

(No Model.)

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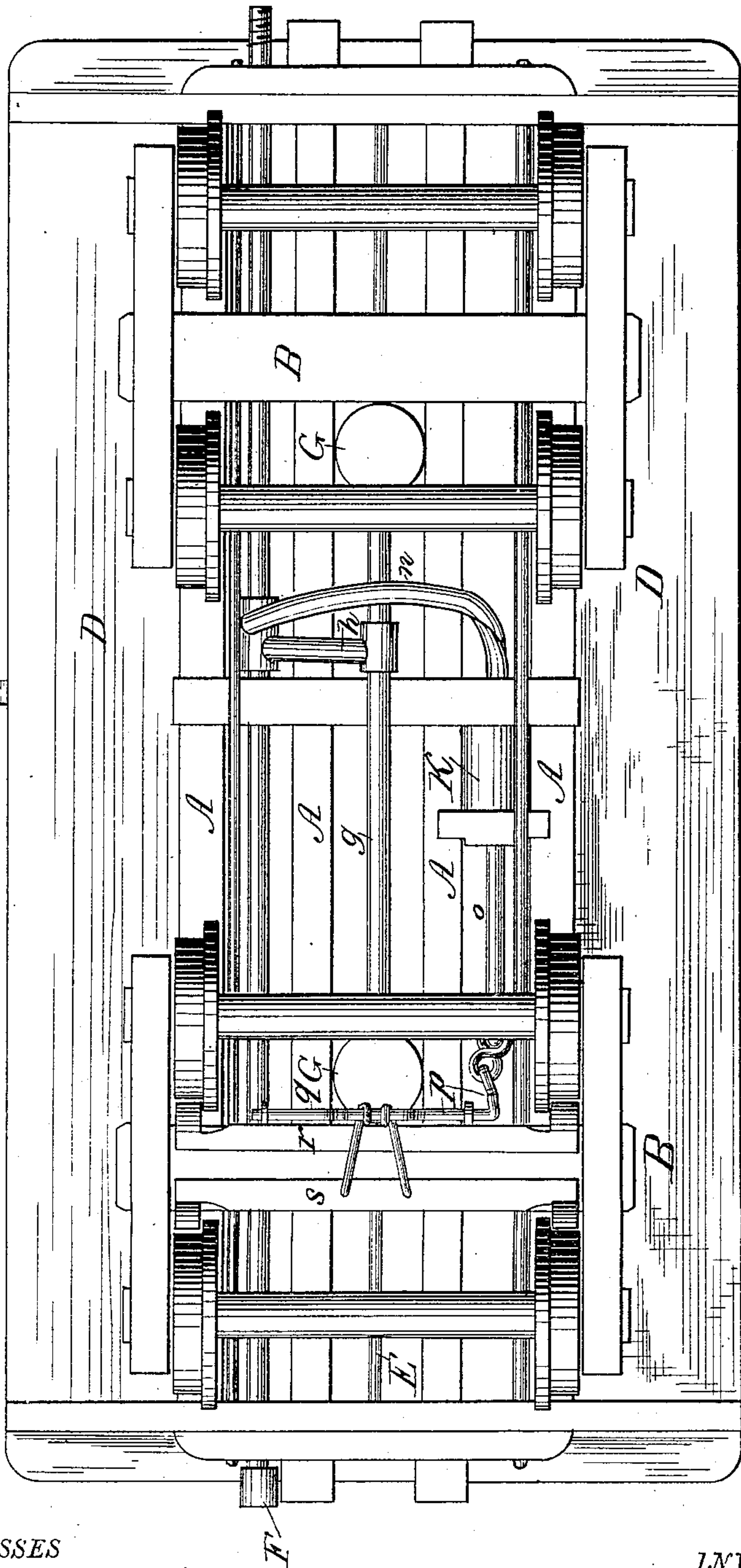
A. O'HARA.

DUMPING CAR.

No. 313,361.

Patented Mar. 3, 1885.

Fig. 1.



