

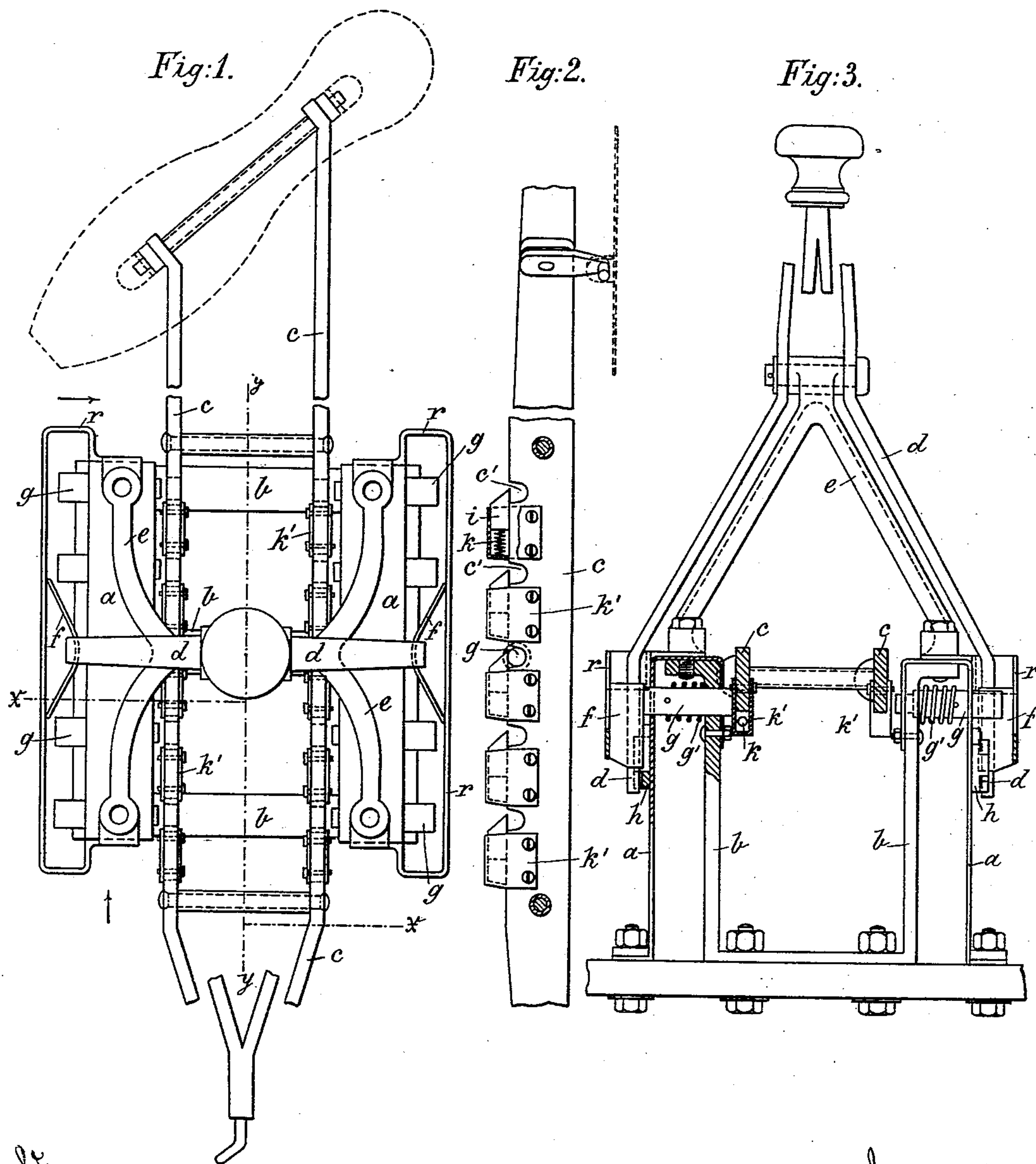
(No Model.)

3 Sheets—Sheet 1.

H. GANSWINDT.
TREAD GEAR.

No. 562,956.

Patented June 30, 1896.



Witnesses
H. van Oldenmeel
E. A. Scott

Inventor
Hermann Ganswindt
by *Richard R.*
Attorneys

(No Model.)

