

No. 838,724.

PATENTED DEC. 18, 1906.

C. A. LANG.
SLED.

APPLICATION FILED JAN. 4, 1906.

2 SHEETS—SHEET 1.

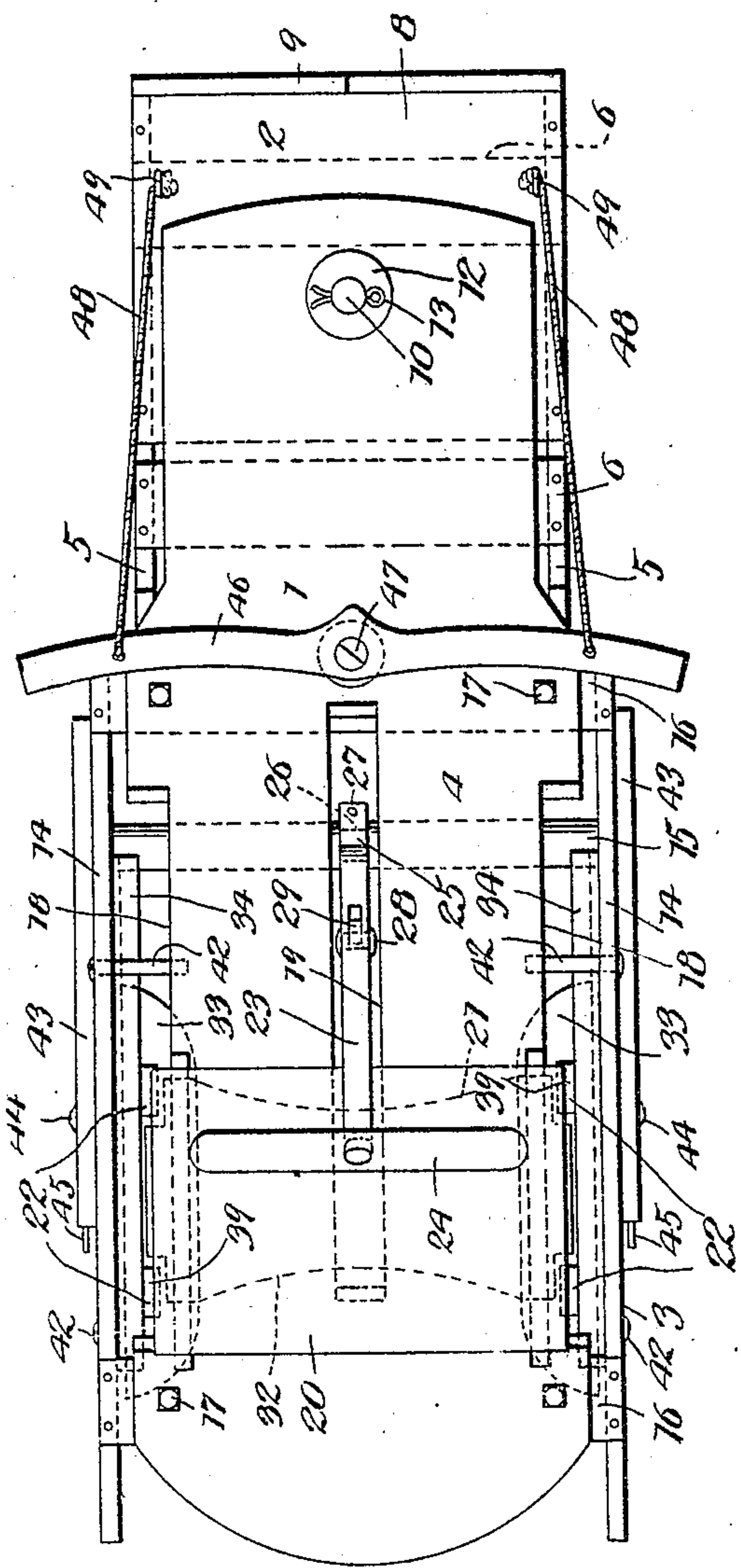


