P. J. MEAHL.

MACHINE FOR MARKING PERFORATED MUSIC ROLLS.

APPLICATION FILED SEPT. 21, 1910.

998,025.

Patented July 18, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

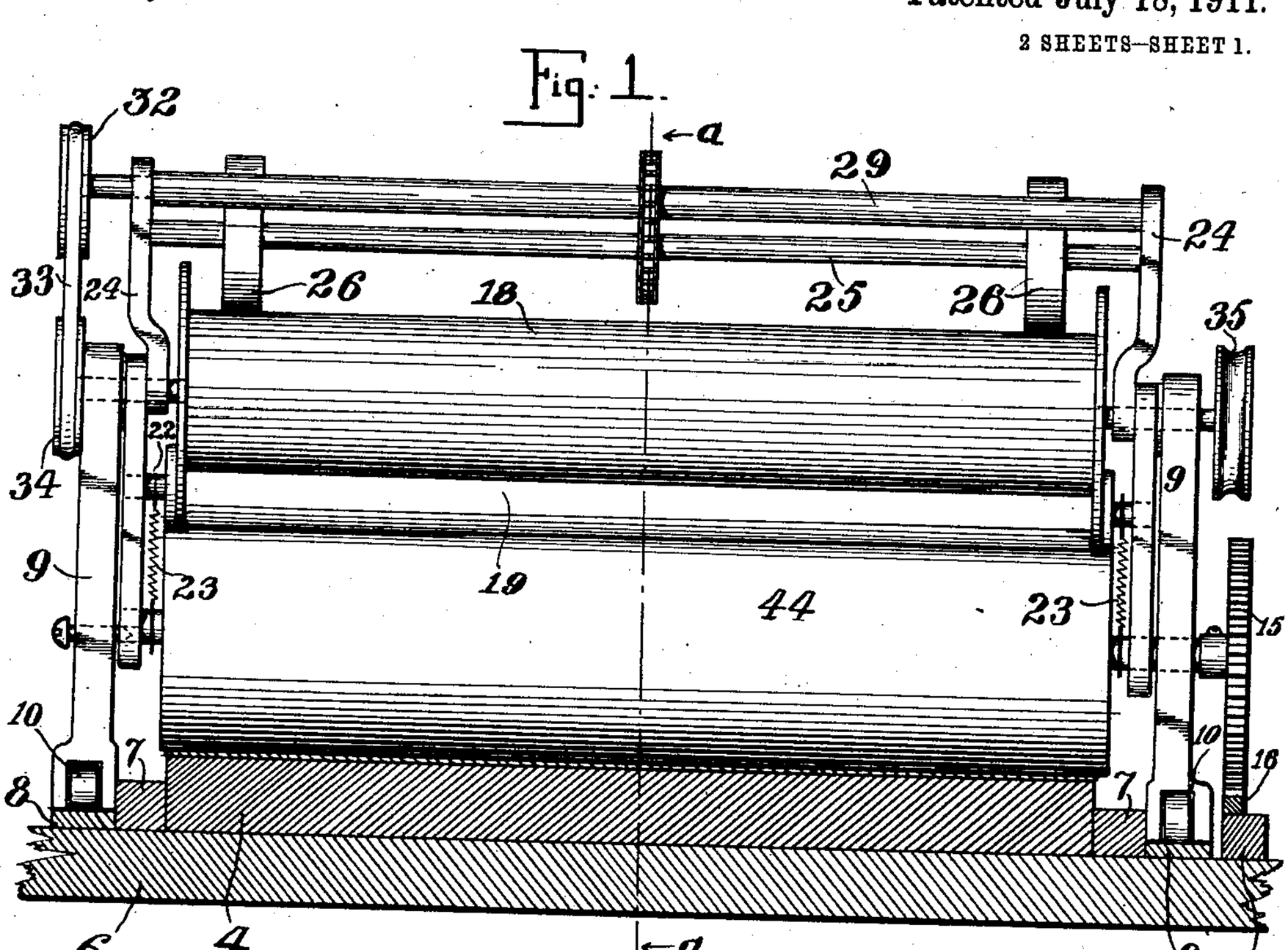
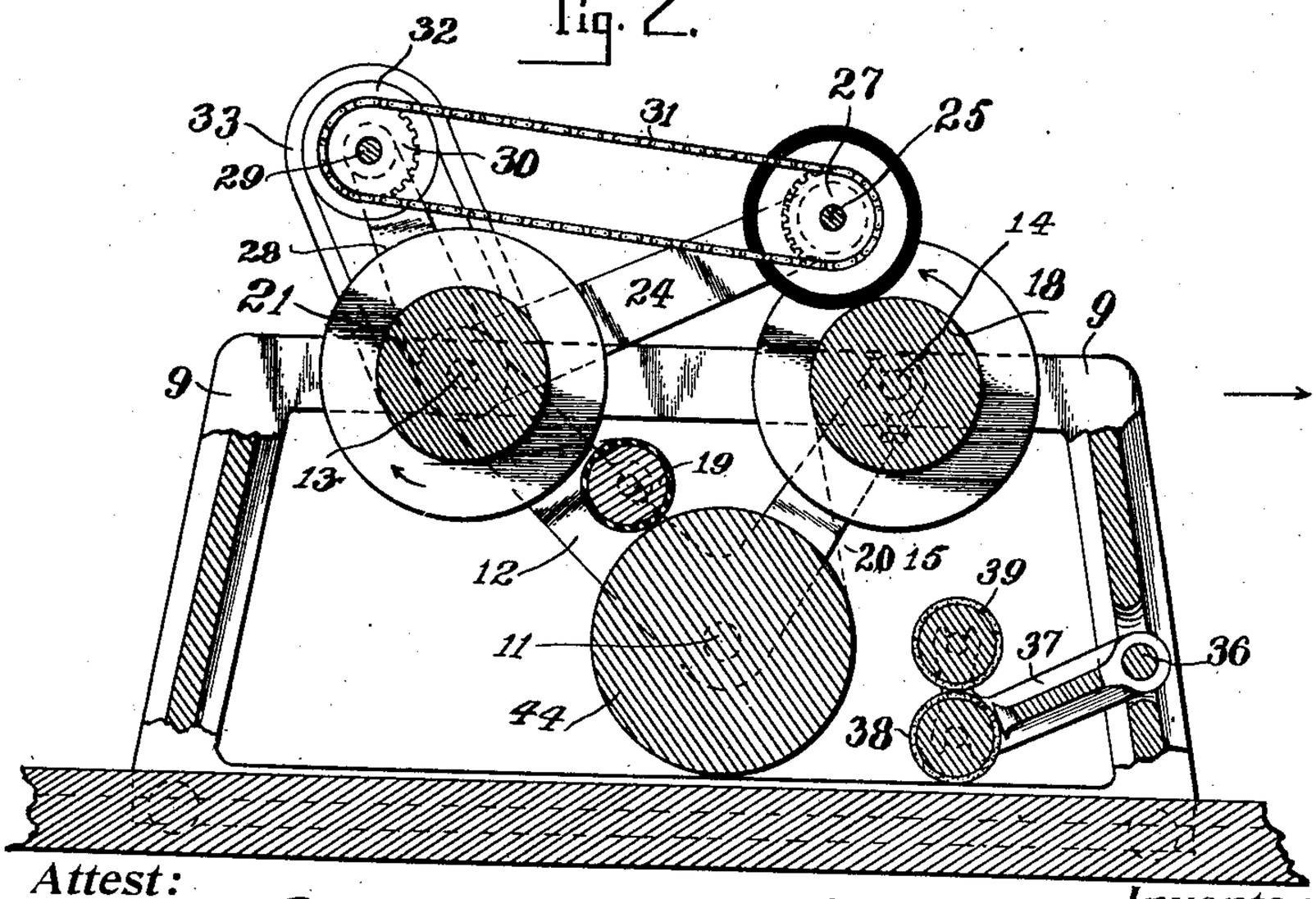


Fig. 2.



