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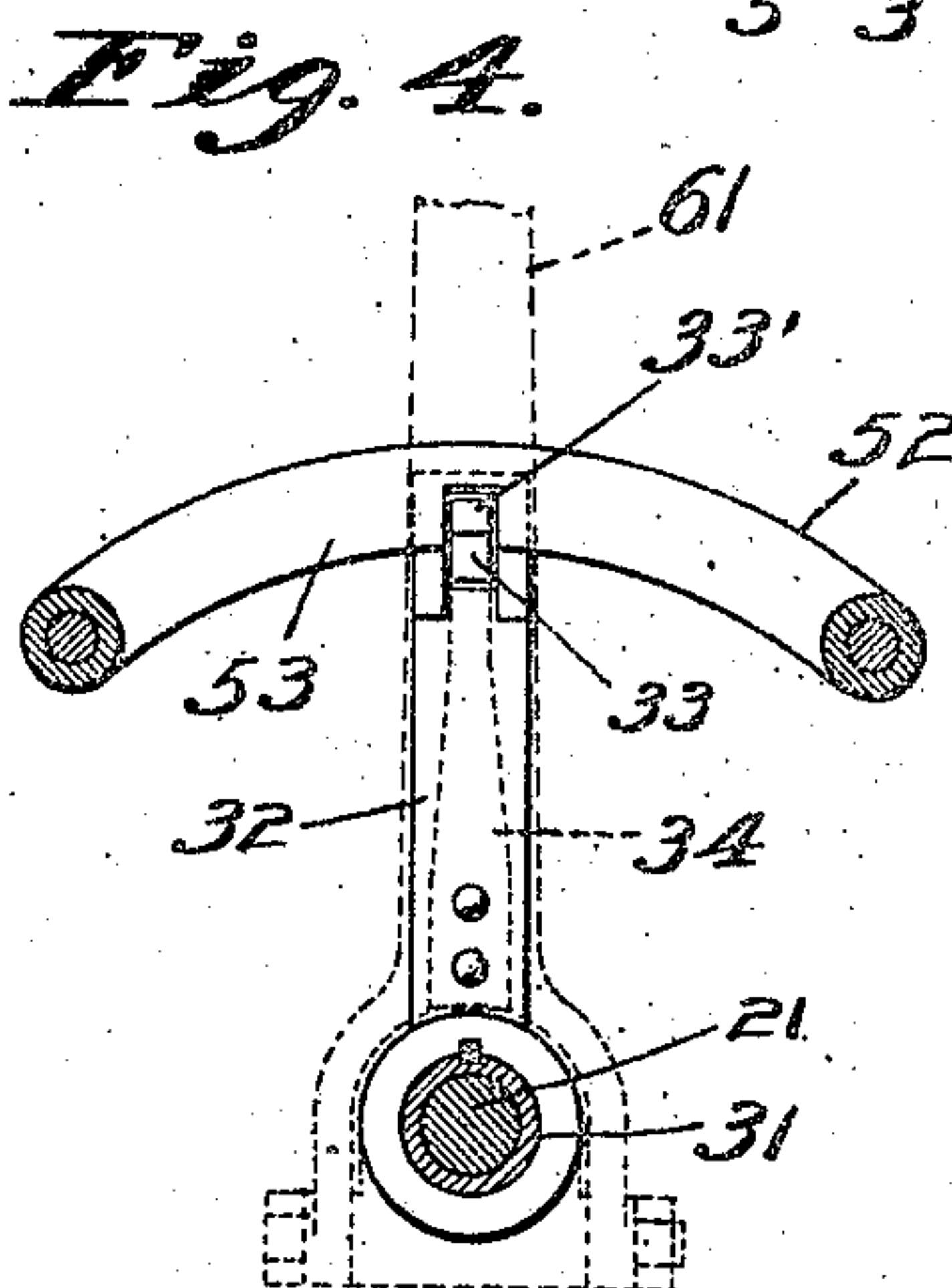
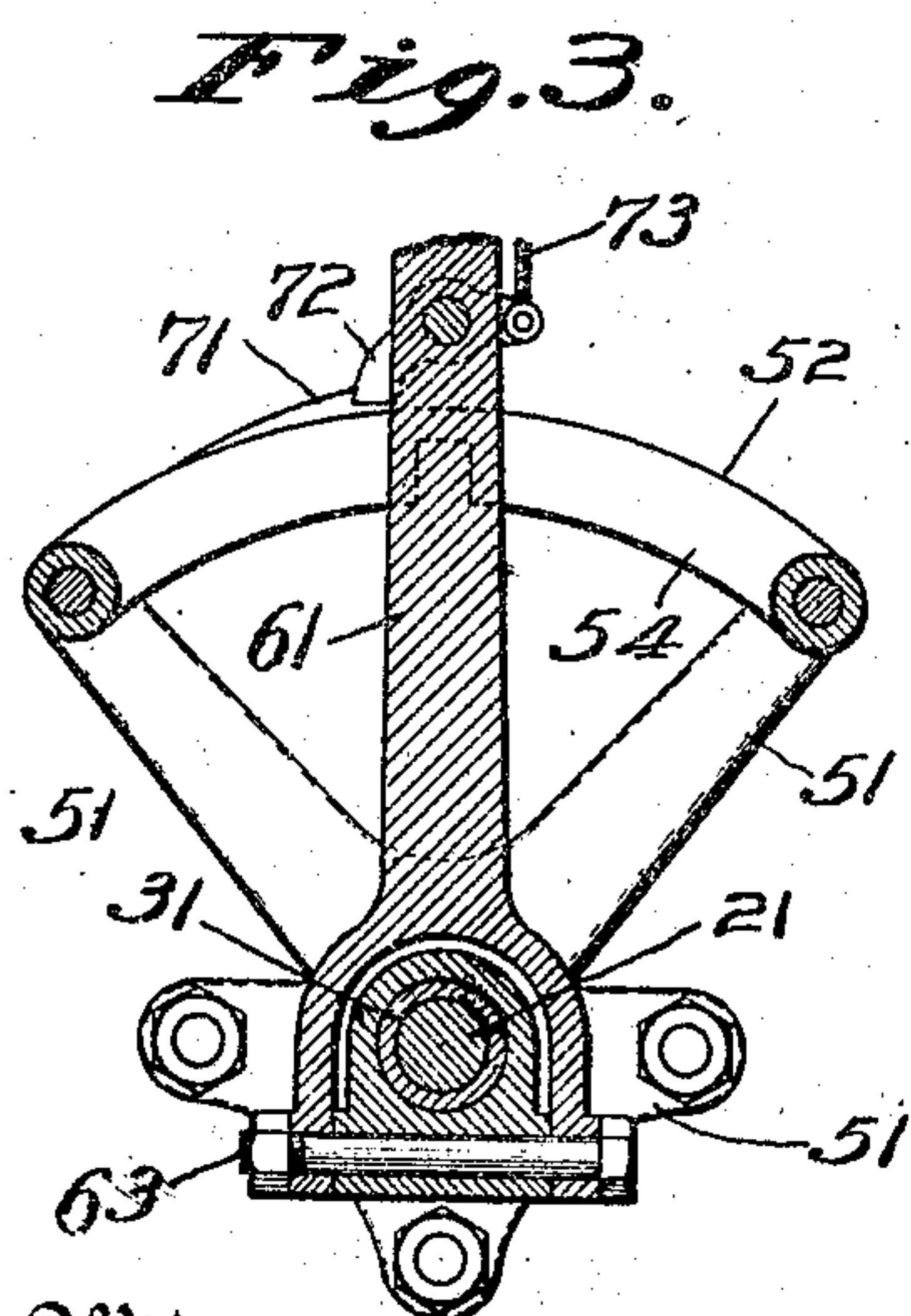