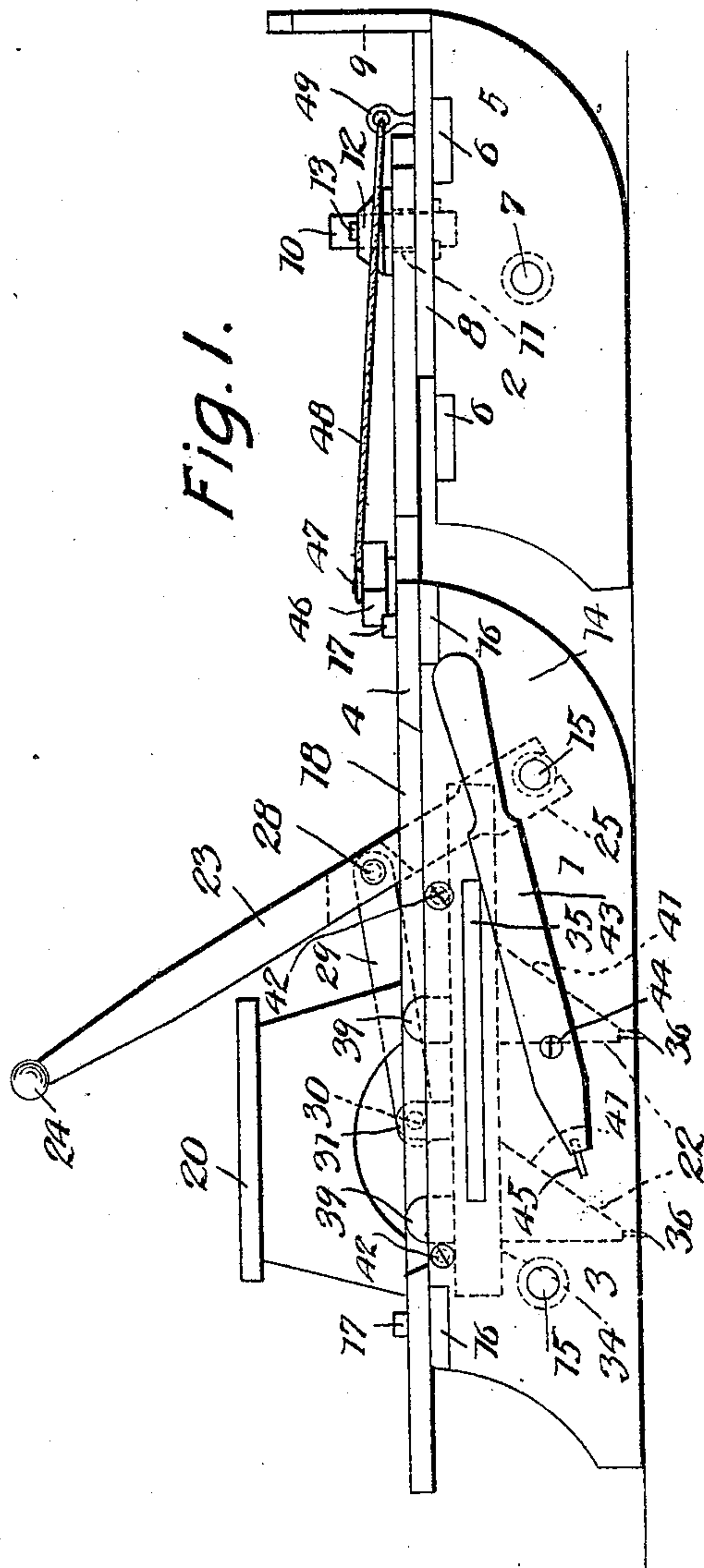
Fig. 2.

Witnesses

Geo. Hilton

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Fig. 1.