WITNESSES

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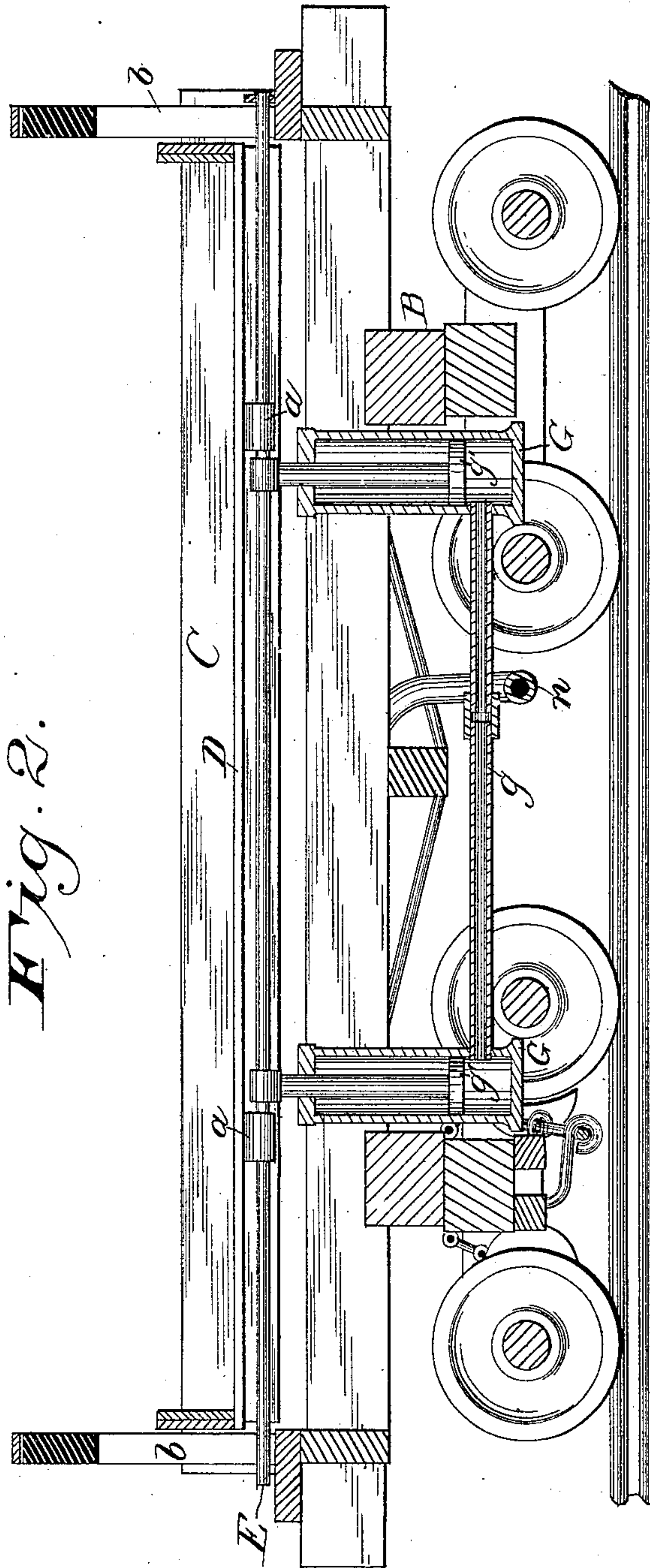


Fig. 2.

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Fig. 4.

