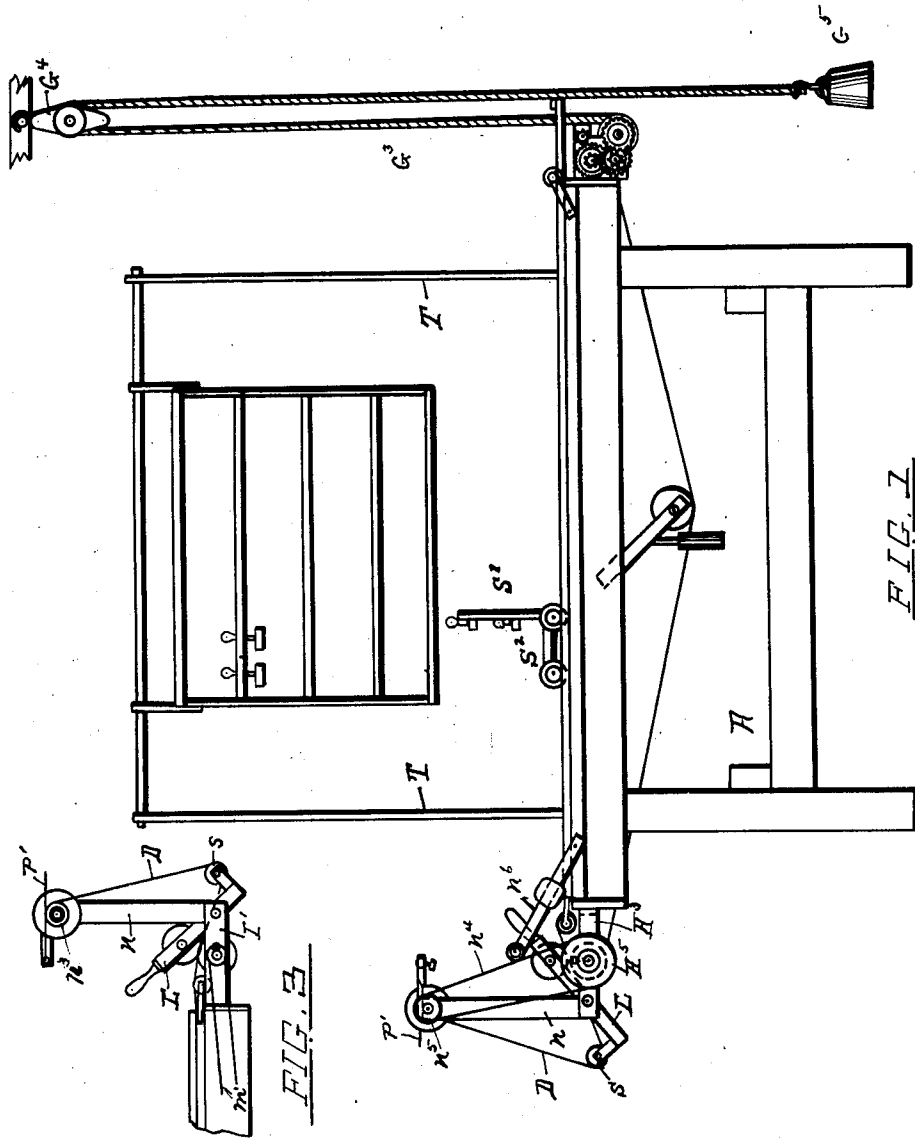


G. H. DAVIS.
MUSIC ROLL MARKING MACHINE.
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1,057,622.

Patented Apr. 1, 1913.

3 SHEETS—SHEET 1.



WITNESSES:

INVENTOR

G. H. Davis

Louis Sanders Jr. BY
Carrie E. Sanders

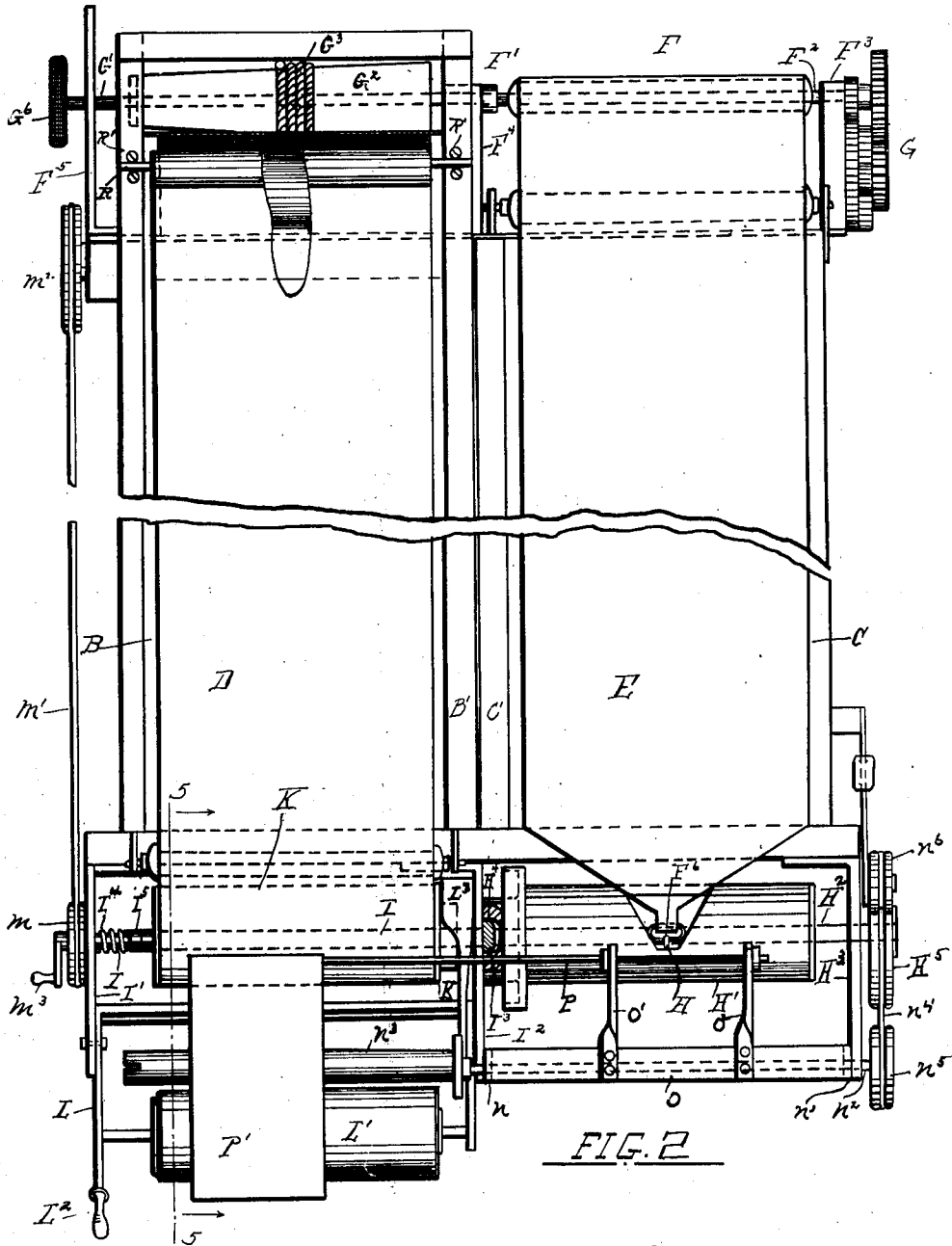
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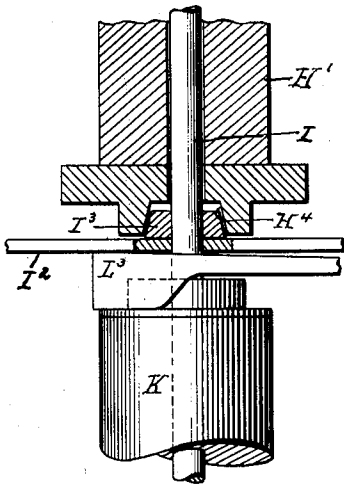


Fig. 6.

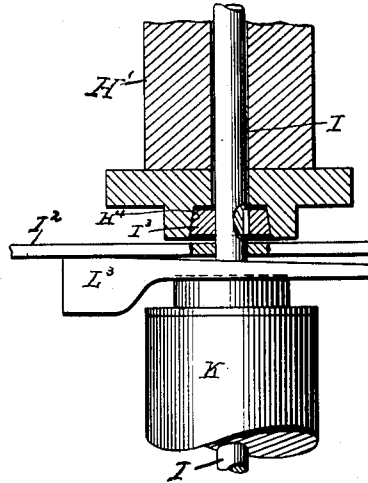


Fig. 7.

