

Feb. 14, 1933.

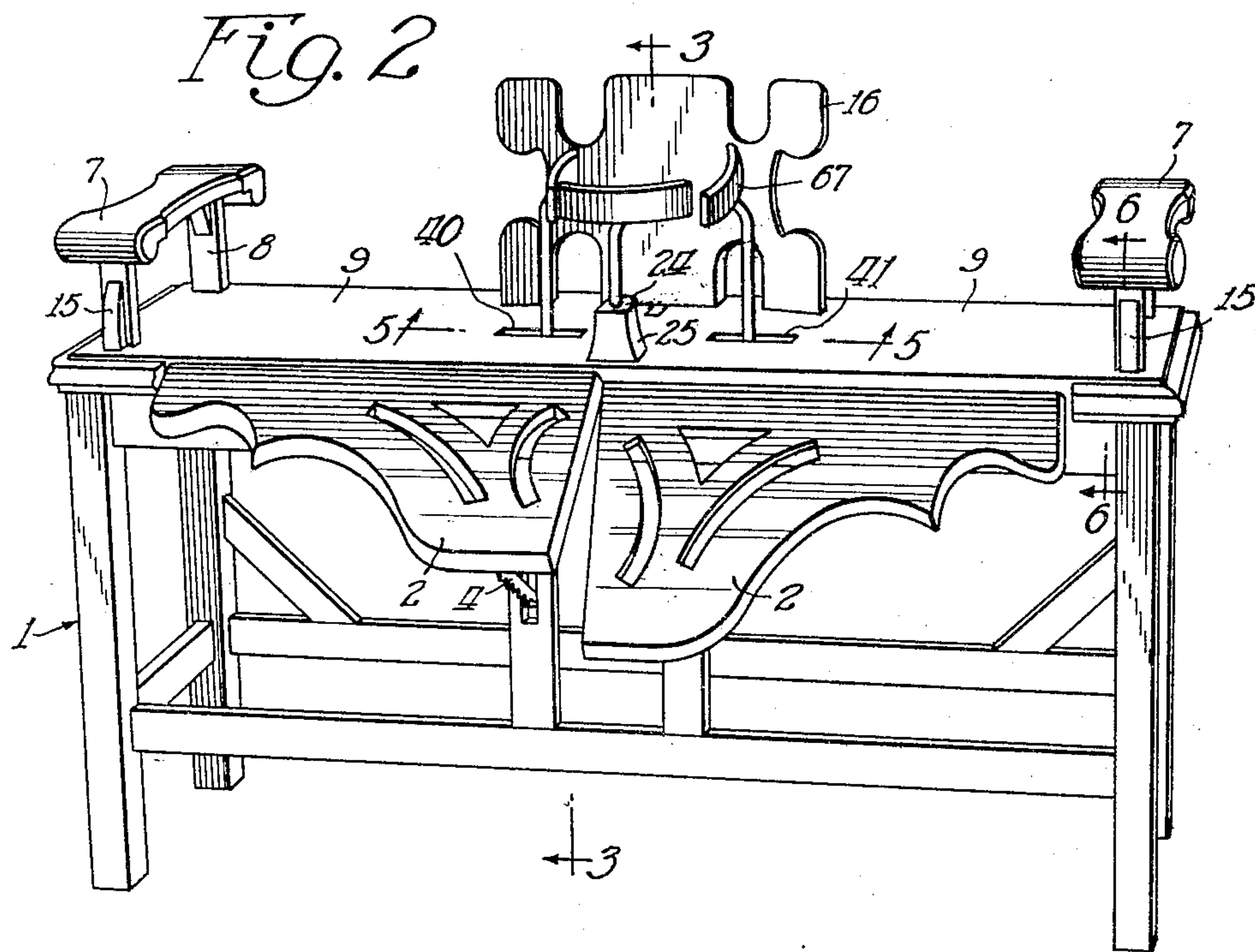
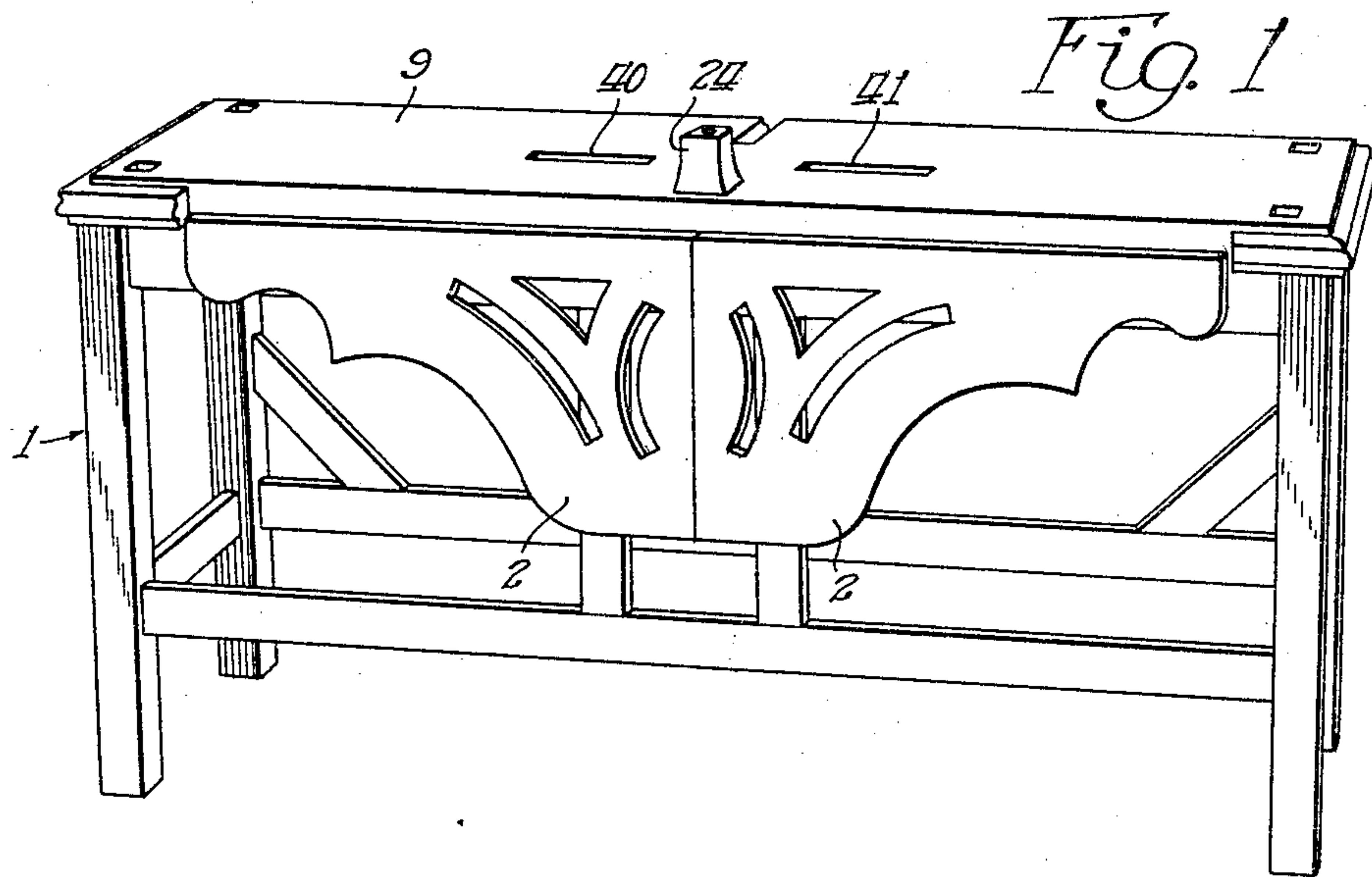
L. G. HELPLING