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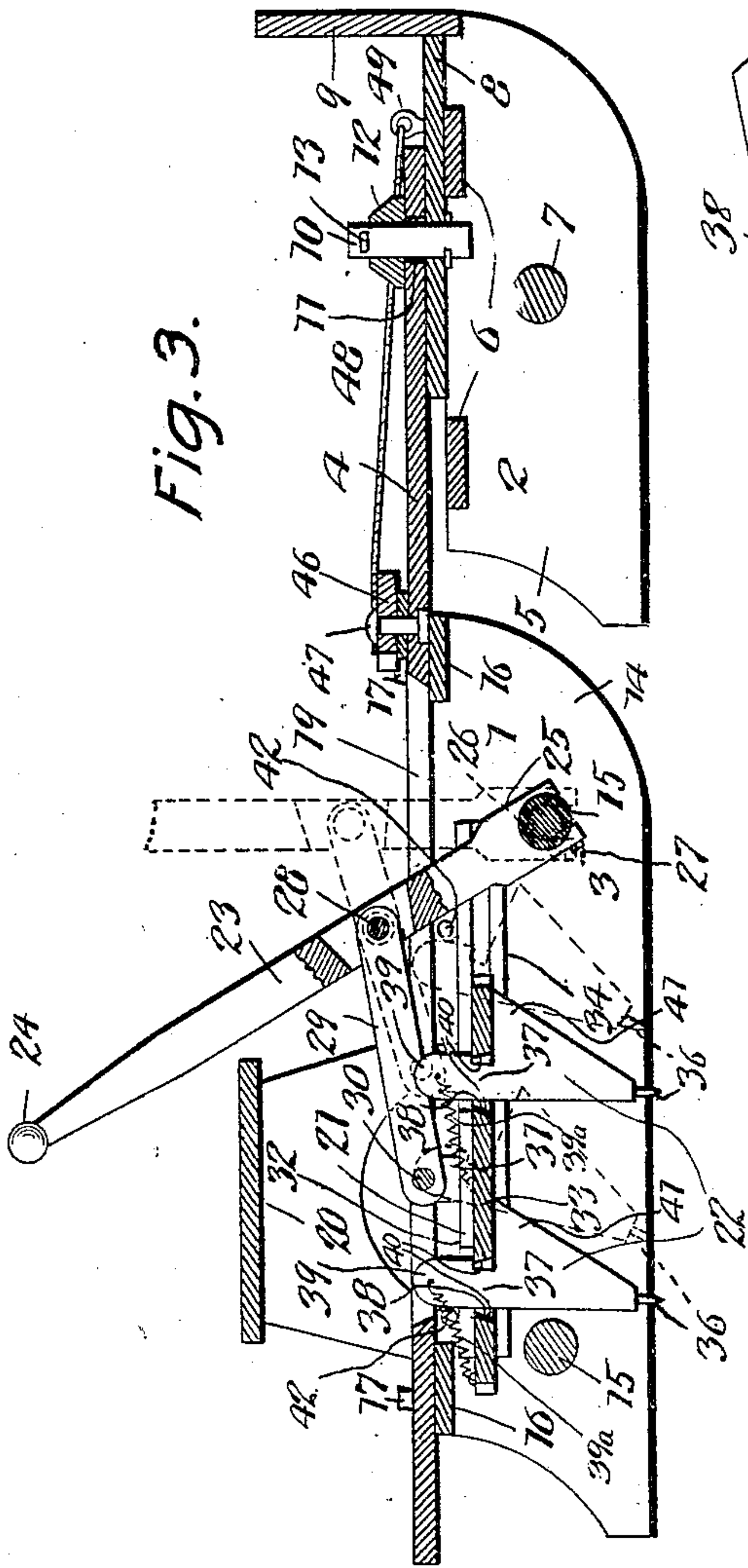


Fig. 3.

