

No. 675,349.

Patented May 28, 1901.

F. L. CAPPS & V. H. EMERSON.

GRAPHOPHONE.

(Application filed Feb. 18, 1901.)

(No Model.)

Fig. 3.

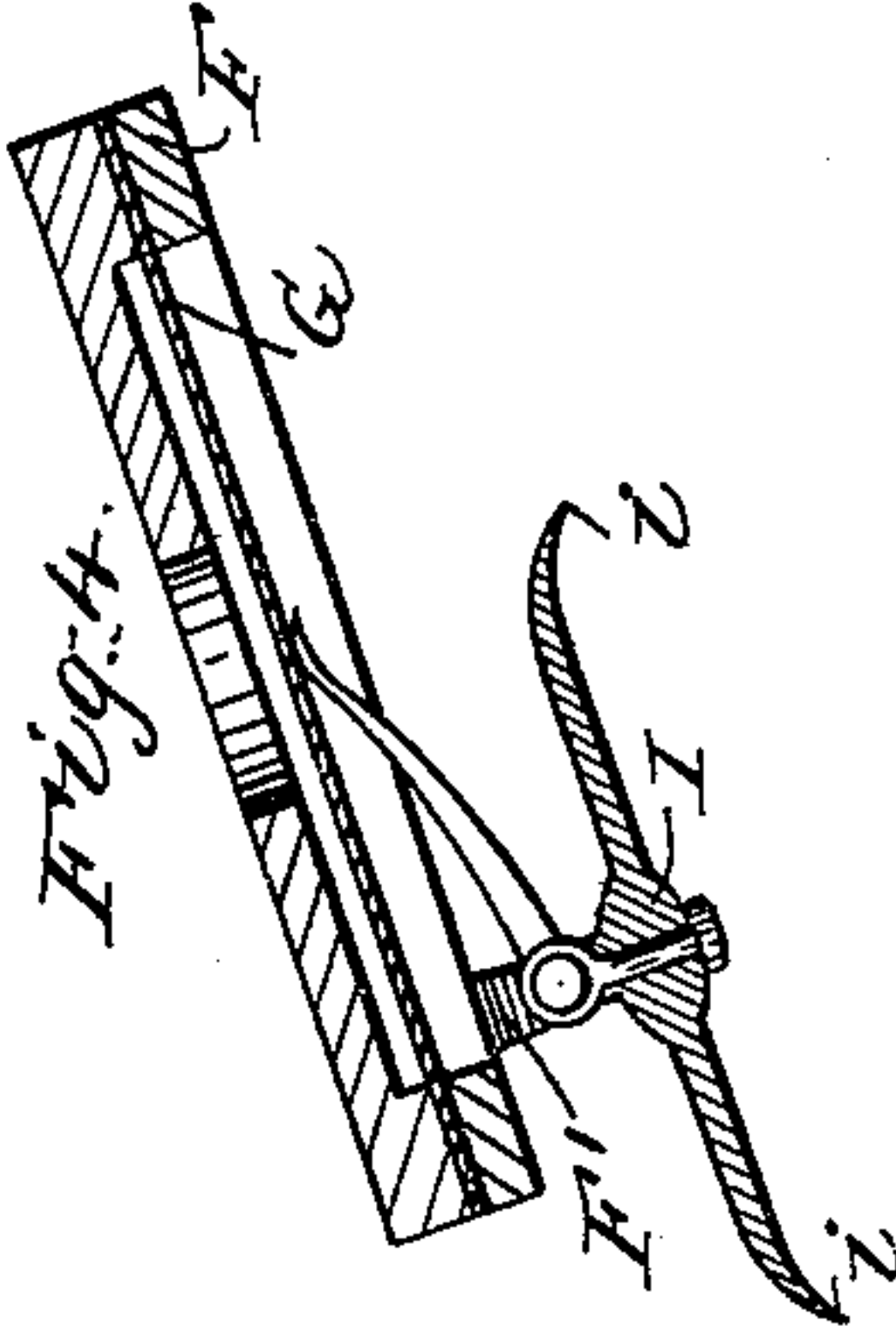