1,897,377

BENCH

Filed Dec. 29, 1930

3 Sheets-Sheet 1



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Feb. 14, 1933.

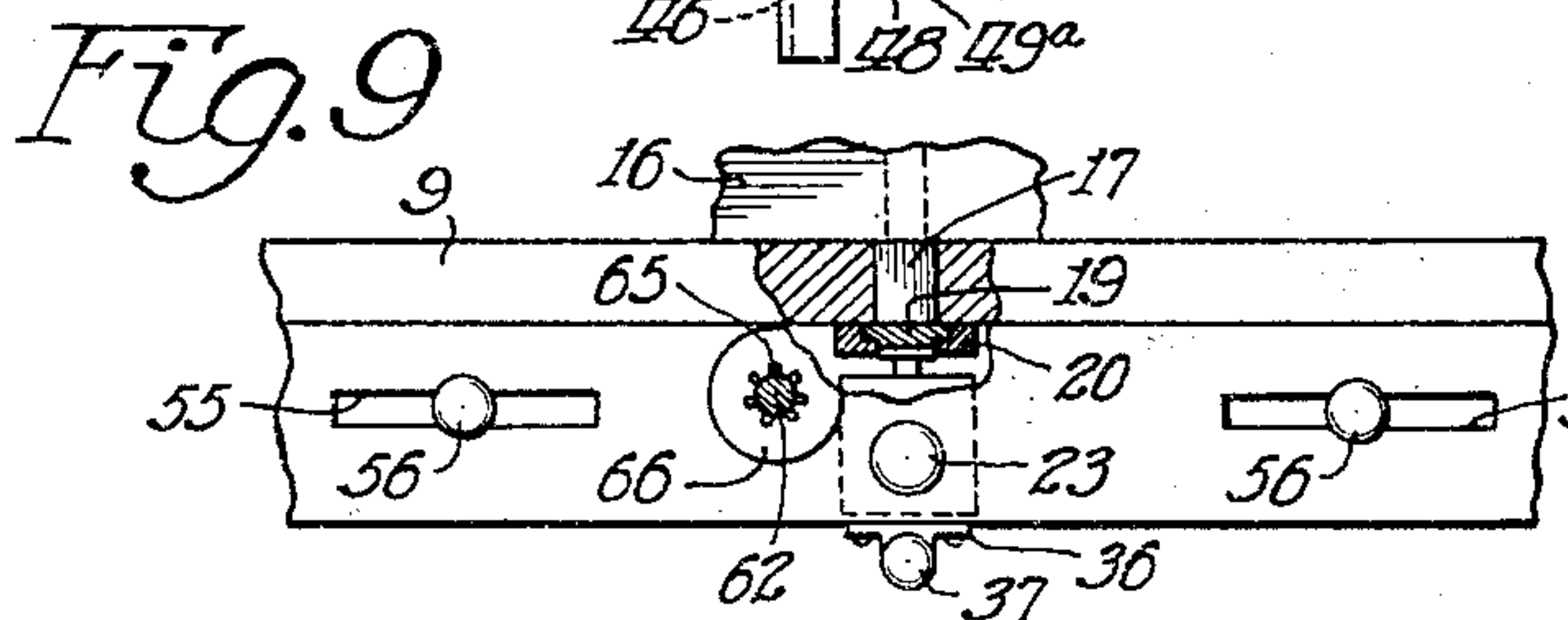