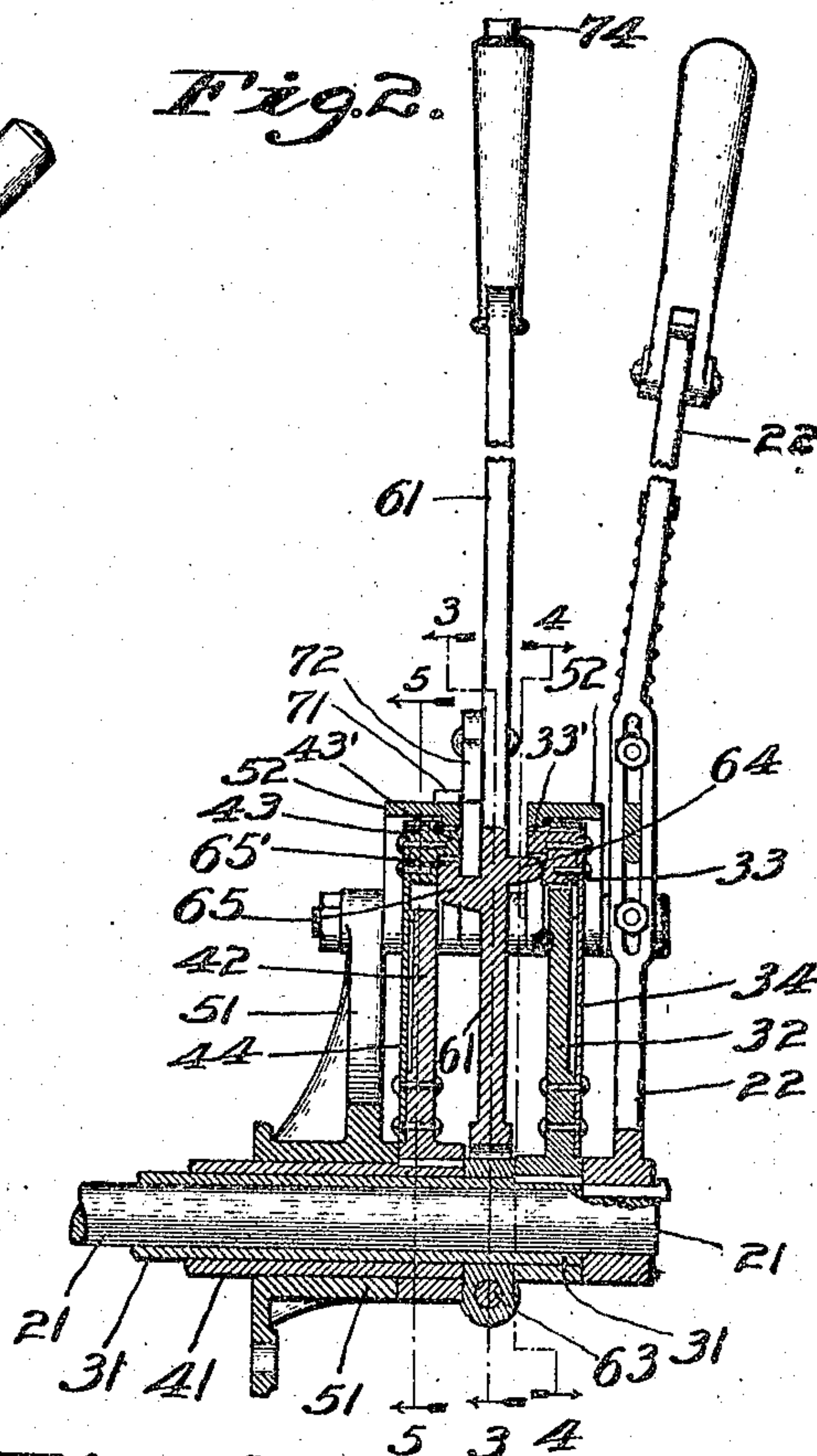
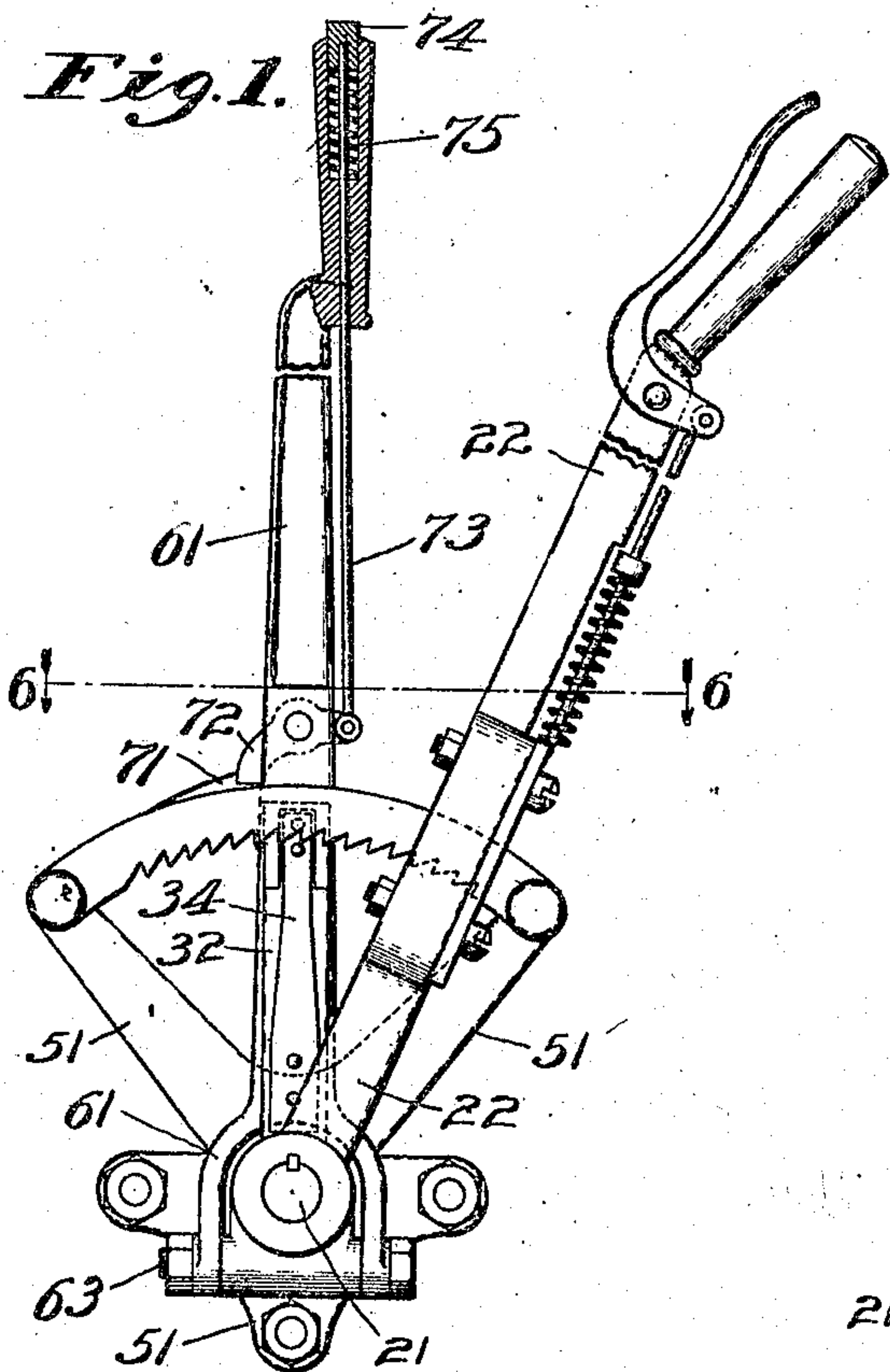
PATENTED APR. 28, 1908.

