

G. A. OPPENHEIMER.
 AUTOMATIC NEEDLE DISENGAGING AND STOP MECHANISM FOR SOUND REPRODUCING MACHINES.
 APPLICATION FILED JAN. 29, 1903.

936,348.

Patented Oct. 12, 1909.

3 SHEETS-SHEET 1.

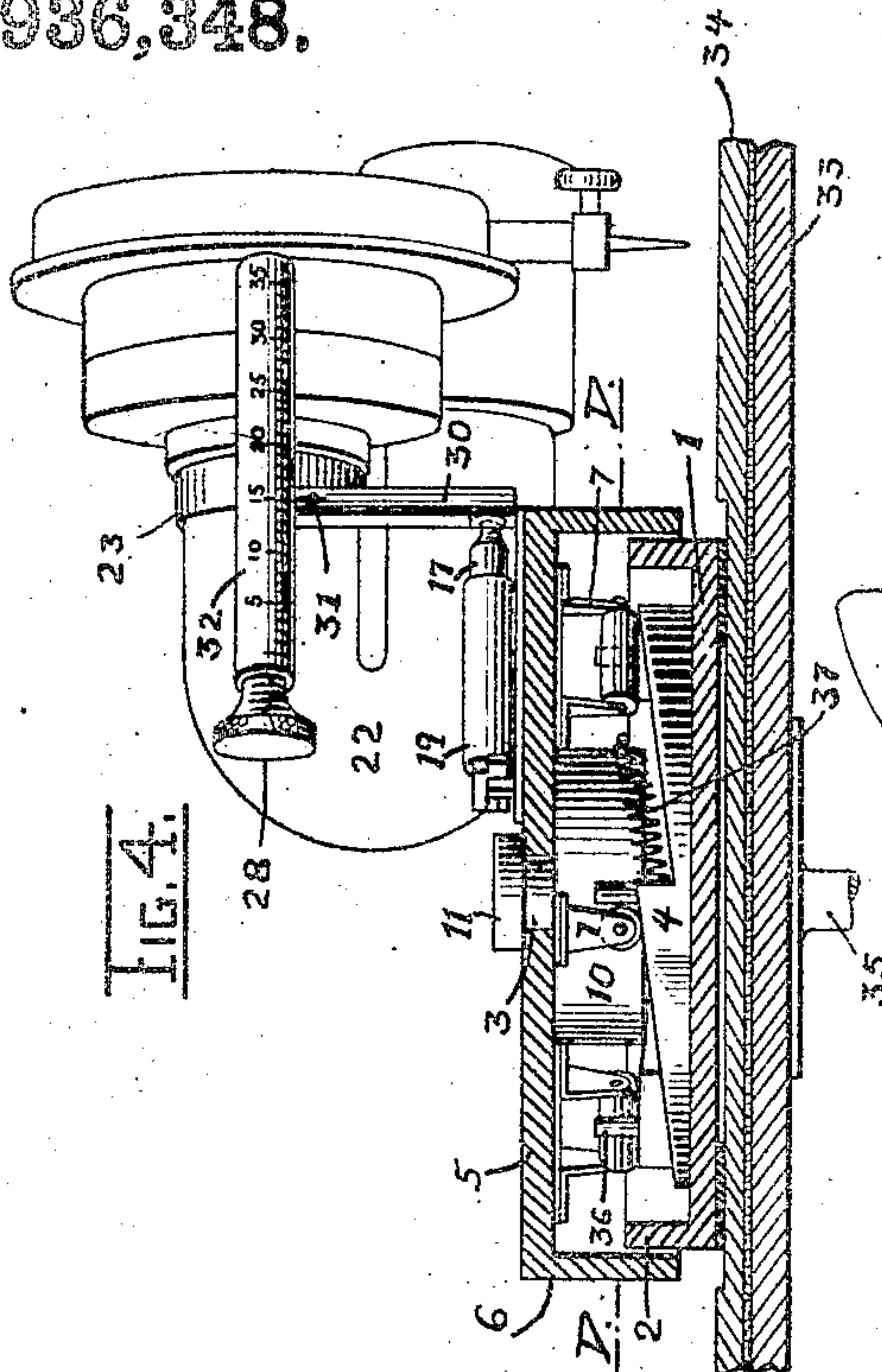


FIG. 1.