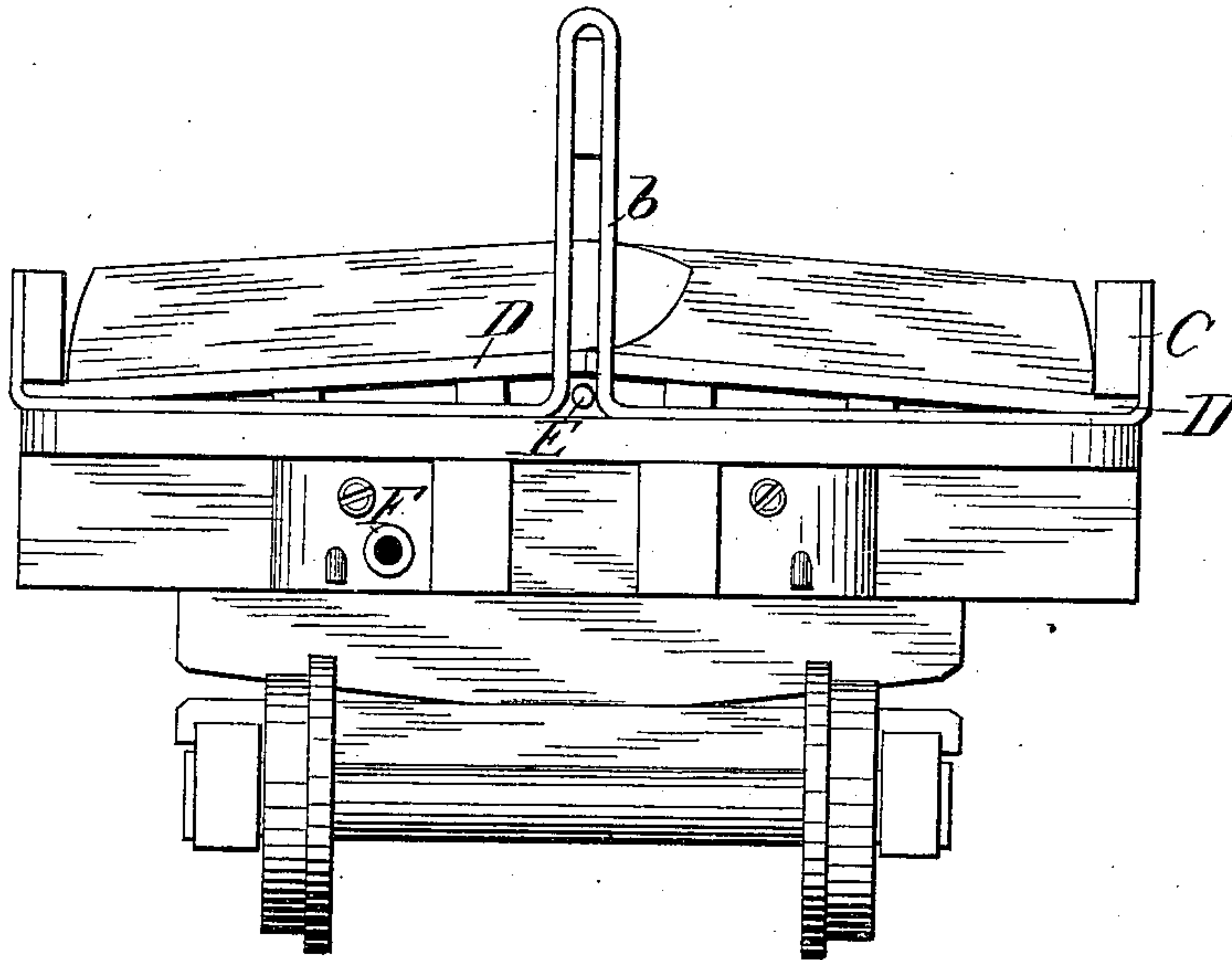


Fig. 3.

