

M. COUADE.
ARRANGEMENT FOR CONTINUOUS PHONOGRAPH RENDERINGS.
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999,097.

Patented July 25, 1911.

Fig. 1.

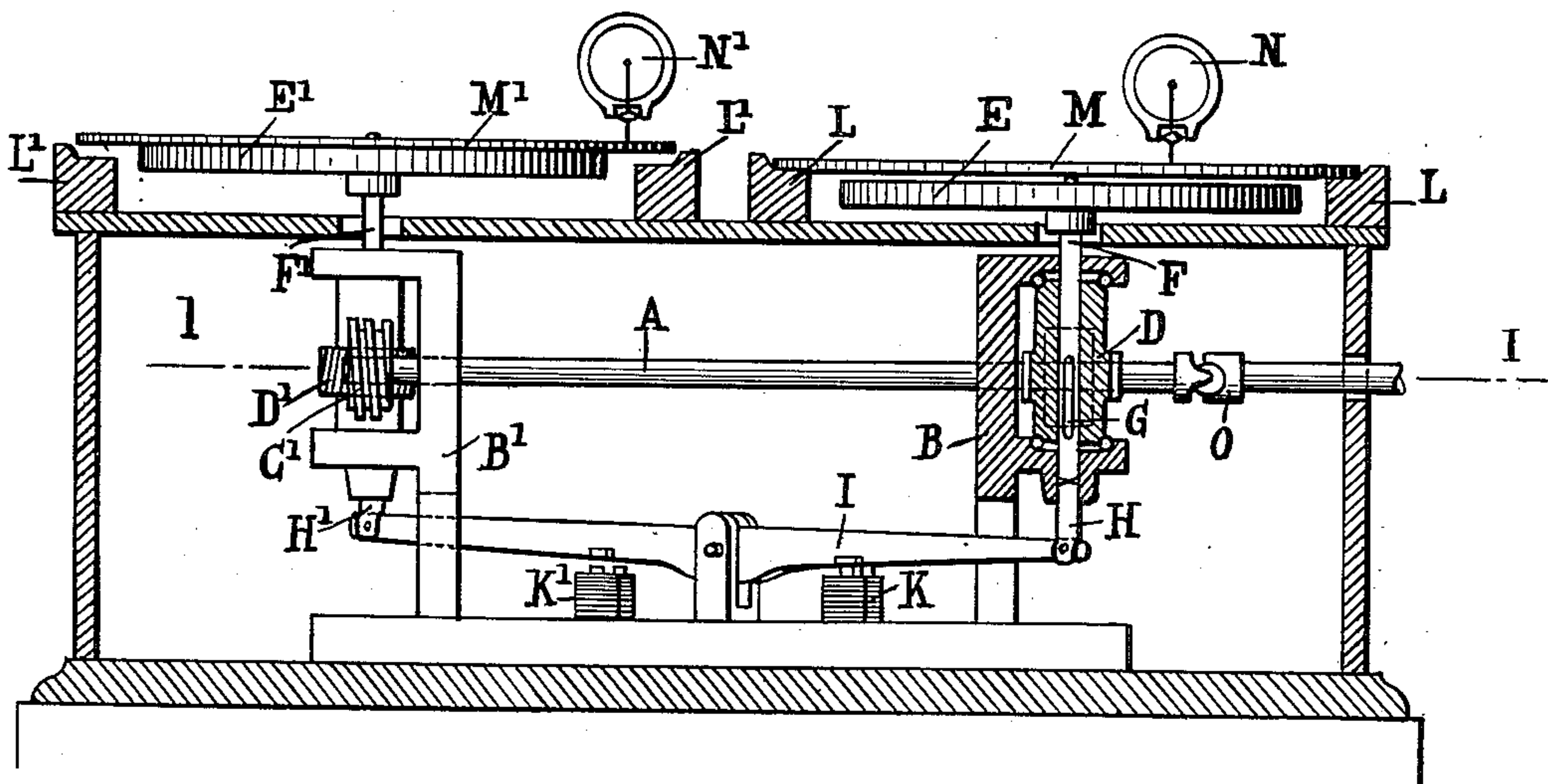


Fig. 2.