T. W. WARNER & F. H. JONES.

SELECTIVE LEVER.

APPLICATION FILED APR. 22, 1907.

3 SHEETS—SHEET 1.



Witnesses
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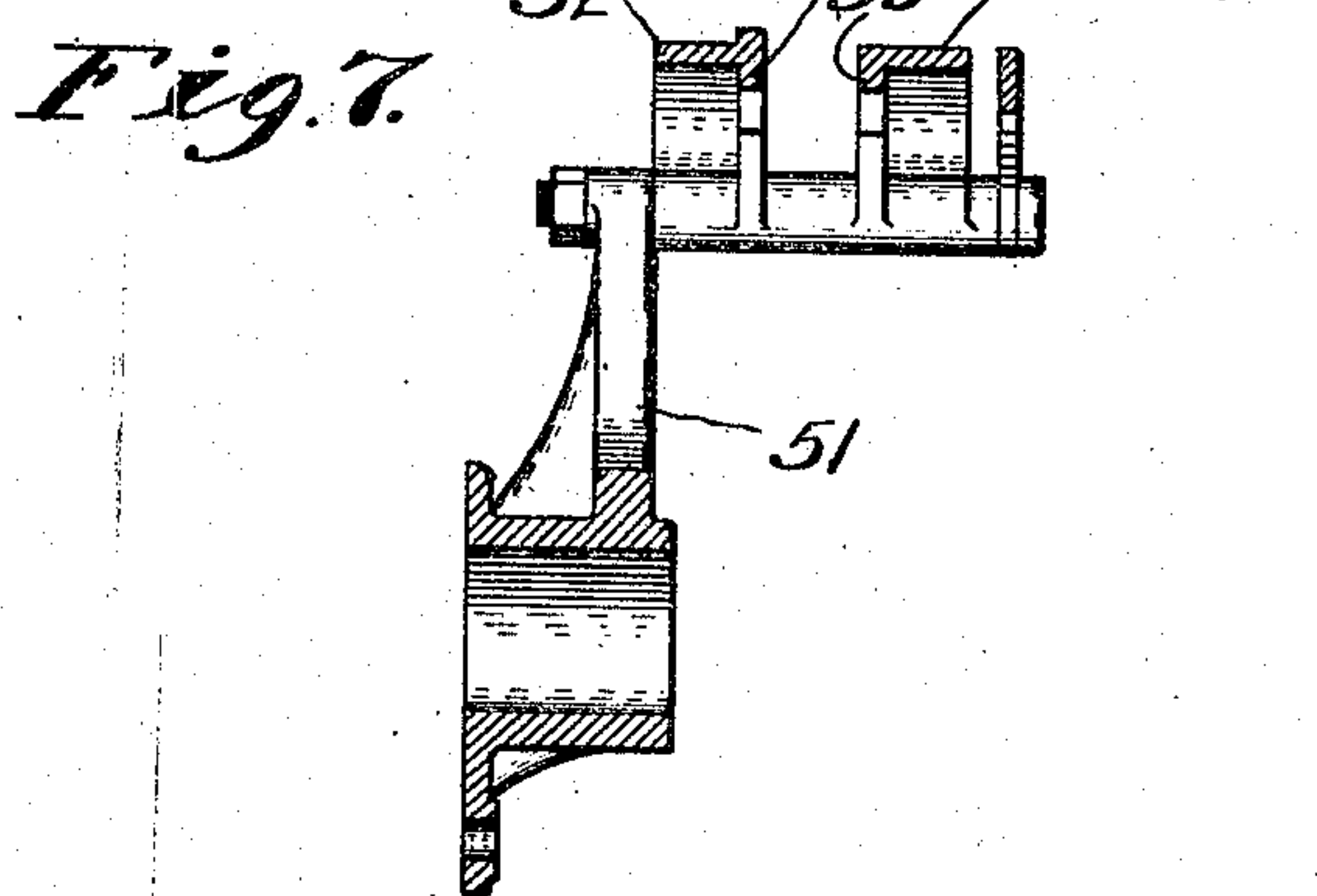