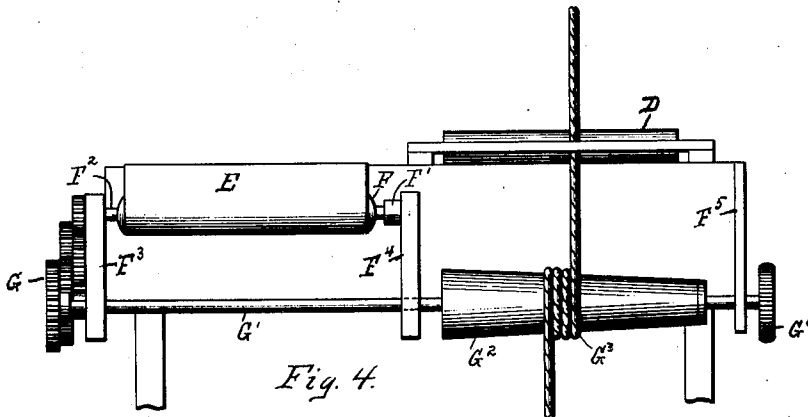


Fig. 4.

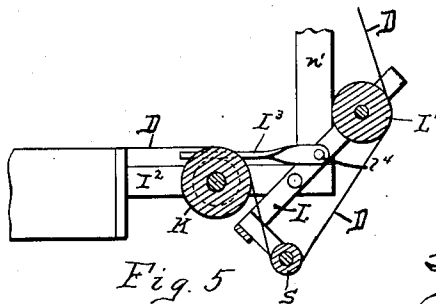


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE HOWLETT DAVIS, OF WEST ORANGE, NEW JERSEY.

MUSIC-ROLL-MARKING MACHINE.

1,057,622.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed February 27, 1909. Serial No. 480,306.

To all whom it may concern:

Be it known that I, GEORGE HOWLETT DAVIS, a citizen of the United States, residing at West Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Music-Roll-Marking Machines; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same.

In marking perforated music rolls with the "tempo" marks and the dynamic line, usually represented by a more or less zig-zag dotted line running the full length of the roll, it has been customary to extend the roll to its full length upon a long bench either along side of, or superposed upon what is known as a "marking master" and then copy the marks with a series of rubber stamps and a dotting wheel from said marking master. This plan necessitates the use of numerous long benches in order to accomplish a reasonable amount of work with any degree of accuracy and speed, and when a roll is completed it, as well as the "master" must be rewound into a roll. Where floor space is valuable, some other means for displaying the "master" from which to mark the stock roll becomes necessary, and it is to accomplish this saving, and also lessen and lighten the labor of such marking, at the same time permit the work of marking to be done much more rapidly that I have devised the machine hereinafter described.

In the accompanying drawings forming a part of this specification Figure 1 is a rear elevation. Fig. 2 is a top plan view of the entire table, and Fig. 3 is a front elevation of a detail of my improvement. Fig. 4 is an end view of the table showing the master roll rewinding mechanism. Fig. 5 is a section on line 5-5 of Fig. 2. Figs. 6 and 7 are detached views, partly in section of the clutch mechanism.

Like letters of reference refer to like parts throughout the specifications.

A represents a plain flat table of any desired construction, having upon its top two trackways, B and C separated by the rails B¹ C¹ respectively for the stock roll D and the marking master roll E. The latter roll is of the usual type of perforated roll mounted upon a spool F, which is carried in the bearings F¹ and F², in the projecting

arms F³ and F⁴ at the end of the table A. The bearing F² is connected by a train of speed gearing G to a shaft G¹, which is carried in the arms F³ and F⁴ and extends across the upper end of the table A to a third bearing arm F⁵. The shaft G¹ has rigidly mounted thereon the cone roller G², around which is wound a cable G³, the latter being led up over a pulley G⁴ to a weight G⁵. I provide the shaft G¹ with a hand wheel G⁶ for hand manipulation. The purpose of the mechanism just described, is to automatically rewind the marking master E when the marking of a stock roll D has been completed. The master E, when spool F is located in the bearings F¹ and F², is led down the trackway, C on the table and secured by means of its ring clip F⁶ to a hook H on the roller H¹ which is rigidly mounted on the shaft H². The shaft H² is carried by a bearing arm H³ supported upon the lower end of the table, and is in alignment with a second shaft I carried in similar bearings I¹ and I², also secured to the lower end of the table.

