

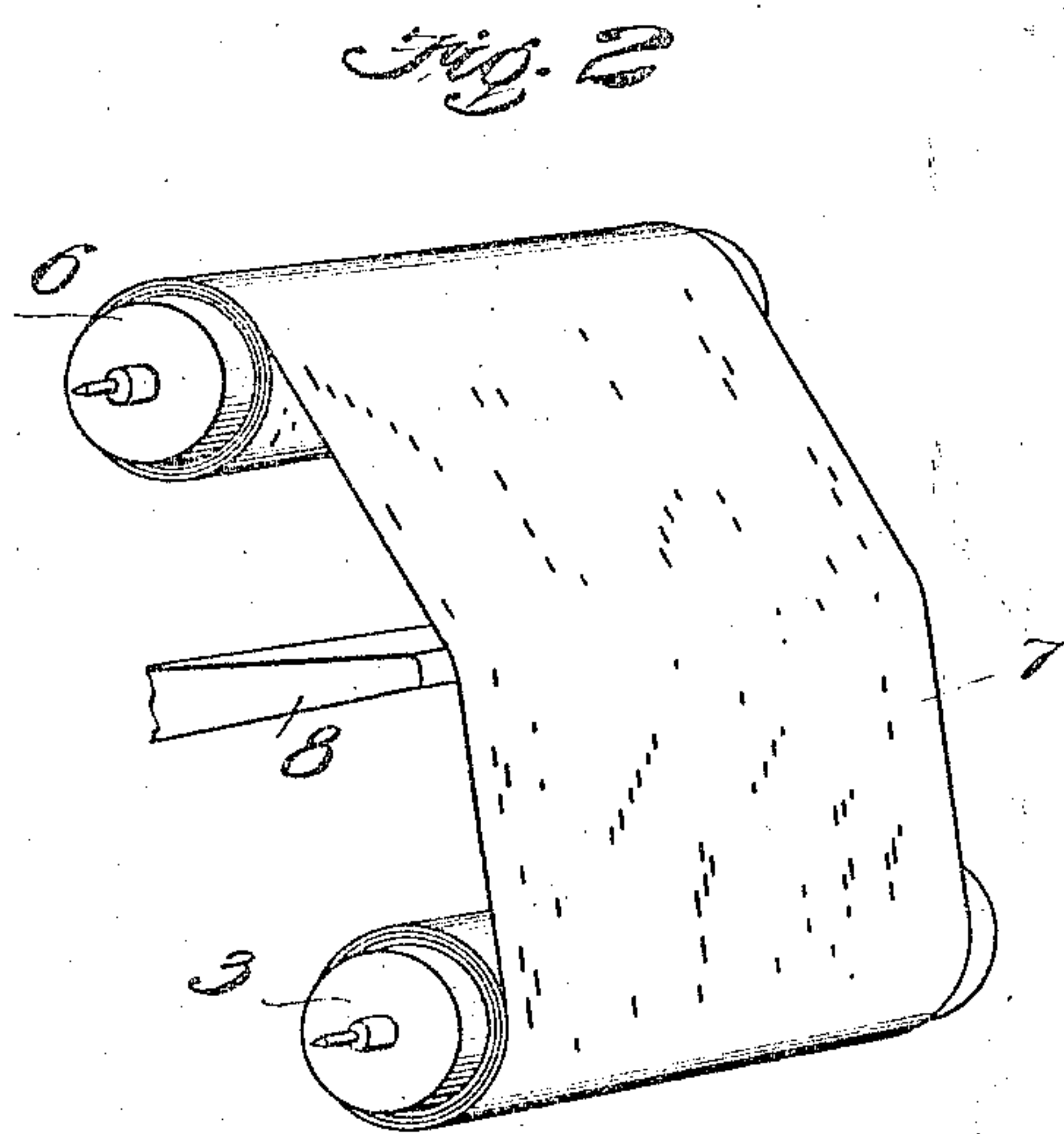
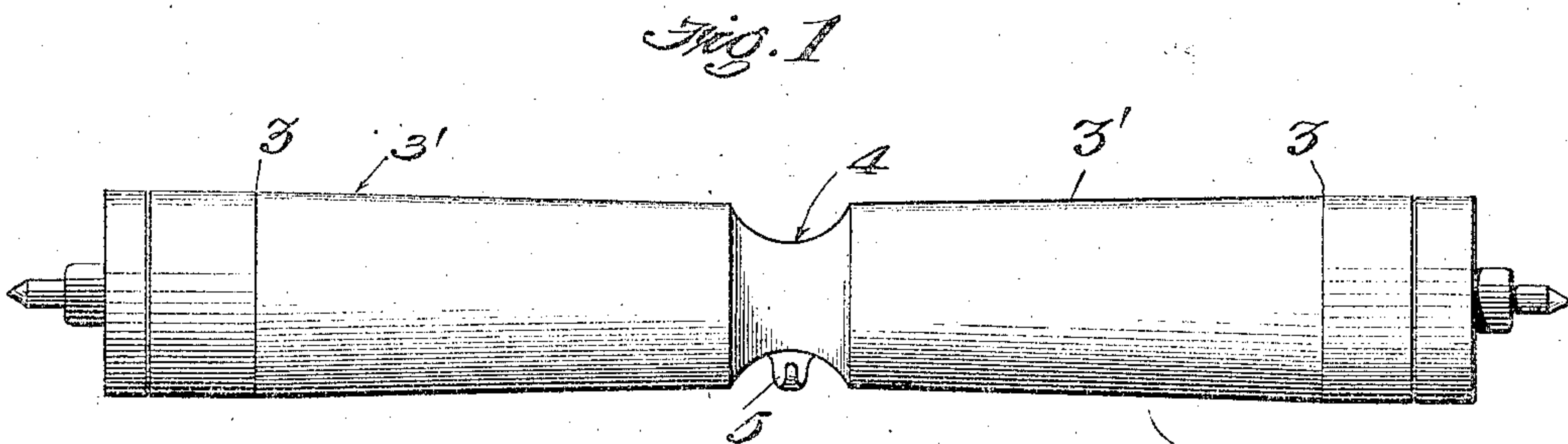
No. 822,517.

