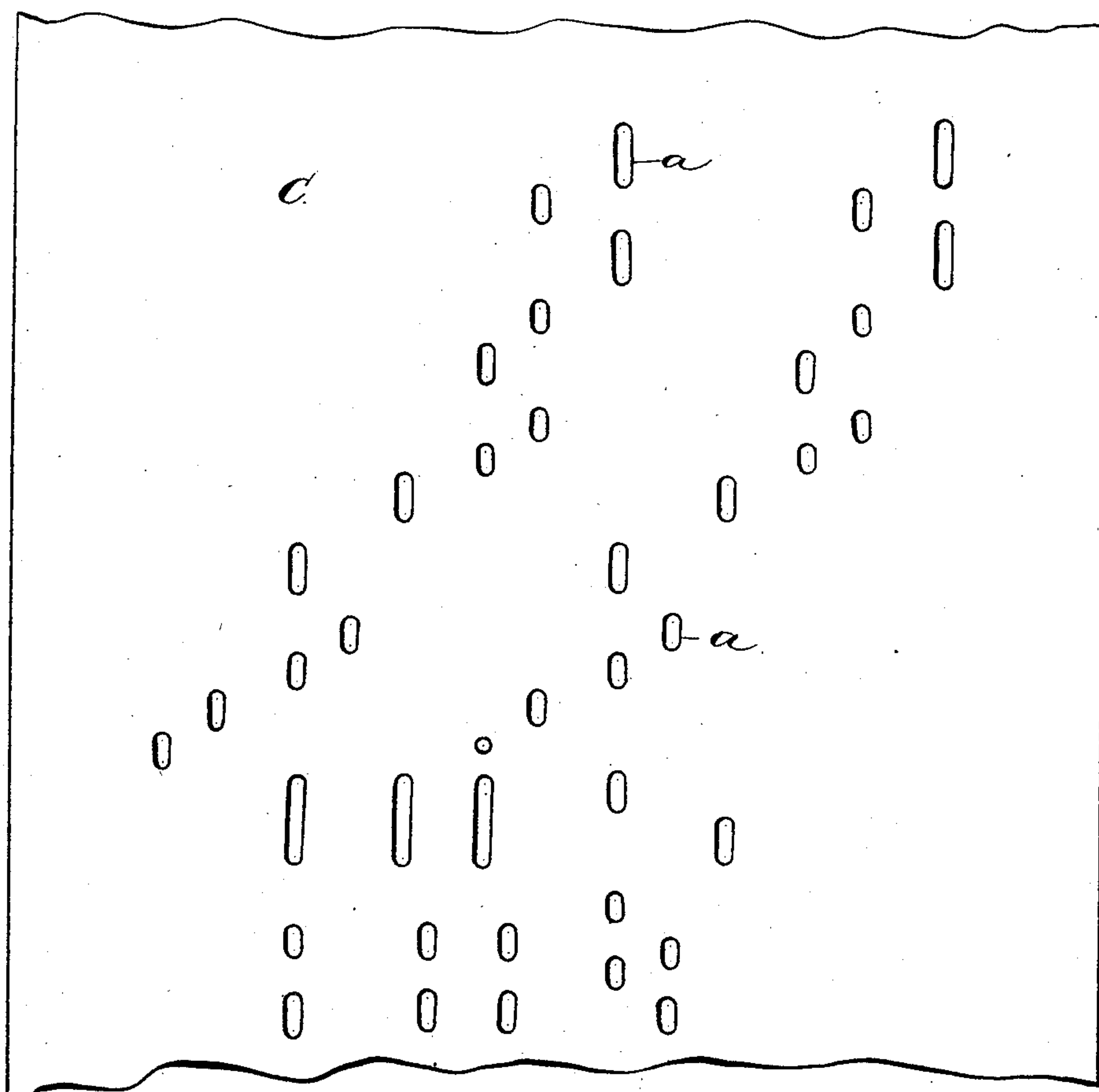
MUSIC ROLL.

(Application filed July 22, 1901.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2.