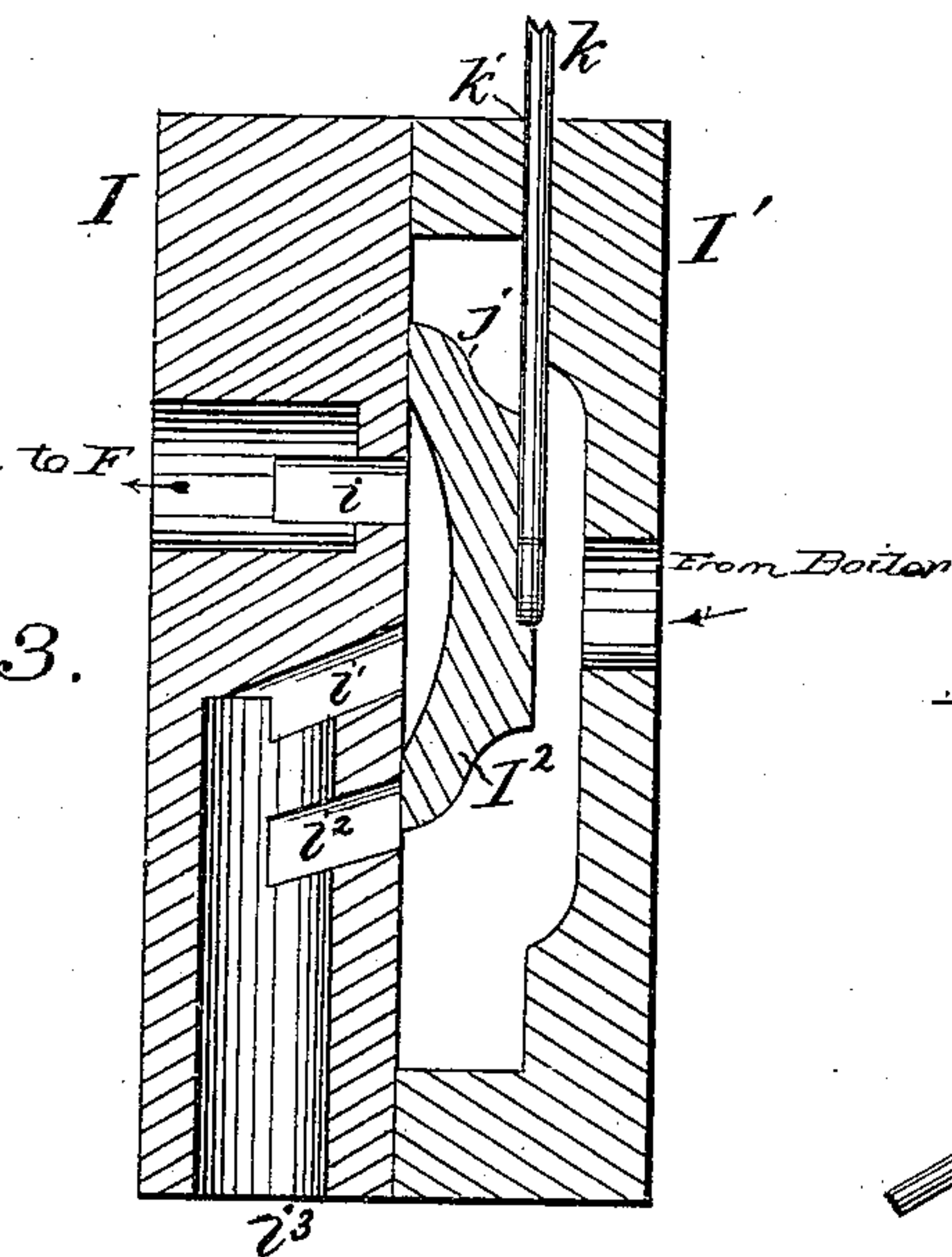
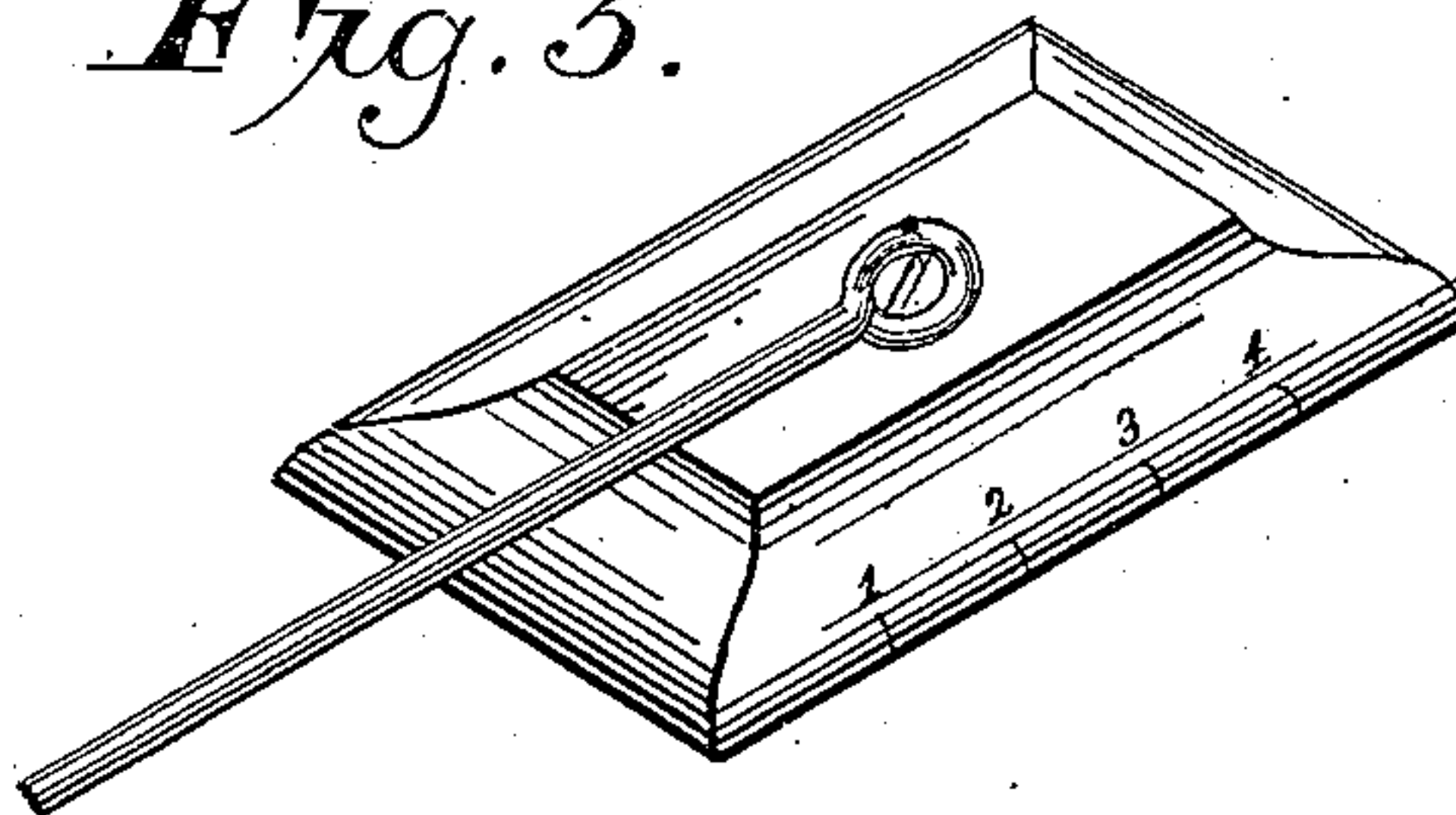


