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SIEVE FOR USE IN MAKING DISK SOUND RECORDS.

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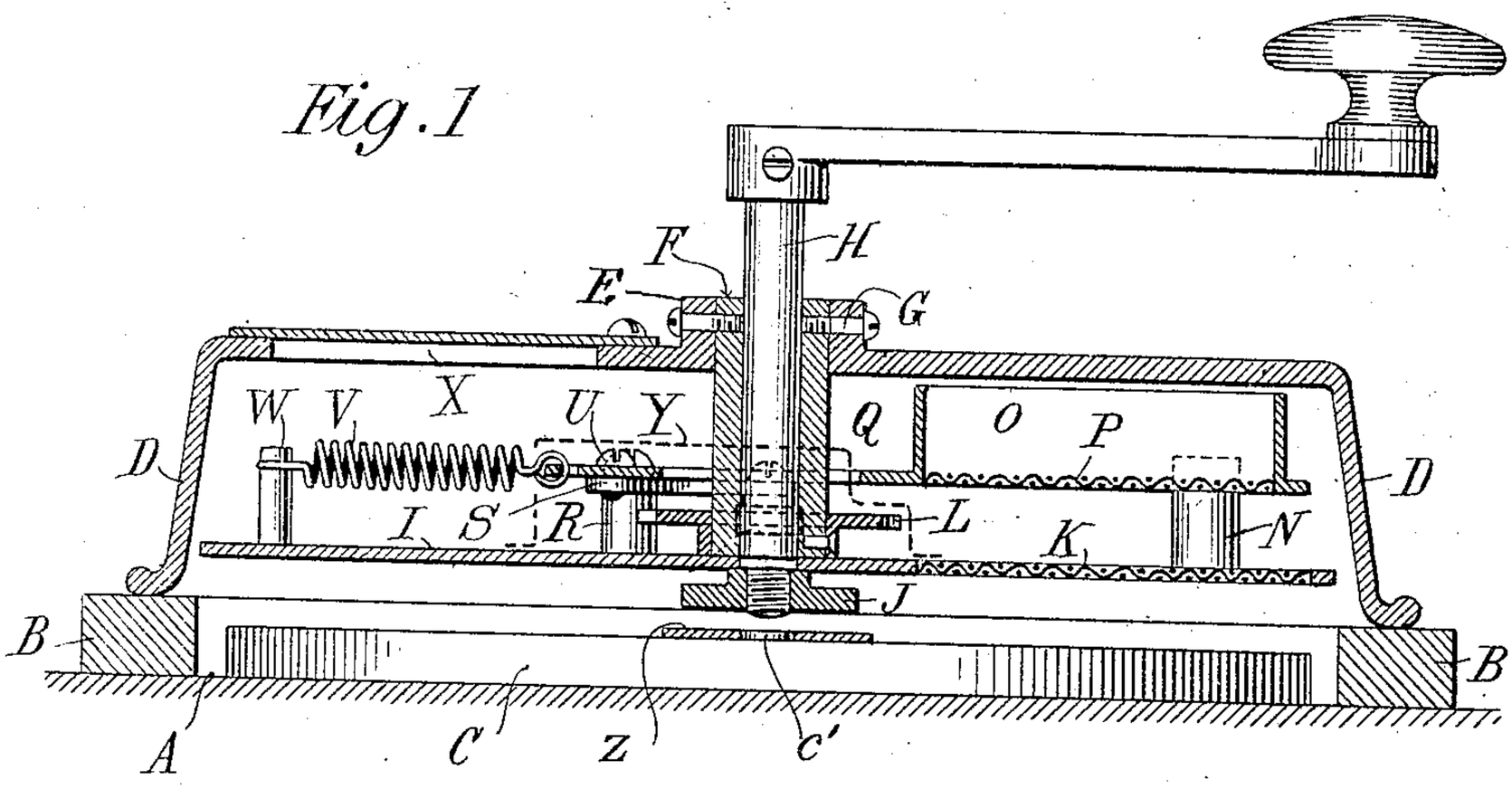
Fig. 1