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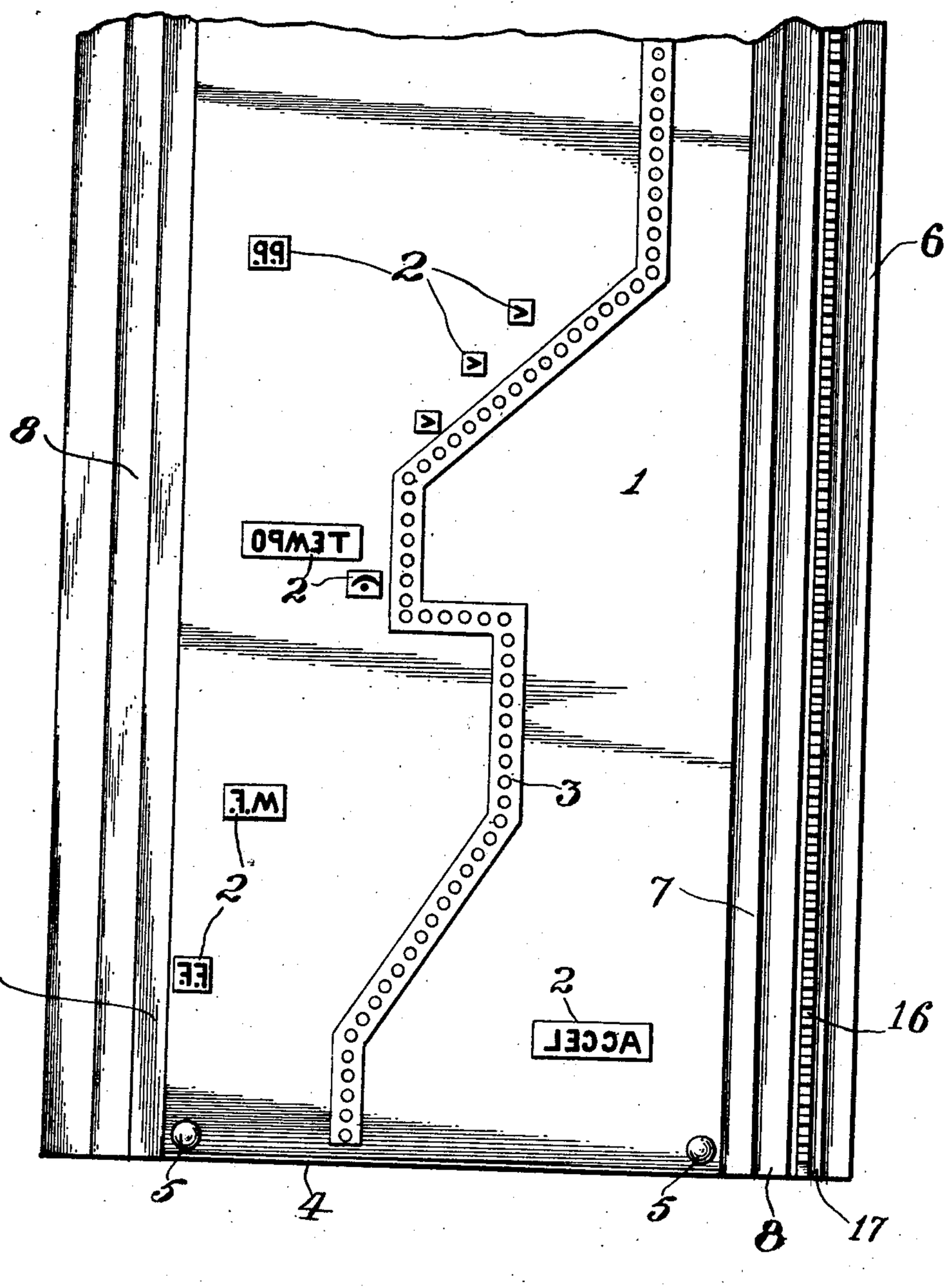
2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

PHILIP JACOB MEAHL, OF BAYONNE, NEW JERSEY.