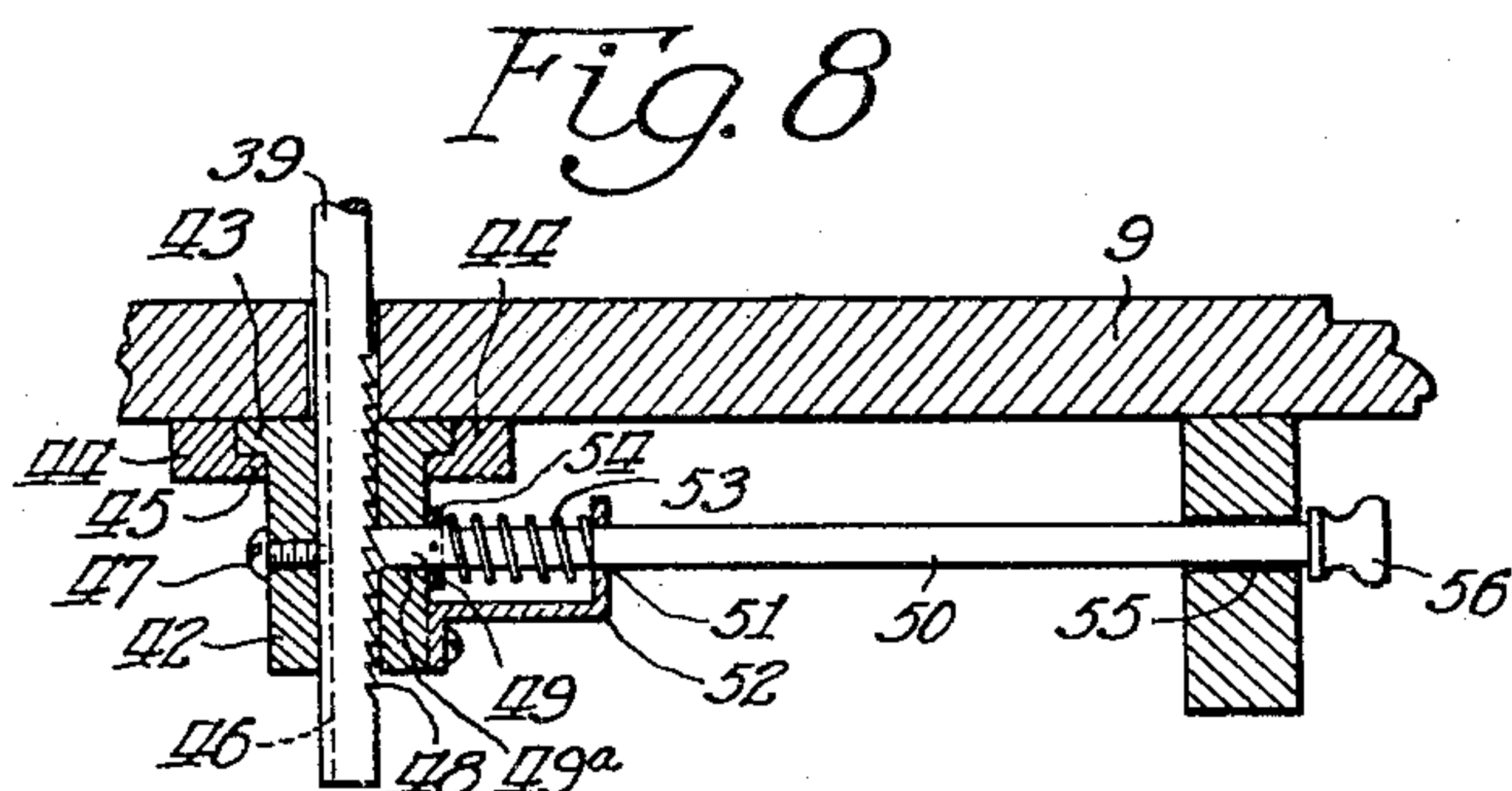
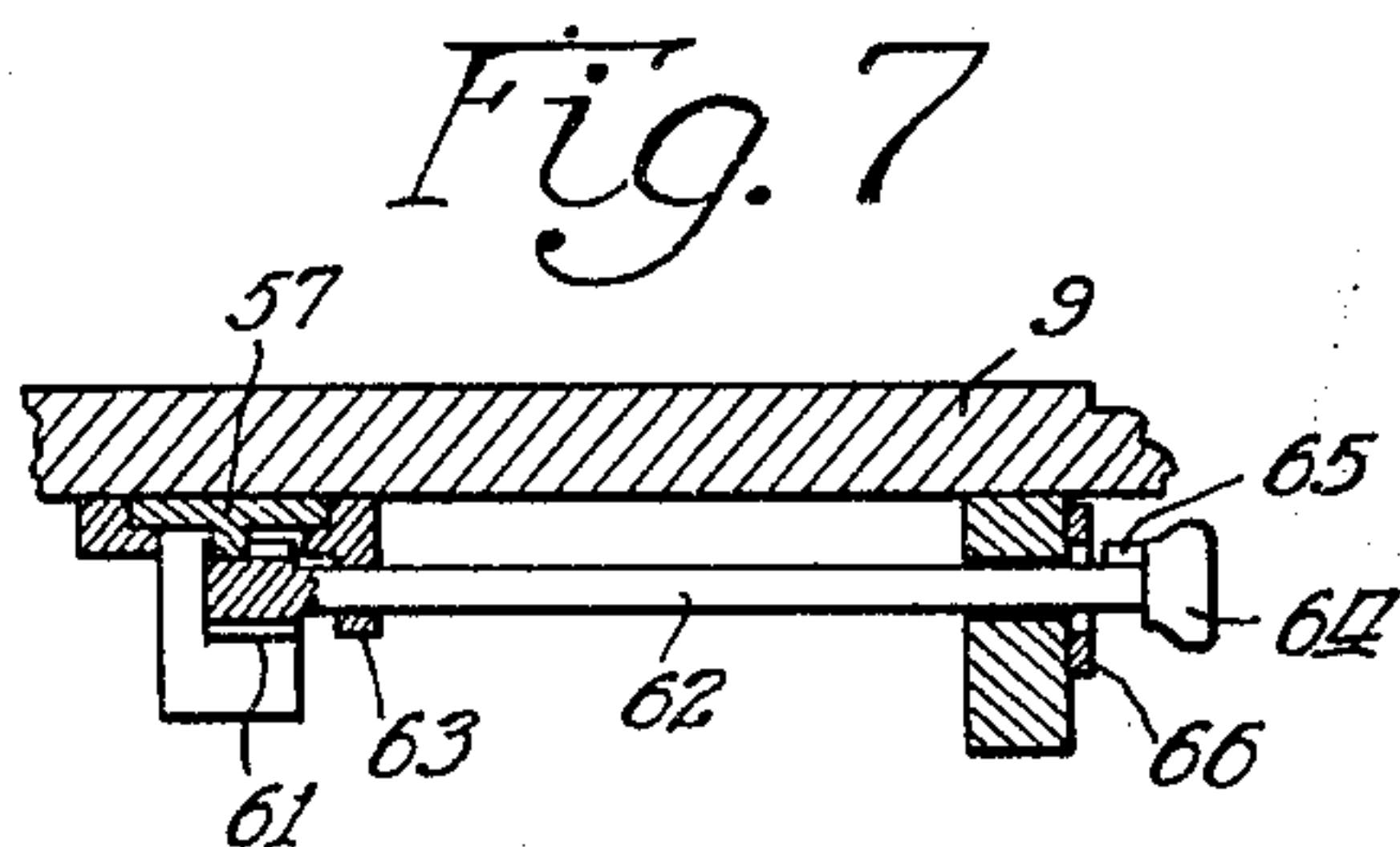
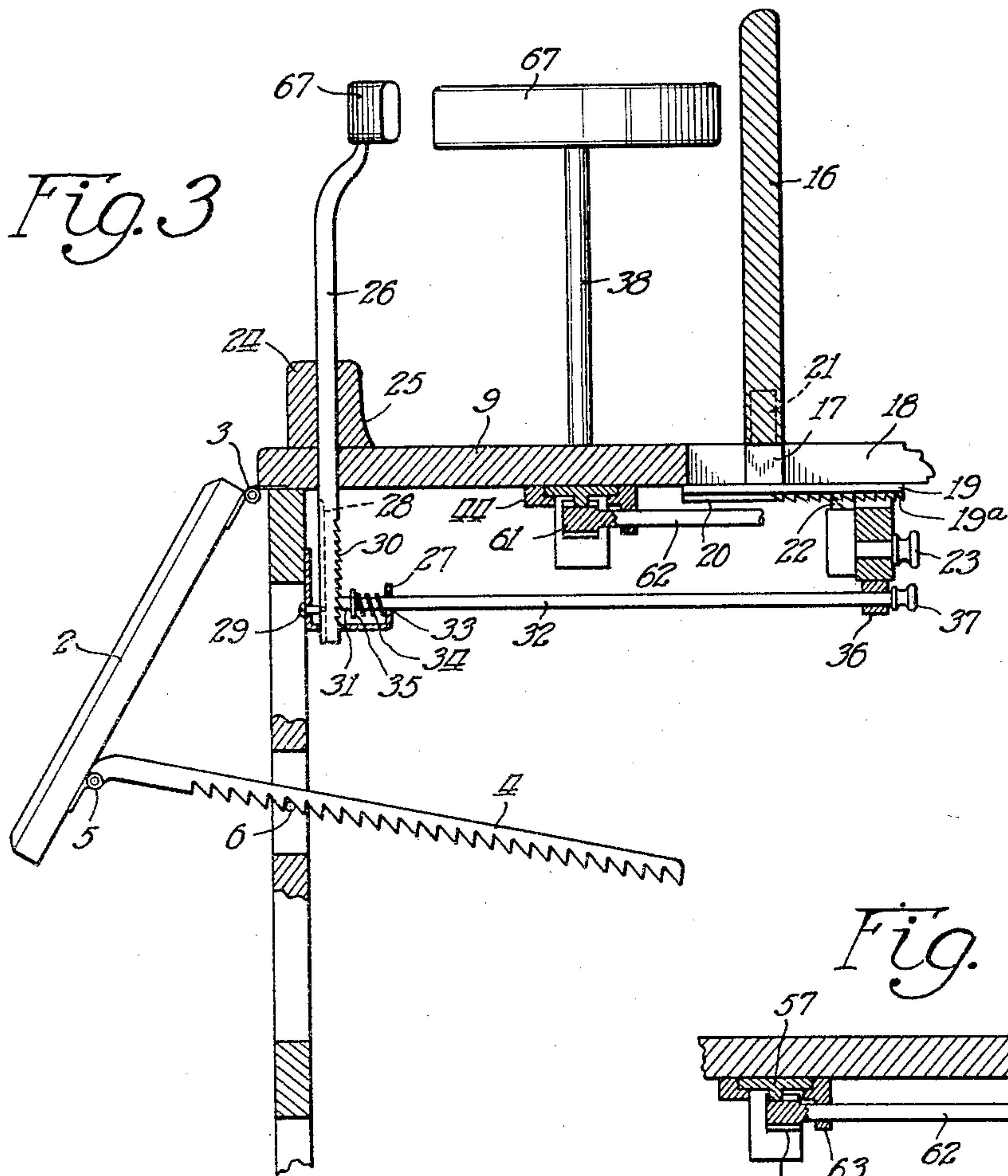
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