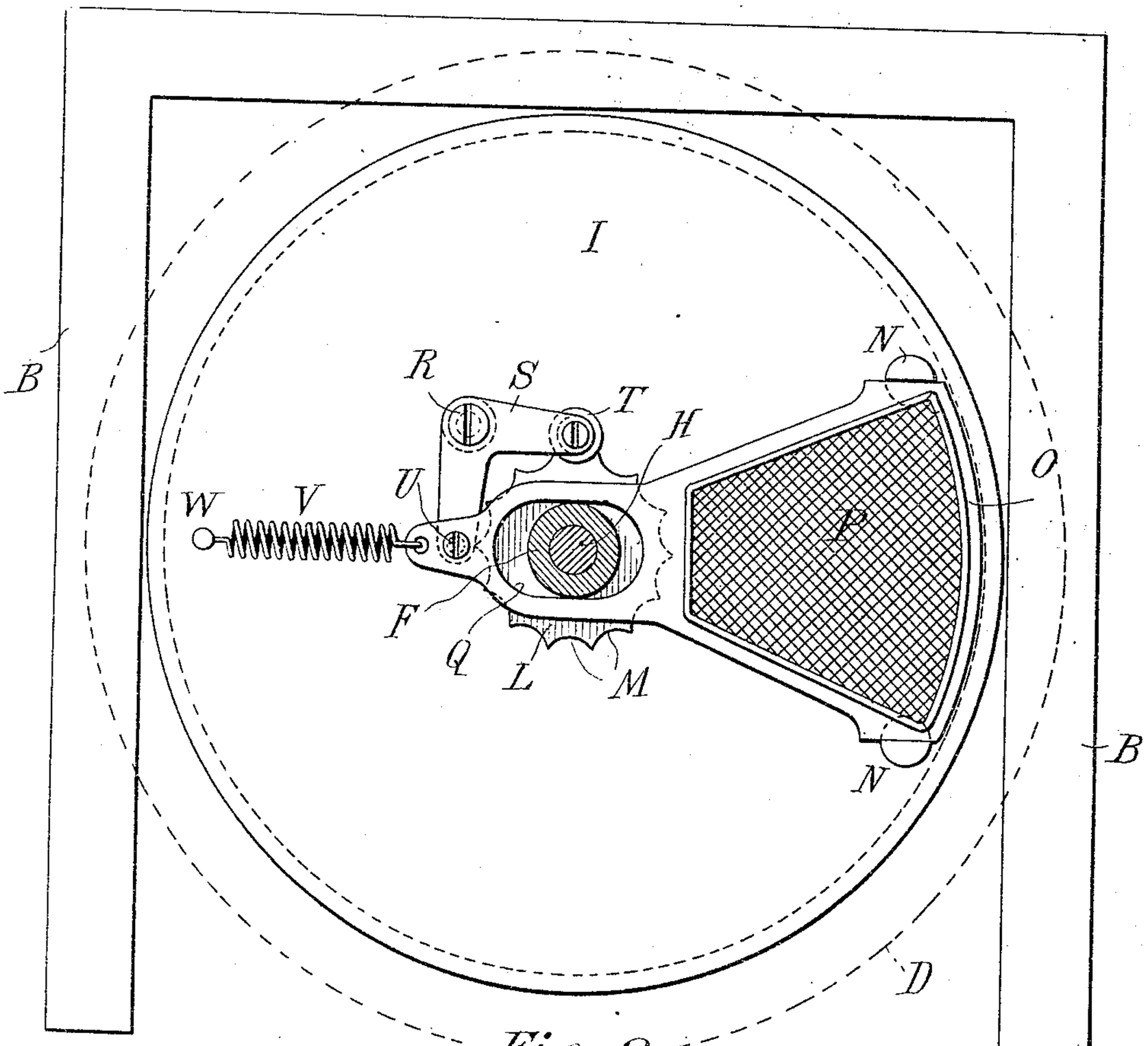


Fig. 2

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UNITED STATES PATENT OFFICE.

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SIEVE FOR USE IN MAKING DISK SOUND-RECORDS.

No. 865,716. Specification of Letters Patent. Patented Sept. 10, 1907.

Application filed January 7, 1907. Serial No. 351,230.

To all whom it may concern:

Be it known that THOMAS H. MACDONALD and FRANK L. CAPPS, citizens of the United States of America, and residents of Bridgeport, Fairfield county, Connecticut, have invented a new and useful Improvement in Sieves for Use in Making Disk Sound-Records, which improvement is fully set forth in the following specification.