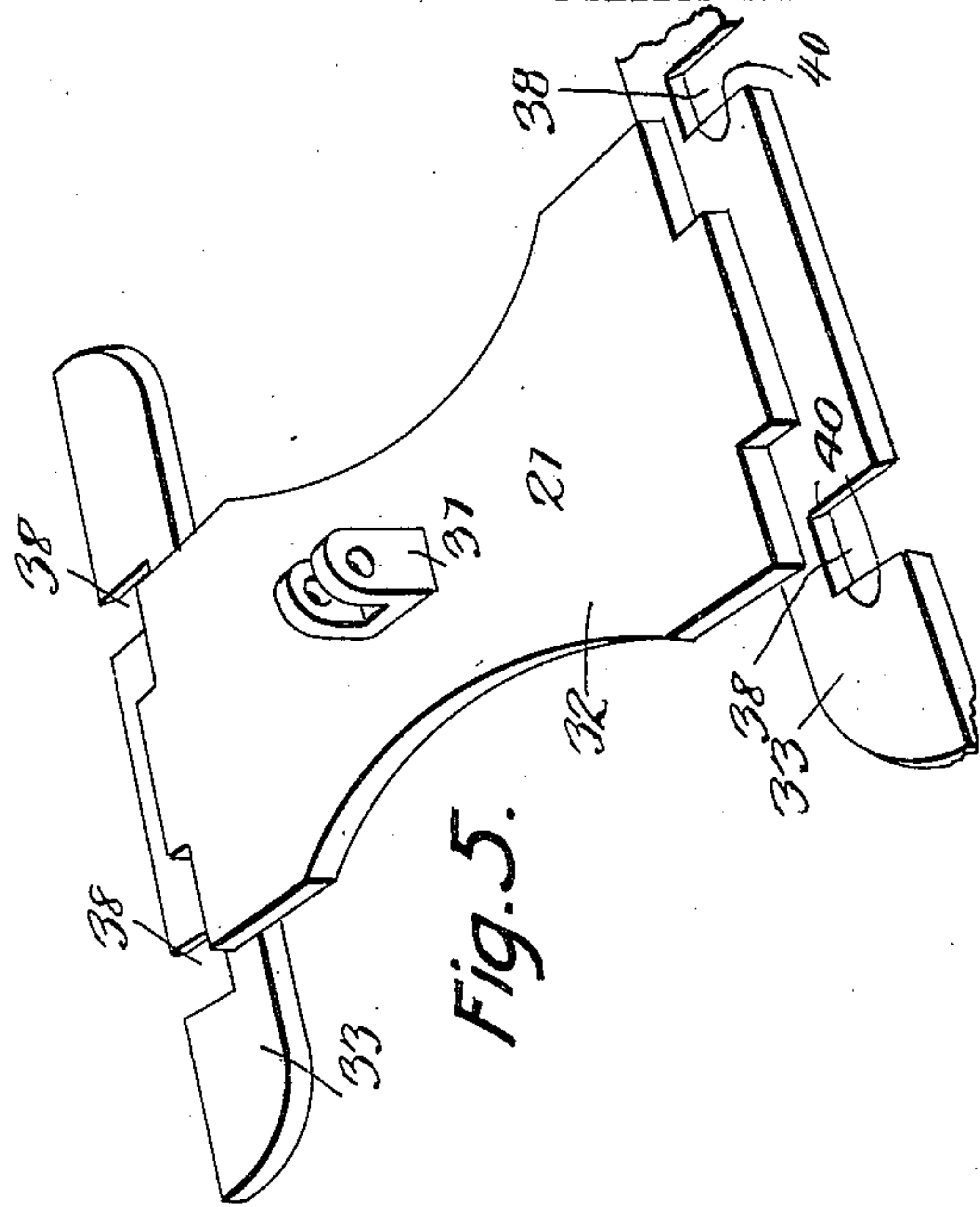


Fig. 5.