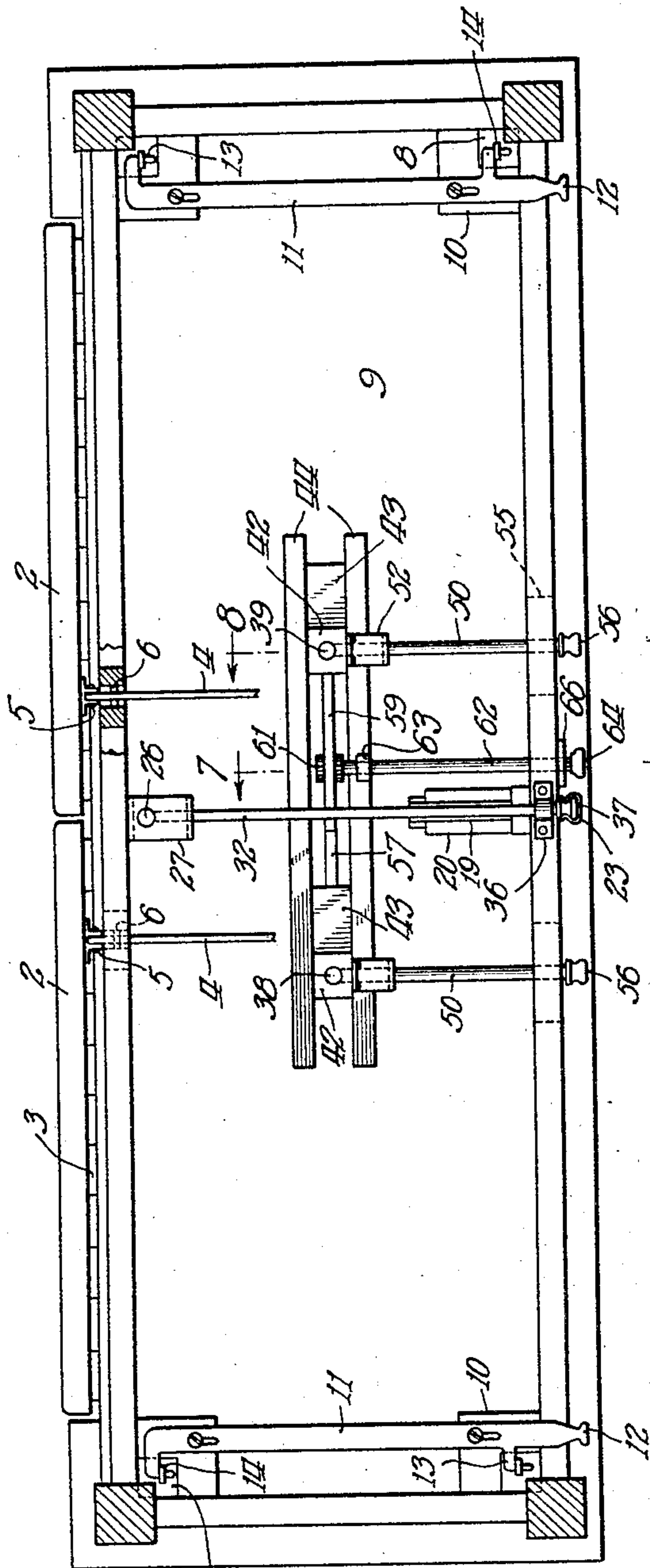


Fig. 4

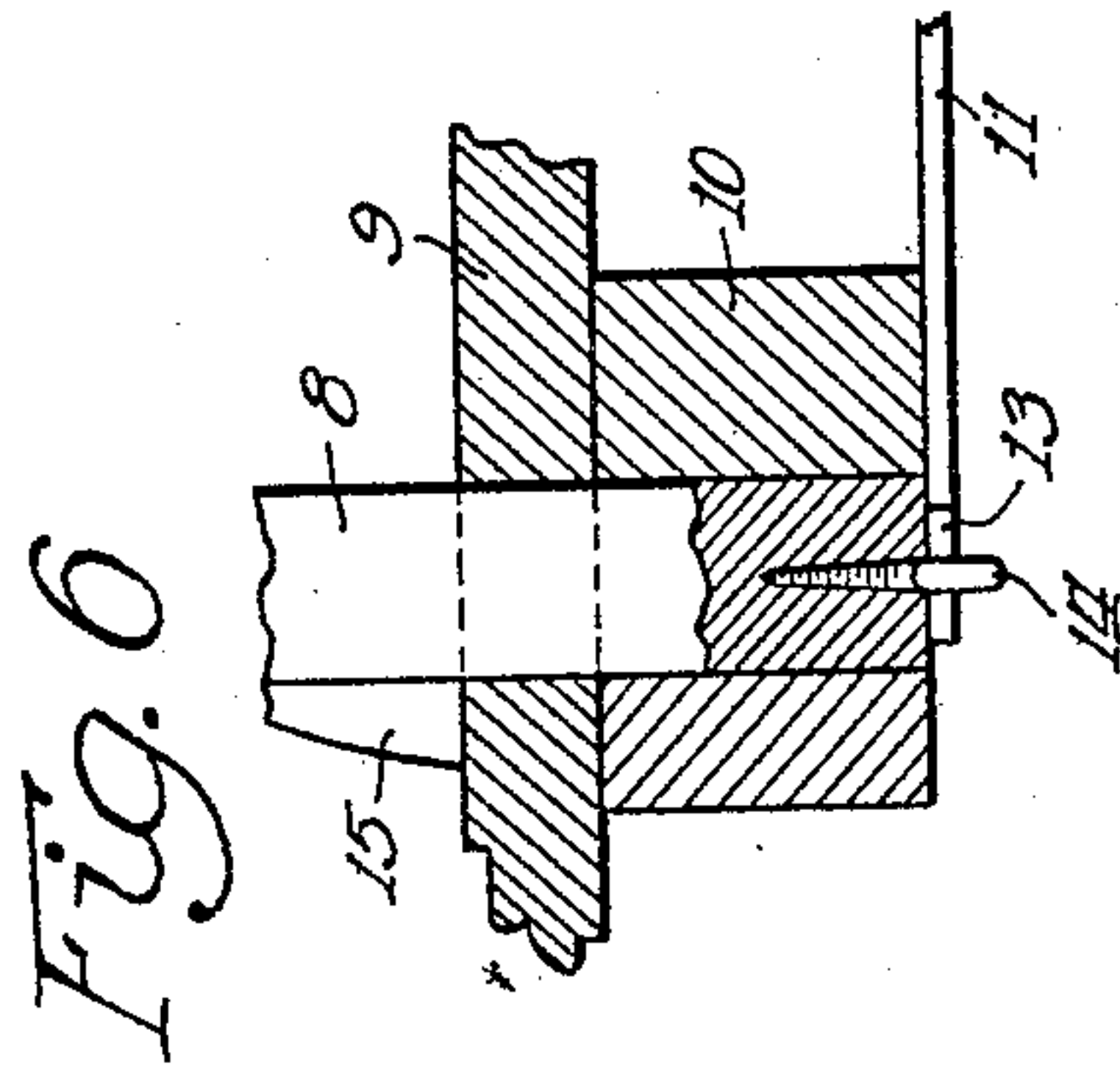


Fig. 6

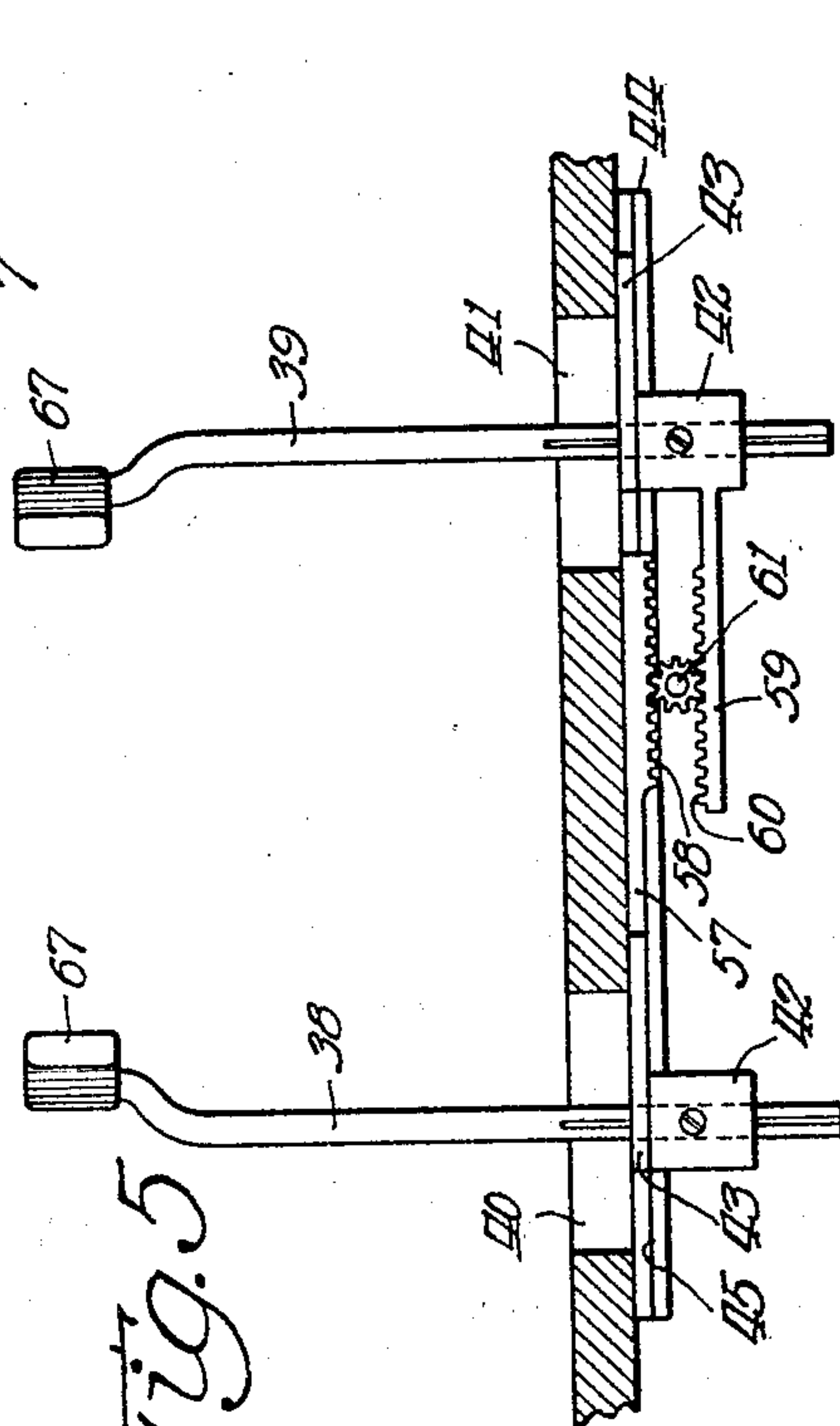


Fig. 5

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UNITED STATES PATENT OFFICE

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BENCH

Application filed December 29, 1930. Serial No. 505,285.

This invention relates to benches more particularly for photographic posing purposes and among other objects aims to provide a simple and improved construction which is readily and effectively adjustable for different subjects and different postures.

One object of the invention is to provide a bench for general studio purposes which may be used for posing one or a number of subjects. When used for a number of subjects, accessories attachable to the bench to provide a background for one subject, for instance, may be removed from the bench. The bench is desirably ornamental in appearance and the various accessories permit of arranging a pleasing and artistic background for the subject.

The invention further contemplates supporting means for a subject such as an infant, to provide support and proper posturing while at the same time the supporting means itself is imperceptible.

Control of the adjustment of the accessories is, in general, desirably effected from the rear of the bench, and within a relatively small compass, thus conserving the time of the operator and the subject.

These and other objects are attained by means of the illustrative construction shown in the accompanying drawings, in which Figure 1 is a perspective view of the bench stripped of its accessories and usable for general studio purposes; Figure 2 is a perspective with the accessories in place; Figure 3 is a section taken on the