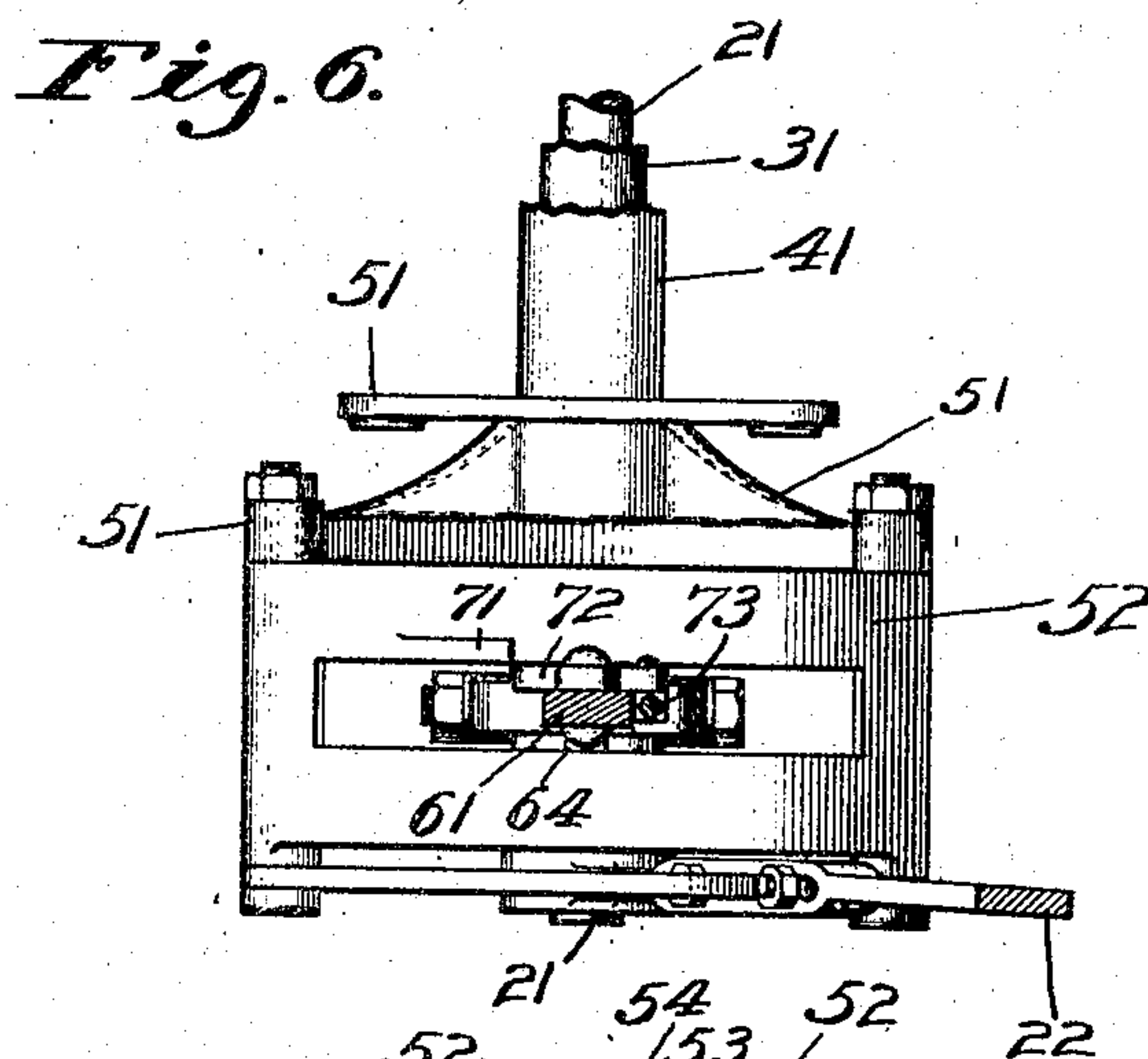
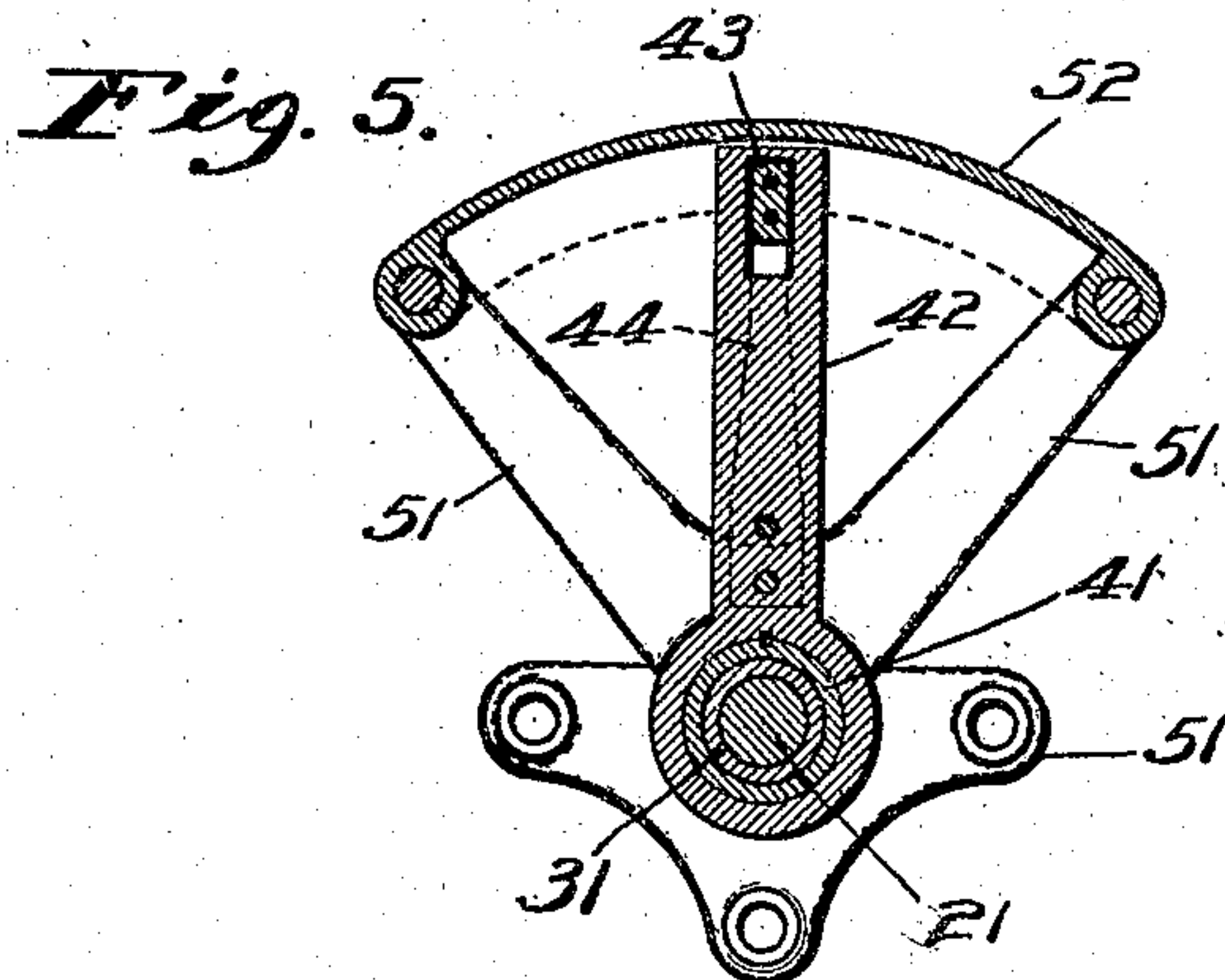
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3 SHEETS—SHEET 2.