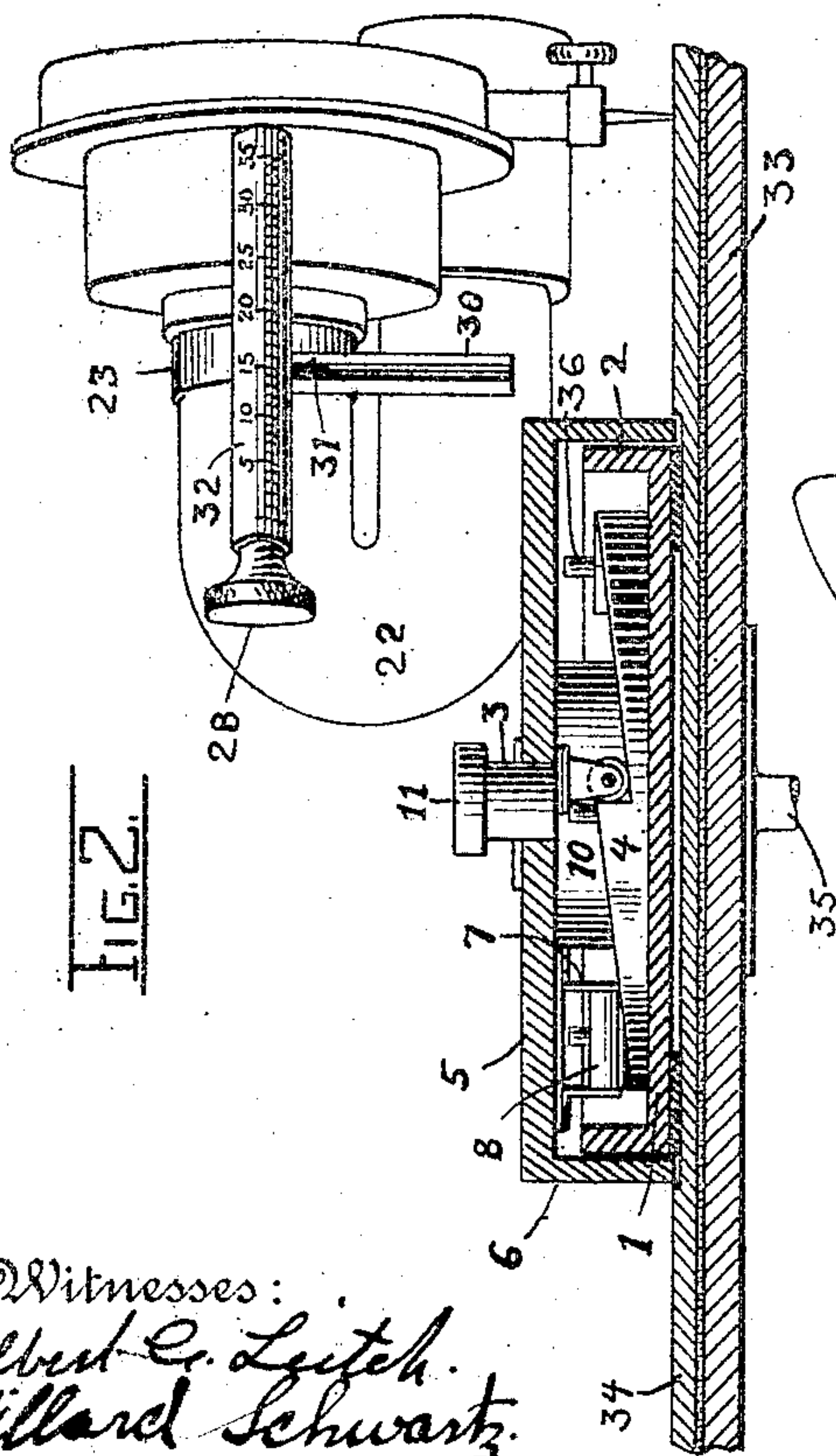


FIG. 2.