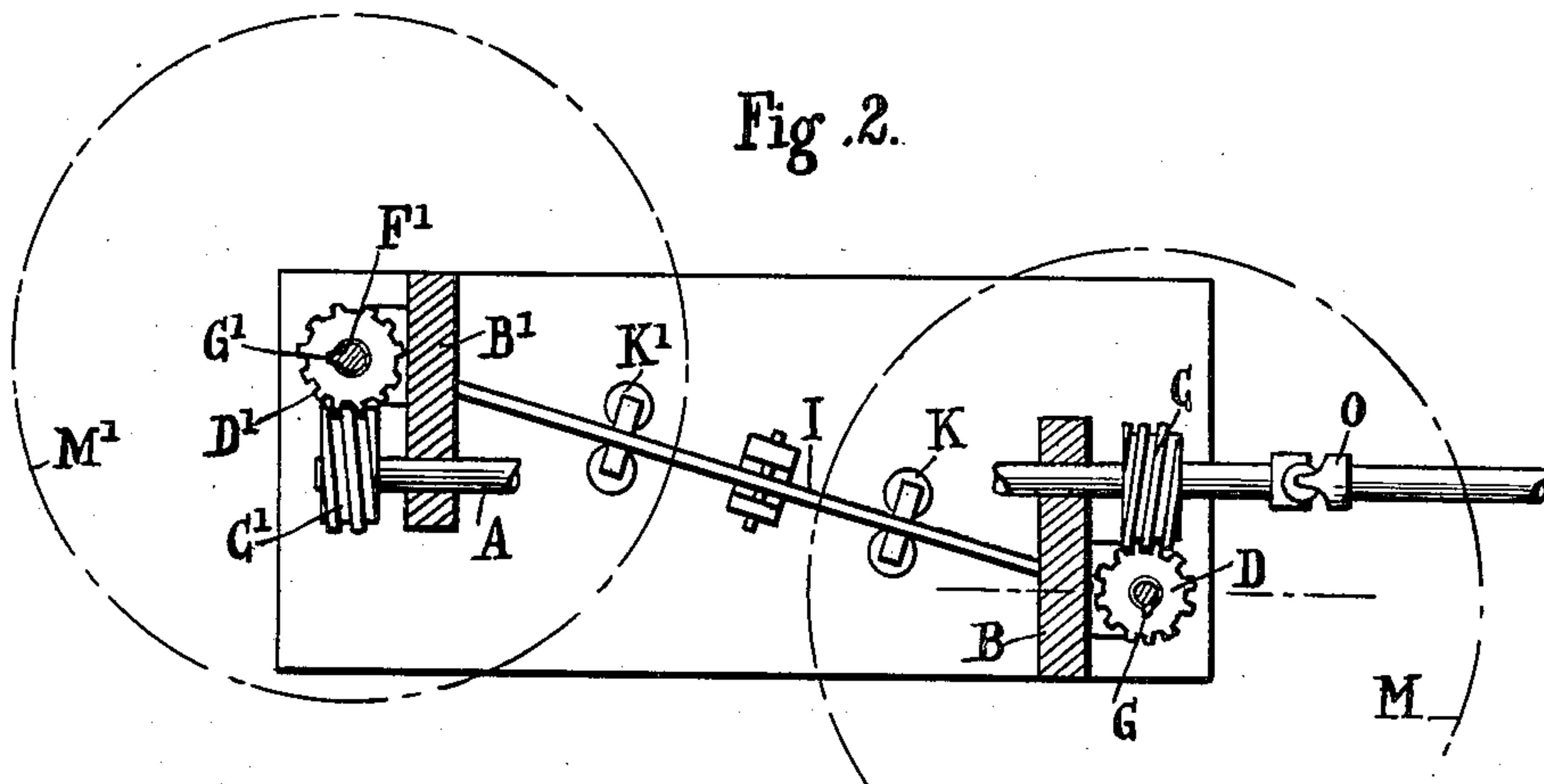
