

No. 881,521.

S. G. WILSON.

PATENTED MAR. 10, 1908.

MECHANICAL CHAIR.

APPLICATION FILED DEC. 24, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

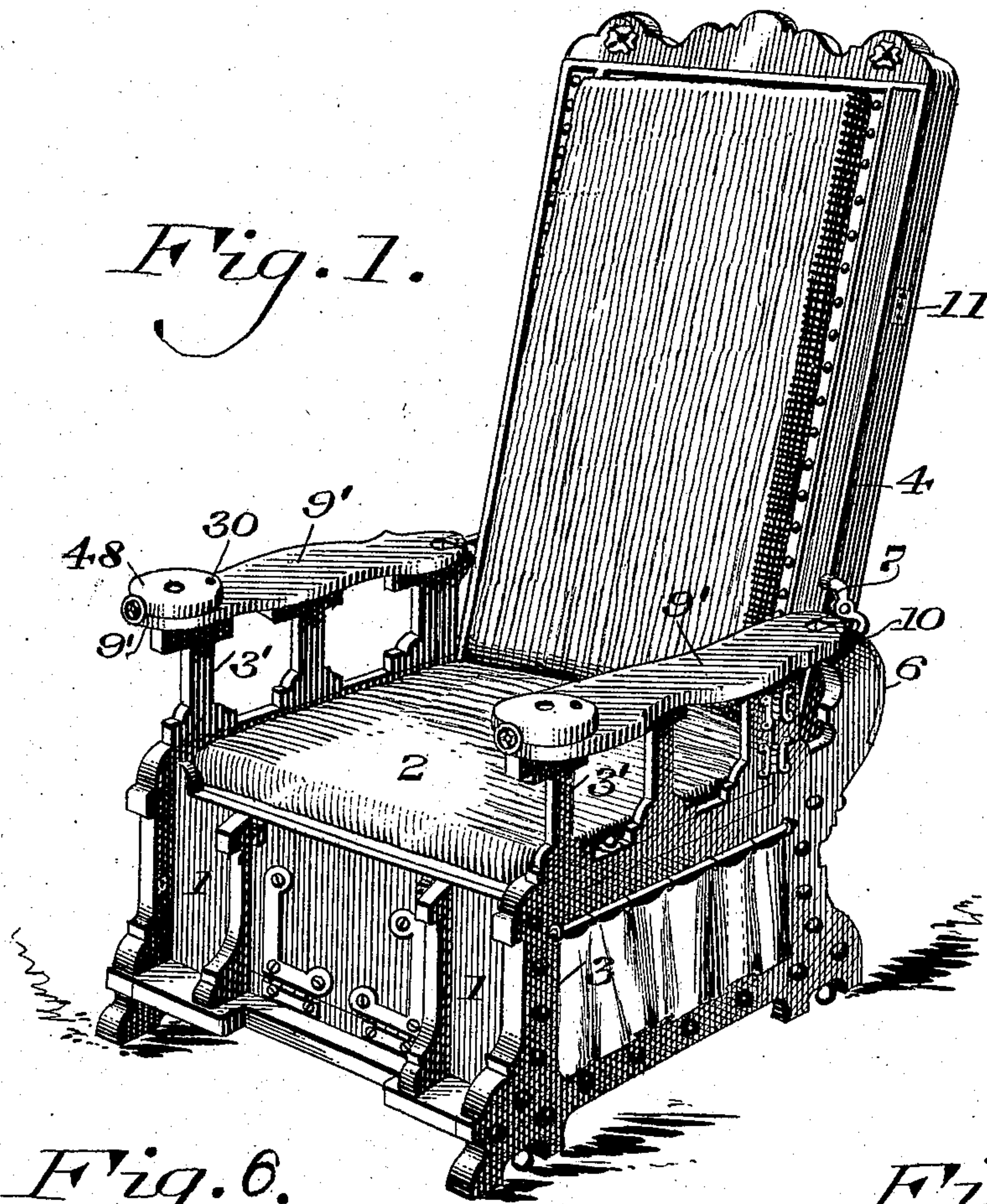


Fig. 6.

