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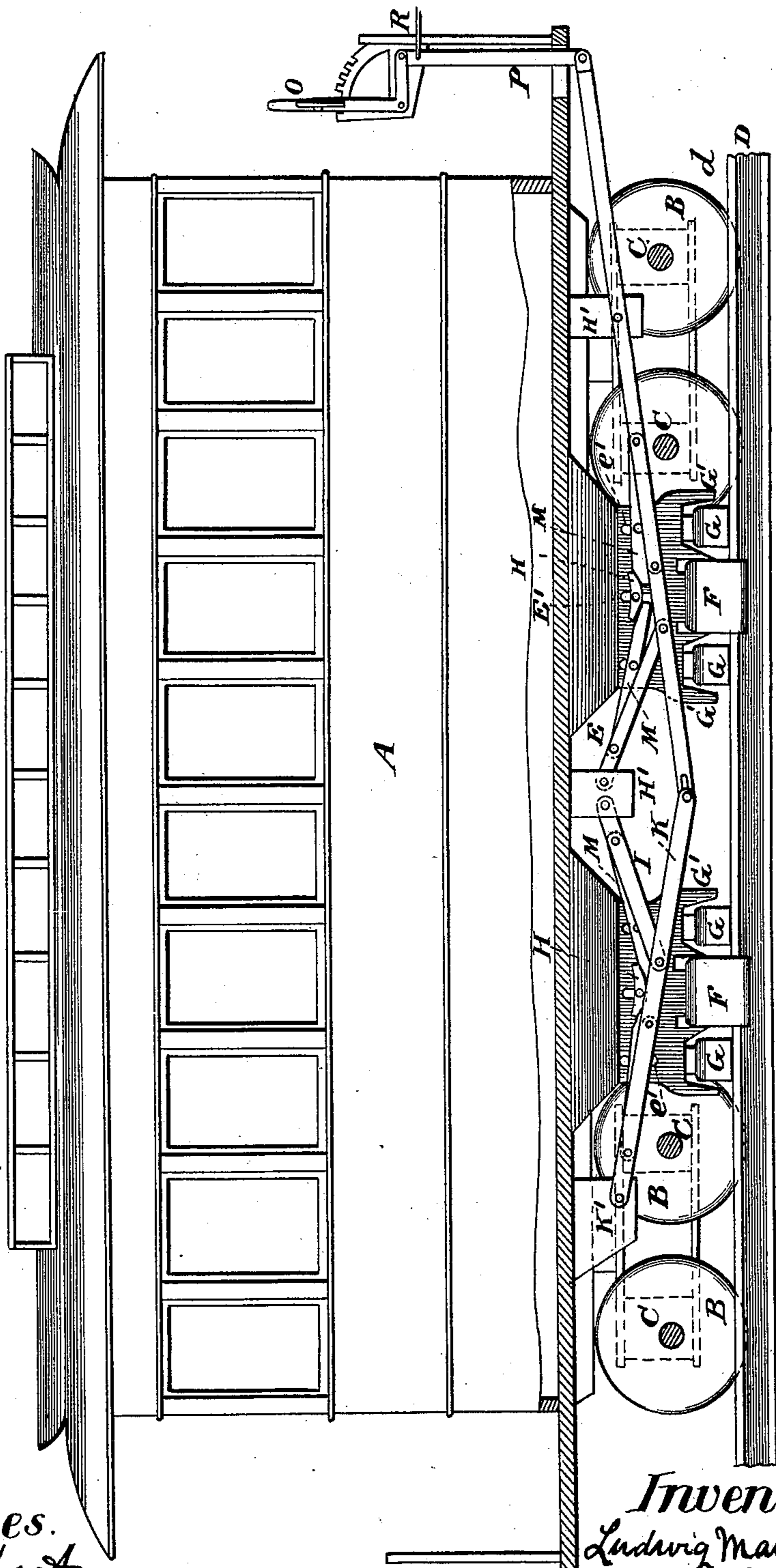
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L. MAURER & H. C. SCHEER.
COMBINED CAR BRAKE AND CLUTCH.

No. 405,266.

Patented June 18, 1889.

Fig. 1.