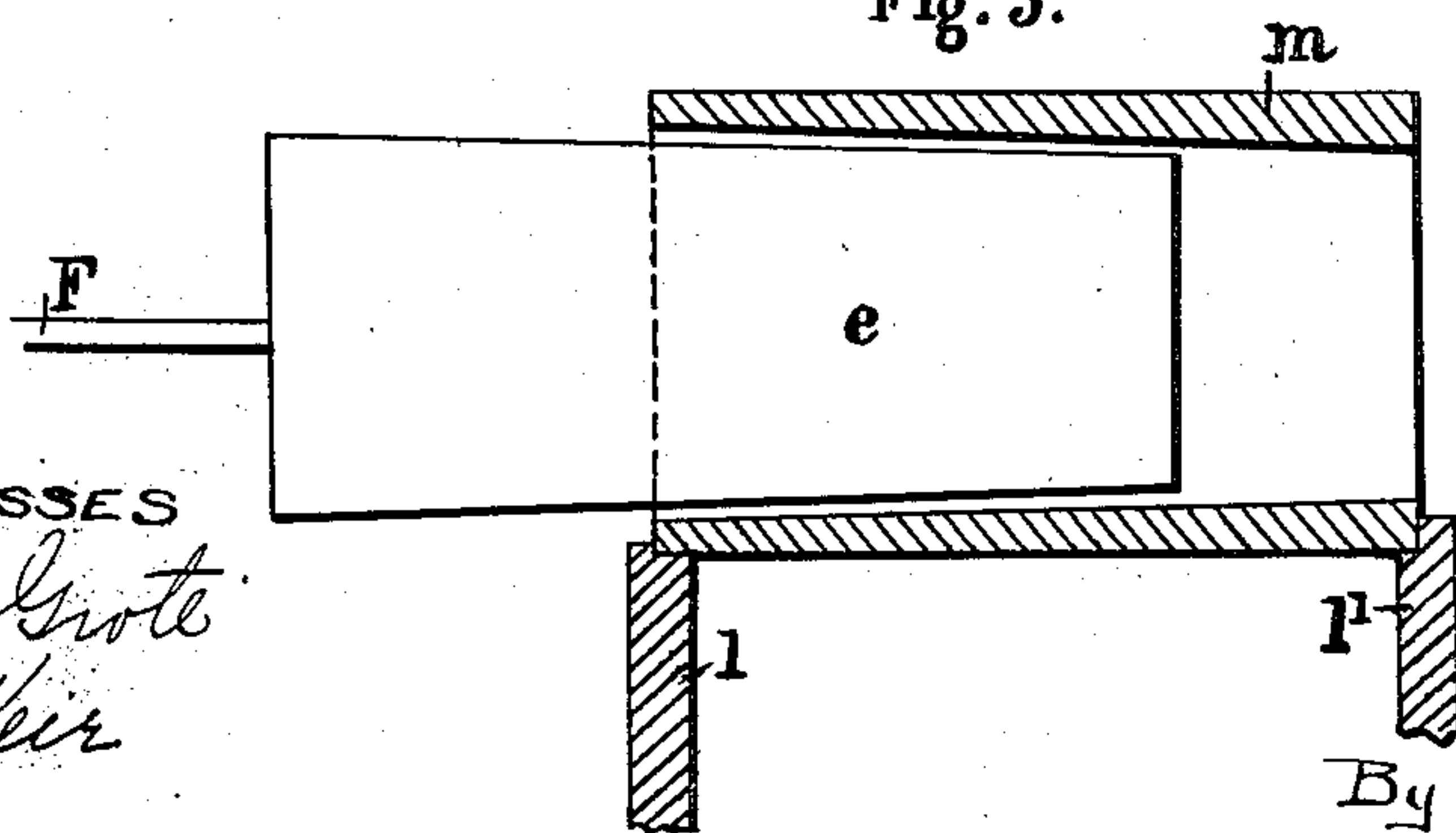


