

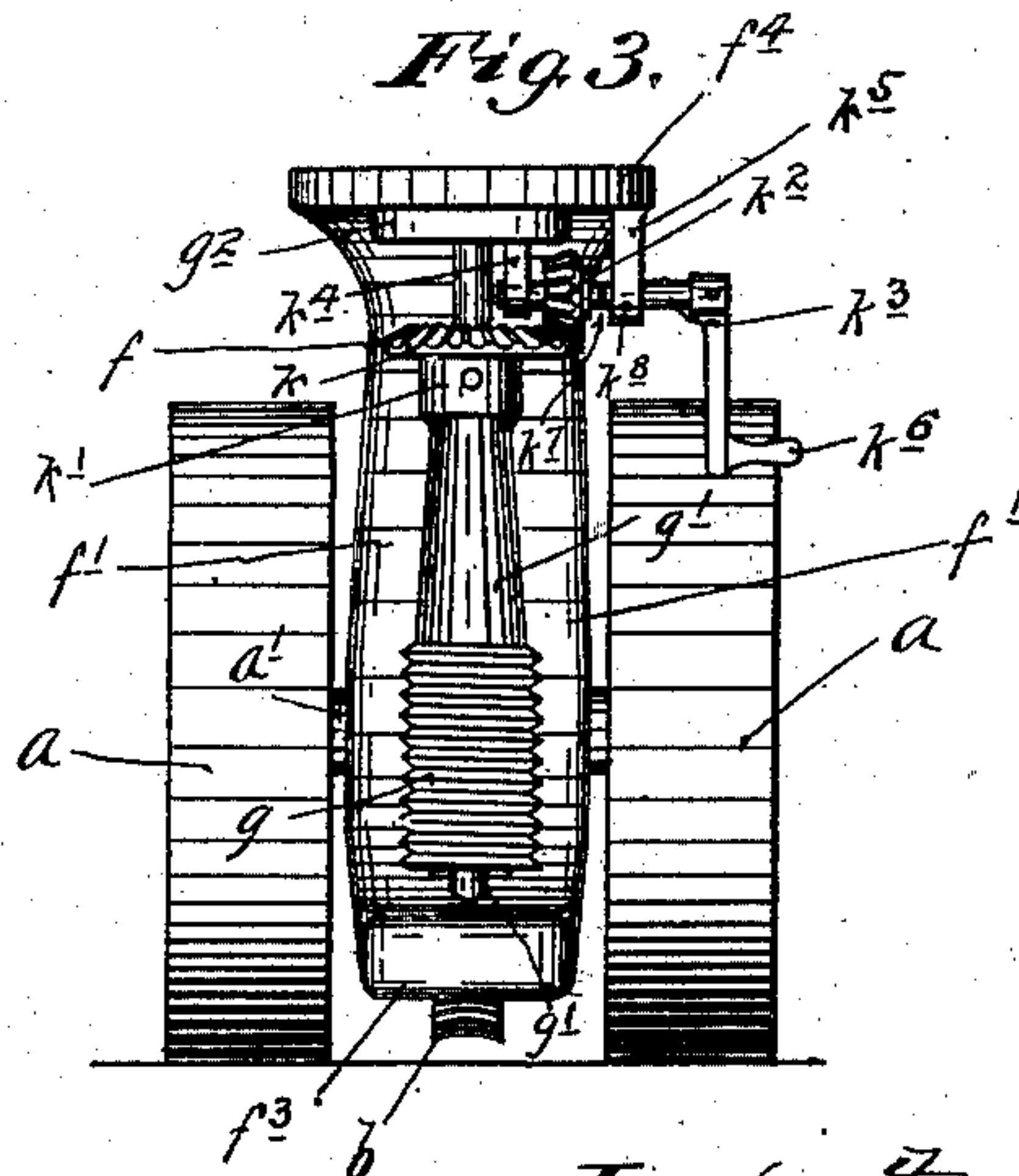