Our invention relates to the production of disk sound-records, particularly records made in accordance with the Hoyt and Gavin patents of Jan. 2, 1906, No. 808,842, No. 808,843, and No. 809,263. According to these patents, the body or main portion of the disk which carries the sound-record is composed of a comparatively cheap material, while the surface thereof containing the impressions or other irregularities corresponding to the sound-waves is composed of a more expensive material which is peculiarly adapted to the purpose. The former material (or equivalents therefor) will hereinafter be designated as "ordinary stock" or simply "stock", while the more expensive material intended for the surface of the record will be designated as "glaze". It is desirable, of course, to use as little of the glaze as possible, and at the same time to insure the presence of a sufficient amount; and it is also desirable that this glaze be uniformly distributed throughout the surface of the record.

The present invention consists of a machine or apparatus for insuring these two purposes, viz.: The employment of just the right amount of glaze, no more and no less, and the uniform distribution of the glaze.

The invention will be best understood by reference to the accompanying drawings in which

Figure 1 is a vertical section through our apparatus; and Fig. 2 is a plan view of the same with the stationary casing removed.

Upon a table or flat surface A are located two supports B upon which rests our apparatus, so that the matrix C may be inserted beneath the apparatus.

D represents a metal casing, which may be described as an inverted pan having a central orifice surrounded by an upturned flange E.

F is a stationary spacing-sleeve secured firmly in the central opening, as by screws G that pass through flange E.

H is a shaft having a crank-arm at the top, and journaled in the sleeve F. Below the sleeve F, the shaft H is flattened so as to fit into a corresponding central aperture in the plate or disk I; while the extreme end of shaft H is screw-threaded. The disk I bears against the lower face of sleeve F, and is clamped in place by the nut J that is screwed on the end of shaft H. When shaft H is revolved by means of its crank handle, the disk I is caused to revolve.

A portion of the disk I (preferably a radial segment thereof) is cut away, and a grating or wire mesh K secured in its place. This will be called the lower grating. Fast near the lower end of sleeve F is a star wheel L having concave seats M. On each side of the grating K a shouldered stud N rises from near the circumference of disk I, so as to furnish bearings for the reciprocating sieve O, whose inner end is supported in a manner that will presently be described.

The sieve O is preferably of the same shape as the cut-away portion of disk I, is located above it, and is provided with a grating or mesh P that will be referred to as the upper grating. The bottom of sieve O is extended past the center of disk I, and contains a slot Q so as to furnish clearance for the sleeve F.

R is a stud rising from the disk I, upon which is pivoted the elbow lever S. Depending from one member of lever S is carried a roller T adapted to engage the seats M of star-wheel L; while the other member of the lever is pivotally connected at U to the extension of sieve O. A spring V, whose outer end is secured to a stud W on the disk I, serves to draw the sieve O radially inward; while each tooth of star-wheel L (by moving roller T radially outward) serves to force sieve O radially outward. Consequently, rotation of disk I, by means of the crank handle, produces not only a revolution of the sieve O upon the axis H, but also gives it a reciprocating movement, radially inward and outward.

A covered aperture X will be provided in the stationary casing D, conforming in size and shape to the sieve O, by which the latter may be filled for each operation. A shield or cover Y for the operating parts L—S—T—, etc., may likewise be provided, so as to protect them from the powdered composition which the apparatus is to distribute.

The operation of our apparatus is obvious. A matrix C (which may be heated beforehand) is inserted face upwards in the space between the supports B, just beneath our apparatus. A steel disk Z is placed over the center of the matrix, being centered thereon by the stud c' thereof which enters a central aperture in disk Z. The purpose of this is to prevent any of the glaze from being deposited upon the center of the matrix, where no record-lines are to be produced. The sieve O is brought underneath the aperture X, and filled with the proper amount of powdered glaze. The factory manager or expert will have determined how much glaze is to be used for a record of a given size, and the sieve O is loaded accordingly. The

crank of shaft H is then revolved, whereupon the sieve O is caused to reciprocate and discharge its contents in a fairly uniform manner, while at the same time the sieve and the lower grating are carried around the entire circle. On account of the two gratings, the disiribution of the powdered glaze over the surface of the matrix C is for all practical purposes absolutely uniform. The heat of the matrix causes the powdered glaze to adhere somewhat to its surface. Thereafter, though the subsequent steps form no part of our present invention, the steel disk Z may be removed, and a lump of ordinary stock placed upon the matrix C (though the deposit of glaze will remain interposed between the ordinary stock and the matrix C) and pressure applied in the usual manner, which will spread out the ordinary stock and at the same time compress it against the glazing already deposited and produce the finished record.