line 3—3 of Figure 2; Figure 4 is a bottom view of the bench; Figure 5 is a partial section on the line 5—5 of Figure 2; Figure 6 is a partial section taken on the line 6—6 of Figure 2; Figure 7 is a partial section on the line 7—7 of Figure 4, showing the parts somewhat larger; Figure 8 is a partial section on the line 8—8 of Figure 4, also showing the parts somewhat larger; and Figure 9 is a rear view, partially in section, showing the arrangement of the controls.

Referring in detail to the figures of the drawings, I have shown in general a bench 1 which may be made of wood appropriately designed and decorated to present the effect

of a piece of furniture. The front of the bench is provided with the separate leg rests 2, which are complementally designed to form together an ornamental skirt for the front of the bench which conceals the mechanism upon the underside of the bench seat, presently described. Each of the leg rests 2 depends from and is hinged to the upper edge of the bench as at 3. Each leg rest is swingable transversely of the bench and is adapted to be set at any desired angle with respect to the seat of the bench, independently of the other leg rest, as by means of the rack bars 4 which are pivoted to each leg rest as at 5 and are adapted to engage detents 6. The cut of the teeth of the rack 4 is such that when they are engaged by a detent 6, movement of a leg rest downwardly is prevented. Thus each leg rest may be set at any desired angle to support each leg of a subject such as a child for example in a different position, aiding in a pleasing and natural pose while the means for positioning the legs are relatively inconspicuous in the resulting photograph. If it is desired to move a leg rest downwardly, the rack 4 may be pivoted by hand on its pivot 5 to clear the detent 6.