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Fig: 4.

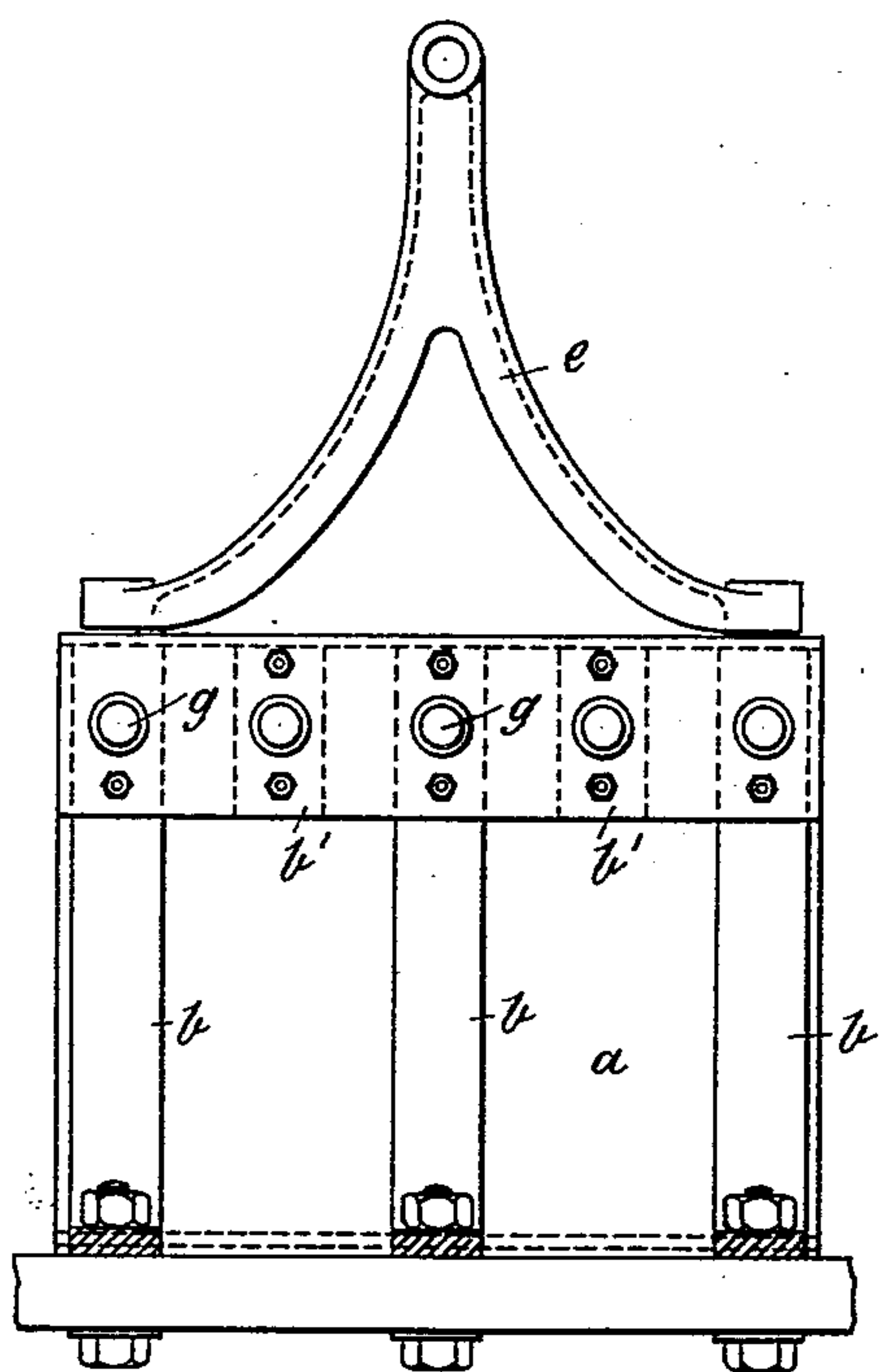
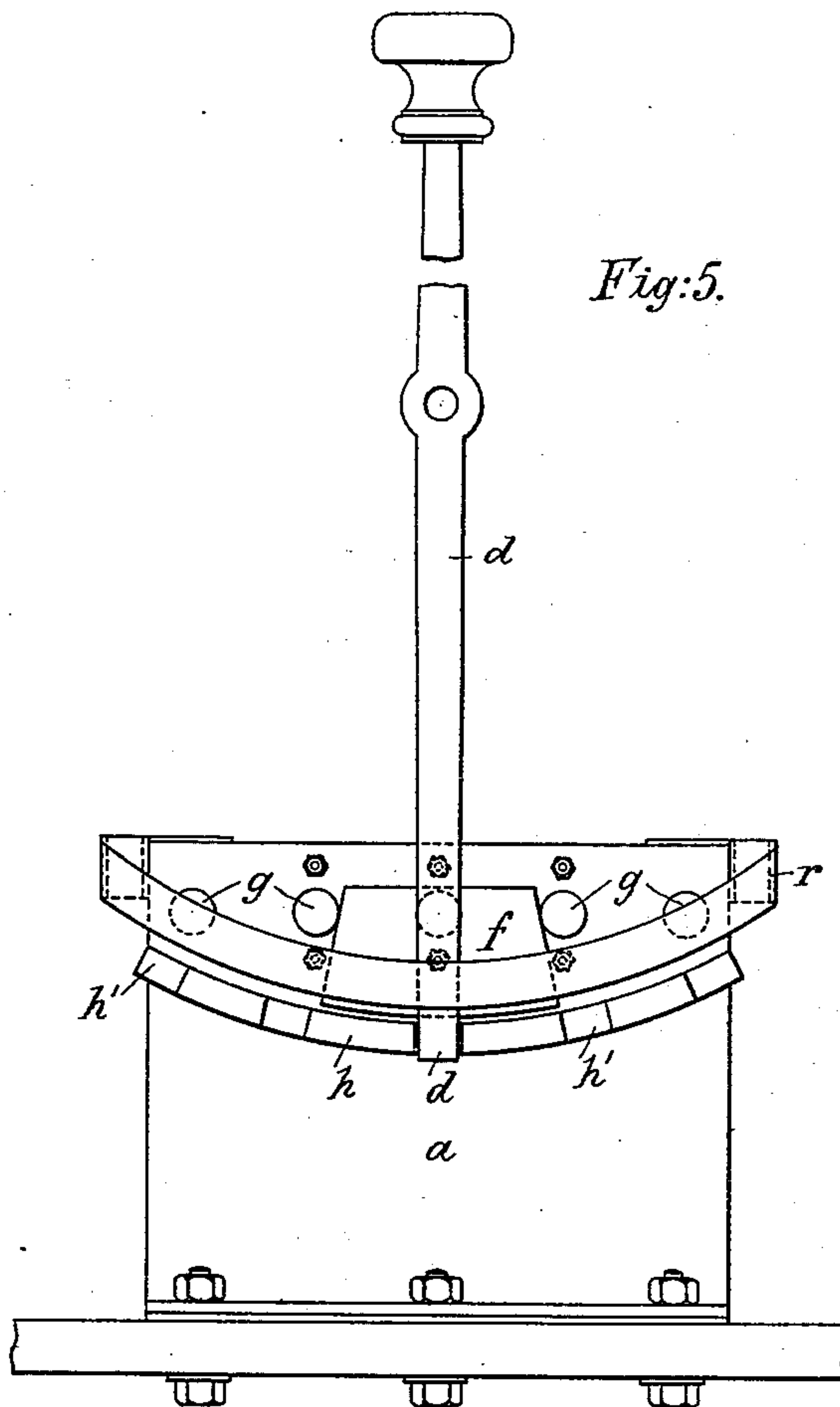