MACHINE FOR MARKING PERFORATED MUSIC-ROLLS.

998,025. Specification of Letters Patent. **Patented July 18, 1911.**

Application filed September 21, 1910. Serial No. 582,983.

To all whom it may concern:

Be it known that I, PHILIP J. MEAHL, a citizen of the United States, and a resident of Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Machines for Marking Perforated Music-Rolls, of which the following is a specification.

This invention relates to improvements in machines for marking perforated music rolls such as are used on automatic or semi-automatic music playing devices.

It is customary to provide perforated music rolls, such as referred to above, with the dynamic and rhythmic signs or indications given by the composer on the staff notation so that as the perforated sheet when in use on a playing attachment passes the tracker these dynamic or rhythmic signs appear to view successively and give the performer or player the required information. Lines are also produced on the sheets, extending lengthwise and laterally and by their positions on the tracker board indicate loudness of playing corresponding to the directions given by the well known signs "PP" etc., to "FF."

The object of my invention is to provide a new and improved machine of simple construction, which rapidly, reliably and correctly prints such indications, and the line or either upon the perforated music roll.

In the accompanying drawings in which like letters of reference indicate like parts in all the figures: Figure 1 is a vertical transverse sectional view through my improved perforated music roll marking machine. Fig. 2 is a longitudinal sectional elevation on the line *a*—*a* of Fig. 1. Fig. 3 is a plan view of the base and the pattern sheet therein.

The pattern sheet 1 shown in Fig. 3 consists of a sheet of paper or other suitable material on which are produced in raised type the dynamic or rhythmic marks shown at 2—2 and also in raised type the above mentioned indicating line as shown at 3. This type is secured on the surface of the pattern sheet 1 so as to project from the same and may consist of rubber type which is cemented upon the sheet, or of leather, wood, metal or composition type, suitably secured on the face of the pattern sheet. The various types, of course, are arranged on the pattern sheet precisely in the same manner, but in the reverse, as they are to appear on the printed perforated music roll or sheet. This pattern sheet 1 is secured on a long flat horizontal base or bed 4 and held against longitudinal movement in any suitable way, for example, by means of thumb tacks 5 forced through the sheet into the bed or base 4. This bed or base 4 rests upon a suitable support 6 and along each edge of the bed 4 a guide rail 7 is secured and adjacent to and outside of the same a flat rail 8 is secured. A movable carriage, composed of two side frames 9 of substantially quadrilateral shape is provided on the bottom of each end with a roller 10 which run upon the corresponding track rail 8, the two sides 9 being united by a series of shafts, so as to form a complete carriage. A shaft 11 is mounted at each end in the apex of a V-shaped frame 12, the upper end of one leg of each frame being mounted to rock on a shaft 13 and the upper ends of the opposite legs carrying the shaft 14 which enters notches in the top of the side frames and rests upon the set screws 15 by means of which the shaft 11 can be adjusted slightly higher or lower. A drum 44, which I will term printing drum, is fixed on the shaft 11 and this shaft 11 at one extreme outer end carries a cog wheel 15 which engages a rack 16 on the rail 17 on the upper surface of the support 6 adjacent to one side of one tracker rail 8, so that as the carriage is moved lengthwise of the pattern sheet the printing drum 44 is rotated.

The perforated music sheet is wound on a spool 18 carried by the shaft 14 and passes around the printing drum as indicated by 20, then around the tension roller 19 and the free end is secured to the spool 21 on the shaft 13. The tension roller 19 is secured on a shaft 22 which has slightly elongated bearings in the V-shaped frames 12 so that the roller 19 can be drawn toward the printing drum 44 by springs 23 attached to the shafts 22 and the roller 19 being preferably covered with rubber, felt or some other friction surface. An arm 24 is mounted loosely on each end of the shaft 13 and these arms carry at their free ends a shaft 25 on which are mounted two rubber covered friction rollers 26, a sprocket wheel 27, the friction rollers resting on the periphery of the spool 18 or the paper on the same. Two additional arms 28 are also mounted on the ends of the shaft 13 and at their free ends carry a shaft 29 which in turn