PATENTED JUNE 5, 1906.

W. B. FLEMING.

ROLL FOR THE ACCURATE WINDING OF A SHEET OF PAPER FROM ONE ROLL
TO ANOTHER.

APPLICATION FILED MAY 8, 1905.



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UNITED STATES PATENT OFFICE.

WILLIAM B. FLEMING, OF SOUTH PASADENA, CALIFORNIA.

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No. 822,517.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed May 8, 1905. Serial No. 259,441.

To all whom it may concern:

Be it known that I, WILLIAM B. FLEMING, a citizen of the United States, residing at South Pasadena, in the county of Los Angeles and State of California; have invented new and useful Improvements in Rolls for the Accurate Winding of a Sheet of Paper from One Roll to Another, of which the following is a specification.

10 The object of my invention is to provide simple and efficient means whereby when a sheet of paper is wound from one roll upon another the edges thereof shall be in accurate register throughout the different layers
15 comprising the roll.

I have illustrated my invention as applied to the take-up roll and music-roll of self-playing mechanical instruments and will describe it herein with reference thereto.

20 In the drawings, Figure 1 is a side elevation of the take-up roll detached from the instrument. Fig. 2 is a perspective view of a portion of the tracker-board and of the music-roll and of the take-up roll and of a sheet
25 of music partly wound upon said rolls, all detached from the instrument.

