F. A. MILLER.

SLED.

APPLICATION FILED JUNE 18, 1909.

963,615.

Patented July 5, 1910.

3 SHEETS—SHEET 1.

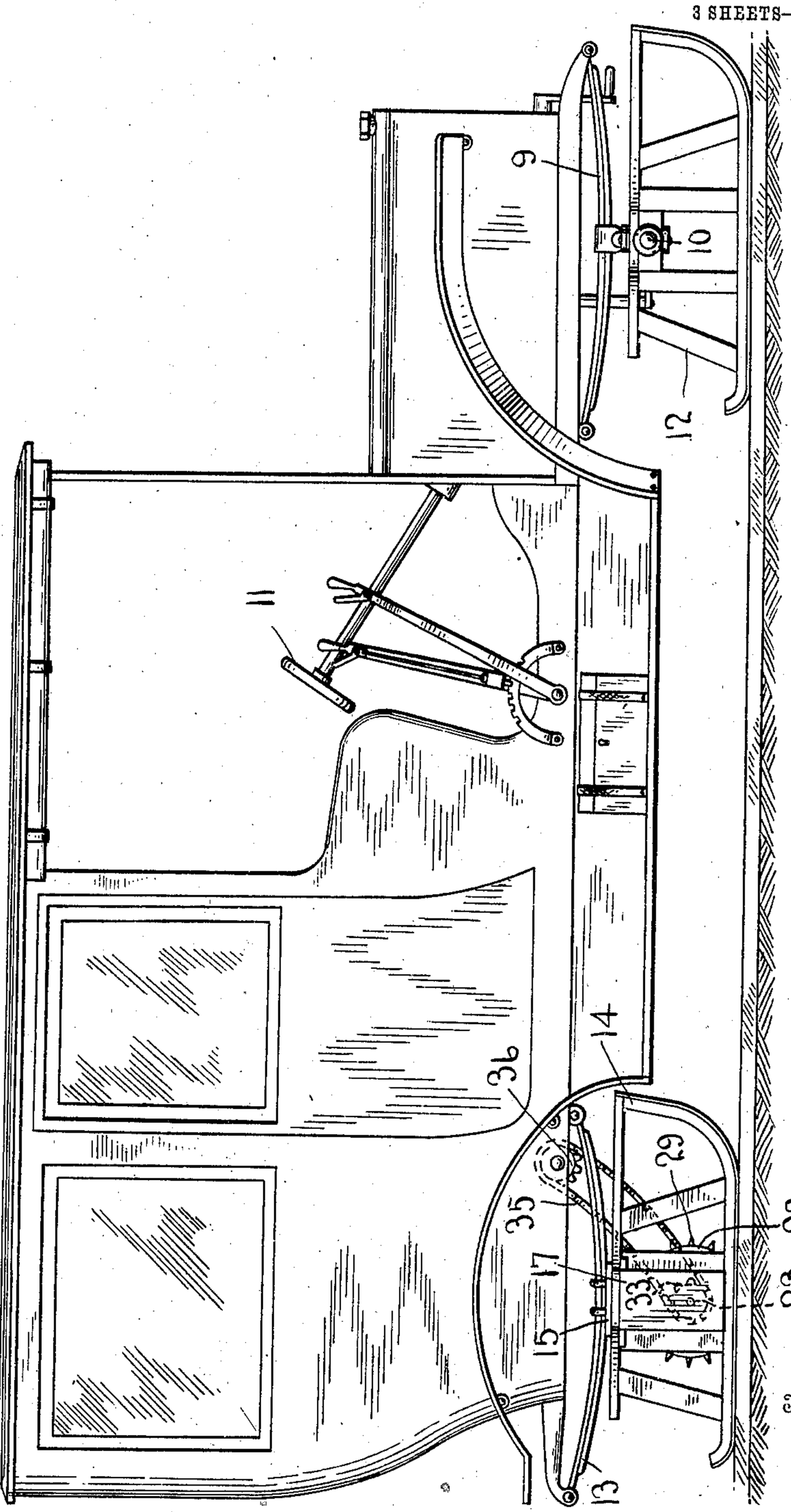

FIG. 1.

Witnesses

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3 SHEETS—SHEET 2.

FIG. 2.