Of course, instead of taking ordinary stock, an old disk record may be warmed up and placed upon the matrix and re-pressed, with the same results; or a disk of some other material (cardboard, celluloid, etc.) may be employed, the heat and pressure serving to bind it firmly to the glazing already deposited by our apparatus, and simultaneously produce a finished sound-record. Moreover, instead of placing a matrix C beneath the apparatus, we may use an old record (or a disk of any other suitable material), deposit the glazing thereon by our apparatus, and then place a matrix face downwards on the glazing and subject to heat and pressure in the usual manner.

While we have described our invention with some particularity, we have done so only for the sake of clearness, since changes may be made in the construction and arrangement of parts, and certain features of our invention used to the exclusion of others. The spirit of our invention consists in causing the powdered glaze to be uniformly distributed over the surface to be treated by means of a jogging or shaking motion which progresses over the entire surface; and preferably we employ two gratings; if, for instance, the lower grating should be omitted, we have found that the glazing is liable to be deposited in a series of "windrows", as it were. Nevertheless, if the lower grating be omitted, or if (instead of the sieve with its upper grating) a hopper with a slit or restricted aperture at its bottom be employed, in either case the apparatus will be within the spirit of our invention.

Having thus described our invention, we claim:

1. The combination of a lower grating adapted to travel in a circular path, an upper grating located above the same and adapted both to travel in the same path and also to reciprocate radially of said path.

2. The combination of a lower grating adapted to travel in a circular path, an upper grating located above the same and adapted both to travel in the same path and also to reciprocate radially of said path, and common means for actuating both gratings.

3. The combination of a lower grating adapted to travel in a circular path, an upper grating located above the same and adapted both to travel in the same path and also to reciprocate radially of said path, and common means comprising a stationary star-wheel and a lever co-acting therewith and connected to said upper grating for actuating both gratings.

4. The combination of a stationary sleeve, one or more projections carried thereby, a revoluble shaft journaled in said sleeve, a plate secured to said shaft and carrying a grating, a reciprocating sieve mounted on said plate above said grating, and means co-acting with said projections for reciprocating said sieve.

5. The combination of a stationary sleeve, a star-wheel carried thereby, a revoluble shaft journaled in said sleeve, a plate secured to said shaft and having a grating, a reciprocating sieve mounted on said plate above said grating, an elbow-lever on said plate connected to said sieve at one end and at its other end carrying a device that co-acts with said star-wheel whereby the sieve is forced outward, and means for drawing said sieve inward.

6. The combination with a stationary casing and a vertical sleeve made fast in the center thereof, a revoluble shaft journaled in said sleeve and carrying a plate provided with a grating, a reciprocating sieve mounted on said plate above said grating, and means actuated by said shaft for reciprocating said sieve.

7. The combination of a stationary casing having an open bottom and supporting a stationary sleeve in its center, a revoluble shaft journaled in said sleeve and carrying a plate provided with a grating, a reciprocating hopper mounted upon said plate above said grating, an elbow-lever pivoted upon said plate and having one end secured to the extension of said sieve and carrying on its other end a roller, a star-wheel fast on said sleeve and adapted to actuate said roller, and a spring attached to said sieve and acting in opposition to said star-wheel.

8. In a device of the character described, a sieve, means for carrying said sieve in a circular path, and means for reciprocating said sieve radially of said path.

9. The combination of a plate having a cut-away portion, reciprocating sieve carried by said plate above said cut-away portion, and common means for rotating said plate and sieve and for reciprocating the latter.

10. In a device of the character described, a revoluble plate carrying a grating, a reciprocating hopper carried by said plate above said grating, and means for revolving the two and reciprocating said hopper.

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

THOMAS H. MACDONALD.
FRANK L. CAPPS.

Witnesses:
JOHN B. MCCABE,
A. B. KEOUGH.