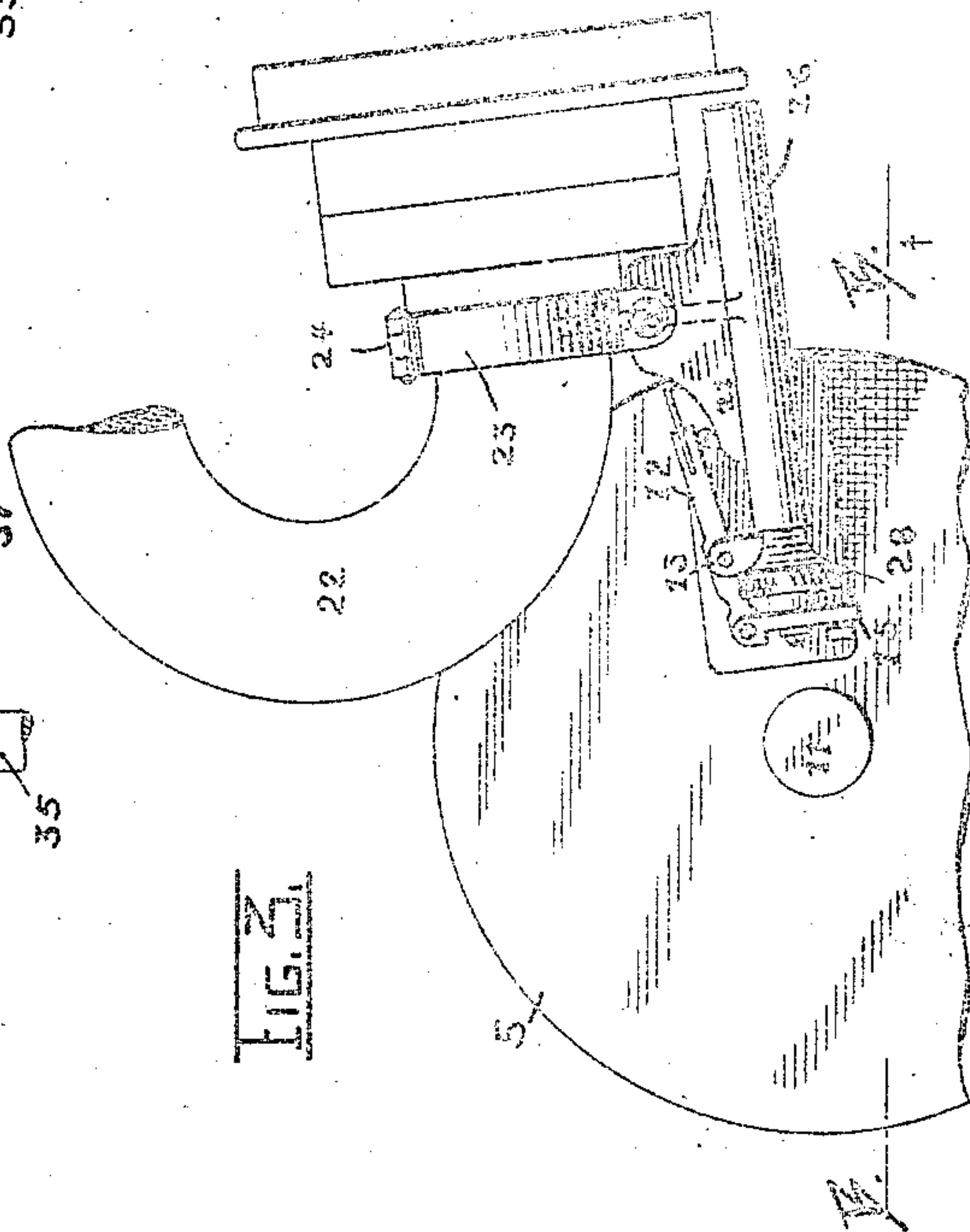


FIG. 3.