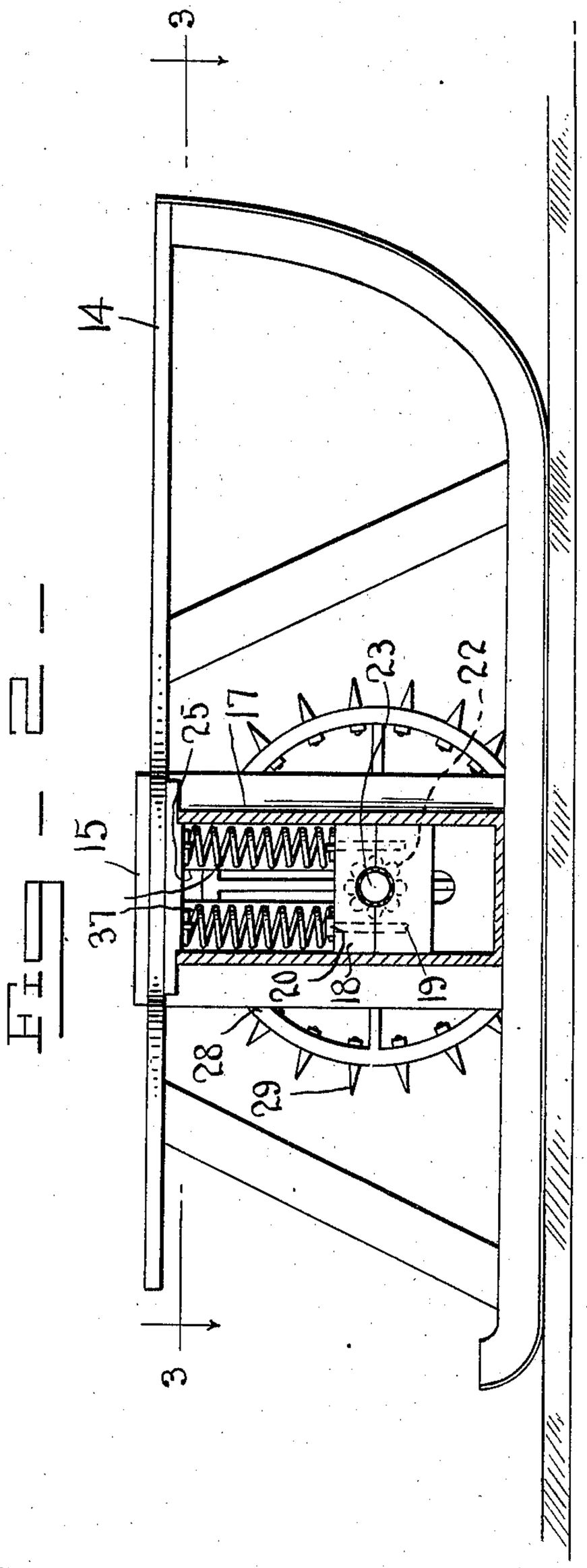


FIG. 4.

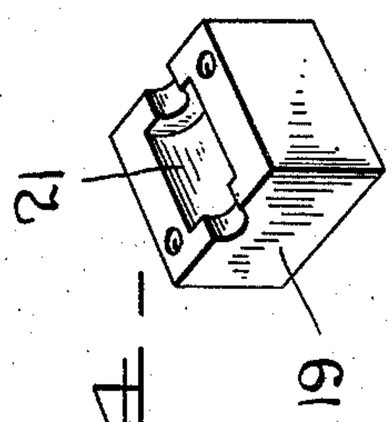
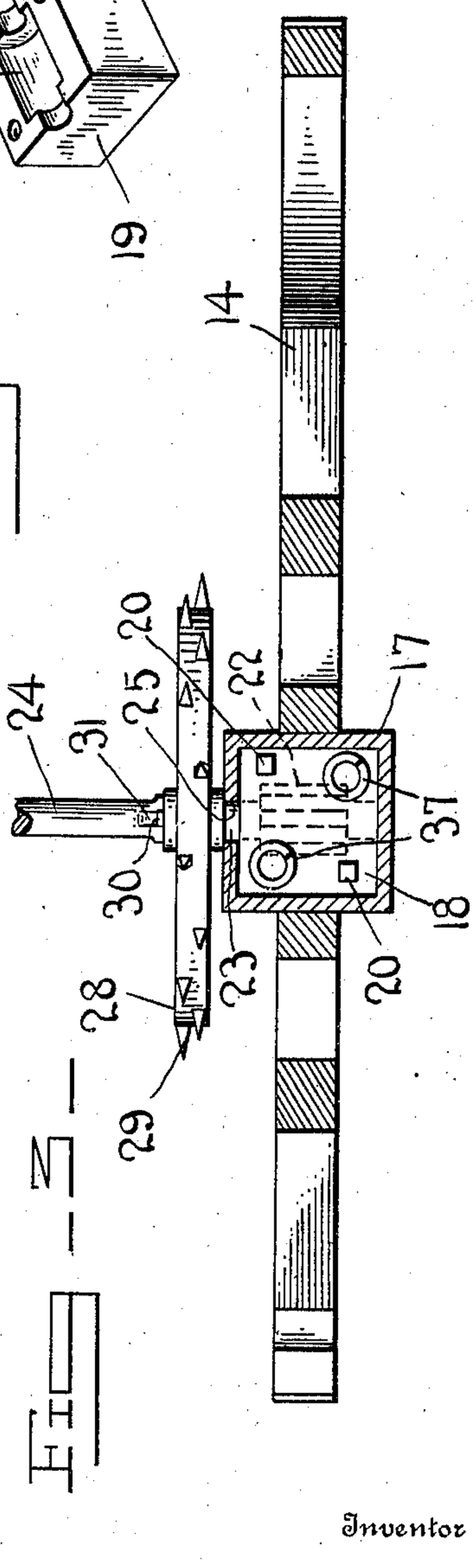