In playing self-playing musical instruments the perforated music-sheet is inserted in the instrument, and the outer end thereof
30 is provided with a ring which is hooked over a hook upon the take-up roll, and power is then applied to operate the pneumatic mechanism of the instrument, which causes the rotation of the take-up roll to unwind the music-sheet from the music-roll and to wind it
35 upon the take-up roll, the playing of the instrument being accomplished as the music-sheet passes over the tracker-board from the music-roll to the take-up roll. The inner
40 end of the music-sheet is securely fastened to the music-roll, and after the music represented by the sheet has been played the music-sheet must be rewound upon the music-roll. In order to keep the music-sheet
45 straight upon the music-roll as it is being rewound, it is usual to provide the music-roll with flanges between which the music is wound and care is necessary to prevent the edges of the music-sheet from being turned
50 by these flanges. In the music-rolls now in use the same is of uniform diameter between the flanges and the take-up roll in that portion thereof which receives the music-sheet is also of uniform diameter, except that there is
55 provided in the center thereof a small groove in which is located the engaging hook which

receives a small ring in the center of the free end of the music-sheet, thereby securing the music-sheet to the take-up roll. These music-sheets taper to the center of the free end, 60 so as to cause the pull of the take-up roll on the music-sheet to be as near central as possible. Owing to the fact that in rewinding the music-sheet upon the roll, it is difficult to keep an even tension on both ends, very frequently one edge or the other of the music-sheet is turned by the flanges on the music-roll and soon the sheet of music is ruined. It sometimes happens that the width of the music-sheets of different manufactures vary, 70 which also has a tendency to cause the edge of the sheet to turn when used with an instrument for which such sheet was not intended. With my improved music-roll and take-up roll these objections are avoided and 75 the music rolls from one to the other with perfect accuracy at all times, thereby enabling me to dispense with guiding-flange upon the take-up roll.

In the drawings a small portion of the roll 80 at each end is of a uniform diameter, terminating at the line marked 3 thereof. From these lines the diameter grows gradually less until it reaches the usual central groove 4, which contains the music-securing hook 5, 85 and producing the tapering surface 3'. In putting a sheet of perforated music into an instrument one side thereof is secured to the driving mechanism. In some instruments it is secured on the right-hand side and in 90 other instruments it is secured on the left-hand side. In playing such music it is always drawn over the tracker-board by the action of the take-up roll, and by making the first inch at each end of the take-up roll of 95 uniform diameter the extreme edges of the paper will always come upon the parallel surfaces of the ends, no matter in which way the music-sheet is put in the instrument. The edges will always come upon such parallel 100 portions even though the music-sheets may vary in width a half an inch, thereby always bringing the tapering portion of the take-up roll so near the center of the music-sheets that the taper of the take-up roll compensates 105 for the taper of the music-sheet at its free end, together with the usual attaching-strip by means of which the securing-ring is attached thereto. The music-roll 6 is preferably provided with a slight taper from the 110 ends to the center. By this construction I have found in actual practice that the music-

sheet 7 will pass from one roll to the other over the tracker-board 8 with absolute accuracy and without the use of end flanges on the music-roll. I have accomplished this result by the use of the tapering take-up roll alone.

In other mechanisms in which it is desirable to transfer or wind a roll of paper from one roll to another by making that portion of the roll which is covered by the paper of equal diameter at the outer edges and a slightly lesser diameter at the central portion between the edges with a uniform taper from the ends, the paper will wind upon such roll with the edges in accurate register.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roll for winding paper comprising paper-securing means at the central portion

thereof; end portions having the same diameter, the diameter of the end portions being uniform throughout and intermediate portions having a gradual decrease in the diameter from the end portions to the paper-securing means.

2. A take-up roll for musical instruments having a central groove and end sections of a uniform diameter for a short distance and intermediate portions of slightly and gradually decreasing diameter from the uniform diameter of the ends to the center groove thereof.

In witness that I claim the foregoing I have hereunto subscribed my name this 2d day of May, 1905.

WILLIAM B. FLEMING.

Witnesses:

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