Fig. 3.



WITNESSES

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ARRANGEMENT FOR CONTINUOUS PHONOGRAPH RENDERINGS.

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Specification of Letters Patent.

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Application filed March 23, 1909. Serial No. 485,225.

To all whom it may concern:

Be it known that I, MAURICE COUADE, a citizen of the French Republic, residing at Laon, Department of Aisne, France, have
5 invented a new and useful Arrangement for Continuous Phonograph Renderings, of which the following is a full, clear, and exact description.

This invention relates to an arrangement
10 whereby may be obtained the continuous rendering or reproduction of a piece of music or the like recorded on several successive disks or cylinders. This arrangement also enables me to effect as desired with absolute certainty and without jerks, the start-
15 ing and the stopping of the gramophone or phonographic rendering of a piece, at any desired point in this piece and at a predetermined moment.

20 Means for carrying out the present invention are shown by way of example upon the annexed drawings, in which:—

Figure 1 is a longitudinal section, and Fig. 2 is a section on line 1—1 of Fig. 1.
25 Fig. 3 shows an example of the arrangement applied to a cylinder apparatus.

A horizontal axis A turning between two supports or bearings B and B' transmits by the intermediary of two tangential screws
30 C C' and two wheels D D', the movement of a constant speed-motor (not shown) to two plates E E'. The vertical spindles F F' of the plates can slide in the wheels which drive them, by means of keys G G'; by reason of this arrangement the wheels alone
35 receive the oblique drive of the helicoidal gears and the vibrations from this wheel are not imparted to the plates E E'. These wheels D D' may be mounted between ball
40 bearings carried by the bearings B B'.

The two tangential screws C C' have threads of opposite hands; the same applies to the wheels D D', the object being to balance the thrust of the wheels in the direction of the axis A.
45

The spindles F F' rest upon the extremities of two pistons H H' guided vertically in alinement with the spindles F F' and carried by the extremities of a beam I which
50 can oscillate about a horizontal axis passing through its center, in the manner of a scale-beam. This beam is balanced under the weight of the two disks, even when the latter are in movement and a slight pressure
55 upon one of the arms is sufficient to lower the corresponding disk while the other is

raised. This rocking is produced from a distance by the two small electro-magnets for the two directions.

Around each disk is fixed to the casing of
60 the apparatus a crown L L' which serves as support to the disk at its edges, when the disk is lowered; it also allows of centering it in such a way that the hole in the disk is exactly facing the end of the disk-spindle
65 and it maintains it at about a millimeter from the disk.

The working of the apparatus is as follows:—The motor being started and the excited electro-magnet K maintaining the
70 plate E lowered, the disk M is laid upon the crown L and alined so that the needle of the reproducer N rests upon the point of the spiral which corresponds to the point at which the reproduction begins. At the mo-
75 ment when this reproduction is to begin, the pivoting of the beam is effected by the electro-magnet mechanism; as soon as the plate E in rising comes into contact with the disk M, it raises the latter from its support or
80 seat L and revolves it in its own movement. The reproduction then begins immediately. During the reproduction of this first disk, the succeeding disk M' is placed upon the crown L', as before its reproducer N' being
85 arranged at the point of the spiral at which the rendering is to begin. At the correct moment one changes over from the reproduction of the first disk M to that of the second disk M' by throwing over the beam.
90 There happens in the case of the disk M' the same as described for the disk M, while the plate E in falling drops its disk M upon the crown L, which causes its instant stoppage. These operations are repeated. The
95 adhesion of the disk to the plate which takes place over the lower surface of the disk and the adhesion to the crown which takes place at the edges of the disk are facilitated by the interposition of baize or any other substance
100 preventing the slipping of the disk, as well as by the roughness of the lower surface of the disk. The plate E is made sufficiently heavy to prevent any disturbance in the speed of the motor owing to the sudden in-
105 crease of weight added thereto by the comparatively light disk at the moment of engagement. The coincidence of the release of one disk with the engagement of the other has likewise for effect to avoid this disturb-
110 ance in the speed.

The invention is not limited to the details

of construction given above merely by way of example. For instance the movement of the disks instead of being obtained through the rocking of a lever may be secured by any
 5 other suitable mechanical or electrical contrivance.

If it be desired to apply the arrangement to a cylinder apparatus, the plates E E' might for example be replaced by the conical sleeves employed in cylinder phonographs (*e* Fig. 3), and arrange the apparatus in such a way that the axes A F F' are horizontal.

The cylinders rest upon supports *l l'*
 15 which allow the cylinders to be centered; before the reproduction they sustain the cylinder, having its reproducer placed at a suitable point, at a very small distance from the sleeve.

20 The support *l* which is fixed will allow of detaching the cylinder at the moment of release; the support *l'* which is pivoted will allow of insuring the adhesion between the sleeve and the cylinder at the moment of engagement, and then by its pivoting or tilting action, which follows immediately, of releasing it completely.

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

1. A phonograph having stationary supports for two records, means for simultaneously lifting one record from and depositing another record upon its support and means in connection therewith for rotating only
 35 the lifted record for the purpose described.

2. A phonograph apparatus having stationary supports provided with means for centering records thereon, in combination with rotary supports adapted to lift the
 40 records from said stationary supports and means for imparting vertical movement in opposite directions to said rotary supports whereby a record may be lifted from one stationary support while another record
 45 is deposited on the other stationary support, substantially as described.

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

MAURICE COUADE.

Witnesses:

CHARLES DOUY,
 JULES DEVINE.