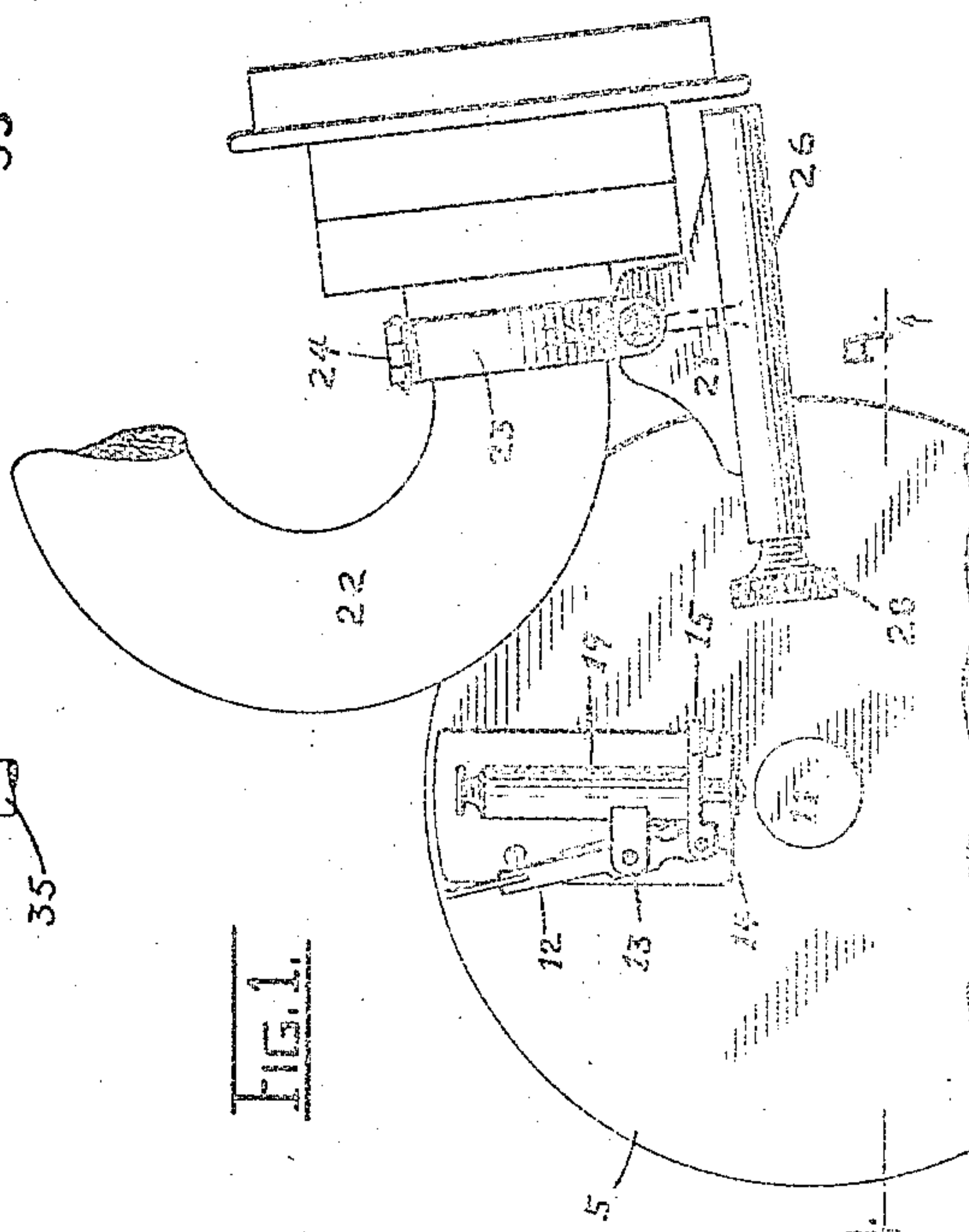


FIG. 4.

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 Willard Schwartz.