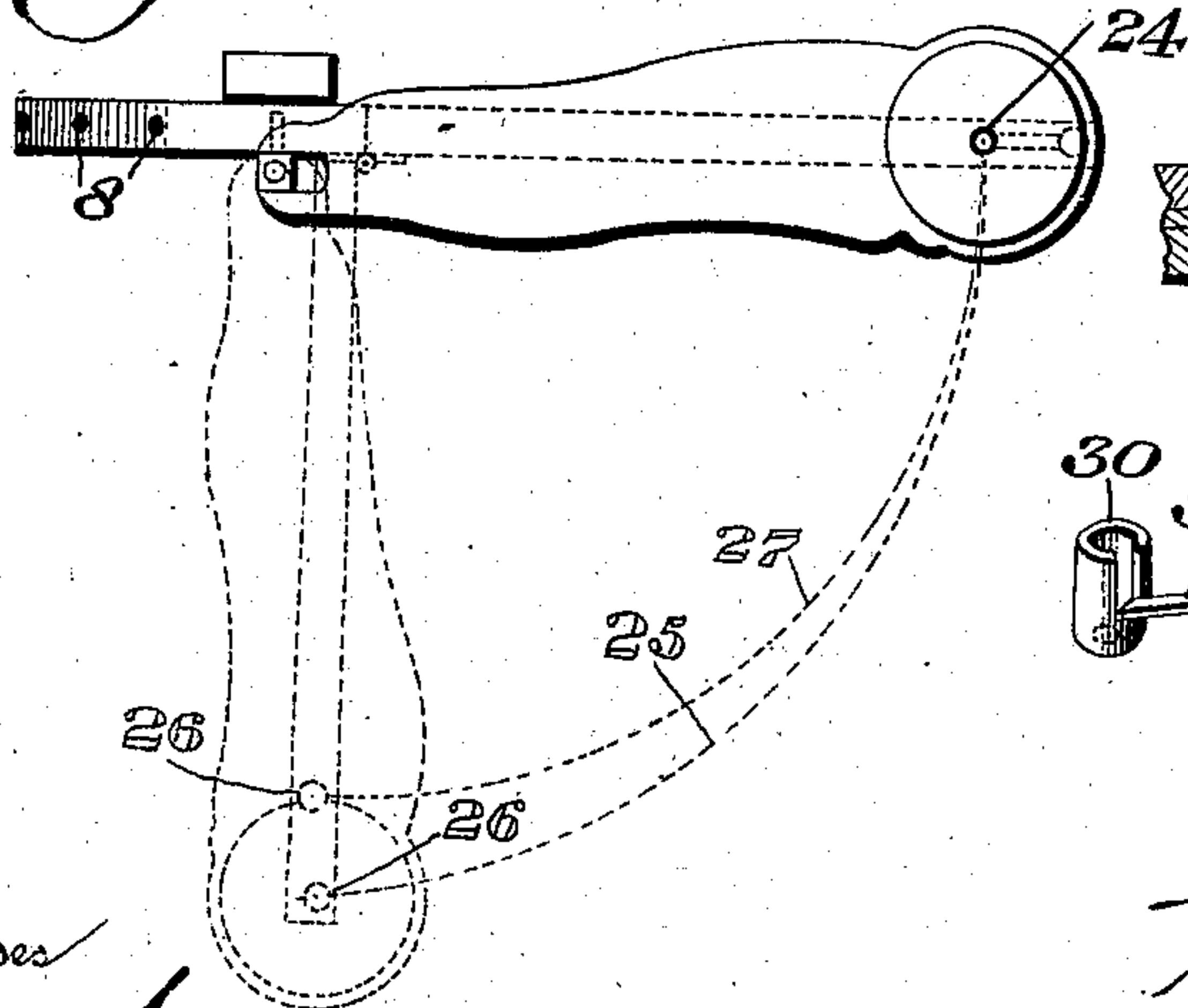


Fig. 8.

