No. 829,185. PATENTED AUG. 21, 1906.

E. S. VOTEY.

MUSIC ROLL COUPLING DEVICE.

APPLICATION FILED OCT. 13, 1905.

Fig. 1.

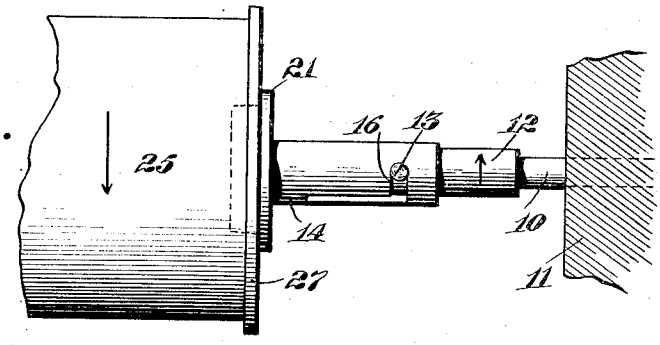


Fig. 2.

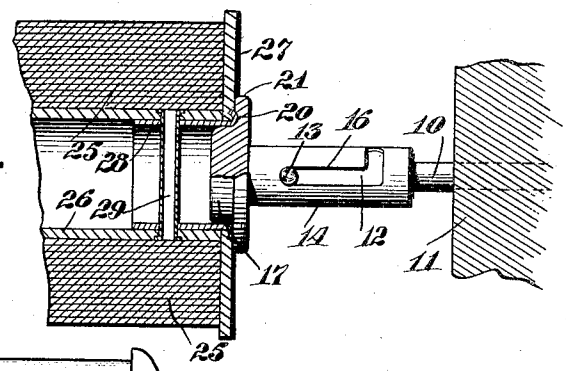


Fig. 3.

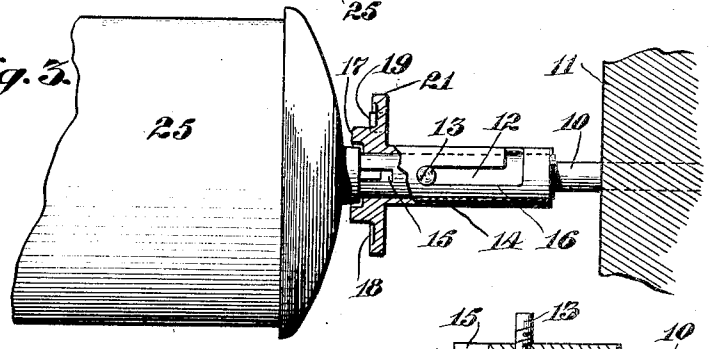


Fig. 4.

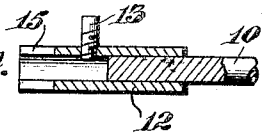


Fig. 6.

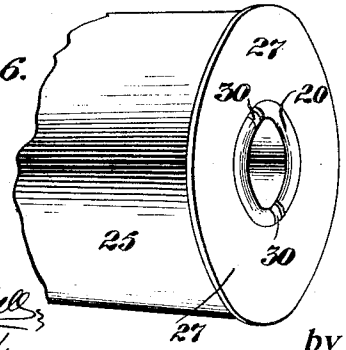
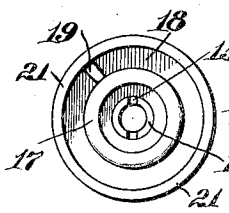


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWIN S. VOTEY, OF SUMMIT, NEW JERSEY, ASSIGNOR TO AEOLIAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF CONNECTICUT.

MUSIC-ROLL-COUPLING DEVICE.

No. 829,185. Specification of Letters Patent. Patented Aug. 21, 1906.

Application filed October 13, 1905. Serial No. 282,661.

To all whom it may concern:

Be it known that I, EDWIN S. VOTEY, a citizen of the United States, residing at Summit, New Jersey, (post-office address, care of The Aeolian Company, 362 Fifth avenue, New York,) have invented certain new and useful Improvements in Music-Roll-Coupling Devices of which the following is a specification, accompanied by drawings.