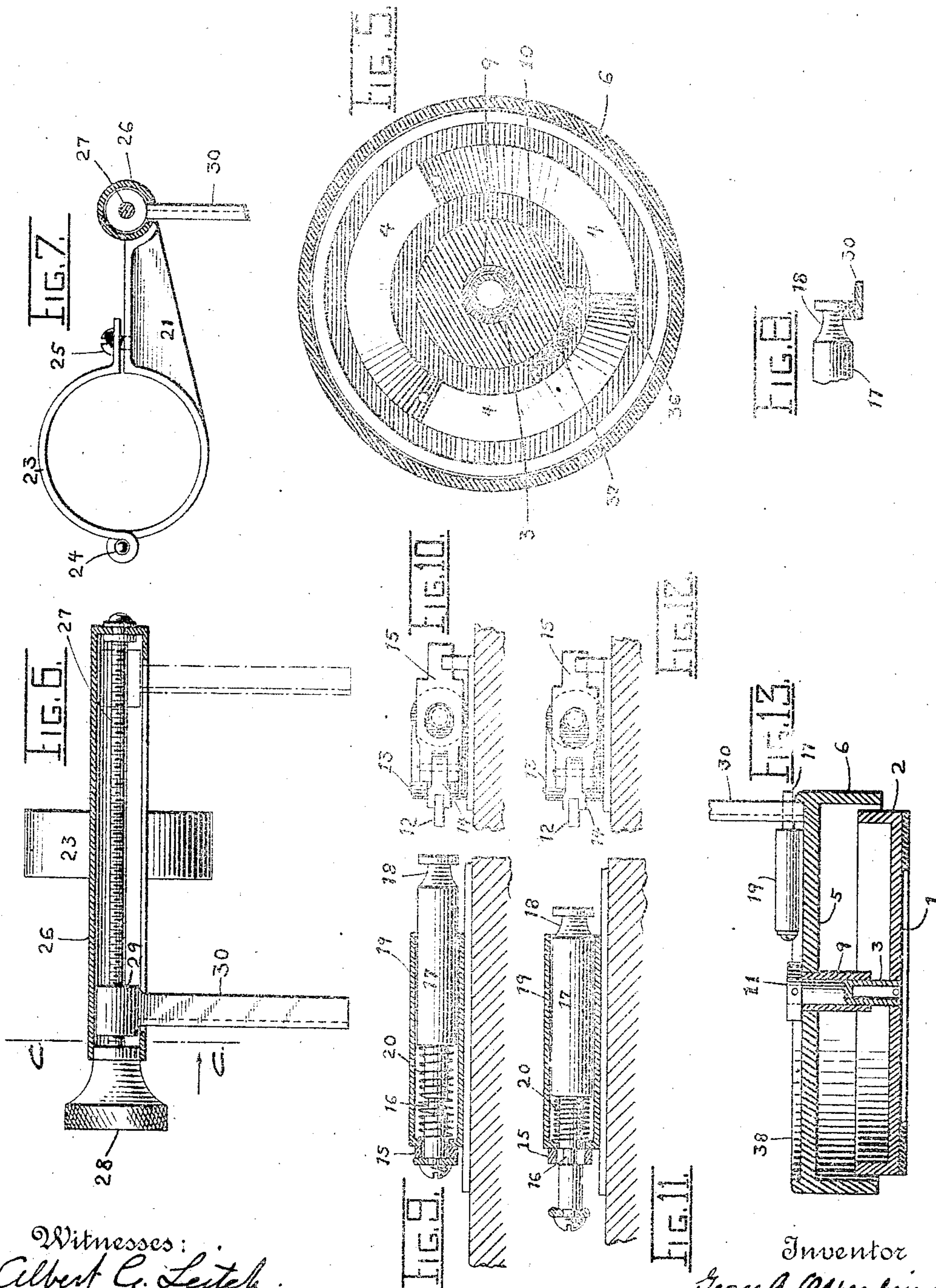
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DESIGNS-SHEET 2.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC NEEDLE-DISENGAGING AND STOP MECHANISM FOR SOUND-REPRODUCING MACHINES.

936,348.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE A. OPPENHEIMER, a citizen of the United States, and residing at New Rochelle, in the county of Westchester, State of New York, have invented certain new and useful Improvements in Automatic Needle-Disengaging and Stop Mechanisms for Sound-Reproducing Machines.

My invention relates to attachments for sound reproducing machines having revolvable horizontal tables upon which are placed the disk records.

The object of my invention is to provide a mechanical device which will automatically disengage and lift the reproducer needle or stylus from the face of the record and stop the rotation of the record upon the completion of the reproduction of the matter inscribed upon the record, or at some other predetermined point in the rotation of the said record.

The accompanying drawings illustrate my invention, in which similar characters of reference indicate corresponding parts throughout the several views.