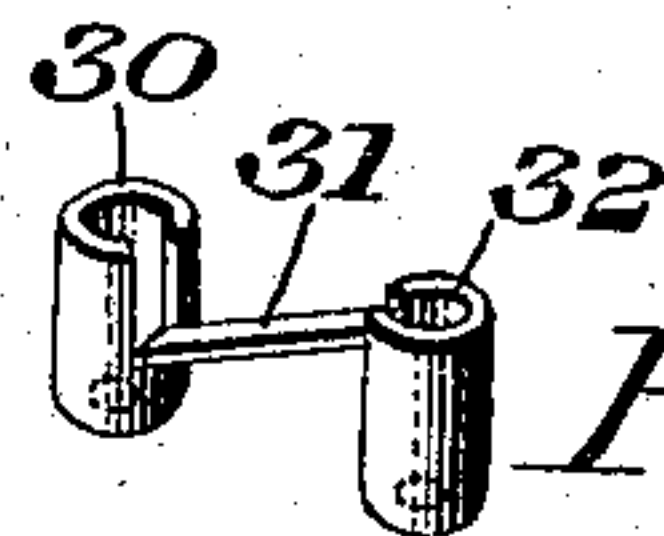
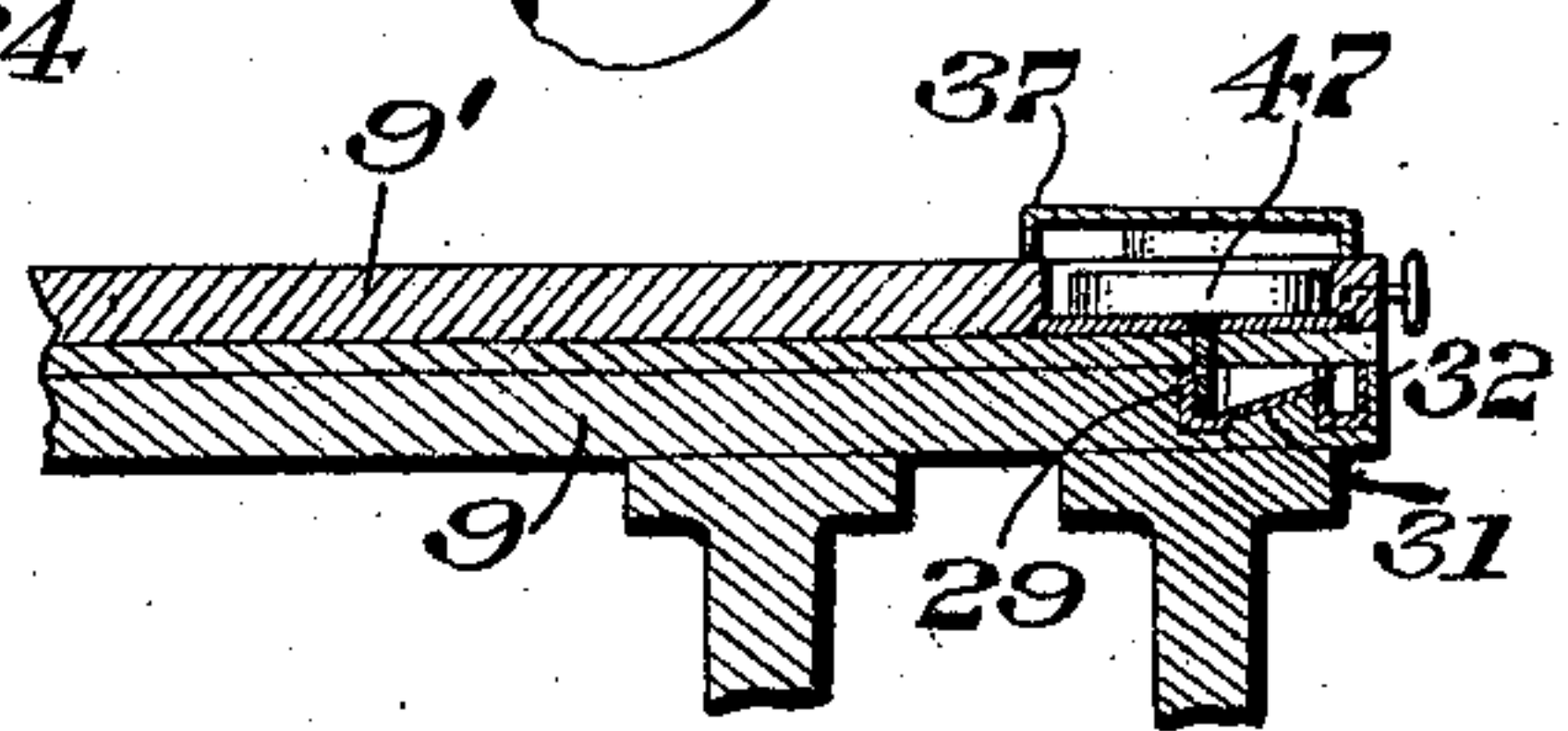


Fig. 7.