This invention relates particularly to the driving-clutch mechanism which is usually at the right-hand end of the music-roll in the pianola, pianola-piano, æolian, angelus, and instruments of similar nature. The invention provides a clutch member for centering and supporting the music-roll, which clutch is adapted to coöperate with different constructions of roll and to receive such rolls of different constructions and properly engage them and drive them and rewind them, as well as to allow them to be unwound in the playing of the instrument. The adjustments of this coupling device enable it to cooperate properly with the well-known sixty-five-note music-rolls having wooden heads with winged pins for engaging a clutch or coupling, and also with sixty-five-note rolls for the same tracker-board, but having the recently-improved rolls with relatively thin heads or flanges and hollow ends, and also with rolls similar in construction to the last, but of greater length, so as to provide for several extra rows of holes or perforations in the roll either for increasing the register or musical range of the roll or for controlling special tracker-ducts which in turn control the operation of special devices in the instrument, which it is not necessary here to describe. In addition to this the invention is adapted for use with different lengths of rolls for any purpose for which it may be desirable to manufacture rolls of different lengths. In the embodiment of the invention shown in the drawings it is designed especially for the conditions above outlined.

Figure 1 of the drawings is an elevation showing the end of a sixty-five-note roll with thin flange and hollow end in combination with the coupling device. Fig. 2 is a similar view, partly in central section and partly in full, showing the same coupling device as adjusted for a similar roll of greater length to provide for three extra rows of perforations. Fig. 3 shows the same coupling device, partly in section, in use with the older form of sixty-five-note rolls having a thick wooden head and winged pin for engaging the clutch. Fig. 4 is a sectional view of the interior member of the coupling device. Fig. 5 is an end view of coupling device, and Fig. 6 a perspective end view of the roll construction shown in Figs. 1 and 2.

At 10 is shown a revolving shaft which drives the roll in rewinding and is turned by the roll as the roll unwinds. This has bearings in part of the frame 11 of the instrument, as well understood. The driving connections for turning the shaft 10 need not be shown, as they are well understood. Rigid with the shaft 10 is the sleeve or head 12, provided with a pin 13 for engaging a slot of the adjustable outer member 14 and having a hollow end and cross-slot 15 for receiving and engaging with the usual winged pin of a roll, the wings of the pin entering these slots 15, as shown in Fig. 3. Upon the sleeve or head 12 is adjustably mounted the outer member 14 of the coupling device. This has a bayonet-joint or L-shaped slot 16, which receives the pin 13, and has a clutch consisting of a central portion 17, surrounded by a flange having an annular recess 18 for receiving a clutch-engaging projection 20 on the roll and one or more pins 19. These clutch features I do not claim herein, as they are part of the subject-matter of my other application, Serial No. 282,660, filed October 13, 1905.

The L-shaped slot 16 permits the member 14 to have two adjustments or positions, one of which positions is shown in Fig. 1 and the other in Figs. 2 and 3. In Fig. 1 the outer member is drawn to the left and turned so that the pin 13 is at the end of the circumferential portion of the slot 16. It will be seen that this end of the slot extends in the direction in which the shaft 10 is intended to be driven in rewinding the roll, so that the dragging action of the roll holds the pin 13 against the end of the slot and maintains the parts firmly in position.

The arrow shown across the sleeve 12 in Fig. 1 indicates the direction of rotation when the shaft is driving the roll. The arrow shown on the music-roll 25 indicates the direction of rotation of the roll in unwinding, and consequently also the direction of the drag or resistance of the roll when being rewound. When the music is being drawn

from the roll in unwinding, it will be seen that the roll tends to hold the pin 13 in the end of the slot 16 in the same manner as when the roll is being driven by the shaft.

The preferred construction of the roll is best seen in Figs. 2 and 6. It consists of a tubular core 26, upon which is secured and wound the music-sheet 25, end flanges 27, and metallic sleeve 28, riveted to the core at 29 and upset or upturned to form a projecting flange or bead 20 on the face of the flange 27, and thereby secure the flange 27 against the end of the core 26. This small flange or bead 20 is cut away or notched at one or more points 30 (best seen in Fig. 6) to receive and engage the pin 19 of the outer clutch member 14 of the coupling device. The construction of the ends of the rolls in Figs. 1 and 2 is the same, though the length of the rolls is different.