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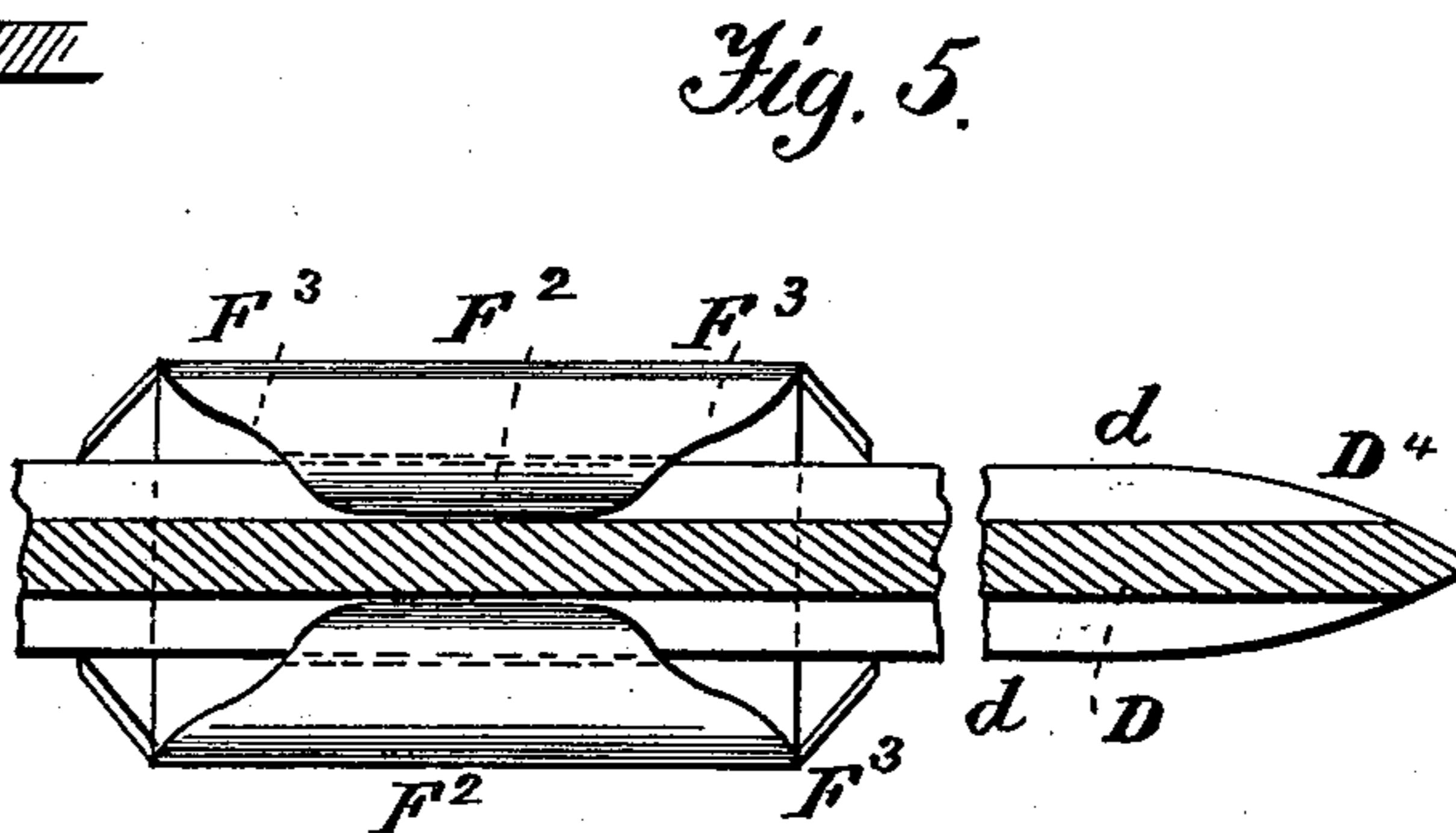