When the bench is to be used to pose one or two subjects, for example, the arm rests 7 may be attached, to add to the pleasing effect of the background. To guard against the arm rests 7 being displaced, either accidentally or due to the prankishness of children, each arm rest 7 has at each end a leg 8, which passes through the seat 9 of the bench and into a block 10 fixed to the underside of the seat 9 (Figures 4 and 6). In sliding engagement with the two blocks 10 at each end of the bench is a locking bar 11, having a handle 12 by which it may be operated from the rear of the bench, and provided with two hooks 13, which are adapted to engage eyes 14 screwed in the lower ends of the legs 8. When an arm rest 7 is inserted in place, the bar 11 is in its farthest position in a direction away from the operator. By pulling the handle 12 toward the rear of the bench, the hooks 13 engage the eyes 14 and lock the arm rest in place. It may be released and removed by sliding the bar 11

back again to its first described position. The arm rests may be provided with the stops 15 which by engaging the seat 9 limit the movement of the legs 8 downwardly to a point where the hooks 13 and the eyes 14 are in substantially the same horizontal plane to facilitate engagement of the hooks and eyes.

To further contribute to the background and also to provide support when desired for the subject, a back rest 16 is removably secured to the bench 1. The back rest 16, which is desirably slightly concave in the manner of a chair back, is in sliding engagement with the seat 9, whereby it may be adjusted transversely of the seat, toward or away from a subject seated thereon, and may be locked in selected positions on said seat.