In Fig. 1 the sixty-five-note music-roll is shown and the coupling device is so proportioned that in its adjustment there shown the roll will be held in the proper position to cooperate with the tracker, as well understood. In Fig. 2 the right-hand end of the roll is about a half inch longer to permit two or three extra rows of perforations, as above mentioned, and to receive this roll the outer member of the coupling device is adjusted so that the slot 16 receives the pin 13 at the extreme left-hand end of the slot. The pressure of the roll against the clutch of course holds the parts in this adjustment. These two adjustments of the coupling device shown in Figs. 1 and 2 are of themselves a valuable improvement; but I have also so provided that the coupling device is capable of receiving the winged pin of the usual sixty-five-note roll, as shown in Fig. 3, the coupling device being then adjusted in precisely the same manner as in Fig. 2. The hollow center of the outer and adjustable clutch member when in the position shown in Figs. 2 and 3 freely permits the insertion and engagement of the winged pin with the coöperating clutch-slot 15 already described, and the parts are proportioned as shown, so that the music-sheet in Fig. 3 will have the same position longitudinally as the music-sheet in Fig. 1. Thus I am able to provide pianolas and other instruments with a clutch member which adapts them to accurately and properly coöperate with specially-designed rolls of extra length, as in Fig. 2, and also with the usual sixty-five note rolls and also with rolls of shorter length, but similar construction, as in Fig. 1, and at the same time provide for accurate coöperation with the older form of rolls having winged pins for engaging the clutch without requiring the removal of any part of the coupling device or the provision of a hinged member by which one part of it may be turned out of the way of another part. Also, apart from the adjustability of my device in its preferred aspect, the omission of the adjustable features and utilization of the combined clutches in the relationship shown in Figs. 2 and 3 enables me to provide for an extra-length roll, as in Fig. 2, in combination with the same coupling device that is adapted to receive the older form of sixty-five note roll with wooden head and winged pin.

Without meaning to limit myself to the preferred details that I have described and illustrated I claim the following:

1. A coupling device provided with means for receiving and engaging a winged pin of a roll and with an outer clutch member having a recess, in combination with a hollow-ended roll having a clutch-engaging member which extends into the recess in said outer clutch, said outer clutch having a coöperating pin or engaging member for engaging the roll, for substantially the purposes set forth.

2. A music-roll-coupling device provided with an inner clutch member recessed and slotted to coöperate with a winged pin and an outer clutch member adjustable longitudinally of the said inner member and provided with means for limiting its adjustment in each direction and for holding it in place when adjusted.

3. A music-roll-coupling device provided with an inner clutch member recessed and slotted to coöperate with a winged pin and an outer clutch member adjustable longitudinally of the said inner member and provided with means for limiting its adjustment in each direction and for holding it in place when adjusted, said means comprising a pin-and-slot connection.

4. A music-roll-coupling device having a longitudinally-adjustable member having roll-engaging means at its free end and a rotary shaft to which the said longitudinally-adjustable member is secured having securing means directly thereon in contradistinction to having separate external non-rotating devices for holding the adjustable member.

5. A music-roll-coupling device having a longitudinally-adjustable clutch member and a rotary shaft to which the said longitudinally-adjustable member is secured by a pin-and-slot connection, the said slot having a circumferential portion against the end of which the pin tends to be drawn in the normal operation of the parts, substantially as described.

6. A music-roll-coupling device having in combination with the actuating-shaft thereof a clutch member adjustable longitudinally thereof and having a projecting centering portion and an outer recessed portion with a pin or projection for driving engagement with the roll, for substantially the purposes set forth.

7. A music-roll-coupling device having in combination with the actuating-shaft there-

of a clutch member adjustable longitudinally thereof and having a projecting portion 17 for centering a roll and an outer recessed portion 21 and a roll-driving pin or projection in such recessed portion for substantially the purposes set forth.

8. A music-roll-coupling device having in combination with the actuating-shaft thereof a clutch member adjustable longitudinally thereof and having a slot, a portion of which extends longitudinally to permit the longitudinal adjustment and another portion which extends circumferentially and a pin for the said slot in the said shaft, whereby the said clutch tends to be retained in either one of its two adjustments when in use, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWIN S. VOTEY.

Witnesses:
W. C. MANSFIELD,
A. W. SPENCE.