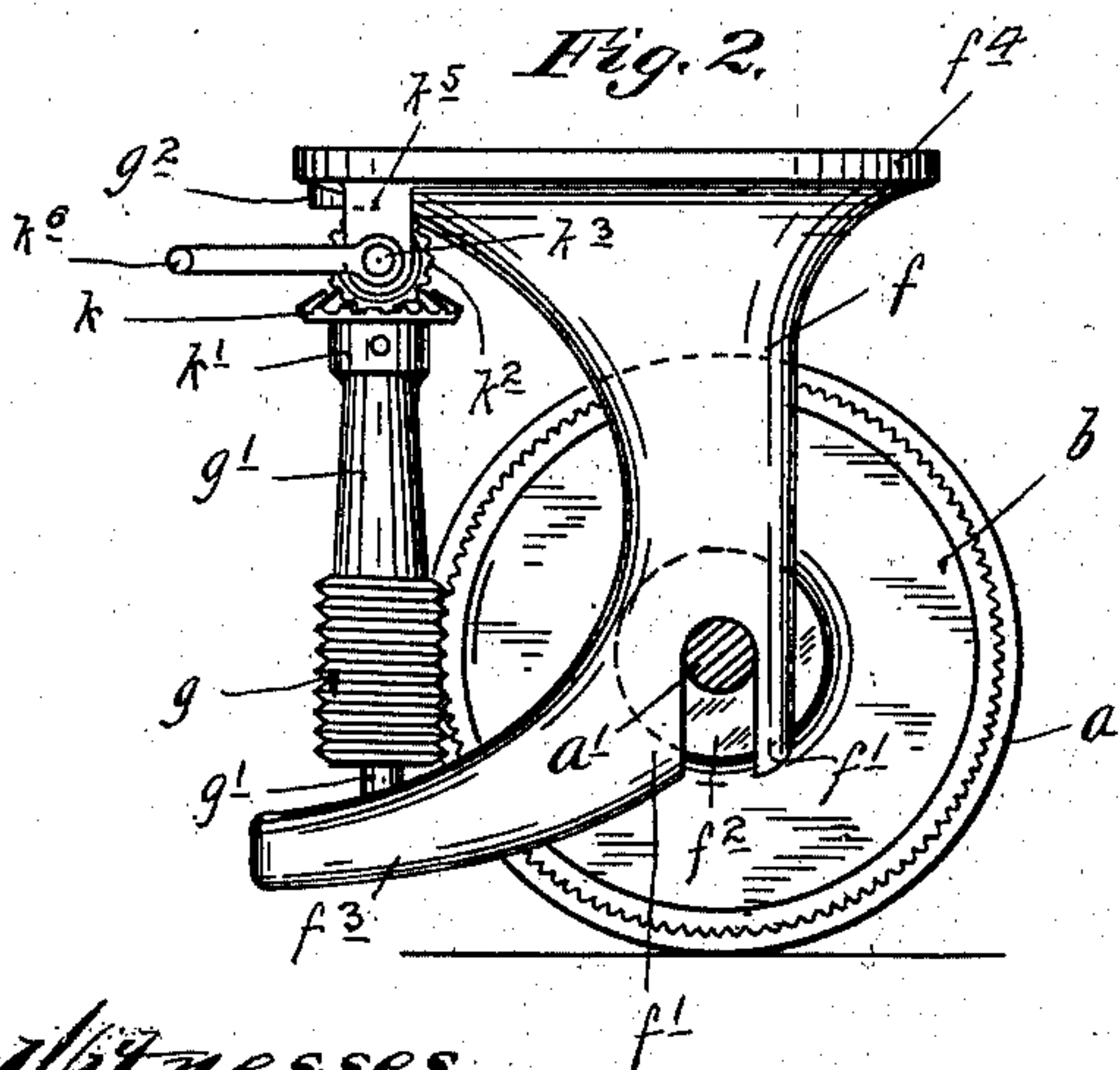