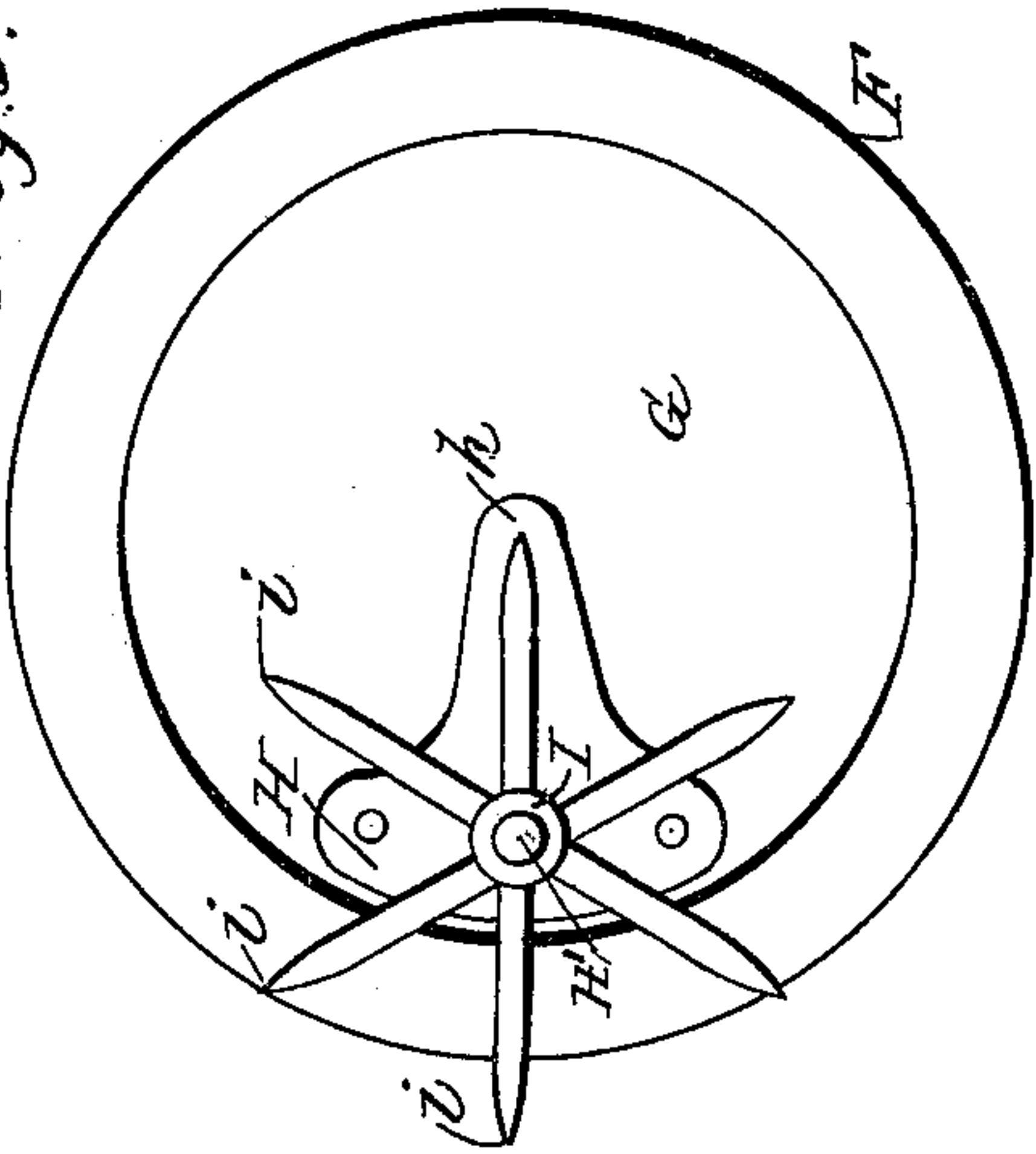
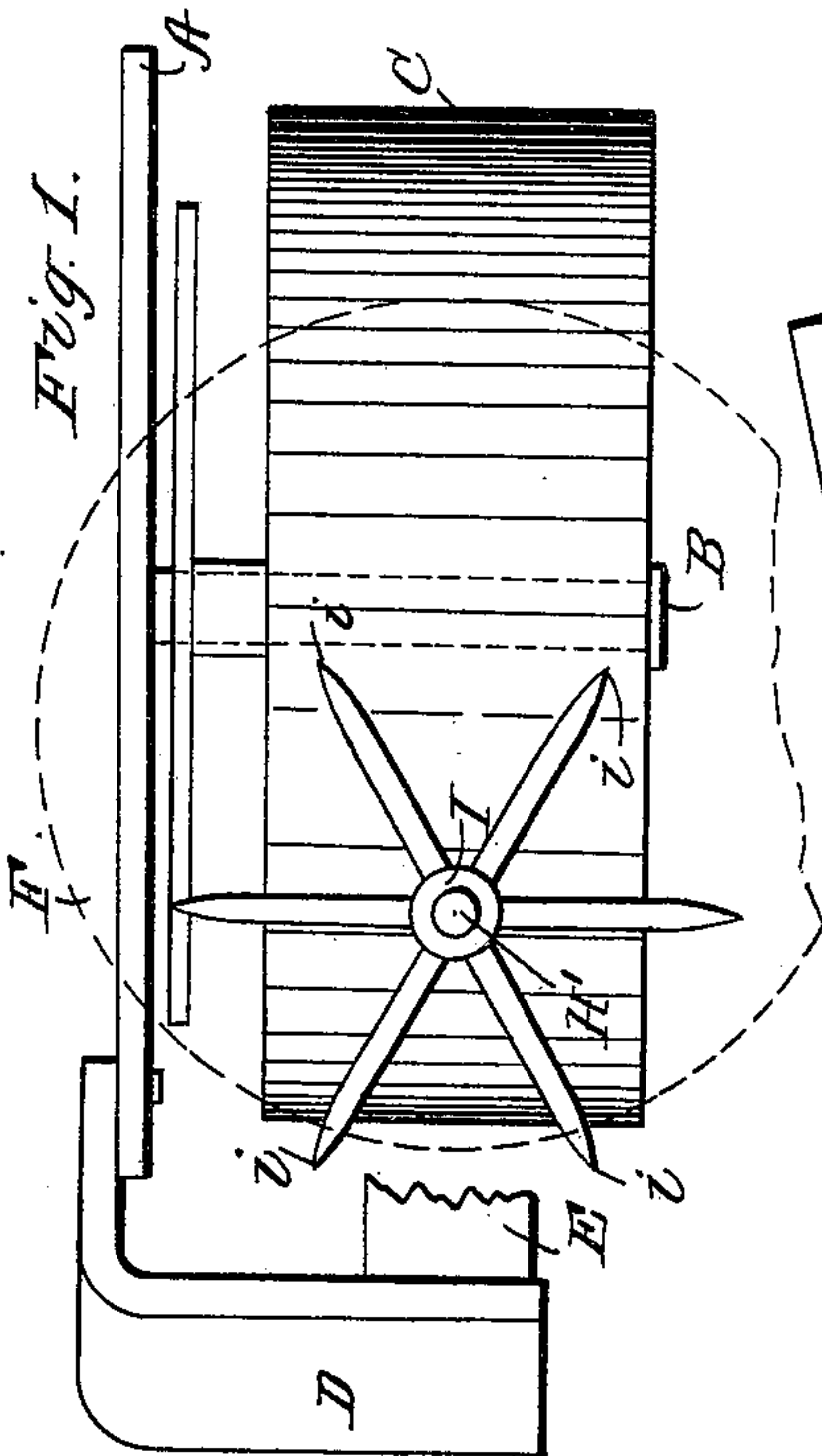