Figure 1 is a plan view of the engaging mechanism in position prior to engaging and lifting the reproducer needle. Fig. 2 is a side elevation of the attachment having a section of the casing removed along the line A A in Fig. 1, and showing a perspective view of the internal mechanism. Fig. 3 shows a plan view of the device in position of engagement with the projecting arm. Fig. 4 is a side elevation of the attachment in position corresponding to Fig. 3, having a section of the casing removed along the line B B, and showing a perspective view of the internal mechanism. Fig. 5 is a section through the line D D in Fig. 4. Fig. 6 is a detailed view in elevation of the bracket and projecting arm. Fig. 7 is a section in elevation through the line C C in Fig. 6. Fig. 8 is a detailed sectional view showing the end of the stop bolt engaging the projecting arm. Fig. 9 shows a detailed view of the stop bolt released. Fig. 10 is a detailed rear elevation of the part shown in Fig. 9. Fig. 11 shows a detailed view of the stop bolt restrained. Fig. 12 is a rear eleva-

tion of the part shown in Fig. 11. Fig. 13 is a sectional elevation through the center of the casing, and shows a modified form of the top portion thereof.

The bottom plate (1), having an upwardly projecting rim (2) and a centrally located upright sleeve (3), carries upon its face the inclined surfaces or abutments (4). The top plate (5), having a downwardly projecting rim (6) and carrying the downwardly hanging supports (7) in which are journaled the ends of the rollers (8), is loosely mounted upon the upright sleeve (3). A bushing (9) is provided to steady the top plate and to prevent it from binding the sleeve. The bottom and top plates, with their respective rims, form a casing which serves to protect and conceal the internal mechanism. This portion of the device must be of sufficient weight to allow it to properly adhere to the face of the record so as to be carried and revolved by it. When the casing of the attachment is made of metal or other suitable material, no extra weight is needed, but when the casing is made of some lighter material, as for instance, rubber or wood, a weight (10) surrounding the bushing (9) and fastened to the top plate (5) may be provided. A collar (11) is fastened by means of a rivet or other suitable fastening to the top of the sleeve (3) so as to prevent the two portions of the casing from being pulled apart.

The engaging mechanism, which is suitably fastened to the upper surface of the top plate (5), consists of a trigger (12) pivoted in the support (13) and attached at the inner end through the connecting link (14) to the latch (15). The latch is adapted to engage a recess (16) in the stop bolt (17). The stop bolt has a notched head (18) and is suitably housed in the frame (19). A spring (20), one end of which bears against the bolt and the other end against the housing is provided to spring the bolt in position when the latch is released through the movement of the trigger, as is shown in Figs. 9 to 12.

The bracket (21) is fastened to the arm (22) that carries the reproducer or sound-box of the phonograph. For this purpose the bracket is supplied at the fastening end

thereof, with a band (23) hinged at (24) and adapted to be clamped by means of a thumb screw or other suitable fastening (25). The outer end of the bracket carries a hollow horizontally disposed barrel (26), in the ends of which is suitably journaled a set screw (27), having a knurled head (28). A nut (29), adapted to be moved in a horizontal direction by means of the screw (27), carries the downwardly projecting arm (30). The arm 30 carries a pointer (31) which indicates the movement of the same upon the graduations (32) placed upon the outside of the barrel (26).

The manner in which my invention operates is as follows: Upon the revoluble horizontal table (33) of the sound reproducing machine, is placed the record (34). Over the central position of the record, in such manner that the sleeve (3) fits over the spindle (35) of the phonograph, I place my attachment. The attachment will then be in the position shown in Fig. 2, that is, with the rollers, carried by the top plate, bearing on the bottom part of the inclined surfaces or abutments. The projecting arm (30) is first set so as to engage the stop bolt at the proper point, which is preferably at the completion of the tune carried on the record. The needle or stylus of the reproducer is then placed upon the record and the mechanism of the phonograph started. As the needle reaches the predetermined point, the projecting arm (30) will engage the trigger, the free end of which projects slightly beyond the head of the stop bolt, causing the stop bolt to be released and snapped in position, so that upon the next revolution of the record the notched head of the stop bolt is presented to and engages with the web of the projecting arm (30), thereby preventing the top part of the attachment from further rotation. The bottom plate, carrying the inclined surfaces or abutments, now rotates independently of the top plate which is held in engagement with the projecting arm (30), thereby causing the roller supports of the top plate to mount the inclined surfaces or abutments and vertically raise said top plate. The lower end of the projecting arm rests upon the upper surface of the top plate and is raised with it, thereby disengaging and lifting the needle from the face of the record, as shown in Fig. 4. The ascending motion of the rollers is arrested by the pins (36) suitably fastened in the top of the inclined surfaces. The attachment being suitably weighted and being rigidly held by the reproducer arm of the phonograph, through the projection (30), acts as a friction brake against further rotation of the record and causes it to come to rest.