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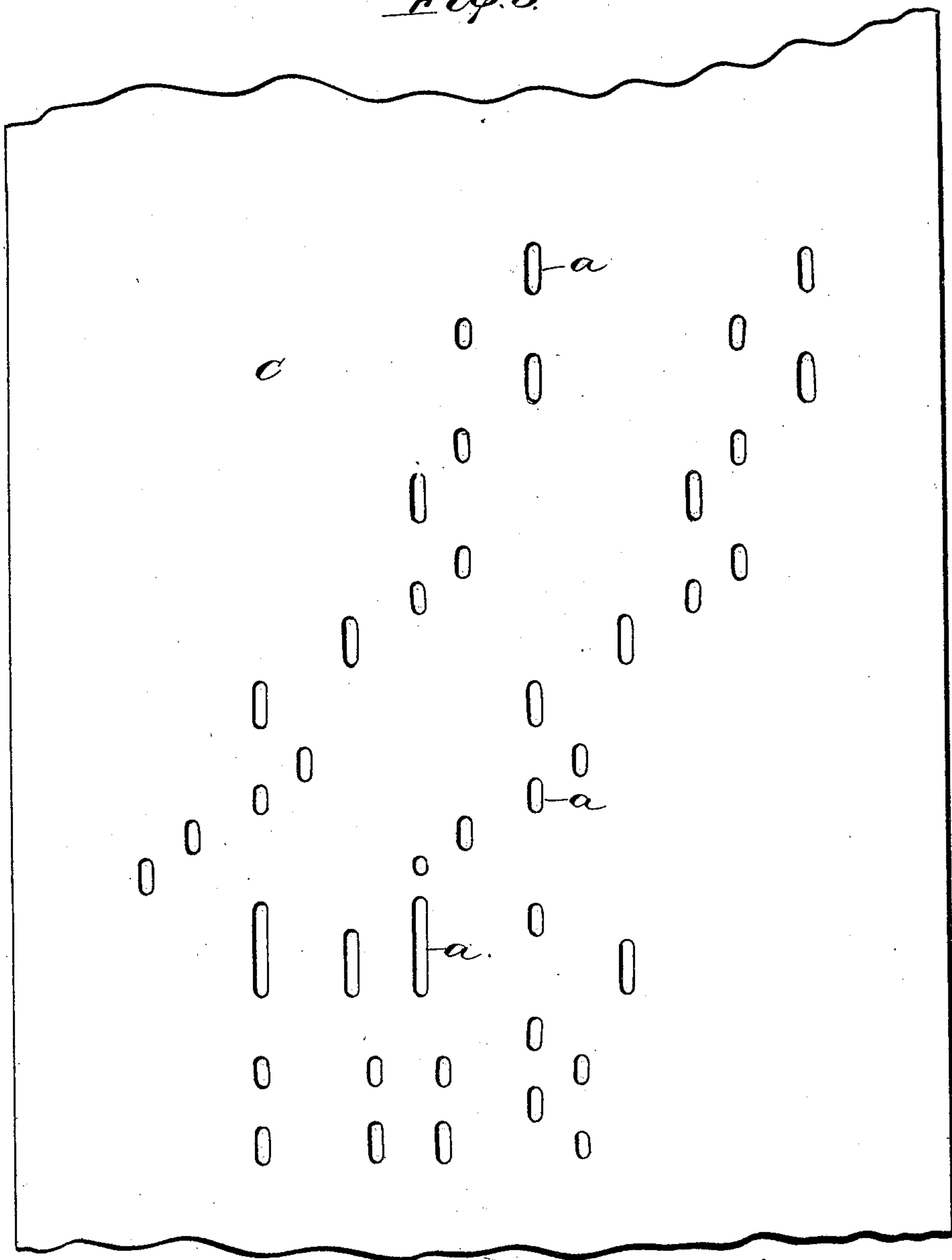
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(No Model.)

3 Sheets—Sheet 3.

Fig. 3



witnesses:
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UNITED STATES PATENT OFFICE.

LEWIS BENJAMIN DOMAN, OF ELBRIDGE, NEW YORK.

MUSIC-ROLL.

SPECIFICATION forming part of Letters Patent No. 697,821, dated April 15, 1902.

Application filed July 22, 1901. Serial No. 69,255. (No model.)

To all whom it may concern:

Be it known that I, LEWIS BENJAMIN DOMAN, a citizen of the United States, residing at Elbridge, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Music-Rolls, of which the following is a specification.