Fig. 1.

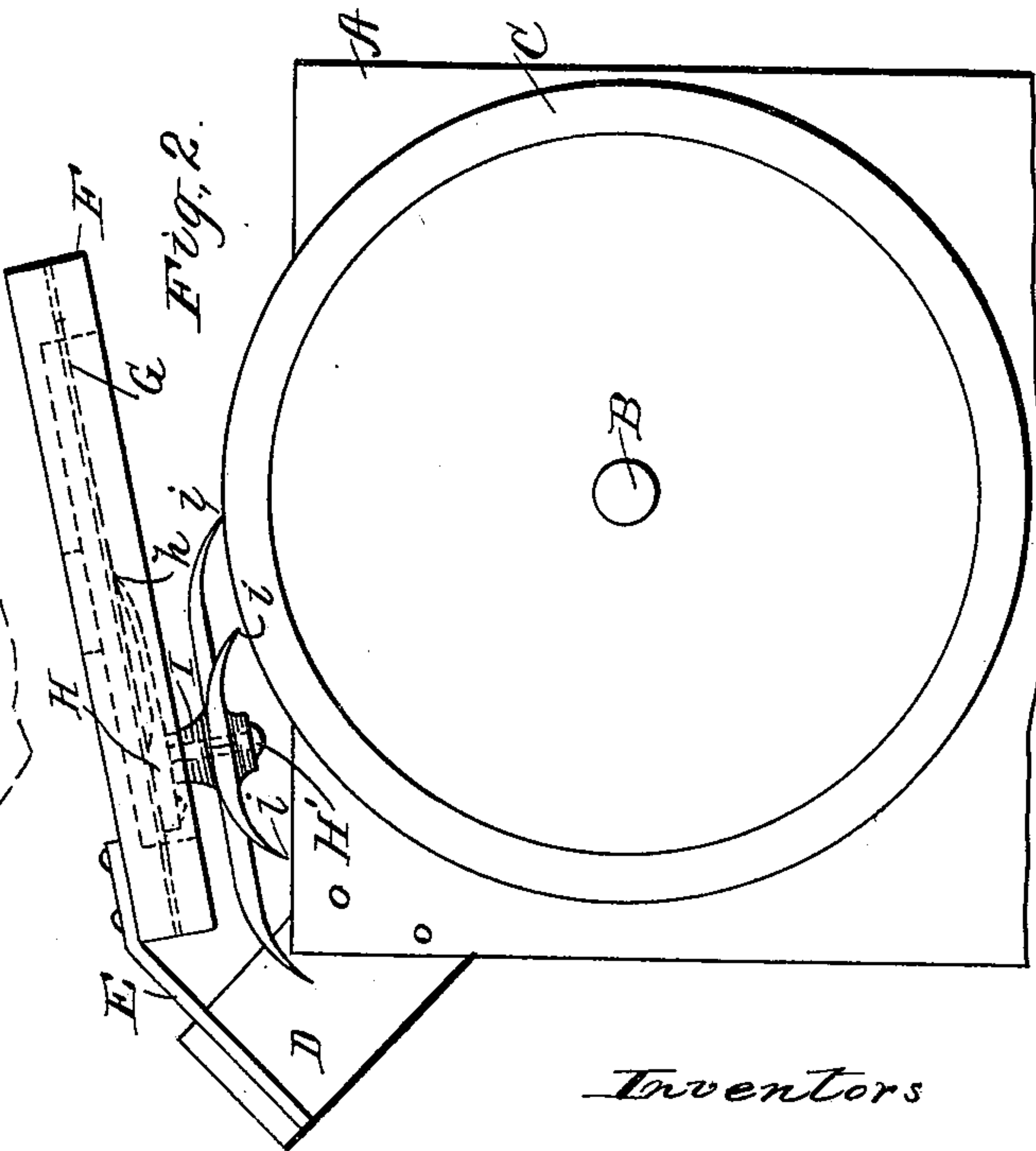


Witnesses

W. R. Eadon.

[Signature]

Fig. 2.



Inventors

[Signature] Frank L. Capps
[Signature] Victor H. Emerson

[Signature] Philip H. H. H.

their attorneys

UNITED STATES PATENT OFFICE.

FRANK L. CAPPS AND VICTOR H. EMERSON, OF NEWARK, NEW JERSEY,
ASSIGNORS TO AMERICAN GRAPHOPHONE COMPANY, OF WEST VIRGINIA.

GRAPHOPHONE.

SPECIFICATION forming part of Letters Patent No. 675,349, dated May 28, 1901.

Application filed February 18, 1901. Serial No. 47,826. (No model.)

To all whom it may concern:

Be it known that we, FRANK L. CAPPS and VICTOR H. EMERSON, of Newark, New Jersey, have invented a new and useful Graphophone, which is fully set forth in the following specification.

This invention relates to talking-machines; and its object is to obtain repetition of the reproductions from a sound-record without requiring the reproducer to be moved back to the starting-point. It is particularly adapted for use with an inclosed graphophone, (or phonograph or gramophone,) as in a doll or other toy, where there would otherwise be need of an arm or lever projecting to the outside of the casing or of an opening into the casing for resetting the apparatus.

Our invention consists, in brief, of a plurality of reproducer-points having phonetic connection with a diaphragm or other sonorous or vibratile body and so constructed and arranged that they may be driven continually and always in the same direction without reversal along and in operative connection with the sound-record.