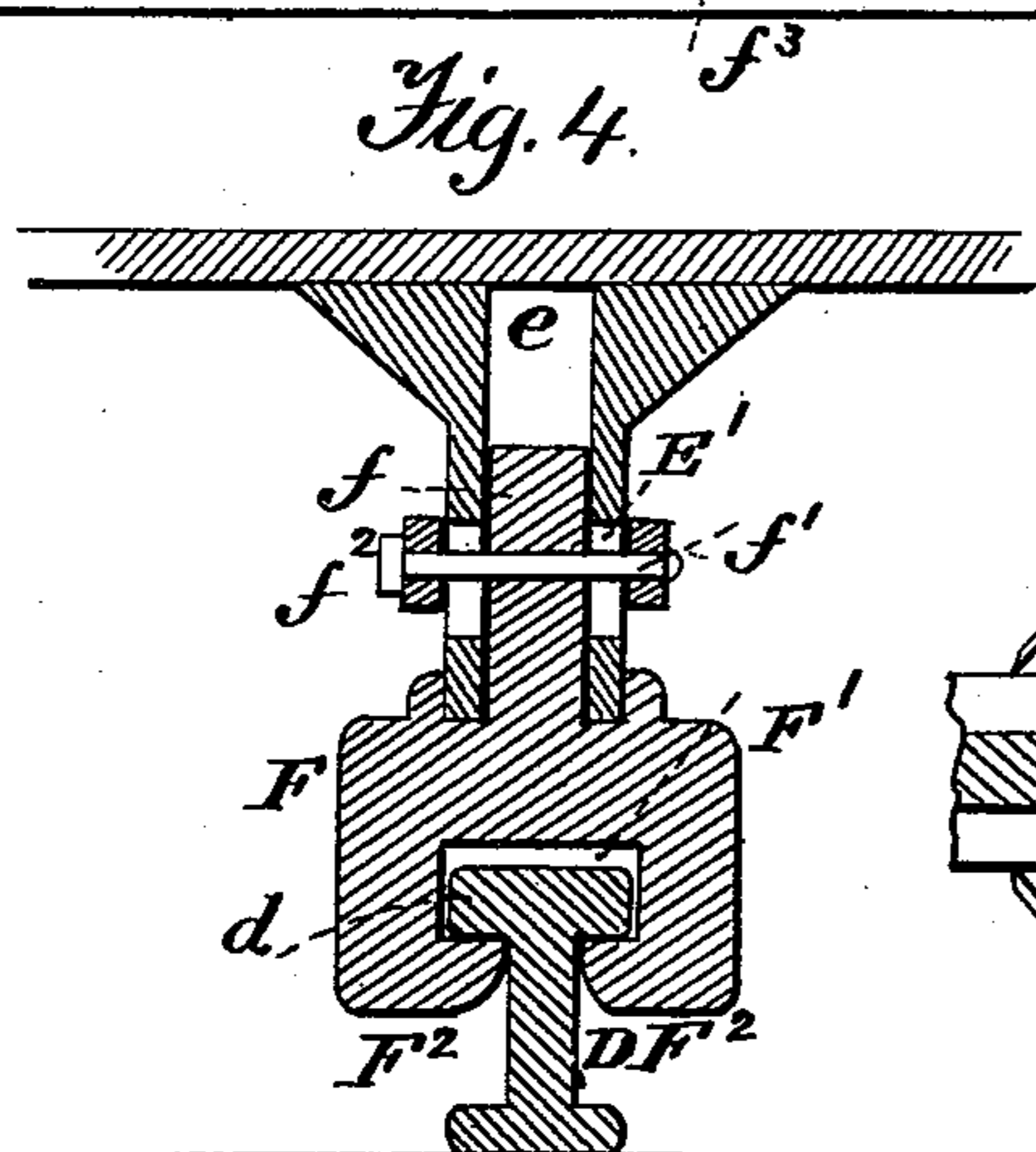
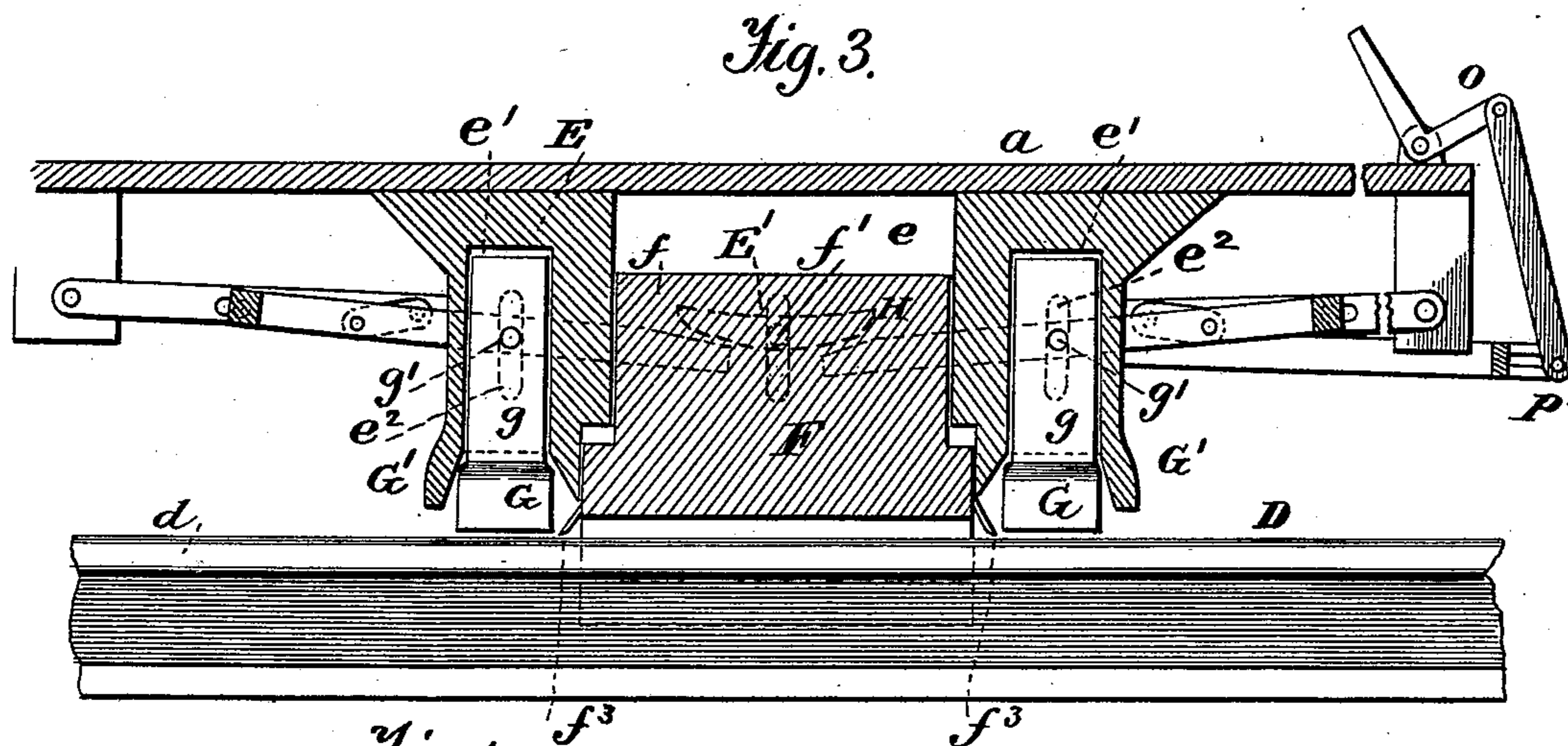