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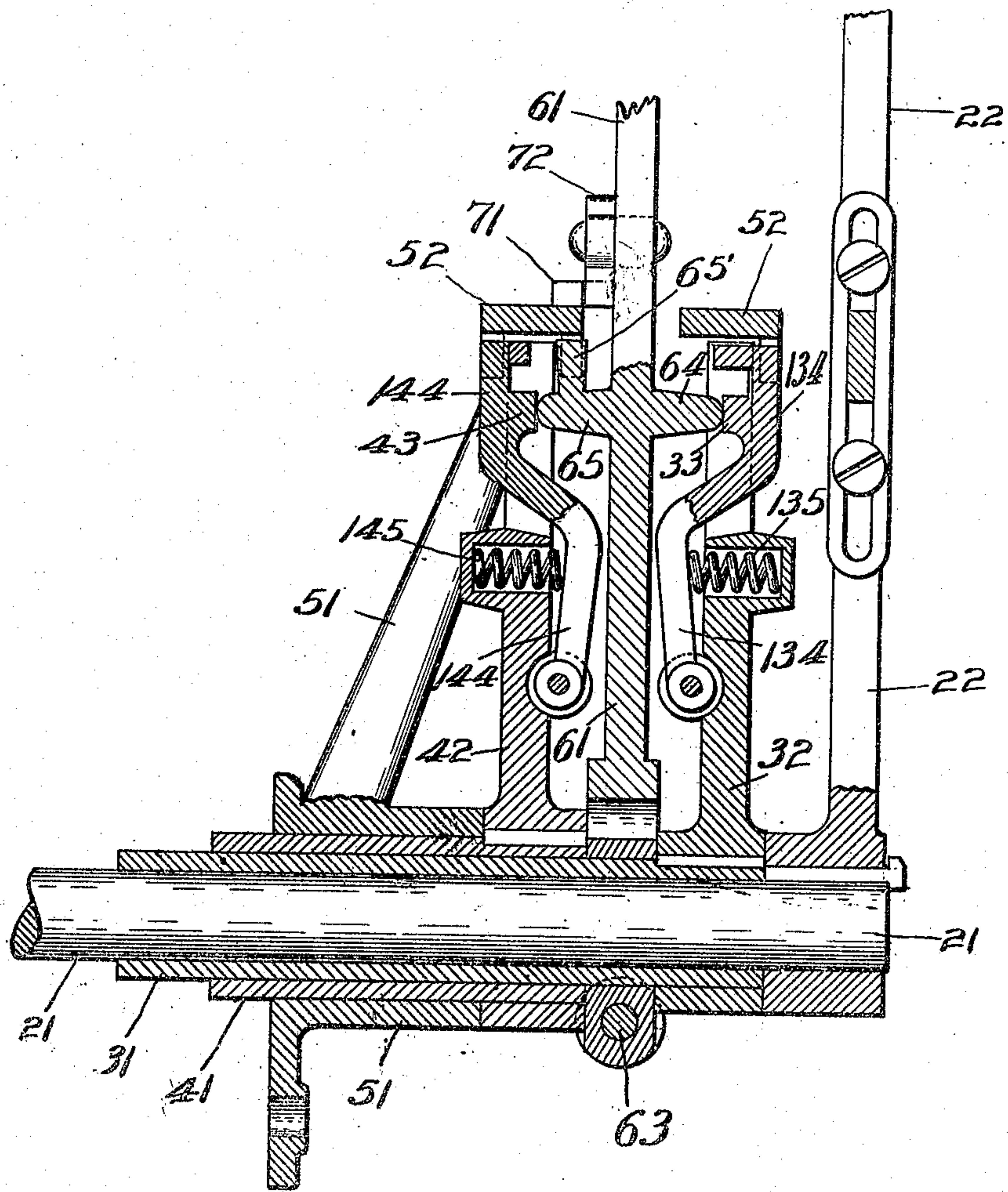
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3 SHEETS—SHEET 3.