Fig: 5.



Witnesses
H. van Oldenmeel
E. A. Scott

Inventor
Hermann Ganswindt
by *Richardson*
Attorneys

(No Model.)

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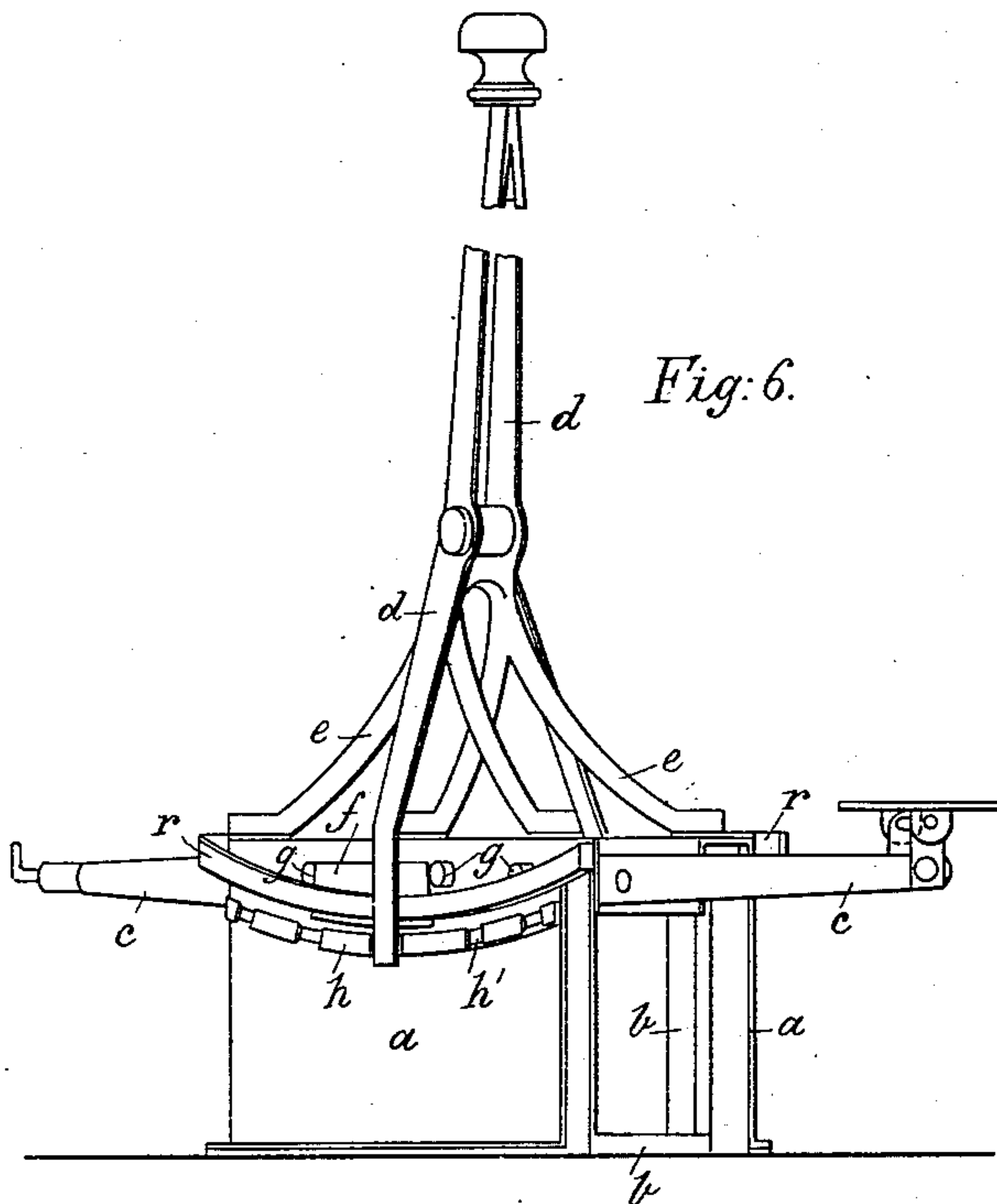


Fig. 6.

