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ROLL MECHANISM FOR AUTOMATIC PLAYERS.

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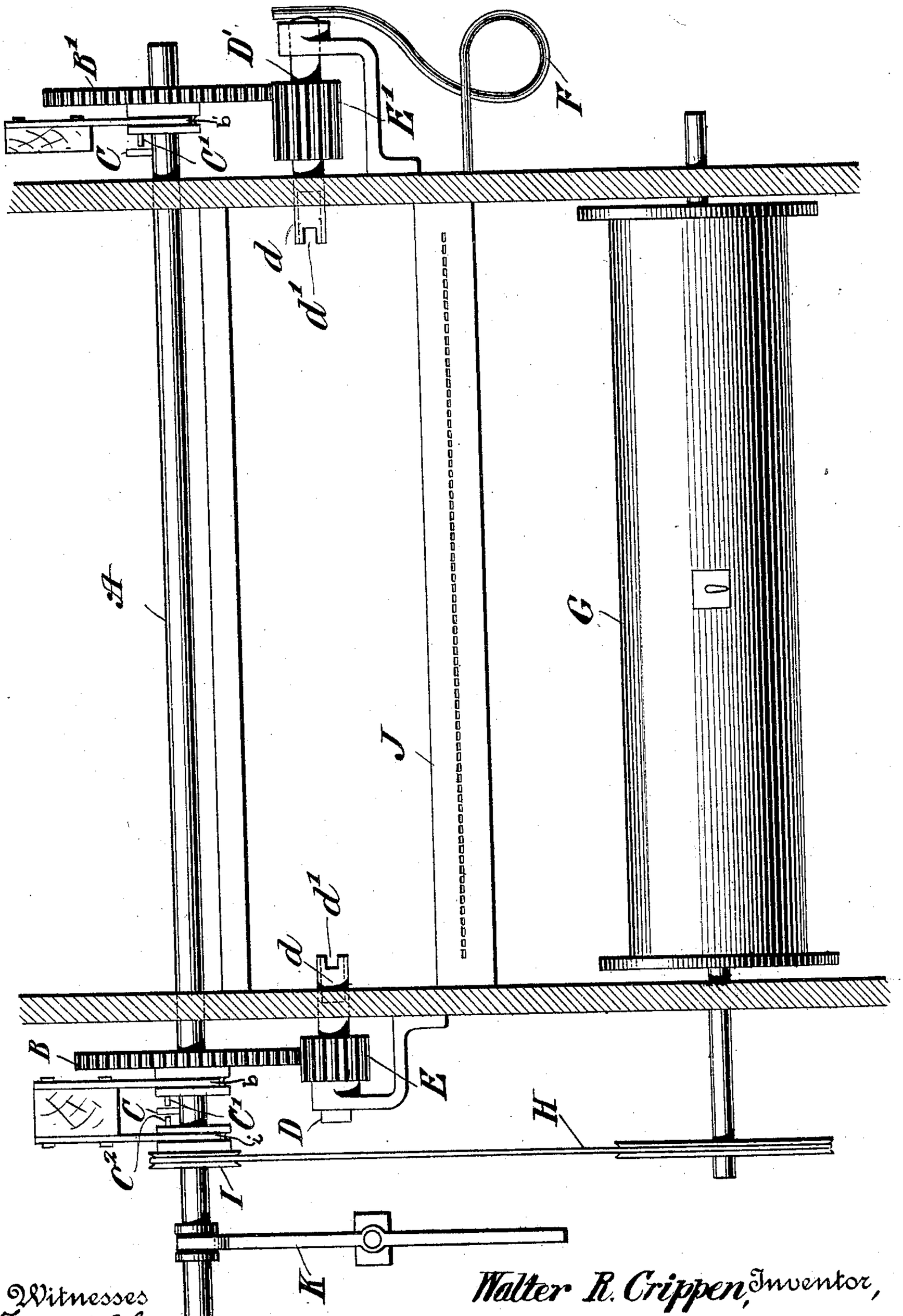

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ROLL MECHANISM FOR AUTOMATIC PLAYERS.

No. 837,610. Specification of Letters Patent. Patented Dec. 4, 1906.

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To all whom it may concern:

Be it known that I, WALTER R. CRIPPEN, a citizen of the United States, residing at Boston, Suffolk county, Massachusetts, have invented certain new and useful Improvements in Roll Mechanism for Automatic Players, of which the following is a full, clear, and exact description.

My invention relates to improvements in roll mechanism for automatic players; and it consists in providing means whereby rolls adapted for players of different makes can be used in the same instrument. Thus (in some instances) in instruments of two different makes the paper of the music-rolls when in use has its inner surface in contact with the tracker-board, while in other instances it has its outer surface in contact with the tracker-board. In these different makes of instruments referred to the roll-gripping devices are always on the same side as one looks from the receiving-roll toward the music-roll. The fact that opposite sides of the paper come in contact with the tracker-board in the different makes of machines makes it impossible to use the rolls of the different makes interchangeably in the two instruments, since the roll adapted for one instrument when inserted in the other has the order of its perforations reversed and would also be rewound in the wrong direction.

I have discovered that if an instrument of one make be altered so that a roll of the second make can be inserted in it in such a manner that the paper is reversed, so that its opposite side makes contact with the tracker-board without the roll being turned end for end, such altered instrument can be used in connection with rolls of the second make as well as with the rolls for which it was originally intended.

My invention therefore consists in providing means whereby rolls adapted for machines of different makes can be inserted so that the contact side of the paper shall be such that the perforations will retain their proper position relative to the tracker-board and the paper properly rewound.