Fig. 8.



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UNITED STATES PATENT OFFICE.

THOMAS W. WARNER AND FRANK H. JONES, OF MUNCIE, INDIANA.

SELECTIVE LEVER.

No. 885,814.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed April 22, 1907. Serial No. 369,553.

To all whom it may concern:

Be it known that we, THOMAS W. WARNER and FRANK H. JONES, citizens of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented certain new and useful Improvements in Selective Levers, of which the following is a specification.

Our present invention relates to that class of shifting levers, principally used in automobile construction, by means of which either of a plurality of sub-levers may be operated from a single main operating lever.

Said invention consists in certain improvements in the construction and arrangement of parts of a device of this character, as will be hereinafter more particularly described.

Referring to the drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a side elevation of a structure of the character in question, assembled ready to be applied to the machine upon which it is to be used; Fig. 2 a central vertical sectional view thereof, some parts, however, being shown in elevation for purposes of better illustration; Fig. 3 a sectional view looking toward the left from the dotted line 3 3 in Fig. 2; Fig. 4 a view looking toward the right from the dotted line 4 4 in Fig. 2, the position of the main lever being indicated by means of dotted lines; Fig. 5 a sectional view when looking in the direction indicated by the arrows from dotted line 5 5 in Fig. 2; Fig. 6 a sectional plan view as seen when looking downwardly from the point indicated by the dotted lines 6 6 in Fig. 1; Fig. 7 a view of the stationary member of this device separately similar to a portion of the illustration of Fig. 2, and Fig. 8 a view similar to a portion of Fig. 2, but on an enlarged scale showing an alternative construction.

In said drawings the part marked 21 is an ordinary brake-shaft, and it carries on its end a brake-lever 22. As these parts are not features of our present invention they will not be further described herein except incidentally in describing the invention. Surrounding the brake-shaft 21 is a sleeve-shaft 31 leading to one element of a reversing gear (not shown) or such like device to be operated, and surrounding this sleeve-shaft is a second sleeve-shaft 41 leading to another element of such reversing gear or mechanism to

be operated. These several shafts, thus sleeved together, rest in a bearing in or adjacent to a stationary quadrant-structure 51, which is securely bolted or otherwise fastened to the machine with which our improved selective lever is to operate.