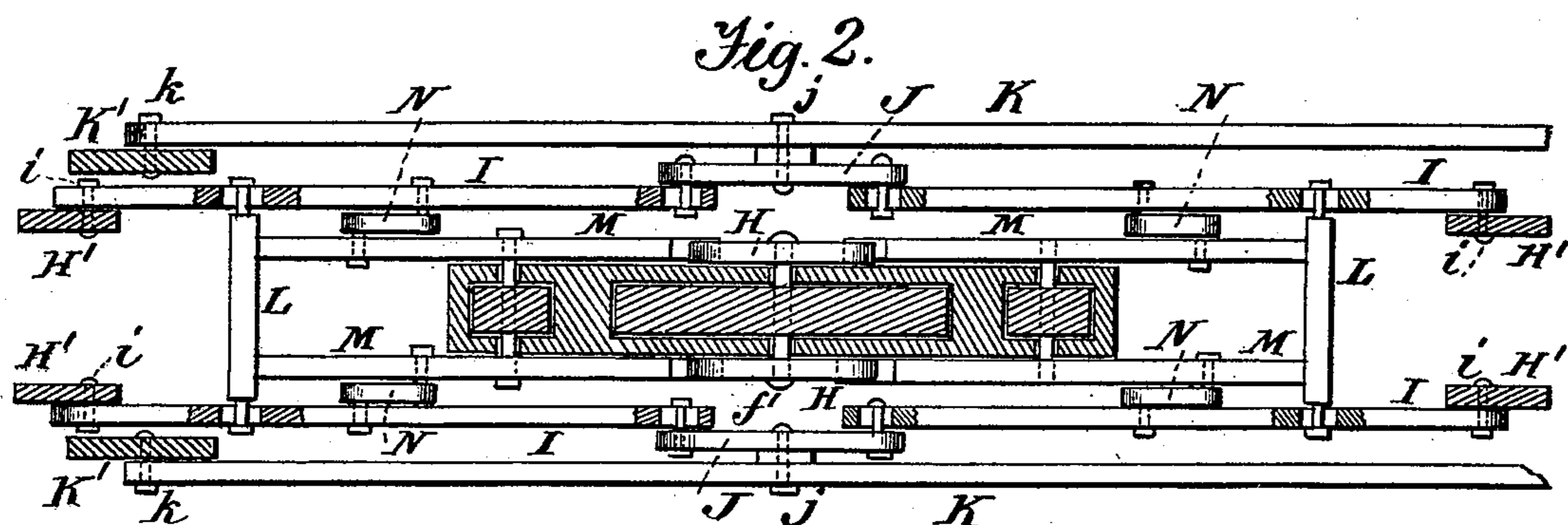
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