The adjusting means here shown for the back rest 16 includes a leg 17 affixed to the bottom of the back rest centrally thereof (Figure 3). The leg 17 is adapted to slide in the slot 18, which slot is cut in the bench seat 9 and runs transversely thereof for a portion of the width of said seat, one end of the slot being open at the rear margin of the seat to permit insertion of the leg 17 therein, and consequently the attachment or removal of the back rest from the bench as desired. The leg 17 is rigidly secured to an elongated rack bar 19 having the rack teeth 19a along its lower edge. The rack bar 19 is wider than the slot 18 and has sliding engagement with the underside of the bench seat 9 and with the guiding ribs 20 at either side thereof (Figure 9). Thus the back rest is supported upon the seat 9 and is guided in its movement thereon. The leg 17 may be attached to the back rest by a stud 21, which is conveniently made of square cross section and fits snugly into a square hole in the bottom of the back rest, thus preventing rotation of the back rest upon the stud. The teeth 19a along the lower edge of the rack bar 19 are so cut that when the back rest 16 is moved by hand for instance inwardly of the slot to its desired position upon the seat 9, the rack bar depresses and thereby passes over a latch 22 adapted to engage the rack teeth 19a. The latch 22 prevents movement of the rack and consequently of the back rest outwardly of the slot, and therefore the weight of a person leaning against the back rest is supported. When it is desired to move the back rest outwardly of the slot to adjust it in a different position or to remove it entirely from the bench, the latch 22 is depressed by rotating the knob 23. The latch 22 and knob 23 may conveniently be parts of a conventional door latch construction which need not be further described.

The bench seat 9 is here shown having a formation 24 rising therefrom at a midpoint in its front margin, which formation desirably serves as a crotch block to prevent a

subject such as a young child, for example, from sliding forward on the bench. When so used, the legs of the child may straddle the crotch block 24 which thus constitutes with the seat 9 a saddle, and the back rest 16 may be moved inwardly of the slot 18 to support the child and aid in maintaining its posture. The crotch block 24 itself is not conspicuous but appears to be a natural part of the bench background. The crotch block desirably has its edges rounded, and its rear and side faces desirably sloped slightly in their approach to the bench seat 9 as at 25 to guard against discomfort to the subject, and to further provide the effect of a saddle.

When it is required to further support the child, as for instance when an infant is to be posed, I provide body supporting means which may be covered by the clothing of the infant to conceal the supporting means from view and which at the same time, in cooperation with the crotch block and back rest already described, support the infant against movement in any direction. Said supporting means is desirably inclusive of control mechanism operable from the rear of the bench and by means of which the body supports may be locked in selected adjustment.

In the illustrative construction, a front body support is inclusive of a support rod 26 which is shown passing through and in sliding engagement with the crotch block 24 and the seat 9 and continuing downwardly into sliding engagement with the horizontal portion of a bracket 27 rigidly secured to the bench frame by appropriate means, the bracket having a hole therethrough just large enough to permit the rod 26 to move vertically therein. To prevent the rod 26 from rotating, the lower part of the rod may be provided with a shallow slot 28 running lengthwise thereof which is engaged by a set screw 29 located in the vertical portion of the bracket 27. Along the length of the rod 26 at its lower end, and opposite the slot 28, are cut the teeth 30, which are adapted to be engaged by the pawl 31. The teeth 30 are so cut and the tooth engaging face of the pawl 31 is so inclined that the teeth will not slide over the pawl when the rod 26 is subjected to pressure downwardly. The pawl 31 is shown as an integral extension of a control rod 32 which passes through and slides in a hole 33 in a vertically extended portion of the bracket 27. A coil spring 34 surrounding the rod 32 and disposed between the vertically extended portion of the bracket 27 and an annular shoulder 35 on the rod normally presses the pawl into engagement with the teeth 30. The rod 32 is supported at its end opposite the pawl 31 by passing through a bearing 36 depending from the bench frame at the rear of the bench. The rod 32 terminates in a handle 37. When the handle 37 is pulled rearwardly, the pawl 31 is moved away from the teeth

30 against the pressure of the spring 34, at which time the support rod 26 may then be moved freely up or down by hand. When the rod is placed in desired adjustment, the handle 37 may be released and the pressure of the spring 34 presses the pawl 31 into engagement with the teeth 30, locking the rod 26 against movement downwardly.

Side body supports are inclusive of the rods 38 and 39 which are located centrally of the seat 9 and are movable longitudinally of the bench in the longitudinal slots 40 and 41 respectively, cut in the seat 9. Each support rod 38 and 39 is shown passing through and in vertical sliding engagement with a block 42. Each block 42 is here shown as formed integrally with a flat oblong sliding member 43 which is supported by the parallel shouldered guide ribs 44 appropriately secured to the underside of the seat 9, the margins of the sliding members 43 riding upon the shoulders 45 (Figure 8) of the ribs 44, thus permitting sliding movement of the members 43 and consequently of the blocks 42 along the underside of the bench seat 9 longitudinally thereof. To prevent rotation of the side support rods 38, 39, each rod may have a longitudinal slot 46 along its lower end which is adapted to be engaged, for instance, by a set screw 47 located in the side of the block 42. Each support rod 38, 39 also is provided along its length at its lower end, and opposite the slot 46, with teeth 48, which are adapted to be engaged by the pawl 49 which passes through an aperture 49a in the block 42. The teeth 48 are so cut and the tooth engaging face of the pawl 49 is so inclined that the teeth 48 will slide over the pawl when the rod 38 or 39 is raised, but will be caught by the pawl when the rod 38 or 39 is subjected to pressure downwardly. The pawl 49 is here shown as an integral extension of a control rod 50, which passes through and slides in a hole 51 in a vertical extension of a horizontal bracket 52 appropriately secured to the block 42. A coil spring 53 surrounding the rod 50 and disposed between the bracket 52 and an annular shoulder 54 on the rod 50, normally presses the pawl 49 into engagement with the teeth 48. The rod 50 at its end opposite the pawl 49 passes through an elongated slot 55 in the bench frame and terminates in a handle 56. The elongation of the slot 55 permits the rod 50 to accommodate itself to the movement of the block 42 longitudinally of the bench. When the handle 56 is pulled rearwardly, the pawl 49 is moved away from the teeth 48 against the pressure of the spring 53 and the support rod 38 or 39 may then be moved freely up or down by hand. When the rod is placed in desired adjustment, the handle 56 is released and the pressure of the spring 53 again presses the pawl 49 into engagement with the teeth 48,

locking the rod against movement downwardly.

It is desirable that the support rods 38, 39 be movable toward and away from each other to accommodate a smaller or larger child, as the case may be, but that they maintain at all times equal distances from the mid-point of the bench. I have provided means for moving the side support rods 38, 39 simultaneously toward or away from each other while at the same time maintaining said equal distances from the mid-point of the bench, which means is desirably actuated by a control operable from the rear of the bench. Said means also desirably includes locking means for locking the side body supports in selected positions longitudinally of the bench.