Upon the sleeve shaft 31 a sub-lever 32 is rigidly attached. In the upper end of this sub-lever is a slot, and within said slot is a lug 33 which is carried by the spring arm or spring-actuated arm 34. This lug 33 has a projecting point 33' which normally extends into and engages with a notch in a flange on the structure 51, as will be presently described. The sleeve-shaft 41 has a sub-lever 42 rigidly secured thereto, and in its upper end it has a slot in which is mounted a lug 43 carried by a spring-actuated arm 34, and having a projecting point 43' which is adapted, like the point 33', to engage with a notch in a flange on the stationary part 51, as will be presently described. As will be readily observed, the arrangement of these lugs, spring arms, and notches is such that sub-levers 32 and 42 are locked in their upright positions except when forcibly moved therefrom.

The structure 51, as before stated, is bolted or otherwise rigidly secured to the machine. It embodies a segmental plate 52, having, as is best shown in Fig. 6, a central large slot or opening, and this slot or opening is bounded on its two longer sides by the depending flanges 53 and 54. These flanges, as best shown in Figs. 3 and 4, have the central notches (already referred to) with which the projecting points 33' and 43' are adapted to engage, whereby the sub-levers are locked in their upright position.

The main lever 61, is pivotally mounted on a ring loosely mounted on the sleeve-shaft 31—the lower end of said main lever being forked, and secured to said ring by a pivot 63, as is best shown in Fig. 3. Said ring has an extension containing a hole to receive the pivot, and the pivot is located below the shafts, on the opposite side thereof from the point where the main lever and the sub-levers engage, thus decreasing the necessary sideway movement of the handle end of the main lever without increasing the length of the sub-levers and the size of the quadrant structure. This main lever 61 extends up through the large slot or opening in the segmental plate 52, and terminates in a suit-

able handle by means of which it can conveniently be operated. At a point opposite the spring-actuated lugs 33 and 43, this lever has projections 64 and 65. These projections, as is clearly shown in Fig. 2, are of such form and character that when the lever 61 occupies a central position in the large slot or opening in the segmental plate 52 the said projections will have no effect upon the lugs 33 and 43, but said lugs will remain in engaged position, and the sub-levers will remain locked at that point. The lever 61, however, is capable of being swung sidewise, and, when pushed in one direction or the other, will disengage the lug against which it is pushed. If, for example, the lever 61 is pushed toward the right, the lug 3 will be forced over until its point 33' is beyond or behind the flange 53. At the same time the lug 65 will follow in the same direction until it is entirely free of the flange 54. Meantime the lug 64 has forced the lug 33 partly out of its slot in sub-lever 32 and has itself become engaged with said slot. When the parts have reached this point, the main lever 61 and the sub-lever 32 become in effect one lever, and, when moved back and forth, will rock the sleeve-shaft 31 to any point within the predetermined limit of movement, at the will of the operator. The point 33' of the lug 33, as soon as the movement in question begins, will pass behind the flange 53, and can not thereafter escape therefrom until it is brought back to upright position, where said lug-point is again opposite the notch in said flange, when it will reengage therewith unless held forcibly out of such engagement.

When the lever 61 is thrown to the left (as the parts are arranged in Fig. 2), the operation is practically the same with respect to the sub-lever 42 and the shaft 41 which it operates as that which has just been described. The projection 65, however, differs in one respect from the projection 64. Said projection has an upturned lip 65', which, when the lever 61 is forced over, passes to a point behind the flange 54. Then, when the lever 61 is swung in one direction or the other, in operating the sub-lever 42, this upturned lip, being engaged behind the flange 54, prevents the lever 61 from being moved sidewise until its return to its middle or upright position. Likewise, when this main lever is swung to the right, and so engaged with or operating the sub-lever 32, this upturned lip 65' will, when the lever is swung to one side or the other of its upright position, bear against the adjacent side of the flange 54, and it thus serves also to hold the main lever into its engaged or operative position with the sub-lever 32. The sub-levers are thus both held to their middle position at all times except when the main lever has been moved sidewise the full distance provided for by the construction and thus fully engaged with

one of them, when the one so engaged can be swung back and forth as desired, the other, meanwhile, being securely locked in place. All movements of these levers and the attached mechanism except such as purposely effected by the operative are effectually precluded.

As will be observed, there is formed on the segmental plate 52, on one side of the slot or opening therein, a detent 71. A pawl 72 is pivotally mounted on the lever 61, and a push rod 73 extends upwardly into and through the handle portion of said lever; terminating in a knob 74. A spring 75 exerts a pulling force on the rod 73, and normally holds the pawl 72 into engagement. It may be disengaged, when desired, by simply pushing down on the knob 74. The purpose of this is to prevent the lever from being ordinarily so moved as to cause the gear controlled by this lever to be thrown to the "reverse" position. The lever can thus be manipulated, at will, for any of the other movements desired, without any danger of unintentionally reversing the travel of the apparatus being manipulated. When it is desired to reverse the travel of such apparatus, however, it can readily be done by pushing down with the thumb on the knob 74, and then throwing the lever 61 over to the "reverse" position.

In the alternative view, Fig. 8, we have shown a little different construction, in which the lugs in the slots at the upper ends of the sub-levers, instead of being carried by arms which are in themselves springs, are carried by pivoted arms 134 and 144 which are actuated by springs 135 and 145. The flanges on the segmental section 52 and the projections on the main lever 61 are also somewhat differently arranged, although having the same effect, and being substantially the same in all essential respects.