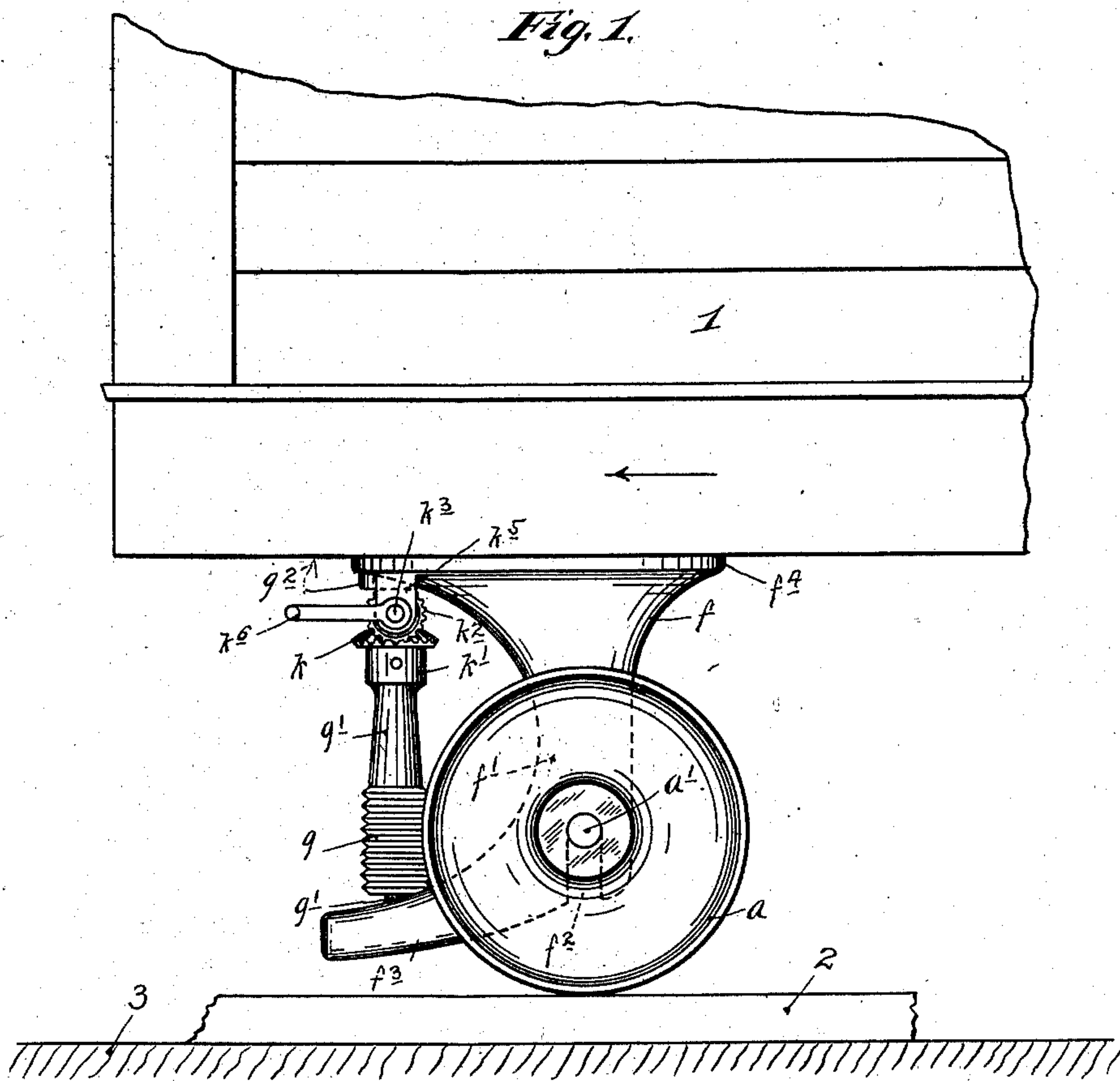
No. 712,520.