Witnesses
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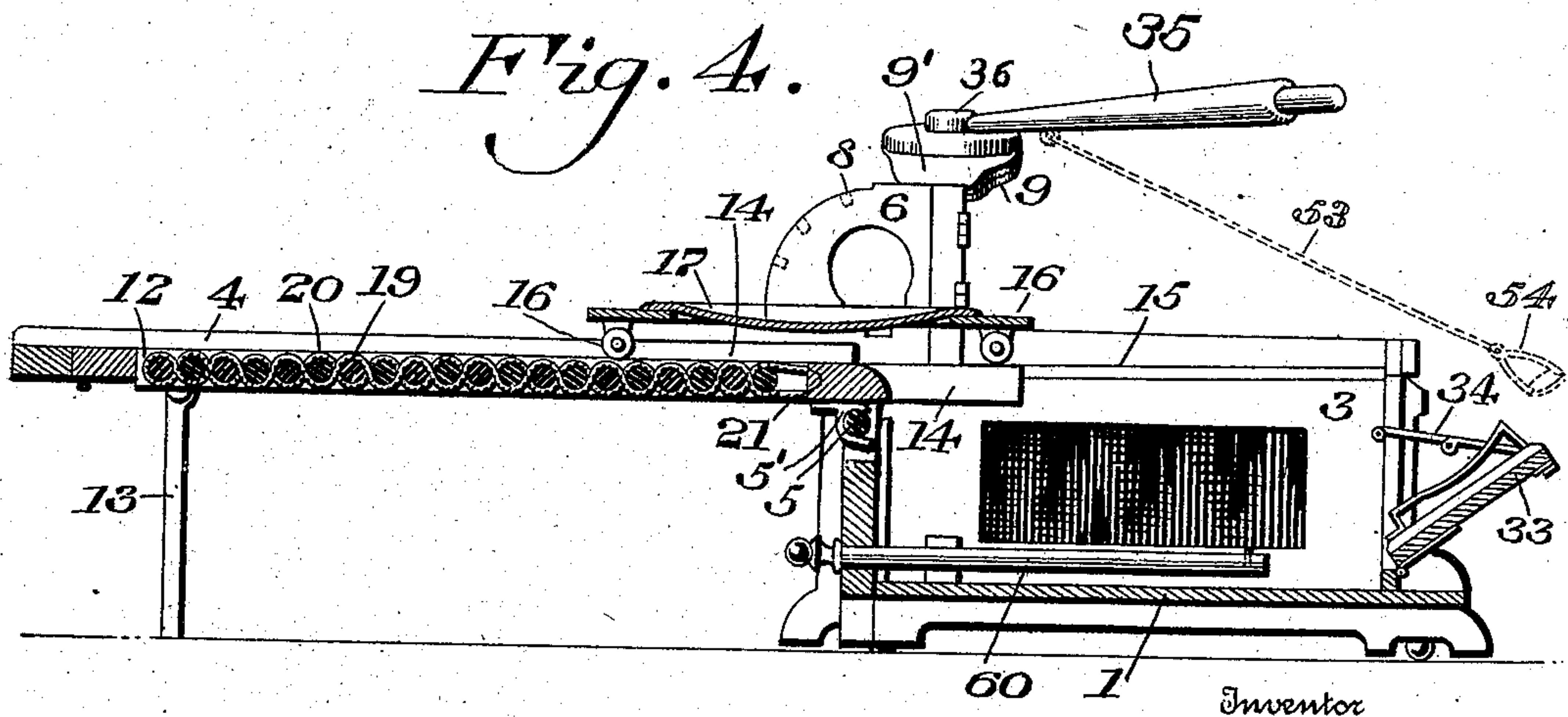
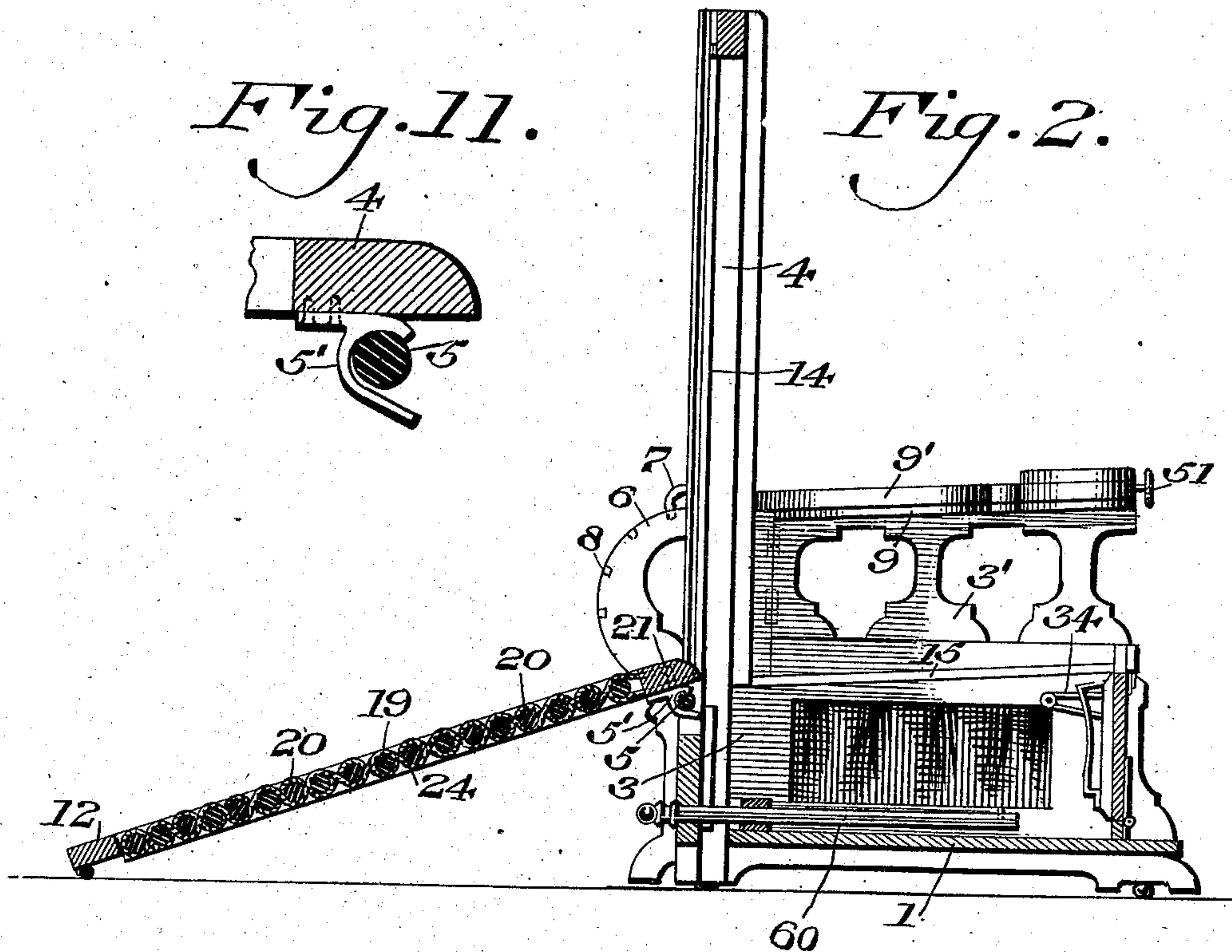
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3 SHEETS—SHEET 2.