In embodying my invention in the preferred form I provide an extended main shaft having two main driving-gears, one at each end of the music-roll, and in addition to the single-geared counter-shaft now used I provide a second counter-shaft having a gear meshing with the additional main gear on the motor-driven shaft. I provide each of the two counter-shafts with both a pivot-bearing surface and a gripping device for engaging an end of a music-roll. In my preferred construction the main gears are fixed against axial movement, and the counter-shafts are mechanically connected through them to the main shaft by means of clutches. The gear on one of the counter-shafts is a wide gear, and the counter-shaft is so constructed that it can be moved laterally against a spring bearing upon its end, thereby permitting the insertion of a music-roll without disengaging the main gear. A receiving-spool driven from the main shaft by a belt is provided, and the sheet is wound upon it as the piece is being played. A shifting mechanism is also provided for moving the main shaft into and out of engagement with the pulley driving the receiving-roll and the gears driving the counter-shafts.

By providing two counter-shafts, each driven from the main shaft, so that either of them is capable of driving the music-roll so as to rewind the sheet and also capable of simply supporting the pivot end of the music-roll, I am able to place either side of the paper of the music-roll in contact with the tracker-board, and so insert the roll with the perforations in the proper position relative to the tracker-board perforations. By this means the music-rolls become interchangeable and the scope of the machine is largely increased.

An embodiment of my invention is shown in the accompanying drawing, which shows a plan view of the mechanism.

Referring more particularly to the drawing, A is a motor-driven shaft. B B′ are main gears loosely mounted thereon. C C′ are pins carried, respectively, by the shaft and said gears, which pins by a longitudinal movement of the shaft relatively to the main gears can be brought into engagement and disengagement, the same constituting a simple form of clutch.

D D′ are two counter-shafts provided with pinions E E′, meshing with the gears B B′, respectively. Each of the shafts D D′ is provided with a recess *d* for the pivot end of the roll and also a slotted face *d′* to engage and

drive the squared end of a roll. The counter-shaft D is mounted so as not to have longitudinal movement. The counter-shaft D′ is, however, free to be moved against the action of the spring F, the pinion E′ being of such breadth as not to disengage the gear B′ when so moved.

G is the receiving-roll, onto which the perforated sheet is wound, the same being driven by a belt H from the pulley I on the main shaft A in the ordinary manner, so as to pull the sheet over the tracker-board J. The pulley I is provided with a pin C^2, which is engaged by the left-hand pin C when the shaft A is shifted to the extreme left.

K is a shipper-lever for shifting the shaft A.

While I have shown clutches for connecting and disconnecting the motor-shaft, other known expedients can obviously be used.

The gears B B′ and the pulley I are held from axial movement by the guards *b b′* and *i*, secured to a fixed support and engaging grooves in their hubs.

In the apparatus shown it is intended that the receiver-roll G should be driven forward, in which case the paper will wind off the top of the music-roll and onto the top of the receiving-roll G, the inside of the paper making contact with the tracker-board.

By the means described rolls can be inserted in either direction, so as to have the proper side in contact with the tracker-board and be positively driven on the rewind and also be free to unwind on the forward movement of the receiving-roll G, making one machine adapted for use with rolls which otherwise were not available.

What I claim is—

1. In an automatic player, the combination of a motor-driven shaft, two gears mounted thereon, two counter-shafts in line with one another and each provided with a pinion engaging one of said main gears and means for grasping a music-roll, and means for mechanically connecting and disconnecting said counter-shafts and motor-driven shaft.

2. In an automatic player, the combination of a motor-driven shaft, two gears loosely mounted thereon, clutch mechanism for causing said shaft to mechanically engage said gears, two counter-shafts in line with one another and each provided with a pinion engaging one of said main gears.

3. In an automatic player, the combination of a motor-driven shaft, two gears loosely mounted thereon, clutch mechanism for causing said shaft to mechanically engage said gears, two counter-shafts in line with one another and each provided with a pinion engaging one of said main gears, said counter-shafts each having means for grasping an end of a music-roll, and also a recess for a pivot-bearing.

4. In an automatic player, the combination of a motor-driven shaft, two gears loosely mounted thereon, clutch mechanism for causing said shaft to mechanically engage said gears, two counter-shafts in line with one another and each provided with a pinion engaging one of said main gears, said counter-shafts each having means for grasping an end of a music-roll, one of said counter-shafts being longitudinally movable, and a spring normally tending to hold it in forward position.

5. In an automatic player, the combination of a motor-driven shaft, two gears loosely mounted thereon, clutch mechanism for causing said shaft to mechanically engage said gears, two counter-shafts in line with one another and each provided with a pinion engaging one of said main gears, one of said counter-shaft pinions having a wide face and being longitudinally movable relatively to its main gear.

6. In an automatic player, the combination of a motor-driven shaft, two counter-shafts in line with one another, independent means for transmitting power from said main shaft to both said counter-shafts and mechanism for connecting and disconnecting said power-transmitting means, said counter-shafts each having a roll-engaging face and also a recess for a pivot-bearing.

7. In an automatic player, the combination of a motor-driven shaft, two counter-shafts in line with one another; a receiving-spool, driving connections between said main shaft and both of said counter-shafts, a driving connection between said main shaft and said receiving-spool, and means for establishing the connections between said main shaft and said counter-shafts and simultaneously interrupting the driving connection between said main shaft and said receiving-spool and vice versa.

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Witnesses:
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