Patented Nov. 4, 1902.

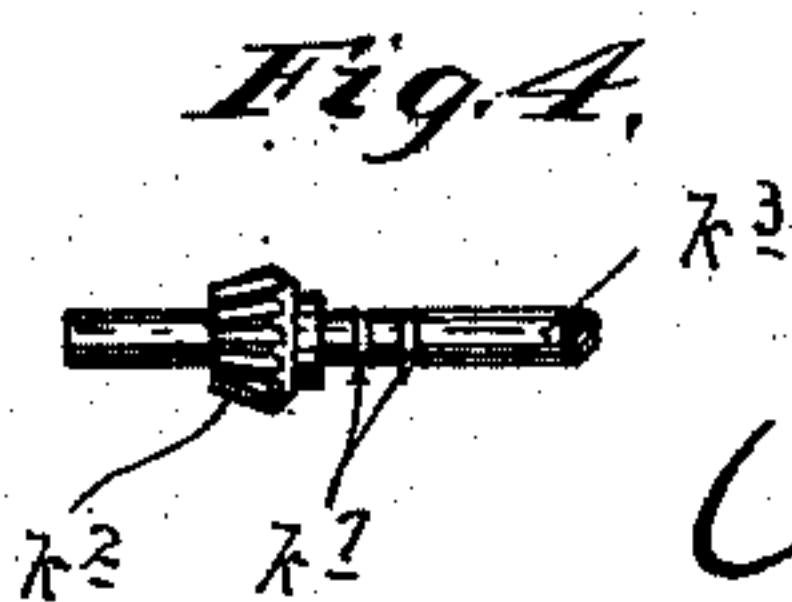
E. W. GRAGERT.
HOUSE MOVING TRUCK.
(Application filed Mar. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
Robert Otto.
Harry Kilgore.



Inventor.
Elmer W. Gragert.
By his Attorneys,
Williamson & Merchant

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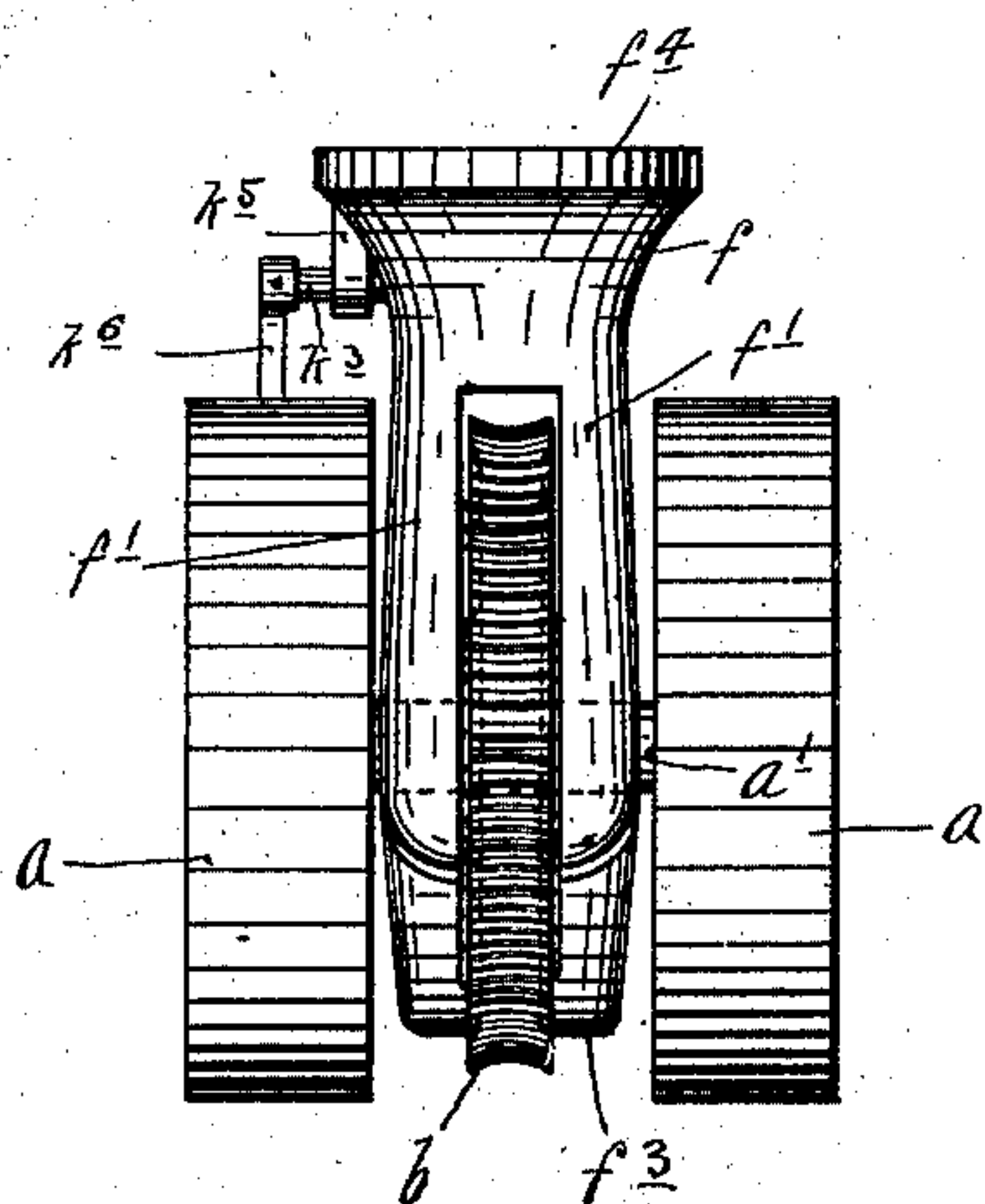
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2 Sheets—Sheet 2.

Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

ELMER W. GRAGERT, OF WHITEROCK, SOUTH DAKOTA.

HOUSE-MOVING TRUCK.

SPECIFICATION forming part of Letters Patent No. 712,520, dated November 4, 1902.

Application filed March 5, 1900. Serial No. 7,279. (No model.)

To all whom it may concern:

Be it known that I, ELMER W. GRAGERT, a citizen of the United States, residing at White-rock, in the county of Roberts and State of South Dakota, have invented certain new and useful Improvements in Building-Moving Trucks; 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.

My invention has for its especial object to provide an improved building-moving truck; and to this end it consists of the novel devices and combinations of devices herein-after described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view in side elevation showing one of my improved moving-trucks and a portion of a house or building supported thereby. Fig. 2 shows the moving-truck in side elevation, but with one wheel removed. Fig. 3 is a front elevation of the truck. Fig. 4 is a detail of a portion of the driving connection; and Fig. 5 is a view in rear elevation showing the complete truck.

In the drawings, the numeral 1 indicates a portion of a building or house which is supported by the truck, and the numeral 2 indicates a heavy plank or rail which is laid upon the ground 3, and over which the wheels of the truck run.

The moving-truck has a pair of wide-faced wheels or rollers a , that are rigidly secured on a short but very strong axle a' . Rigidly secured on the shaft or axle a' about halfway between the wheels a is a large worm-gear b , of slightly-less diameter than the said wheels.

The frame of the truck as preferably constructed is in the form a heavy casting f , which is provided with depending prongs or legs f' , that straddle the worm-gear b and are provided with open seats or slots f^2 , which straddle and receive the axle a' , as best shown in Fig. 2. The prongs f' are extended forward and are again united at their outer ends, as shown at f^3 . At its upper end the frame f is expanded or formed with an ex-

tended bearing-surface f^4 , which is adapted for engagement with the under timbers of the framework of the house, as shown in Fig. 1, or with other timbers placed beneath the house in case the latter timbers are used.

For coöperation with the worm-gear b a worm or screw g , secured on a short vertically-disposed counter-shaft g' , is provided. The upper end of this counter-shaft g' is mounted in a suitable bearing-plate g^2 , secured on the under forward portion of the frame-section f^4 . The lower end of said counter-shaft is suitably journaled in the portion f^3 of the frame f . At some distance above the worm g the counter-shaft g' is provided with a beveled wheel k , and just below this wheel k it is also provided with a diametrically-perforated head k' , through the perforations of which the ends of a bar may be passed to operate the screw g .

For coöperation with the wheel k a beveled pinion k^2 is secured on the short shaft k^3 , and this shaft k^3 is mounted to rotate in suitable bearings k^4 and k^5 , respectively, on the bearing g^2 and the frame portion f^4 . At its outer end the shaft k^3 is provided with a crank or handpiece k^6 , by means of which it may be turned. To permit the pinion k^2 to be moved into and out of mesh with the wheel k at will, the shaft k^3 is provided with a pair of annular grooves k^7 , with either one of which a pin k^8 , which is driven into a suitable seat in the bearing k^5 , is adapted to engage to hold the said shaft in either of its two longitudinally-adjusted positions.