Witnesses
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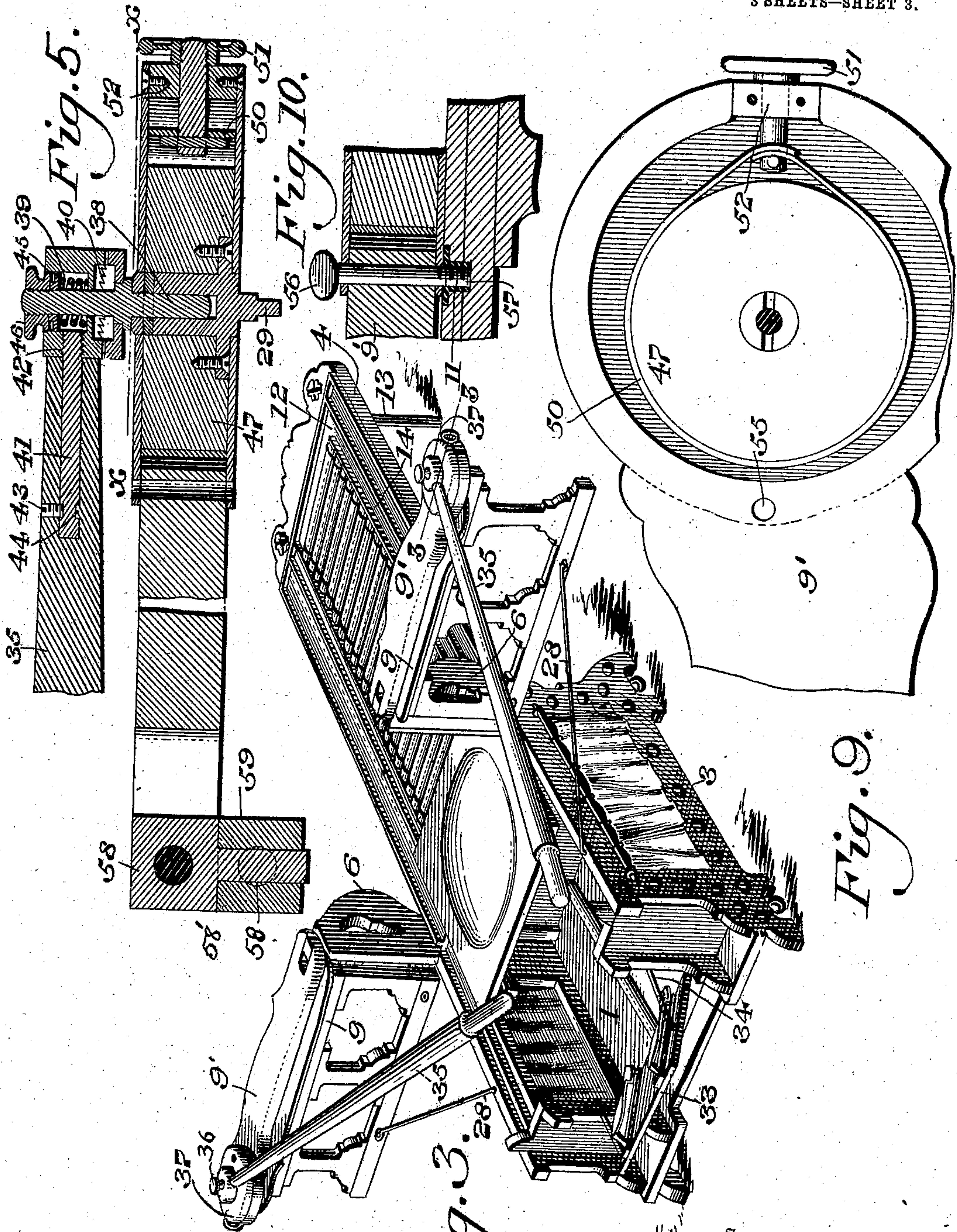
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3 SHEETS—SHEET 3.