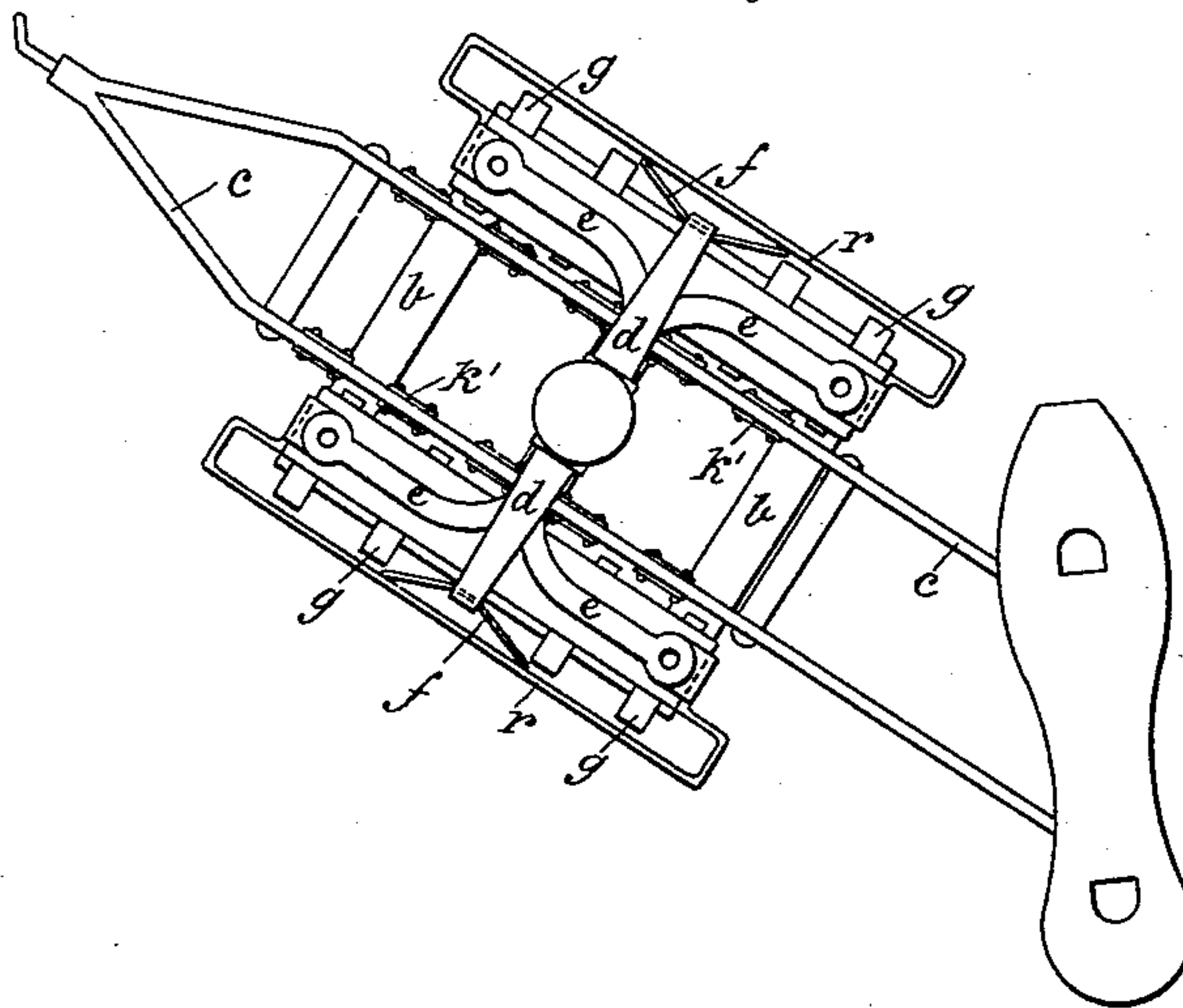