LUDWIG MAURER AND HEINRICH CHRISTIAN SCHEER, OF NEW YORK, N. Y.

COMBINED CAR BRAKE AND CLUTCH.

SPECIFICATION forming part of Letters Patent No. 405,266, dated June 18, 1889.

Application filed March 5, 1889. Serial No. 302,015. (No model.)

To all whom it may concern:

Be it known that we, LUDWIG MAURER and HEINRICH CHRISTIAN SCHEER, citizens of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in a Combined Car Brake and Clutch; and we 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in car brake and clutching mechanism, and while it is designed more particularly for use upon elevated roads it is of course applicable to surface roads as well. It has for its object to prevent derailment of the cars, and also to provide for the almost instantaneous stopping of the cars when occasion may require.

Heretofore, even with the best forms of brakes wherein pressure upon the wheels has been relied upon to stop the car, it has been found that during the winter and upon occasions when the rails are slippery such brakes have failed to accomplish the desired results, for the reason that the wheels would fail to hold upon the rails, but would slide or skid thereon, resulting not only in failing to stop the car but in wearing a flat place upon the wheels, necessitating repairs thereto or the substitution of new wheels therefor.

To avoid the objections above noted, to prevent the derailment of the car, and to such other ends as the invention may pertain, the same consists in the peculiar combinations and in the novel construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a railway-car with the lower portion shown in section

and equipped with our improvement. Fig. 2 is a longitudinal horizontal section through the gripping mechanism. Fig. 3 is a central vertical section of a portion of the same on an enlarged scale. Fig. 4 is a vertical transverse section through Fig. 3. Fig. 5 is a bottom plan view of the main gripper with the central rail shown in section.

Like letters indicate like parts throughout the several views.

Reference now being had to the details of the drawings by letter, A designates a car, B the supporting-wheels, and C the axles.

Arranged centrally between the rails (not shown) on which the wheels B travel is the rail D, which may be of any known construction, provided it have its tread extended upon both sides of its vertical web, as shown at *d* in Fig. 4.

While in Fig. 1 we have shown two sets of the grippers and both sets arranged to be simultaneously operated by means of a single hand-lever on the car, in practice we may sometimes employ but one, as shown in Fig. 3, or we may use more if found necessary or desirable; and it is of course evident that a whole train of cars may have the gripping mechanism so connected as to be operated by a single lever on the engine or any one of the cars; but as the present invention resides in the gripping mechanism itself, and not in any particular means for operating the same, no such construction is shown.

Secured to the bottom *a* of the car is the block E, provided centrally with the vertical recess *e*, and upon each side of said recess *e* with a vertical recess *e'*. The side walls of this block E are provided with the vertical slot E', arranged centrally of the recess *e*, and with the vertical slots *e''*, arranged centrally of the recesses *e'*.