Having thus fully described our said invention, what we claim as new and desire to secure by Letters Patent, is:—

1. The combination, in a selective lever, of a stationary structure embodying a segmental plate having a central slot or opening and notched flanges alongside said opening, a plurality of sleeved shafts, a sub-lever for each shaft and having a slot in its upper end, a spring-operated engaging device secured to each sub-lever embodying a lug extending through the slot in the sub-lever to which it is attached, a centrally-arranged operating-lever pivotally mounted at the lower end and extending up through the opening in the segment, said operating lever having projections on opposite sides thereof respectively arranged to engage with and force back the lugs of the spring-operated engaging devices on the corresponding sub-levers, each of said projections being of such length as when one of them is fully engaged

with the corresponding sub-lever that the other will be free of engagement with the notch in the flange adjacent thereto.

2. The combination, in a selective lever, of a stationary structure embodying a segment having a slot-opening therein, a plurality of sleeved shafts mounted in a bearing adjacent to said segment-structure, a sub-lever for each of the shafts, spring-operated engaging devices carried by said sub-levers, there being flanges on the segment-structure alongside the opening therein having notches with which said spring-operated engaging devices will engage, a main lever of less width than the width of the slot in the segment-structure and passing through said slot and mounted upon a pivot adjacent to the shafts and provided with projections adapted to contact with said spring-operated engaging devices, one of said projections having an up-turned lip which will pass through the notch in an adjacent flange and engage behind said flange when said lever is moved sidewise in one direction and with the front of said flange when said lever is moved sidewise in the other direction, thereby locking said lever to the position to which it has been moved at all points except when said lip and said notch are in registry.

3. The combination, in a selective lever, of a stationary segment-structure having a slot-opening therein, a plurality of sleeved shafts mounted in a bearing adjacent to said segment-structure, sub-levers attached to said shafts, an operating lever pivotally mounted at a point adjacent to said shafts and extending up through the slot-opening in the segment-structure, a detent attached to the segment-structure alongside the slot-opening therein at one side, a pawl pivoted to the operating lever and adapted to engage with said detent in one direction only, the said operating lever being free to be moved to its three other positions without interference by said detent and cooperating pawl, a rod extending from said pivoted pawl up through the handle of said lever, a push button on the upper end of said rod, and a spring within a chamber in said lever-handle whereby the rod is held normally upward and the pawl thus held into the path of the detent on the segment-structure.

4. The combination, in a selective lever, of a stationary segment-structure having a slot-opening therein, a plurality of nested shafts mounted in a bearing adjacent to said segment structure, sub-levers attached to said shafts, one of which is adapted when moved in one direction to "reverse" the movement of the mechanism, an operating lever pivotally mounted at a point adjacent to said shafts and extending up through the slot-opening in the segment-structure and adapted to engage separately with the sub-levers, a detent attached to the segment-structure

alongside the slot-opening therein at that side nearest the operating lever when swung to engage with the sub-lever adapted to perform the reversing operation, a pawl mounted on said operating lever and arranged in the path of said detent when said lever is thus positioned to engage the detent in one direction only, the operating lever being free to be moved to any one of its other three positions without interference by said detent and pawl, and means whereby said pawl will be held continuously in said path except when purposely removed therefrom, whereby accidental reversing of the mechanism is guarded against while all other permissible movements of the operating lever are freely permitted.

5. A selective lever system for automobiles comprising a pair of members adapted to be connected with the speed controlling mechanism comprising a reversing means, of a selective lever adapted to engage either of said pair of members and shift the same in either of two directions, a movable detent adapted, when the lever is associated with one of said pair of members, to restrain the movement of said lever in one direction only, and means mounted on said lever for shifting said detent to permit movement of the lever in said direction, the selective lever being free to be moved in any one of its other three directions without interference by the movable detent.

6. In a selective lever system for automobiles, the combination, of a pair of members each adapted to be moved in opposite directions from a medial position and each adapted to be connected to speed controlling mechanism, of a selective lever adapted to be moved into engagement with one or the other of said pair of members, locking means for holding said members in medial position, means carried by the selective lever for operating said locking means, a fixed stop, a movable pawl carried by the selective lever and adapted to engage said fixed stop in one direction only and only when said selective lever is associated with the corresponding one of said pair of members, the selective lever being free to be moved to any of its other positions without interference by said pawl and means carried by the selective lever for readily shifting said pawl away from the fixed stop to permit movement of the selective lever in the normally restrained direction.

7. In a selective lever system for automobiles, the combination, of a pair of members each adapted to be moved in opposite directions from a medial position and each adapted to be connected to speed controlling mechanism, of a selective lever adapted to be moved into engagement with one or the other of said pair of members, locking means for holding said members in medial position, means carried by the selective lever for oper-

ating said locking means, means preventing
the association or dissociation of the select-
ive lever with either of said pair of members
except in medial position, a fixed stop, a
5 movable pawl carried by the selective lever
and adapted to engage said fixed stop in one
direction only and only when said selective
lever is associated with the corresponding
one of said pair of members, the selective le-
10 ver being free to be moved to any of its other
positions without interference by said pawl
and means carried by the selective lever for

readily shifting said pawl away from the
fixed stop to permit movement of the select-
ive lever in a normally restrained direction. 15

In witness whereof, we, have hereunto set
our hands and seals at Muncie, Indiana, this
fifteenth day of April, A. D. one thousand
nine hundred and seven.

THOMAS W. WARNER. [L. S.]

FRANK H. JONES. [L. S.]

Witnesses:

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