A band or strip of felt, rubber, or other suitable adhesive material may be applied to the

bottom surface of the attachment so as to provide a good friction bearing between the attachment and the record.

When the projection (30) is lifted from the attachment and the record removed, the spring (37), the ends of which are suitably fastened to the upper and lower parts of the attachment respectively, brings the parts of the attachment back to their normal position as shown in Fig. 2. This spring may be omitted and the upper part will fall back into its original position by reason of its weight.

The modified form of the casing shown in Fig. 13, has a raised lip (38) formed around the periphery of the upper surface of the top plate, which acts as a safeguard to prevent the end of the projecting arm 30 from breaking away from engagement with the stop bolt.

The construction and arrangement of the various parts may be modified and varied from that illustrated in the accompanying drawings without departing from the essential features of this invention.

What I claim as my invention, and desire to secure by Letters Patent is:

1. A brake attachment for talking machines, comprising a member adapted to rest on the record and to engage the sound-box or corresponding part of the machine, as such part approaches the center of the record, whereby further rotation of the latter is stopped.
2. A brake attachment for talking machines, comprising a member adapted to loosely rest on the record, said member having a friction surface for engaging with said record and being adapted to engage the sound-box or corresponding part of the machine, as such part approaches the center of the record, whereby further rotation of the latter is stopped.
3. A brake attachment for talking machines, comprising a member adapted to rest on the record, and movable means borne by said member and adapted in one position thereon to engage the sound-box or corresponding part of said machine, as such part approaches the center of the record.
4. A brake attachment for talking machines, comprising a member adapted to loosely rest on the record, said member having a friction surface for engaging with said record, and means borne by said member and adapted to engage the sound-box or corresponding part of said machine, as such part approaches the center of the record.

5. A brake attachment for talking machines, comprising a member adapted to loosely rest on the record, said member having a friction surface for engaging with said record, and radially movable means borne by said member and adapted in extended position to engage the sound-box or correspond-

ing part of said machine, as such part approaches the center of the record.

6. A brake attachment for talking machines, comprising a member adapted to rest on the record, and a stop bolt reciprocally mounted on said member and adapted, when extended, to engage the sound-box or corresponding part of said machine, as such part approaches the center of the record.

7. A brake attachment for talking machines, comprising a member adapted to rest on the record, a stop bolt reciprocally mounted on said member and adapted, when extended, to engage the sound-box or corresponding part of said machine as such part approaches the center of the record, resilient means tending thus to extend said bolt, and a latch normally retaining the same in its inner position, said latch being operable by engagement with such machine part to release said bolt.

8. A brake attachment for talking machines, comprising a member adapted to rest on the record, a stop bolt reciprocally mounted on said member and adapted, when extended, to engage the sound-box or corresponding part of said machine as such part approaches the center of the record, resilient means tending thus to extend said bolt, and a pivotal latch normally retaining the same in its inner position, said latch being operable by engagement with such machine part to release said bolt.

9. In a talking machine, the combination with the record and sound-box or corresponding part of the machine cooperative with said record, of a member resting on said record, and a projection carried by such machine part and adapted to engage said member to stop the further rotation of the record.

10. In a talking machine, the combination with the record and sound-box or corresponding part of the machine cooperative with said record, of a member resting on said record, and a projection carried by such machine part and adapted to engage said member to stop the further rotation of the record, said member and projection being adjustable relatively to each other independently of the movement of the latter with such machine part.

11. In a talking machine, the combination with the record and sound-box or corresponding part of the machine cooperative with said record, of a member resting on said record, and a projection carried by such machine part and adjustable in the direction of movement of the same, said projection being adapted to engage said member to stop the further rotation of the record.