The shaft H² as indicated extends only part way through the roller H¹, said roller, being loosely mounted upon the inner end of the shaft I and having at its left end a clutch member H⁴ for engagement with a corresponding clutch member I³ rigidly mounted on the shaft I. These clutch members H⁴ and I³ are normally held in engagement by means of a spring I⁴, bearing upon the inner face of the bearing arm I¹ and a collar I⁵ on the shaft I, said shaft having a short longitudinal movement for a purpose hereinafter to be described.

Rigidly mounted on the shaft I is a feed roller K over which the stock roll D passes.

The arms I¹ and I² project some distance from the end of the table and have at their ends the U-shaped frame L pivoted thereto. The frame L carries the rotatably mounted feed roller L¹ for coöperation with the roller K, the construction being such that the roller L¹ may be swung over into contact with the roller K as shown in Fig. 3, or away from it as shown in Figs. 2 and 5, the handle L² being provided for this purpose.

In order to disconnect the roller H¹ from the shaft I, the frame L has pivoted thereon at L⁴, a cam L³ which rests upon the hub of the roller K between the end of the roller K and the bearing arm L², so that

when the frame L is in the position illustrated in Figs. 1, 3 and 7, the cam L³ extends forward so that its narrow part will be located adjacent the end of the roller K, but when the frame L is thrown into the position shown in Fig. 2 and Fig. 6, the wide part of the cam will be drawn between the end of the roller K and the arm I² thereby forcing the roller K and shaft I against the spring I⁴ to withdraw the clutch member I³ from the member H⁴ and consequently releasing the roller H¹ from the shaft I.

In order to rotate the shaft I and with it the rollers H¹ and K, I mount upon the outer end of the shaft I a pulley m over which passes a cable m¹ from an idler m² at the upper end of the table. I may also provide the shaft I with crank m³.

As a portion of the stock roll is marked, it must be carried out of the way in order to bring a new portion into position to be marked, and in order to accomplish this, I provide the following mechanism: From the ends of the bearing arms H³ and I², extend the upwardly projecting shaft supports n and n¹, carrying the shaft n², on the left end of which is secured the roller n³, upon which the stock roll is wound up as fast as marked. In order that this winding may progress with the other work, the shaft n² is connected by belt n⁴ passing over the pulley H⁵ on the shaft H² and the pulley n⁵ on the end of shaft n². If desired a tightener n⁶ may be provided for the belt n⁴.

In order to insure the proper winding of a finished stock roll upon the roller n³ with the requisite degree of tension, I locate a tension device of any desired type in the vicinity of the roller n³ so as to bear upon the stock roll as the same is wound upon said roller. I have found the following means to operate admirably well for this purpose: At the upper ends of the shaft supports n and n¹, I secure a connecting piece O, from which project the arms O² and O¹, carrying at their outer ends the rod P, the latter running parallel with the shaft n² and the roller n³. From the free end of rod P, is pivotally supported the flat sheet of tin or other suitable material P¹, the free portion of which rests upon the roller n³ or the stock roll as the same is wound up.

In connecting up the machine for operation, the stock roll to be marked is mounted upon a rod R, which is located in suitable bearings R¹, at the upper end of the table. The free end of the stock roll is then carried down the trackway B over the feed roller K around the idler S (the latter mounted in the U-shaped frame L) thence to the roller n³, where it is given a few turns to insure its proper winding thereon. The marking master E is then mounted with its spool F in the bearings F¹ and F², and its