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Fig. 3.

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UNITED STATES PATENT OFFICE.

STEPHEN G. WILSON, OF PHILADELPHIA, PENNSYLVANIA.

MECHANICAL CHAIR.

No. 881,521.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed December 24, 1906. Serial No. 349,346.

To all whom it may concern:

Be it known that I, STEPHEN G. WILSON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Mechanical Chair, of which the following is a specification.

The purpose of my invention is to combine the parts of a Morris chair in such a manner as to coöperate with exercising mechanisms.

A further purpose of my invention is to use the back and body of a Morris chair to form tracks upon which a sliding seat may operate.

A further purpose of my invention is to make use of the front piece of a Morris chair for an extensible foot rest.

A further purpose of my invention is to use the side frames supporting the arms of the chair as supports for rowing machine handles.

A further purpose of my invention is to make use of the arms of my chair to secure retarded rotary movement for the handles of a rowing machine.

A further purpose of my invention is to combine the parts of the exercising machines so that they shall fit to or be a part of the chair construction.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents in perspective, a Morris chair capable of being arranged for use as an exercising machine. Fig. 2 represents a similar construction in vertical section, the parts being in a slightly different position. Fig. 3 represents my device in perspective arranged as a rowing machine. Fig. 4 represents a similar construction to Fig. 3 in longitudinal section, additional parts being shown. Fig. 5 represents the arm of my rowing machine in fragmentary longitudinal section. Fig. 6 represents the position of the side frame and arm in plan view showing the extended arm position in dotted lines. Fig. 7 represents in perspective and Fig. 8 in section, portions of the arm and supporting frame. Fig. 9 represents a section of Fig. 5 upon line $x-x$. Fig. 10 represents in section a portion of the arm and back showing the manner of their attachment. Fig. 11 represents an enlarged detail section of a portion of Fig. 2.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings. 1 designates a frame of a Morris chair having a cushion seat 2, side members 3 and back 4. The back is hinged to any suitable pivot bar 5 preferably by strips 5'. The segment 6 offers means of attachment of a catch 7 upon the back in any one of a number of openings 8. The normal arm 9 is supplemented by a special arm 9' which is pivoted by a universal joint at 10 so as to move vertically and horizontally and to be free to turn so as to secure attachment at any suitable point 11 on the sides of the back when the arms are turned into a vertical position.