12. In a talking machine, the combination with the record and sound-box or corresponding part of the machine cooperative with said record, of a member resting on said record, a bracket carried by said ma-

chine part and projecting in the direction of movement of the same, and an arm adjustable along said bracket and adapted to engage said member to stop the further rotation of the record.

13. In a talking machine, the combination with the record and sound-box or corresponding part of the machine cooperative with said record, of a member resting on said record, a bracket carried by said machine part and carrying a barrel projecting in the direction of movement of such part, a screw within said barrel, and a nut mounted on said screw so as to be adjustable along said barrel, said nut being provided with a downwardly projecting arm adapted to engage said member to stop the further rotation of the record.

14. A brake attachment for talking machines, comprising two relatively movable members adapted to rest on the record, movement of the one member upon the other serving to raise the same from the record, and said movable member being adapted to engage the sound-box or corresponding part of said machine, as such part approaches the center of the record.

15. A brake attachment for talking machines, comprising two relatively movable members adapted to rest on the record, movement of the one member upon the other serving to raise the same from the record, and movable means borne by said last-named member and adapted in one position thereon to engage the sound-box or corresponding part of said machine, as such part approaches the center of the record.

16. A brake attachment for talking machines, comprising two relatively movable members adapted to rest on the record, movement of the one member upon the other serving to raise the same from the record, and radially movable means borne by said last-named member and adapted in one position thereon to engage the sound-box or corresponding part of said machine, as such part approaches the center of the record.

17. In an attachment for sound reproducing machines, the combination with the rotative record, of a device provided with an inclined surface arranged to be rotated therewith, a member movable upon the inclined surface, and a projection carried by the reproducer arm and adapted to engage said member so as to stop the further rotation of the record and raise the reproducer therefrom, substantially as described.

18. In an attachment for sound reproducing machines, the combination with the rotative record, of a device provided with an inclined surface arranged to be rotated therewith, a member movable upon the inclined surface and adapted to be carried therewith, and a projection carried by the reproducer arm and adapted to engage said member so

as to stop the further rotation of the record, and raise the reproducer therefrom, substantially as described.

19. In an attachment for sound reproducing machines, the combination with the rotative record, of a device provided with an inclined surface arranged to be rotated therewith, a stop bolt movable upon the inclined surface and adapted to be carried therewith, and a projection carried by the reproducer arm and adapted to engage said bolt so as to stop the further rotation of the record and raise the reproducer, substantially as described.

20. In an attachment for sound reproducing machines, the combination with the rotative record, of a device provided with an inclined surface arranged to be rotated therewith, a bolt movable upon such inclined surface and adapted to be carried therewith, means for controlling the thrust of the stop bolt, and a projection adapted to be carried by the reproducer arm and arranged to engage said bolt so as to stop the further rotation of the record, and raise the reproducer therefrom, substantially as described.

21. An attachment for sound reproducing machines, comprising a member having an inclined surface, a second member movably mounted on the inclined surface, and a projection adapted to be carried by the reproducer arm and arranged to engage and restrain said second member, substantially as described.

22. An attachment for sound reproducing machines, comprising a member having

an inclined surface, a plate movably mounted on the inclined surface, a bolt mounted upon said plate, means including a latch for controlling the thrust of the bolt, and a projection carried by the reproducer arm and arranged to engage said bolt so as to restrain further rotation of the plate, and cause the same to mount the inclined surface, substantially as described.

23. An attachment for sound reproducing machines, comprising a lower plate adapted to be carried by the record and formed with an inclined surface, an upper plate movable upon such inclined surface, a bolt mounted upon the upper plate, means including a latch for controlling the thrust of said bolt, and a projection adapted to be carried by the reproducer arm arranged to act upon the latch and engage the bolt so as to restrain the further rotation of the upper plate and cause it to mount the inclined surface, thereby lifting the reproducer from the record, substantially as described.

24. In an attachment for sound reproducing machines, the combination of a bracket adapted to be fastened to the reproducer arm and carrying at one end a barrel, a screw within said barrel, and a nut mounted upon said screw so as to be adjustable along said barrel, said nut having a downwardly projecting arm, substantially as described.

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