free end is then carried down the trackway and secured to the roller H¹, as above described. The master and the stock roll being duplicates are then adjusted by means of the crank m³, or the cable m¹ to bring them with the corresponding perforations abreast of each other in their respective trackways, when the feed roller L¹ is carried forward to bear upon the roller K, coincidentally connecting the roller H¹ with the shaft I as above described. The operator is now ready to affix the proper markings upon the stock roll by means of rubber stamps and a dotting wheel in exact copy of the markings upon the master. When the exposed portion of the stock roll is thus marked, the operator grasps the cable m¹, draws it in the direction of the arrow, thereby drawing along both the stock roll and the master in unison, the stock roll being wound upon the roller n³, and the master upon the roller H¹. During this operation the drawing off of the master has, through the gearing G and shaft G¹, wound up the weight G⁵. This operation of marking and drawing off the stock roll and master is repeated until the stock roll is completely marked, when the operator throws back the frame L, thereby releasing the clutch members H⁴ and I³, whereupon the weight G⁵ will automatically rewind the master upon the spool F, while the operator is free to wind up the remaining portion of the stock roll upon the roller n³, remove the same and substitute a new stock roll to be marked. At this point it may be remarked that it is unnecessary to rewind the stock roll at this time, for upon the completion of marking it is removed from the roller n³, and placed in the unfinished stock room, whence it is taken later with others to the assembling department where it is properly mounted upon a spool similar in all respects to the spool F, and a ring clip similar to F⁶ attached. For this purpose, the outer end of the stock roll as it comes from the roller n³ is ready to be glued or pasted to the spool, when it is wound thereon.

It might be supposed that the weight G⁵ would actuate the parts to rewind the master upon the spool F at the wrong time, or unless some means were employed to prevent it. This is not the case, however, as the friction of the stock roll mechanism is sufficient in practice to hold the parts stationary, except as manipulated by hand through the cable m¹ until the clutch members are released.

In order to provide convenient means for carrying the rubber stamps always at hand and within easy reach of the operator, the small carriage S² is located upon the sides of the stock roll trackway, and is pushed along by the operator as he progresses with the marking. This carriage is provided with a

platform upon which to lay such stamps as are of most frequent use, and the rack S¹ for those of less frequent use. Upon the up-rights T, I may also mount a large storage rack for other stamps and apparatus when not in use.

I claim:

1. In a marking machine, the combination of a table having a plurality of trackways thereon, means for supporting a stock roll and a master roll, each in spooled form at one end of said table, a pair of feed rollers for said stock roll, and a winding roller for said master roll, means for detachably connecting one of said stock feed rollers with said winding roller, whereby said stock roll and master roll may be simultaneously unspooled and drawn down said trackways respectively to permit the marking of said stock roll, and means for separating said stock feed roller from said winding roller and automatic rewinding mechanism for rewinding said master roll upon said spool.

2. In a marking machine, the combination of a table having a pair of trackways thereon, means for supporting a stock roll and a master roll each in spooled form at the upper end of said table adjacent to the respective ends of said trackways, means for unspooling and drawing said rolls down said trackways respectively, said means consisting of a pair of feed rollers for said stock roll, and a winding roller for said master roll detachably connected to one of said stock feed rollers, and means for detaching said stock roller from said winding roller, and means for automatically rewinding said master roll when said winding and said stock feed rollers are detached.

3. In a marking machine, the combination of a table having parallel trackways thereon for simultaneously displaying corresponding portions of a stock roll and a master roll, a stock feed roller and a master winding roller for unspooling and drawing said rolls down said trackways, to permit the marking of said stock roll and wind said

master roll upon said winding roll, detachable means for connecting said winding roller with said stock feed roller, and means for automatically rewinding said master roll upon its spool when said feed and winding rollers are detached.

4. In a marking machine, the combination of a table having parallel trackways thereon, supports upon the upper end of said table for supporting a master roll and a stock roll, each in spooled form, a winding roller and a pair of stock feed rollers at the lower end of said table for simultaneously unspooling and drawing said rolls respectively down said trackways to expose corresponding portions thereof in said trackways, clutch mechanism for connecting said winding roller with one of said stock feed rollers, means for releasing said clutch mechanism and gravity actuated means for automatically rewinding said master roll upon the release of said clutch mechanism.

5. In a marking machine, the combination of a table having a plurality of trackways thereon, means at one end of said table for supporting a master roll and a stock roll, each in spooled form, means at the other end of said table to unspool and draw said rolls down the trackways to expose corresponding portions thereof, said means consisting of a winding roller for said master roll and a pair of feed rollers for said stock roll, clutch mechanism connecting said winding roller and one of said feed rollers, means for separating said feed rollers and means actuated by their separation to disconnect said clutch mechanism to permit the rewinding of said master roll, and complete the winding of the stock roll and permit its removal from the machine.

This specification signed and witnessed this 22d day of February 1909.

GEORGE HOWLETT DAVIS.

Witnesses:

R. D. EVANS,
LOUIS M. SANDERS.