FIG. 3.



Witnesses

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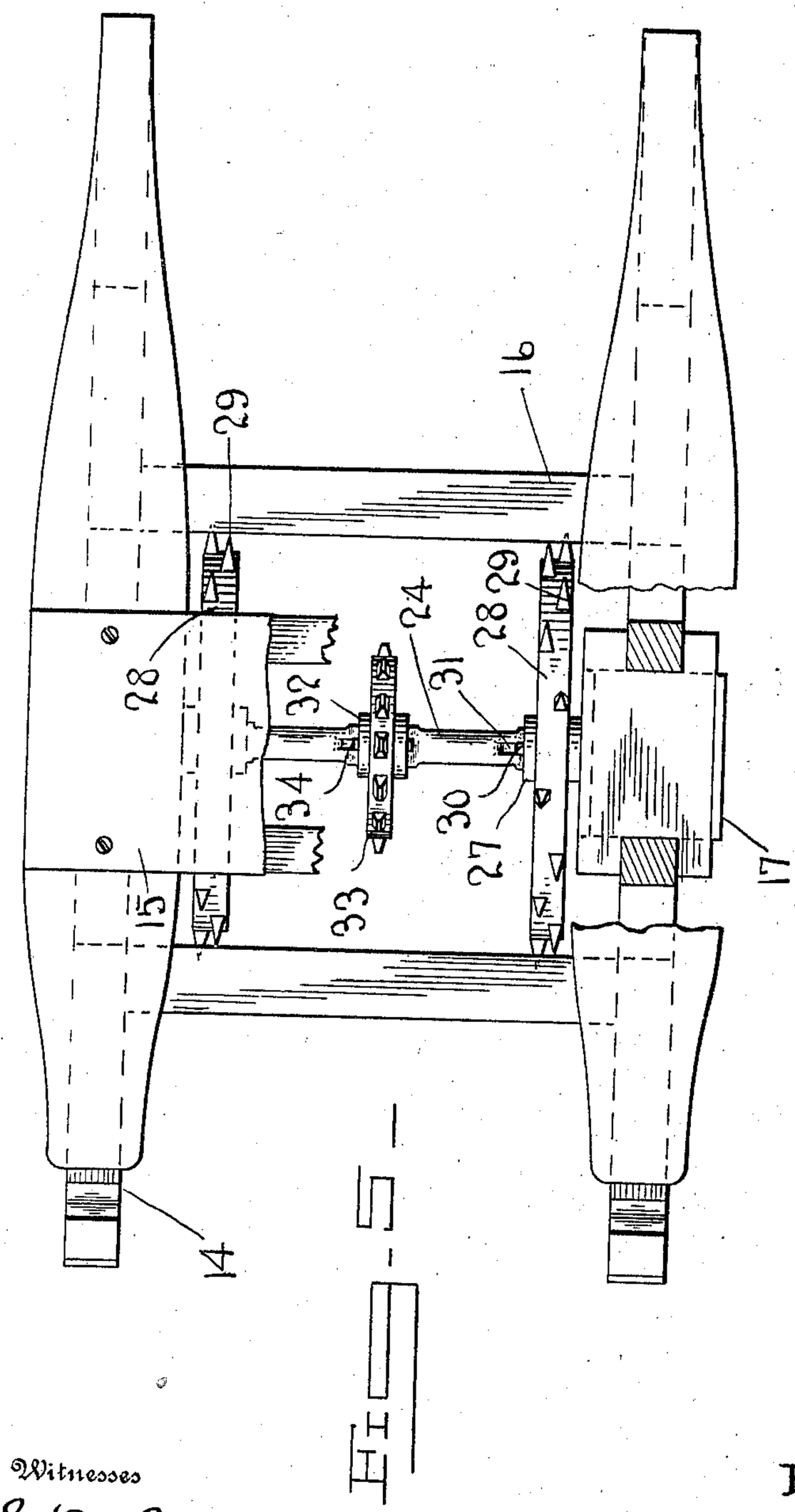
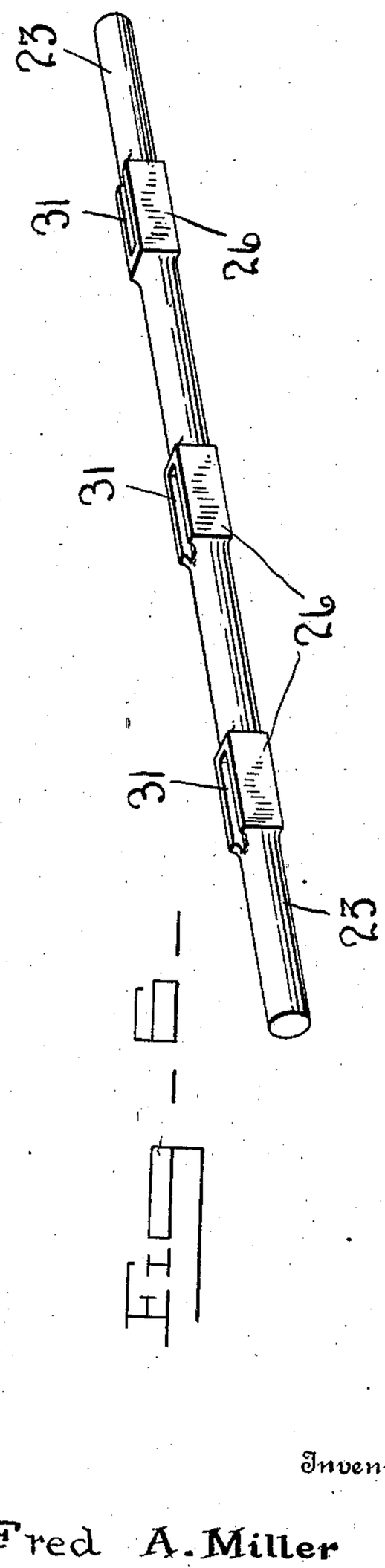
3 SHEETS—SHEET 3.





Witnesses

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UNITED STATES PATENT OFFICE.

FRED A. MILLER, OF CADYVILLE, NEW YORK.

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963,615. Specification of Letters Patent. **Patented July 5, 1910.**

Application filed June 18, 1909. Serial No. 502,949.

To all whom it may concern:

Be it known that I, FRED A. MILLER, a citizen of the United States, residing at Cadyville, in the county of Clinton, State of New York, have invented certain new and useful Improvements in Sleds; and I do hereby 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.

The invention relates to sleighs and more particularly to the class of automobile sleighs.

The primary object of the invention is the provision of a sleigh of this character in which the driving medium is controlled by suitable motive power and this medium is secured to a rotatable shaft the journals of which are held in vertically slidable journal boxes that are cushioned by expansible coiled springs suitably held within housings and in this manner the driving medium is permitted to automatically adjust itself to irregular surfaces during the travel of the sleigh.

Another object of the invention is the provision of a sleigh of this character in which the actuating shaft supporting the driving medium is held in cushioned journal boxes adapted to be inclosed by housings which will protect the said journal boxes from foreign matter that would interfere with the free operation of the same.

A further object of the invention is the provision of a sleigh in which the driving wheels for propelling the same are mounted upon a shaft the latter being provided with squared portions engaged by the hubs of the wheels to prevent the latter from turning upon the shaft or becoming loosened thereon.