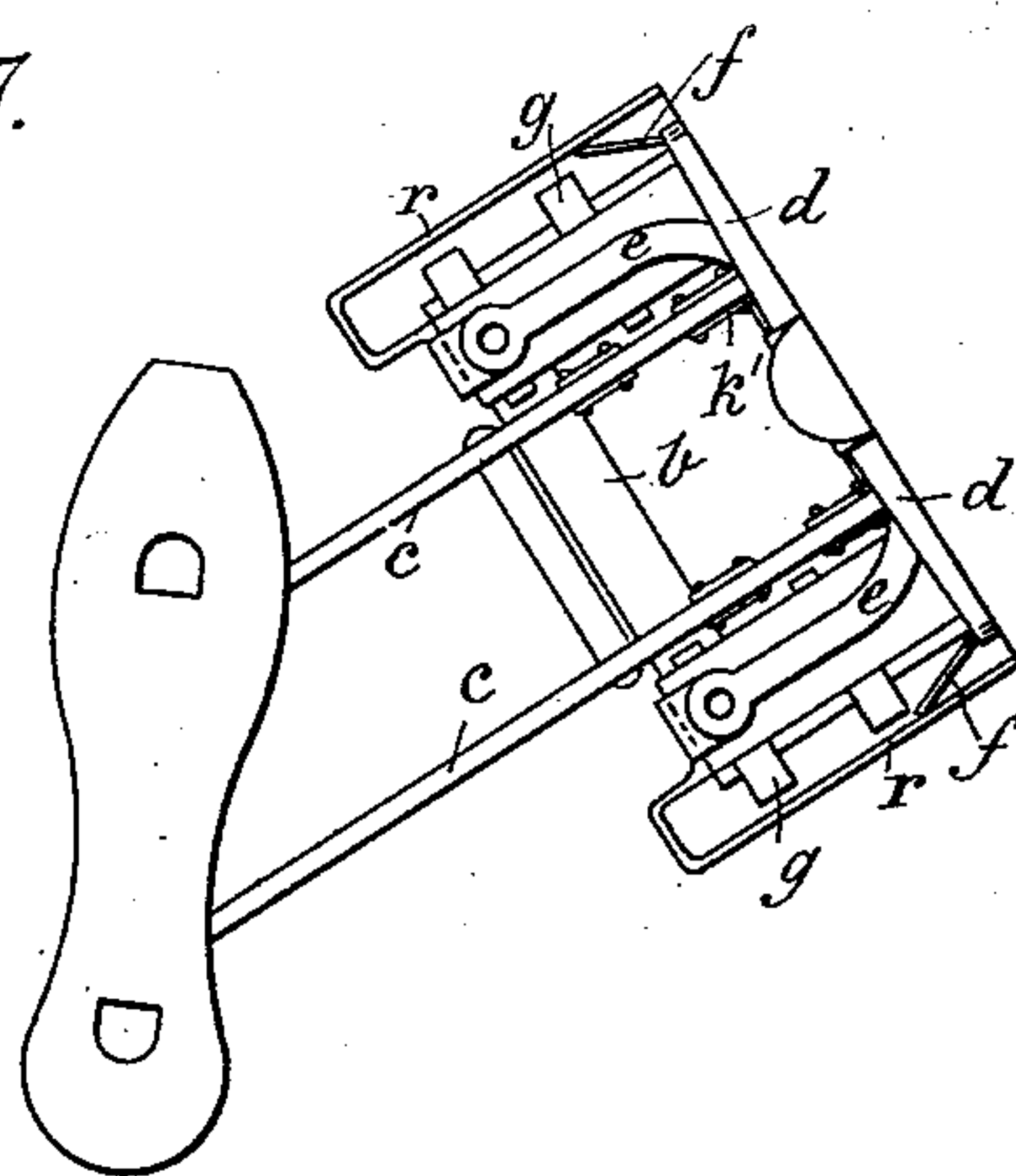