This invention pertains to perforated music, and more particularly to perforated music-rolls; and it has for its object primarily to provide a roll of this class of music in which there is provision compensating for the gradual yet positive increase in speed of the music caused by the increasing lineal speed of the music-sheet due to the windings of the sheet on the take-up roll of the instrument. In order to accomplish this purpose, I provide a music sheet or roll with gradually-increased length of space occupied by measures, perforations, and bridges between perforations from the beginning to the end. I am thus enabled to give absolutely exact "tempo" and do not increase the time of the music as the take-up roll of the playing device becomes greater in diameter from the windings of the sheet thereon. This drawback, which has heretofore been present in all forms of self-playing instruments, is very evident, more especially in dance-music, and although the increase (using a common roll) is very gradual, still it is there, and the greater the difference in diameters of the roll the more appreciable is the increase. A simple computation of the relative circumference of the roll—usually, say, from one and one-half to three inches in diameter—will show that the speed will be doubled on the larger roll. Heretofore attempts have been made to overcome or obviate this defect, usually by slowing down the take-up roll as it increases in size by means of a suitable stop; but this, as will be readily understood, changes the tempo by steps. For instance, beginning a selection the time increases in speed as the roll becomes larger, and when the speed is reduced it is done at once, from which objectionable results are attained. It is evident that it is not possible for any one, no matter how skilled he may be in such matters, to shut off the speed in exact accordance with the increase in speed of the music-sheet due to the

increasing circumference of the roll. I overcome this objection without the employment of any extraneous device and without adding to the cost of the roll or sheet of music by cutting the music-sheet with a gradually-increased length of perforation from the beginning to the end of the piece. This gradual increase is so made as to exactly and automatically compensate for the increase in lineal speed of the music, the result being that the tempo is exact to the metronome.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of a roll of sheet-music constructed in accordance with my invention, a portion of the sheet being unrolled. Fig. 2 shows, on an enlarged scale, a portion of the sheet, being that taken from the beginning of the roll from the first end of a sheet where the take-up roll has very little paper wound thereon and therefore small in diameter. Fig. 3 is a similar view of the same music taken from the latter end of the roll when the take-up roll is nearly filled with paper and its circumference materially increased. The time of the two portions is the same, for the reason that that shown in Fig. 2 is fed slower on account of the smaller circumference of the roll.

Like letters of reference indicate the corresponding parts in the different views.

Referring to the details of the drawings by letter, A designates a roll such as is commonly used for rolling perforated sheet-music such as is generally employed in self-playing instruments. B designates my improved perforated sheet wound thereon, a portion being shown as unrolled in Fig. 1.

In this application it is not deemed necessary to describe the method of perforating the sheets to accomplish the end in view, as this may be done in a variety of ways, some of which I have employed and one of which forms the subject-matter of a separate application soon to be filed; but as the method of

production has nothing to do with the present invention a description thereof is not given.

Upon reference to Fig. 2 will be seen a portion C of the sheet or roll, and attention is particularly directed to the length of space between the perforations a , and from a comparison of the spaces in this view and those between the perforations in Fig. 3 it will be seen that they are much greater in the latter view. The increase in these distances will of course have to be determined by the length of the sheet; but in all cases, whether the sheet be a long one or a short one, the increase is so regulated as to correspond with the increase in diameter of the take-up roll, so that the said increase will exactly correspond with and compensate for the increasing speed of the music-sheet as the circumference of the take-up roll is increased by the windings of the sheet thereon, as will be readily understood.

What I claim as new is—

1. A music-sheet having its perforations gradually increasing in length to compensate for the increasing diameter of the take-up roll.

2. A music-sheet having provision for the automatic compensation of the increased size of the take-up roll.

3. A music sheet or roll having gradually-increased length of space occupied by measures, perforations and bridges between perforations from the beginning to the end, whereby the increasing lineal speed of the music-sheet and consequently increasing

speed of the music due to the windings of the sheet on the take-up roll are compensated for.

4. A perforated music-sheet having its perforations regulated as to length according to the diameter of the roll.

5. A perforated music sheet or roll having provision for keeping the time of the music constant as the feed becomes faster due to the increasing diameter of the take-up roll.

6. A perforated music sheet or roll having provision allowing for a gradual increase in its lineal speed as the take-up roll increases in size without increasing the speed or "tempo" of the music.

7. A perforated music sheet or roll having its perforations and bridges between perforations regulated as to length according to the diameter of the roll.

8. A perforated music sheet or roll for use on instruments provided with means for revolving its take-up roll a certain number of revolutions per unit of time, said perforated sheet or roll being provided with means whereby the increasing lineal speed of the music-sheet and consequently increasing tempo of the music due to the increasing circumference of the take-up roll are compensated for.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS BENJAMIN DOMAN.

Witnesses:

CHARLES F. HARRINGTON,
ALBERT E. BROWN.