The back is formed in two parts, the outer part proper shown by reference 4 and an inner frame 12. These are both pivoted about the same bar so that they can be lowered together, as for rowing machine use, as seen in Figs. 3 and 4, or the inner part 12 can be lowered separately for such use as running exercise, as seen in Fig. 2. Any suitable latch or catch keeps them together when desired. When the two parts are lowered together any support 13 is used. The back is then substantially horizontal so that guides 14 upon the back form a line with guide 15 within the body of the chair when the cushion is removed permitting travel of the rollers 16 of a sliding seat 17 thereon.

The chair back is preferably provided with a removable cushion 18. Beneath this cushion are located rollers 19 which are retarded in their rotation by a brake 20. The brake 20 is formed in the preferred construction by means of a cord which is secured at one end as at 21 and turned a half turn about each of the adjoining rollers passing in this manner about the entire set of rollers successively, then entirely around the roller and back upon the opposite sides of each of the rollers to the initial roller which is secured by any suitable adjustable device comprising a drum 22 to which the end or ends of the rope are attached so that winding of the thumb piece 22' tightens the brake and ratchet and latch 23 retains the drum in position. Thus the tension on the cord or rope and consequently the braking effect upon the rollers may be varied at will. In the position shown in Fig. 2, the rollers 19 constitute a tread mill or running exerciser and the back 4 remains in raised position to steady or afford support to the one exercising.

The sides 3' of the arm portion of the chair carry arms 9 and are hinged to the back as

are also arms 9' but the sides 3' and the arms 9' are pivoted at different points so that as they open to the position shown in Figs. 3 and 4 there is relative movement between arms 9 and 9', the path of movement being shown in Fig. 6 in which the aperture 24 of the arm 9' travels over the arc shown at 25 whereas the point 26 of the arm 9, which coincides in position with 24 in the original location, traverses the track 27 to the location shown in the dotted lines which is the extended position of the arm and side frame shown in Figs. 3 and 4. A brace 28 or any other suitable means is used to more firmly secure these parts in extended position. At the same time the parts latch automatically by means of the construction shown in Figs. 7 and 8. The arm 9' carries a pin 29 coincident with the aperture 24, which pin rests in its inner position in the socket 30. During the extension of the arm 9' and side 3' this pin 29 traverses the inclined plane 31 until at the extended position of the arm and side when pin 29 drops into the socket 32 and latches in that position, bracing the parts against movement and assisting the brace 28 to retain them in these positions.

In the illustration shown in Figs. 3 and 4 an extended foot rest 33 is shown held in its extended position by the folding braces 34 which foot rest and brace are shown in retracted position in Fig. 2. Figs. 3 and 4 show also the oars 35 which move about a center 36 coinciding with the point 26 (see Fig. 6) and socket 32 in the extended position of the arms. In my preferred form I secure upon the inner end of each oar 35 a casing 37 carrying a pin 38 which fits into aperture 24. The casing 37 carries a spring 39 and ratchet teeth 40 coöperating to carry the pin 38 with the oar in one direction of motion of the oar and to allow the upper face of the ratchet or clutch 40 to yield compressing the spring 39 in the opposite direction of motion of the oar in which, therefore, the motion of the oar does not carry the pin 38. The ratchets or clutches upon the oars are made with the similarly placed parts of opposite gender producing rights and lefts, so that while the oars will be most used for pulling exercises, slipping on the outward movement of the handle, a reversal of the oars will produce an opposite effect and cause them to slip upon the inward movement and giving "pushing" exercise. The oar is braced by means of a rod 41 threaded within the casing at 42 and held within the oar by a set screw 43 resting within a circular depression 44 in the rod 41. Adjustment of the spring and access to it are had by means of the plate 45 and the nut 46 which secures said plate in place. The arm 9' at the same time carries a frictional retarding means operated by pin 38 through the engagement of said pin with a disk 47 within said arm 9'. The disk 47 is restrained

against rotation in either direction by an adjustable band brake 50 whose tension is adjusted by means of a wheel 51 having a shaft passed through the part 52. It will thus be seen that the oar operates under the retardation of the frictional brake 50 and any desired amount or variation of retardation may be secured by tightening the wheel 51. The return of the oar is free from this retardation.