Our invention will best be understood in connection with the accompanying drawings, which illustrate one embodiment thereof.

Figure 1 is a plan view, the diaphragm-casing being removed, but its position indicated by dotted lines. Fig. 2 is a side view. Fig. 3 is an inverted view of the diaphragm-casing, and Fig. 4 is a sectional view of a modified form of device.

A represents a bracket or plate upon which is mounted the arbor B. Mounted revolubly on this arbor is a drum that carries a sound-record C. This record is preferably of celluloid or other durable material, and the drum may be rotated by clockwork or by a crank-arm or the like. An arm D, integral with or fast to bracket A, projects above or to one side of the drum and its record and carries the support E, preferably of spring material, to which is made fast the head F, as shown in Fig. 2. This head F supports in any desirable manner the diaphragm G. A shoe H is secured to the diaphragm, having a projection *h* extending to the center thereof and connected thereto or merely lying against it.

H' is a stud or arbor rising from the heel

of the shoe. On this stud is journaled the hub I of a spider, whose ends *i i*, &c., are turned down and pointed to constitute the reproducer-points. These arms of the spider are so arranged and so spaced that their points are a little nearer together than the combined transverse thickness width of all the record-grooves, whereby each succeeding reproducer-point will engage the record-groove before its predecessor has left its engagement therewith. The points engage the record-groove one after the other successively, so that as the drum and record are rotated continuously the groove of the record acts as a feed-screw, rotating the spider and giving a continued repetition of the reproductions from the record so long as the latter is revolving.

In Fig. 4 instead of having a shoe secured to the diaphragm it is mounted in trunnions F' upon the frame F, the mode of operation being of course the same.

It is obvious that many changes may be made in the details and operative devices without departing from the spirit of our invention. The latter is not limited to a cylindrical record or to one characterized by a radially-undulating groove. Again, instead of having the record-groove itself act as the feed-screw the spider or other device that constitutes (or carries) the plurality of reproducer-points may be caused to progress by means of some other feed-screw, it only being necessary that by some means the points be caused to have, one after the other, operative relation with a sound-record.

It will be noted that while the diaphragm casing or head F is preferably mounted on a spring-support to adjust itself automatically to any eccentricities of the record-cylinder C, yet it is otherwise stationary, and while the drum carrying the record C revolves or rotates, yet it has no shifting or translatory movement and is therefore stationary relative to the diaphragm. For these reason our invention is peculiarly adapted for use in a small inclosed space.

Having thus described our invention, we claim—

1. The combination with a sonorous or vibratory body, and a sound-record, of a sound-

transmitting device in phonetic connection with said sonorous body and carrying a plurality of reproducer-points that are arranged and adapted for successive engagement with
5 said record, whereby is obtained a repetition of the reproduction from said record without reversing said device, substantially as described.

2. The combination with a diaphragm and
10 a shoe in phonetic connection therewith and carrying an arbor or stud, of a plurality of reproducer-points journaled on said stud and adapted to engage in rotation with the groove of a sound-record, substantially as described.

15 3. The combination of a stationary diaphragm having a stud secured thereto, a relatively stationary but revoluble sound-record, and an intermediate sound-transmitting device journaled on said stud and having pho-
20 netic connection with said sound-record, substantially as described.

4. The combination with a stationary diaphragm and a relatively stationary but revoluble sound-record, of an intermediate sound-
25 transmitting device carrying a plurality of reproducer-points adapted and arranged to engage said record, one after the other, and follow or track throughout the same, substantially as described.

5. In a talking-machine, the combination 30 with a sound-record, of a plurality of revolubly-mounted reproducer-points adapted to engage automatically, one after the other, the groove of said record and be vibrated and rotated thereby, substantially as de- 35 scribed.

6. In a talking-machine, a revoluble device carrying a plurality of reproducer-points, and means for rotating the same to bring said points one after the other into operative re- 40 lation with a sound-record, whereby a repetition of the reproduction is obtained, substantially as described.

7. In a talking-machine, a sound-record, a plurality of reproducer-points, and means for 45 moving said record and for causing said points to travel continuously in the same direction, whereby is obtained a repetition of the reproduction, substantially as described.

In testimony whereof we have signed this 50 specification in the presence of two subscribing witnesses.

FRANK L. CAPPS.
VICTOR H. EMERSON.

Witnesses:

C. A. L. MASSIE,
JOHN DEVINE.