It is important to note that the open seats or slots f^2 in the frame-legs f' extend approximately parallel to the axis of the shaft g' . This permits the frame f , together with the shaft g' , worm g , and other parts mounted on the frame, to be lifted bodily from the truck-wheels, axle, and worm-gear. Hence the said truck-wheels a may be used together when removed from the frame as a substitute for the ordinary moving-rollers.

When the truck is applied as shown in Fig. 1 the building would usually be moved in the direction indicated by the arrow marked thereon. Of course any desired number of these trucks may be applied to support the building. Where a building is not too large or too heavy, three of the said trucks will an-

swer the purpose. With very heavy buildings a very much larger number must be employed.

Where the building is not too heavy and a sufficiently large number of the trucks are employed, the trucks will be preferably moved by operating the crank k^6 and beveled gears k^2 k . However, when greater power is required than can be produced by the crank k^6 a bar will be applied to the perforations of the head k' . When a bar is thus used, the beveled pinion k^2 is preferably moved out of mesh with the wheel k in the manner previously described.

To move the building in the direction indicated in Fig. 1, the worm g and shaft g' are rotated in the direction indicated by the arrow marked on said shaft. This movement of the worm and shaft will force downward on the forward portion of the worm-gear b , and the said shaft will react or force upward at its upper end against the bearing g^2 , and hence against the expanded portion f^4 of the truck-frame f . Thus it will be noted that all of that force which is exerted on the worm-gear b tending to advance the truck is caused to react in a lifting strain on the building which is being moved.

It will of course be understood that the truck above described is capable of considerable modification and that the truck-wheels may be driven in various different ways. In some cases it may be found desirable, particularly in moving very heavy buildings, to lay iron rails and move the trucks over such rails, in which case it would of course be understood that the truck-wheels will be properly flanged to adapt them for coöperation with the said rails.

The worm and worm-gear used to propel the moving-truck has many advantages over any other driving mechanism for several reasons, among which may be mentioned the fact that the truck is always locked against movement in either direction. Hence with these moving-trucks a building may be moved on a slight incline and will be prevented from running away, as it will always be locked where it is left standing.

The device above described, while especially designed as a house-moving truck, involves features of construction capable of incorporation in trucks in general for use for divers purposes—such, for instance, as automobiles and street-cars. For instance, the feature of applying and arranging the worm-and-screw driving device for the traction-

wheels so that the reaction from the propelling force is made to lift on the truck-frame and its load is a feature which would greatly improve automobiles or trucks in general.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A moving-truck, comprising in combination a pair of wheels rigid on a common axle, the worm-gear secured on said axle between said wheels, the bifurcated frame mounted on said axle and straddling said gear, and the worm or screw coöperating with said gear and mounted on said frame, the said worm having a perforated head with which a bar may be engaged to rotate the same, substantially as described.

2. A moving-truck, comprising in combination the wheels a and worm-gear b secured on the axle a' , the frame f with legs f' and open seats f^2 straddling the axle a' , and the worm g , the shaft g' of which is mounted in the frame f , substantially as described.

3. In a moving-truck, the combination with the truck-wheels and worm-gear rigid on a common axle, of the frame having mounted thereon a worm-gear, which frame has open seats engaging the axle and adapting said frame and worm to be lifted from working positions, substantially as described.

4. A moving-truck, comprising in combination a pair of truck-wheels and a worm-gear rigid on a common axle, a supporting-frame mounted on said axle and provided with an expanded upper portion, a worm or screw mounted on said frame for coöperation with said worm-gear, a bevel-gear secured to the said worm, and a transverse crank-operated shaft having a bevel-pinion engaging said bevel-gear, substantially as described.

5. The combination with the truck-wheels a and worm b secured on the axle a' , of the frame f having expanded upper portion f^4 , legs f' , with seats f^2 and projection f^3 , the worm g having on its shaft the gear k and perforated head k' , its shaft being mounted in said truck-frame, and the sliding shaft k^3 with crank k^6 and bevel-pinion k^2 , the latter of which is movable into and out of mesh with said gear k , substantially as described.

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

ELMER W. GRAGERT.

Witnesses:

M. M. McGRORY,

F. D. MERCHANT.