Fig. 7.



Witnesses
H. van Oldenmeel
E. A. Scott

Inventor
Hermann Ganswindt
by Richard R.

Attorneys

UNITED STATES PATENT OFFICE.

HERMANN GANSWINDT, OF SCHÖNEBERG, GERMANY.

TREAD-GEAR.

SPECIFICATION forming part of Letters Patent No. 562,956, dated June 30, 1896.

Application filed January 4, 1896. Serial No. 574,379. (No model.)

To all whom it may concern:

Be it known that I, HERMANN GANSWINDT, engineer, a subject of the Emperor of Germany, and a resident of Schöneberg, near Berlin, in the Empire of Germany, have invented certain new and useful Improvements in Tread-Gears, of which the following is a full, clear, and exact description.

This invention relates to a treadle mechanism for vehicles of all kinds and other purposes, by means of which mechanism the fulcrum of the treadle-lever may be quickly changed, according to the power required, or, when employed on vehicles, the nature or gradient of the ground to be traversed. This may be effected by a single adjusting hand-lever and without stopping the vehicle.

Referring to the accompanying drawings, Figure 1 is a plan view of the treadle mechanism. Fig. 2 is a side view of the treadle-lever. Fig. 3 is a section on line xx of Fig. 1, seen in the direction of the arrow. Fig. 4 is a section on line yy of Fig. 1. Fig. 5 is a side view of the mechanism without the treadle-lever. Fig. 6 is a perspective view of the left treadle mechanism, and Fig. 7 a plan of the latter and part of the right mechanism.

The treadle mechanism illustrated in Figs. 1 to 5 consists of a frame a of sheet-metal plates, bent as shown in Fig. 3 and braced by U-like flat or other suitable supports b , and of the frame-like treadle-lever c . The latter is provided at the under side with a series of notches or recesses c' , Fig. 2, the number of which corresponds to the number of bolts g in frame a , which bolts are controlled by springs g' . To securely guide the bolts g , each pair of which acts as fulcrum for the lever c , they are made to slide in the frame a and supports b , respectively.

A standard e is bolted to the frame a and carries the adjusting-arm d , whose fork-like lower ends are in alinement with each other and at the outer sides of the frame a , Fig. 3. Bent cross-pieces f , acting like wedges, are passed through or attached to the ends of the arm d at about the height of the bolts g , while such ends slide on the curved rail h and fall into notches h' in same.

In the lower edges of the frame c and between the bolts g bolts i are provided, such bolts being guided in holders k' and controlled

by springs k , which latter force out the bolts i , so as to wholly or partly cover the recesses c' . Guide-rails r are provided for preventing the cross-pieces f being displaced.

The fulcrum of the frame-like lever c is changed by altering the position of the arm d —viz., by forcing the forked ends of d out of the notches h' in rail h and abutting same against another set of bolts g brought in alinement with the notches c' , corresponding to the power required or the weight of the vehicle to be moved.

The distance apart of the bolts g is such that on slightly moving the arm d in the proper direction the sheet-metal wedge-like pieces f come in contact with the next pair of bolts g , so that the latter are forced under the notches c' in the lever c . The bolts g , which have acted as fulcrum for the lever c and which were in the advanced or outer position, are now released from the pieces f and returned to their normal position by the springs g' . Immediately the bolts g are free of the lever c , the latter, owing to its weight, necessarily falls, and those bolts g , which are then opposite the notches c' and in the outer position, thus strike against the bolts i , force same against their springs k , and thus enter the notches c' . The springs k then return the bolts i , so as to almost cover or close the notches c' , and hence the bolts g cannot get out of position.

This treadle mechanism may be used for driving all kinds of vehicles, especially where varying gradients and the different nature of the ground are to be contended with. This may be effected with a single lever and without it being necessary to stop the vehicle, no matter how steep the grades are.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim, and wish to secure by Letters Patent, is—

1. In combination in a treadle-gear, the treadle-lever, a plurality of bolts arranged to be engaged with and disengaged from the treadle-lever to change its fulcrum-point, and means for controlling the said bolts, substantially as described.

2. In combination in a treadle-gear, a treadle-lever, the plurality of spring-bolts arranged to engage the same when operated in

one direction and the lever for throwing one pair of bolts into engagement with the treadle-lever and for allowing the other bolts to be held out of action by their springs, substantially as described.

3. In combination in a treadle-gear, the treadle-lever, the spring-controlled bolts *g* to engage the same, the lever *d* having the wedge-pieces *f* for adjusting the bolts and the rail *h* having the notches *h'* for holding the lever *d* in position to maintain a pair of bolts in engagement with the treadle-lever, substantially as described.

4. In combination, the treadle-lever, a plurality of pairs of bolts to engage the same and a lever for engaging the bolts and throwing them into engagement with the treadle-lever

with means for stopping the lever-arm in positions corresponding to the positions of the bolts, substantially as described.

5. In combination, the treadle-lever having a series of openings or notches, the fulcrum-bolts for engaging the same, the spring-bolts *i* for holding the fulcrum-bolts in engagement with the notches and means for controlling the fulcrum-bolt, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HERMANN GANSWINDT.

Witnesses:

F. KOLLM,
GUSTAV TAUER.