A still further object of the invention is the provision of a sleigh of this character in which the construction thereof is generally improved, and one that is simple, thoroughly efficient in operation, and inexpensive in the manufacture.

In the drawings accompanying and forming part of this specification is illustrated the preferred embodiment of the invention, which to enable those skilled in the art to carry the invention into practice, will be set forth at length in the following description, while the novelty in the invention will be brought out in the claim succeeding the description.

In the drawings:—Figure 1 is a side elevation of a sleigh constructed in accordance with the invention. Fig. 2 is a side elevation of one of the rear runners with its housing shown in longitudinal section. Fig. 3 is a sectional view on the line 3—3 of Fig. 2 looking in the direction of the arrow. Fig. 4 is a detail perspective view of one of the journal box sections removed from the housing. Fig. 5 is a top plan view of the rear sleigh runners the same being partly broken away. Fig. 6 is a detail perspective view of the rear driving axle.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings the numeral 8 designates generally an automobile body which may be of any well known style or type and having mounted therein the usual driving motor not shown. At the front of the vehicle body 8 and connected by supporting springs 9 is a front turning axle 10 the latter controlled by suitable steering mechanism 11 and upon this turning axle are suitably connected front sleigh runners 12 which latter may be of any ordinary construction.

Arranged at the rear of the vehicle body and connected thereto by means of springs 13 are rear sleigh runners 14 which latter are held in spaced parallel relation to each other by a cross beam 15 and brace bars 16. Each of said runners 14 is formed with a vertical housing 17 in which is slidably mounted a journal box comprising upper and lower separable sections 18 and 19 the same being connected together by bolt members 20 and each of said blocks is formed with a semi-circular recess or pocket 21 so that when the blocks are connected together the said pockets 21 will register with each other to form an annular race-way in which are disposed roller bearings 22 the same surrounding the journal extremities 23 journaled in the journal boxes of a driving shaft 24 which latter is guided in its vertical movement in the housings 17 by vertical guide slots 25 formed in said housings. This driving shaft 24 is formed at intervals with squared portions 26 the outer ones of which are engaged by the hubs 27 of propeller wheels 28 the same having mounted at their

rims a plurality of spaced teeth or spikes 29 to engage snow or sleet during the travel of the sleigh. These hubs 27 of the propeller wheels are locked to the squared portions 26 of the driving shaft 24 by means of wedge keys 30 working in guide slots 31 formed in the squared portions of the driving shaft.

Engaging the intermediate or central squared portion 26 of the drive shaft is the hub 32 of a sprocket wheel 33 and this hub of the latter is locked to said squared portion by a wedge key 34 in the same manner as the propeller wheels. Trained over the sprocket wheel is a sprocket chain 35 the latter also being trained over a sprocket 36 which latter is rotated by suitable connections with the motor located within the automobile body.

Disposed within the housing above the journal boxes are coiled expansion springs 37 which latter are located diagonally with respect to each other and have their lower ends bearing against said journal boxes to continuously act upon the same for maintaining the propeller wheels in working relation with respect to the ground or the snow or sleet covering thereover.

It is clearly obvious that by the housing 17 the springs and journal boxes therein are protected from dirt, snow or other foreign matter which would necessarily interfere with the working of these parts.

Furthermore by the particular manner of connecting the propeller wheels 28 with the driving axle there will be no possibility of the said propeller wheels becoming loose or turning upon the driving shaft when the sleigh is advancing over the snow or ice.

From the foregoing it is thought the construction and operation of the invention will be clearly apparent without the necessity of a more extended explanation and therefore the same has been omitted.

What is claimed is:—

A sleigh of the class described comprising a body, springs depending from the latter, front and rear runners fixed to the springs, each runner formed of a skeleton frame structure, vertical housings fixed to the rear runners and containing slots in their inner walls, a shaft having its ends passed through the slots and freely slidable therein, split boxings receiving the ends of the shaft and slidable in the housings, expansion springs having their bearings upon the tops of the housings and the boxings and being adapted to maintain the latter in the lower portions of the housings, grooved squared portions formed on the shaft, propeller wheels fitted on the squared portions of the shaft, and wedge-shaped members engaging in the grooves in the squared portions of the shaft to detachably lock and hold fast the wheels on the latter.

In testimony whereof, I affix my signature, in presence of two witnesses.

FRED A. MILLER.

Witnesses:
J. C. Atkins,
L. E. Osborne.