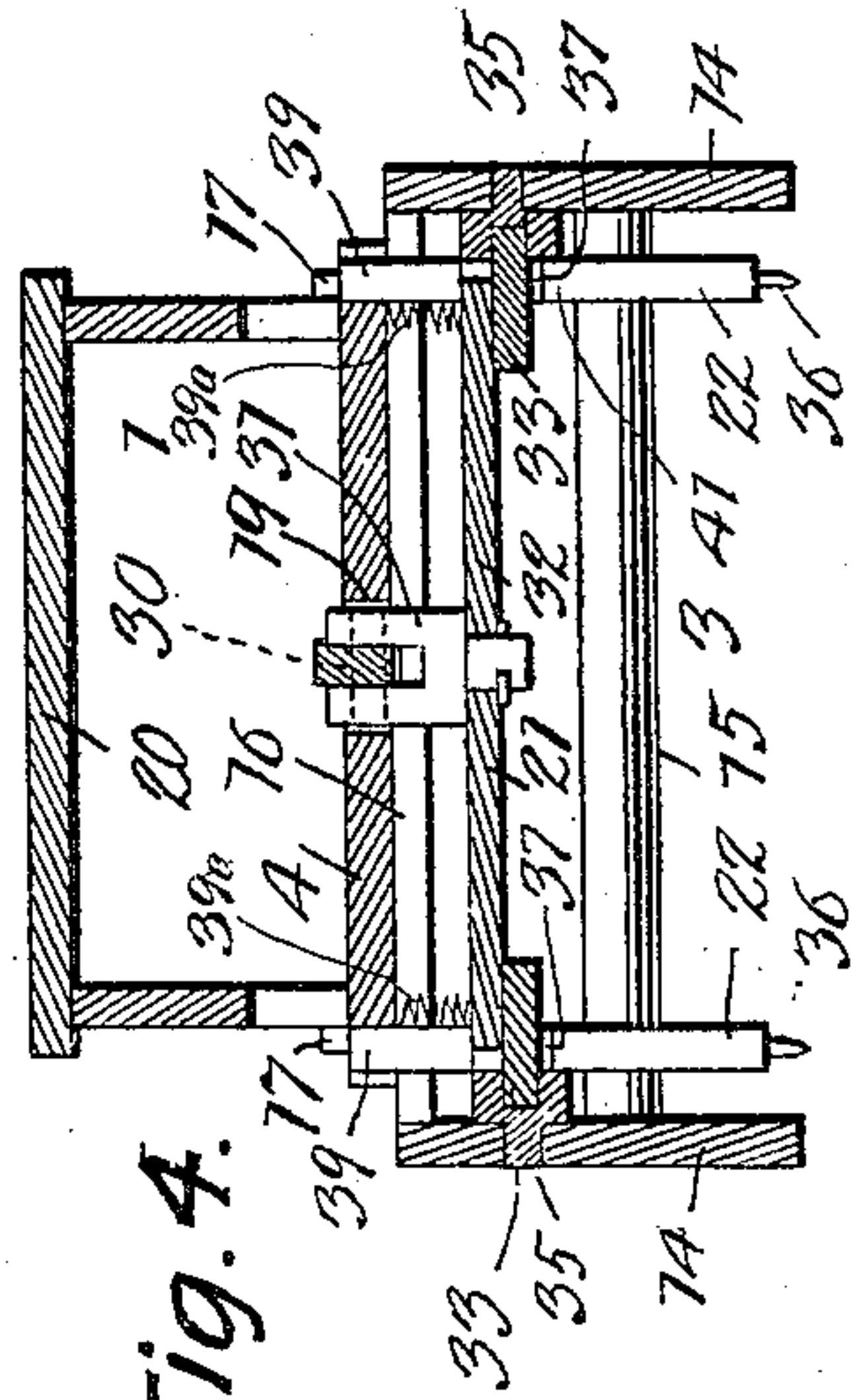


Fig. 4.

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UNITED STATES PATENT OFFICE.

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No. 833,724.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed January 4, 1906. Serial No. 294,612.

To all whom it may concern:

Be it known that I, CHARLES A. LANG, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Sleds; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in sleds and propelling means therefor.

The object of the invention is to provide a propelling mechanism for sleds, which will be of simple, inexpensive, and durable construction and very convenient and efficient in operation.

A further object of the invention is to improve and simplify the construction and operation of sleds and propelling means therefor, and thereby render the same more durable and efficient.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a sled constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a vertical transverse sectional view, and Fig. 5 is a perspective view of the slide and drag-levers or plates of the propelling mechanism.