carries the sprocket wheel 30 over which and the sprocket wheel 27 an endless chain 31 passes. A belt pulley 32 is mounted on the end of the shaft 29 and over the same an endless belt 33 passes which also passes over a belt pulley 34 on the end of the shaft 13. The shaft 14 is provided with a grooved pulley 35 over which a driving belt can be passed for the purpose of rewinding the marked perforated music sheet upon the spool 18. On a transverse shaft 36 at one end of the frame two rock arms 37 are mounted in the forked free ends of which two rollers 38 and 39 are mounted, the roller 38 being an inking roller for the type on the pattern sheet and the roller 39 being an ink distributing roller.

The operation is as follows: A spool 18, with its shaft 14, upon which spool a perforated music sheet to be marked is wound, is placed into the proper bearings of the V-shaped frames 12 and the free end of the paper is drawn down as indicated at 20 passed around the printing drum 44 over the friction drum 19 and then secured to the spool 21. This sheet, of course, is properly adjusted so that that part at the lowermost point of the printing drum will coincide with the first type on the pattern sheet. The carriage is then moved lengthwise of the pattern sheet as indicated by the arrow in Fig. 2 whereby the printing drum 44 is rotated in such a manner as to unwind the perforated music sheet from the spool 18 and as it passes over the drum the ink is transferred from the inked type upon the paper at the lowermost point of the printing drum at the time being. As the spool 18 is rotated in the direction of its arrow it rotates the friction rollers 26 in the reverse direction as indicated by the arrow and by means of the sprocket wheels and chain and the belt 33 the drum 21 is rotated in the direction of its arrow and the printed sheet is wound upon the same. As the ink rollers 38 pass over the type in advance of the printing drum, it is clear that the type is always freshly inked before it comes in contact with the paper being printed.

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

1. The combination with a base, of guide rails at the sides of the same, a carriage movable lengthwise of the pattern sheet on said guide rails, a rack adjacent to one guide rail, a printing drum in the carriage, a cog wheel on the printing drum engaging said rack, a perforated music sheet spool and take-up roll in the carriage and means for rotating the take-up roll from the music sheet roll, substantially as set forth.

2. The combination with a fixed pattern sheet having type on its face, of a carriage movable lengthwise of the pattern sheet, a perforated music sheet spool, a take-up spool and a printing drum on the carriage, means for rotating the printing drum and from the same the music sheet spool, and means for rotating the take-up spool from the music sheet spool, substantially as set forth.

3. The combination with a fixed pattern sheet, having type on its face, of a carriage movable lengthwise of the pattern sheet, a perforated music sheet spool, a take-up spool and a printing drum on the carriage, means for rotating the printing drum and from the same the music spool, and means for rotating the take-up spool from the music spool by frictional contact of a driving mechanism with the paper on said spool, substantially as set forth.

4. The combination with a fixed pattern sheet, having type on its face, of a carriage movable lengthwise of the pattern sheet, a perforated music sheet spool, a take-up spool, a printing drum on the carriage, means for rotating the printing drum and from the same the music spool, a rotating device in frictional contact with the paper on the music spool, and an endless power transmitting device for transmitting motion and power from the music spool to the take-up spool, substantially as set forth.

5. The combination with a fixed pattern sheet, having type on its face, of a carriage movable lengthwise of the pattern sheet, a perforated music sheet spool, a take-up spool and a printing drum on the carriage, means for rotating the printing drum and from the same the music spool and the take-up spool, said printing drum, take-up spool and music spool being all three mounted in one and the same pair of frames, pivotally mounted in the carriage, substantially as set forth.

Signed at New York city, in the county of New York, and State of New York, this 13th day of September, A. D. 1910.

PHILIP JACOB MEAHL.

Witnesses:
OSCAR F. GUNZ,
ROSE G. BREEN.