In the construction here shown one of the sliding members 43 is rigidly connected with a rack bar 57 having the depending teeth 58 while another rack bar 59 complementary to the first rack bar 57 and having the upstanding teeth 60 is rigidly connected with the other block 42. As best shown in Figure 5, said racks are simultaneously engaged by a pinion 61. Obviously, when the pinion is rotated in one direction, the support rods 38, 39 will be moved toward each other, while when the pinion is rotated in the opposite direction, the rods will be moved apart, while at all times the rods 38, 39 will maintain substantially equal distances from the mid-point of the bench.

The pinion 61 is in rigid connection with a control rod 62 which passes through a bearing 63 depending from one of the guide ribs 44, and then passes rearwardly through the bench frame, terminating in a knob 64 by which it may be rotated. In addition to its rotative movement, the rod 62 may be arranged to be moved slightly in the direction of its length, so that in one longitudinal position the rod is free to turn while in another longitudinal position the rod is locked against rotation. In this instance, the rod 62 is provided with a feather 65 (Figure 7) which, when the rod is moved inwardly in its bearings, is adapted to engage one of the radial slots in the slotted disc 66, which is fixed to the frame of the bench and surrounds the rod 62. Thus the control rod 62 may be locked against rotation and the support rods 38, 39 consequently locked against movement. The teeth of the pinion 61 are of sufficient length so that they engage the rack teeth 58, 59 in any position of the control rod 62.

The support rods 26, 38 and 39 are desirably offset near their upper extremities toward the body of the subject allowing room nearer the seat 9 for the hips and a closer approach of the support rods in the vicinity of the waist of the subject. Each support rod is provided at its top with an arcuate member 67 affixed to the tops of the rods transversely thereof. The arcuate members

67 are desirably of sufficient width and appropriately padded to provide comfortable contact with the body of the subject. Together in cooperation with the back rest 16, they substantially encircle the body of the subject and provide complete support therefor, while at the same time the clothes of the subject may be draped over the support rods to conceal them completely from view.

Obviously, the invention is not limited to the specific details of construction described above for illustration. It is to be understood, further, that it is not indispensable that all the features of the invention be employed conjointly, as they may be advantageously used in various combinations and sub-combinations.

Having described one embodiment of my invention, I claim:

1. A posing bench including a seat, body supports passing through said seat, longitudinal slots in said seat receiving said supports therethrough, a rack connected to each of said supports beneath said seat, a rotatable pinion common to both racks and adapted to move said racks simultaneously in opposite directions in said slots, means for rotating said pinion, and means for locking said rotating means.

2. A posing bench including a seat, side body supports rising from said seat and adjustable vertically thereon, longitudinal slots in said seat for the passage of said supports, a rack rigidly connected to each of said side supports beneath said seat, a rotatable pinion common to both racks and adapted to move said racks simultaneously in opposite directions, means operable from the rear of said bench for rotating said pinion, means for locking said rotating means, and locking means operable from the rear of said bench for locking all said supports in selected vertical adjustment against movement downwardly, said supports being adapted to be covered by the clothing of the subject.

3. A posing bench comprising, in combination, a back rest carried by and movable transversely of said bench and having sliding engagement thereon, separate leg rests depending from the forward margin of said bench, said leg rests being independently swingable transversely of the bench, means for locking each leg rest in selected positions with respect to the bench, a crotch block on the bench at the forward margin thereof and disposed on a line intermediate said leg rests, and means for locking the back rest in selected positions with respect to the bench, whereby the distance of the back rest from the crotch block and leg rests may be selectively varied.

4. A posing bench including a seat, a formation rising from the forward margin of said seat and defining a saddle thereon, a back rest carried by the bench, means for mov-

ing said back rest transversely of said seat toward and away from said formation, means for locking the back rest in selected positions on the seat, side body supports carried by the bench, means for moving said side body supports longitudinally and vertically of said seat, and means for locking said supports in selected positions longitudinally and vertically on the bench, said supports being removable from the bench.

5. A posing bench including a seat, a formation rising from the forward margin of said seat and defining a saddle thereon, a back rest carried by the bench and movable transversely of said seat toward and away from said formation, means for locking the back rest in selected positions with respect to said seat, side body supports carried by the bench, means for adjusting said supports longitudinally of the seat toward and away from each other, a front body support in said formation and movable vertically therein, and means for vertical adjustment of all said supports.

6. A posing bench including a seat, aligned longitudinal slots in said seat, rods passing through said slots, an arcuate member affixed to the top of each rod transversely thereof, a rack connected to the lower end of each of said rods, means carried by and beneath the seat for supporting the racks, a rotatable pinion common to both racks and having engagement with said racks to move the racks simultaneously in opposite directions, means operable from the rear of said bench for rotating said pinion, and means for locking said rotating means.

7. A posing bench including separate leg rests depending from the front of said bench, said leg rests being independently swingable transversely of said bench, means for adjusting the leg rests in selected positions with respect to the bench, a crotch block located substantially on a line intermediate said leg rests, a back rest movable transversely of said bench toward and away from said crotch block, means for locking the back rest in selected positions on said bench against movement away from said crotch block, side body supports carried by said bench, said supports being adjustable longitudinally of the bench toward and away from each other, means for adjusting the side supports longitudinally of the bench, a front body support carried by said crotch block and means for adjusting the side and front body supports vertically.

8. A posing bench including a seat, separate leg rests depending from the front of said bench, said leg rests being independently swingable transversely of said bench, means for locking the leg rests against downward movement with respect to said seat, a crotch block rising from the forward margin of said seat substantially on a line intermediate

said leg rests, a back rest slidable on said seat toward and away from said crotch block, means for locking the back rest in selected positions on said seat against movement
5 away from said crotch block, side body supports passing through said seat, longitudinal slots in said seat receiving said supports therethrough, a rack connected to each of said side supports beneath said seat, means
10 carried by and beneath the seat supporting said racks, a rotatable pinion engaging both racks simultaneously and adapted to move said racks in opposite directions, means operable from the rear of said bench for rotating
15 said pinion, means for locking said pinion against rotation, a front body support carried by said crotch block, locking means operable from the rear of said bench for locking all said supports in selected vertical adjustment against movement downwardly, said
20 supports being removable from the bench by upward movement of the supports.

9. A posing bench including a seat, longitudinal slots in said seat, body support rods
25 passing through said slots, a plurality of means carried by and beneath the seat for supporting the rods in vertical position, said means being movable longitudinally of the seat to move the rods in said slots, and interengaging means between each of the rods and
30 one of the first mentioned means for adjusting the rods vertically in the slots.

In witness whereof, I hereunto subscribe
35 my name.

LOUIS G. HELPLING.

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