F is the principal gripper provided with a shank *f*, working in the recess *e* of the block E, and *f'* is a bolt passed through the slot E' in the block E and through the shank *f* of the gripper and provided upon its ends with the nut *f''*. The body of this gripper is recessed to form the chamber F', to receive the tread of the rail, and with the inwardly-extended jaws F², adapted to extend beneath the flanges *d* of the rail and prevent dis-

placement of the same. The ends of the gripper F are formed on an incline or curve, as shown at F³, extending from opposite ends inward toward the center of the gripper, to enable the same to readily go around curves without danger of binding of the parts. The opposite ends of the upper face of the body of the gripper are provided with metal scrapers f³, as shown in Fig. 3, arranged at a slight inclination, as shown, and designed to remove snow or ice or other foreign substance from the tread of the rail D.

G G are pressure-blocks formed with shanks g, which work in the recesses e' in the block E upon opposite ends of the gripper F.

g' are bolts passed through the vertical slots e² in the side walls of the block E and through the shanks g of the blocks G. To prevent injury to the blocks G by contact with obstructions upon the track, the ends of the block E are provided with buffers or guards G', as shown in Fig. 3. The bolt f' carries upon opposite ends upon the outside of the block E a rocking lever or horizontal arm H.

Depending from the bottom of the car are the brackets or arms H', which serve as supports for the pivots of the levers hereinafter described.

I I are levers pivoted at one end to said supports H' by means of the pivots i, and at their inner ends pivotally connected together by means of the bar J, which in turn is pivoted at its center, by means of the pin j, to the arms K, which at one end are pivotally connected, by means of the pivots k, to the supports K', depending from the bottom of the car. The arms I near their outer ends are connected by the cross-bars L, which have pintles at their ends sliding in longitudinal slots in the bars L.

M M are levers connected to the cross-bars L and with the bolts g' of the blocks G, and their free ends are arranged beneath the ends of the rocking levers H, as shown in Figs. 2 and 3. The levers I and M are connected by means of the links N, having at each end a pin, one of which is attached to the lever M and the other to the lever I, as shown best in Fig. 2.

O is the operating-lever pivotally secured to the car and connected by means of the vertical link or rod P with the free ends of the arms K through the medium of a cross-bar P'.

The operation is simple and apparent. The manipulation of the lever O causes the levers M to press with their free ends against the under side of the rocking levers H, thus forcing upward the gripper F and causing its jaws F² to grasp and bind against the under side of the flanges d of the rail D, and simultaneously therewith and by the same operation the pressure-blocks G are pressed down upon the top of the rail with the force in the opposite direction to that of the gripper, thus forming a most powerful grip. The lever is held in its adjusted position through the me-

dium of its catch with the notched quadrant, in a manner well understood. When the lever is released, the weight of the gripper will return it to its normal position and will draw the blocks G from their engagement with the rail.

When two of the above-described devices are employed on one car, they are connected so as to be operated simultaneously, as shown in Fig. 1, and when the devices on one car are to be connected with those on the next car, or all the cars on a single train are to be connected so as to operate simultaneously, suitable mechanism may be employed, such, for instance, as a connecting-rod, as indicated at R in Fig. 1.

At switches and crossings the central rail will necessarily have to be tapered, as shown at D⁴ in Fig. 5.

What we claim as new is—

1. The combination, with the car and the rail D, of the vertically-movable gripper having jaws to engage the flanges of the rail, and the pressure-blocks arranged one at each end of said gripper and adapted to move in a direction opposite to the movement of the gripper and to bear upon the top of the rail, substantially as and for the purpose specified.

2. The combination, with the rail, of the gripper and the inclined scrapers on the ends of the gripper above the top of the rail, substantially as and for the purpose specified.

3. The combination, with the rail D, having flanges d, of the gripper having jaws to engage said flanges, and inclined at its ends, as at F³, substantially as and for the purpose specified.

4. The combination, with the vertically-adjustable gripper and the vertically-movable pressure-blocks, of the system of levers for moving said blocks and gripper in opposite directions, substantially as shown and described.

5. The combination, with the car and the vertically-movable gripper and pressure-blocks, of the lever H on the gripper, the levers M, acting on the lever H, and the system of levers for operating the levers M, substantially as shown and described, and for the purpose specified.

6. The combination with the car, the vertically-movable gripper, and the pressure-blocks movable in the opposite direction to that of the gripper, of the levers H, moving with the gripper, the levers M, connected with the pressure-blocks and acting on the levers H, and the system of levers connected with and arranged to operate the levers M, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

LUDWIG MAURER.

HEINRICH CHRISTIAN SCHEER.

Witnesses:

AUGUST SCHMIDT,
GEO. W. YOUNG.