In Fig. 4 I have shown in dotted lines, a cord 53 and handle 54 which may, of course, be duplicated upon the opposite side and whereby exercise of a different character or foot exercisers, as the case may be, can be secured from the oars, this construction making possible also foot movement of the oars either against frictional retardation or as a "return", the movement in the opposite direction being by hand. The feet may also be used as the opposition of movement to the oar balancing the muscles of the arms with those of the legs in different proportion, as may be desired.

The arm 9' has an aperture 55 at any suitable point, through which a pin 56 may be passed to secure the arm to the body of the chair as at 57 (which may correspond to 11) in any of its positions, as along the back of the chair. The movement of the arm 9' in several different planes is secured by any desirable form of partially or wholly universal joint of which I have illustrated one form, showing the arm pivoted in a block 58 which is in turn pivoted on a pivot 58' in a block 59 secured to the frame of the chair, the pivots being angularly disposed to each other.

It will be evident that the rowing machine may be varied to provide any suitable ratchet connection between the oars and the frictional retardation means and that any other suitable means of frictional retardation may be used.

It will be evident that some other means of outside support for the oar-locks or lock equivalents may be used instead of the side arm support which I have illustrated and described.

It will be evident that various changes may be made by those skilled in this art which will come within the scope of my invention and I do not therefore desire to be limited in every instance to the exact construction herein shown and described.

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

1. In a device of the character described, a chair body, a chair back, a side member, side arm members pivoted at different points and capable of extending from the side of the chair, a pin connecting the side arm members and securing them in extended position, and an exercising device coöperating with the side arm members.

2. In a device of the character described, a

movable chair back, a body, cooperating guides upon the back and body and a movable seat moving upon said guides.

3. In a device of the character described, a 5 movable chair back and body, a seat movable thereon, side and arm members extendable to form oar supports, oars fitting therein and means for retarding the stroke of said oars.

10 4. In a device of the character described, an oar, two supports therefor, ratchet members upon said supports bearing right and left relation, a ratchet member upon the oar, and means for giving frictional retardation 15 to the movement of the oar when mounted upon either of said supports.

5. In a device of the character described, an exercising chair, an arm joined at one end thereto, means for supporting the arm in 20 outstanding position, an oar, a ratchet connected to said oar, means upon the support for engaging said ratchet and frictional retarding means interposed between the ratchet and the arm.

25 6. In a device of the character described, an exercising arm therefor, pivoted at its inner end, means for supporting the arm in extended position, a disk in the outer end of said arm, a band engaging said disk fric- 30 tionally, an oar and ratchet connection between said oar and said disk.

7. In a device of the character described, a chair, an arm therefor pivoted at its inner end, a rotatable member in the outer end of 35 said arm, frictional means for retarding said rotation, an oar and a ratchet in engagement with said oar and with said rotatable means.

8. In a device of the character described, 40 extensible chair arms, a rotatable member in each arm, means for frictionally retarding the rotation of each member, a ratchet engaging each rotatable member, a spring yieldingly holding said ratchet to its work 45 and oppositely-operable oars carrying said ratchets to permit free movement in one di-

rection and frictionally retarding rotation in the opposite direction, reversible by exchange of the oars.

9. In a device of the character described, a 50 plurality of extensible arms, rotatable members in the outer ends of said arms, frictional means for opposing the rotation of said members, an oar and ratchet connection between said oar and said rotatable member, 55 oppositely-operable to secure a retarded movement in opposite directions, according to the arm with which it is connected, and free return movement.

10. In a rowing machine, a plurality of 60 frictionally retarded rotatable members forming supports for the oars and a plurality of oars interchangeable with relation to said supports and by interchange of the same setting in motion said frictionally retarded ro- 65 tatable members in opposite directions.

11. In a rowing machine, a frictionally retarded rotatable member, a plurality of oars and ratchets connected with said oars for engagement with the rotatable member, 70 said ratchets being rights and lefts upon different oars to provide a reversibility of engagement with the same rotatable member.

12. In a rowing machine, a disk, a band, frictionally engaging said disk, a plurality 75 of oars interchangeably pivoted about the center of said disk, right and left ratchet means for engagement of different oars with said disks to give free movement and retardation of movement in different direc- 80 tions according to the oar used with a disk.

13. In an exercising chair, a support upon each side of said chair, a frictionally retarded rotatable member upon each support and an exercising device capable of connection with 85 said rotatable member but having a different direction of rotation according to the member with which it is connected.

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Witnesses:

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