Referring to the drawings by numeral, 1 denotes a sled consisting of front and rear bobs 2 and 3, connected by a platform 4, which is rigidly secured upon the latter and pivotally connected to the former. The front bob 2 consists of two runners 5, connected by cross-bars 6, a brace 7, and a platform 8, which latter has a dashboard 9 secured transversely upon its forward edge. The bob 2 is pivotally connected to the front end of the platform 4 by a pivot 10, which is preferably in the form of an upright stud arranged centrally upon the top of the platform 8 and adapted to project through an opening 11, formed in the platform 4. A collar 12 and a cross-pin or key 13 are preferably provided upon the outer end of the pivot-stud 10 to retain the platform 4 thereon. The rear bob 3 is similarly constructed of two runners 14, which are connected by transverse braces 15 and cross-bars 16, which

latter have the platform 4 secured upon their upper faces by bolts or other suitable means 17. The platform 4 has its side edges above the bob 3 cut away or recessed, as shown at 18, and extending longitudinally in the center of this portion of the platform is a slot 19. A seat 20 of any desired form and construction is preferably mounted upon the platform 4 adjacent to its rear end.

My improved propelling mechanism, which may be mounted upon a single sled, a double sled of the character just described, or upon a sled of any other form and construction, comprises a slide 21, which carries a plurality of drag-levers or plates 22 and which is operated preferably by means of a hand-lever 23. As shown, the latter projects vertically through the slot 19 in the platform 4 and has upon its upper end a cross-bar or handle 24. The lower end of said lever is formed with a bifurcated or forked portion 25 and is pivotally mounted by the engagement of this portion with a seat or annular groove 26, formed in the front brace 15 of the bob 3. A cross-pin or key 27 is preferably passed through the arms or ends of the forked portion 25 to retain the latter in the seat 26. In the hand-lever 23 is formed a longitudinally-extending slot in which is pivotally mounted upon a bolt or the like 28 the forward end of a link or rod 29, which has its rear end pivoted, as at 30, in a bifurcated stud or post 31, provided upon the slide 21. The latter consists of a cross-bar 32, upon the center of which the post 31 is mounted, and two longitudinally-extending plates 33, which are secured upon the flared or enlarged ends of the cross-bar 32, as clearly shown in Fig. 5 of the drawings.

The plates 33 are adapted to slide longitudinally in guides 34, which are provided upon the inner faces of the runners 14 of the rear bob 3. As shown, these guides 34 consist of channel-bars which have projecting portions 35 secured in slots or recesses formed in the runners 14; but it will be understood that these guides may be of any other form and construction and mounted or formed upon the runners in any suitable manner. In the plates 33 of the slide are loosely mounted the drag-levers or spur-plates 22, which engage the snow or ice and propel the sled forwardly. These levers or plates 22 are of substantially triangular form and have at one of their angles spurs 36, which are adapted to engage the snow or

ice. At another of their angles are formed projecting necks or stems 37, which are disposed in slots or openings 38, formed in the plates or portions 33 of the slide, and which have their upper ends enlarged, as at 39, to retain them in the slots or openings 38. By reason of this construction the levers or plates 22 are pivotally suspended from the slide, and they are permitted to swing longitudinally by reason of the beveled front and rear walls 40 of the slots or openings 38. To the enlarged ends 39 of the levers or plates are connected the ends of springs or the like 39^a, which have their other ends connected to the sliding plates 33, so that the levers 22 will be held normally in their vertical position. The length of the levers or plates 22 from their stems or necks 37 to their spurs 36 is such that when they are in their vertical position (shown in full lines in Fig. 3 of the drawings) the spurs 36 will be forced into the snow or ice and the upper surface of the forward portions or angles 41 of said levers or plates 22 will engage the under side of the plates or slide 33 to brace the same, so that as the latter is moved rearwardly by the operation of the lever 23 the sled will be propelled forwardly. Upon the return stroke of the lever 23 the drag-levers or plates 22 move to their dotted-line positions, (shown in Fig. 3 of the drawings,) and while moving to such position they incline rearwardly, are dragged upon the snow or ice, and do not materially interfere with the forward movement of the sled. In order to cause the levers or plates 22 to move quickly and effectively engage or disengage the snow or ice at the end of each of its strokes, I preferably provide stop-pins 42 in the runners 14. These stops 42 are so arranged that they engage the heads or enlarged upper ends 39 upon the levers or plates 22, as will be seen upon reference to the drawings.

When the propelling mechanism is employed upon a single sled, such as the rear bob 3, I preferably steer and brake the movement of the same by a pair of brake-levers 43. The latter are pivotally mounted intermediate their ends, as shown at 44, upon the opposite sides of the runners 14 and have spurs 45 at their lower ends to engage the snow or ice. When the upper ends of both of the levers 43 are shifted rearwardly, the spurs 45 will be forced into the snow or ice to retard the movement of the sled, and when either one of said levers is operated independent of the other the sled will be caused to swing to one side, according to which of the levers is operated. When the propelling mechanism is mounted upon a double sled of the form shown and described, the levers 43 are employed simply for braking the movement of the sled and the latter is steered by a foot-lever 46, which is pivoted centrally, as at 47, upon the top of the platform 4. This

lever 46 has its ends connected by cross-chains or other flexible connections 48 to the forward portion of the front bob 2, as shown at 49, so that when the lever 46 is shifted the front bob will be swung with it upon the pivot-stud 10.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. The combination with a sled, of a propeller mechanism therefor, comprising a slide, drag-levers or plates loosely mounted in the slide, depending therefrom and carried thereby, and fixed stops to coact with said levers or plates at the ends of the strokes of the slide, for the purpose set forth.

2. The combination with a sled of a propelling means therefor comprising longitudinally-extending guides, a slide mounted to reciprocate in said guides and formed with openings having beveled end walls, substantially triangular-shaped drag-levers or plates provided at their lower ends with spurs and at their upper ends with headed necks or stems to loosely engage the openings in said slide, and means for reciprocating said slide.

3. The combination with a sled of a propelling means therefor comprising longitudinally-extending guides, a slide mounted to reciprocate in said guides and formed with openings having beveled end walls, substantially triangular-shaped drag-levers or plates provided at their lower ends with spurs and at their upper ends with headed necks or stems to loosely engage the openings in said slide, means for reciprocating said slide, and stops for shifting said levers or plates.

4. The combination with a sled of a propelling means therefor comprising longitudinally-extending guides, a slide mounted to reciprocate in said guides and formed with openings having beveled end walls, substantially triangular-shaped drag-levers or plates provided at their lower ends with spurs and at their upper ends with headed necks or stems to loosely engage the openings in said slide, stop-pins carried by said sled for coacting with the upper ends of said levers or plates to shift the latter at the ends of the strokes of said slide, a pivotally-mounted hand-lever, and a rod pivotally connecting said hand-lever and said slide.

5. In a sled the combination of a platform having a longitudinally-extending slot and a

pivot-opening at its forward end, a rear bob secured beneath said platform and consisting of runners, cross bars and braces, a front bob disposed beneath the forward end of said platform, a pivot-stud upon said front bob and projecting through the pivot-opening in said platform, a transverse steering-lever pivoted upon said platform, flexible connections between the ends of said lever and the opposite sides of said front bob, brake-levers pivotally mounted upon the runners of said rear bob, guides upon the inner faces of the runners of said rear bob, a slide mounted to reciprocate in said guides, drag-levers or plates pivotally suspended from said slide, a hand-lever projecting through the slot in

said platform and having its bifurcated lower end pivotally engaged with an annular seat in one of the braces of said rear bob, a stud upon said slide and projecting through the slot in said platform, and a rod disposed in said slot and having its ends pivotally connected to said stud and to said hand operating-lever, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES A. LANG.

Witnesses:

ADOLPH G. FREY,

HERMAN J. KREMBS, Jr.