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARTHUR O'HARA, OF HAWLEY, PENNSYLVANIA.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 313,361, dated March 3, 1885.

Application filed December 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR O'HARA, a citizen of the United States, residing at Hawley, in the county of Wayne and State of Pennsylvania, have invented certain new and useful Improvements in Means for Dumping Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in means of dumping a car or train of cars from the engine without the necessity of operating by hand, as usually practiced.

The invention consists in the peculiar construction of the dumping-platform, in connection with the steam pipe and cylinders for operating such platform, and also in general mechanical details, fully hereinafter described.

In the drawings, Figure 1 is a plan view of the bottom of a dumping-car, showing the steam-cylinders and connections. Fig. 2 is a longitudinal section. Fig. 3 is a view of the valve-chamber and valve. Fig. 4 is an end view of the car. Fig. 5 is a separate view of slide-valve.

The frame-work of the car may be constructed, in the ordinary manner, of longitudinal beams A A and cross-braces B B, to the latter of which the trucks are swiveled. The car body or box consists of rigid sides or rails C C and a sectional floor or bottom, D D. These sections are hinged together on a central longitudinal line by means of a rod, E, which passes through eyes in plates *a a*, secured to the respective sections of the floor, so that the latter may be raised at the middle, to allow the load to be dumped on both sides at once. The rod E is extended beyond the bottom at both ends and works up and down in guides *b b*, secured to the frame of the car.

F is a steam-pipe which passes below the car, having proper couplings, so that it may extend below all the cars of the train. It is connected at the forward end with the boiler or steam-drum.

G G represent steam-cylinders, secured in vertical position below the car-body, near each end. These cylinders are connected by a pipe, *g*, which enters them at or near their lower ends, and another pipe, *h*, connects this pipe to the main steam-pipe F, so that steam

may be admitted to both cylinders simultaneously. If preferred, however, a single central cylinder may be employed, though in dumping heavy loads the results are more satisfactory when two are used, one near each end. In each cylinder G works a piston, *g'*, the stem or rod of which is connected to the central rod, to which the car-body is hinged. The admission of steam into the cylinders, and consequent lifting of the pistons, will raise the movable rod, and, as before described, thereby dump the car. This admission of steam to these cylinders and its exhaust therefrom are controlled by the valve shown in Fig. 3. The valve is composed of a sectional case, I I', within which slides the valve proper, I², and is placed on the engine so as to connect the main steam-pipe F with a pipe leading from the steam-drum, these pipes being tapped into opposite sides of the valve-case. The valve I² slides in guides in the section I, as shown. This side of the valve-chamber has three ports, *i i' i''*, of which the port *i* communicates with the main steam pipe F. The valve proper is a plate of metal having beveled sides or edges *j*, and it is provided with a controlling-rod, *k*, which passes through the slot *k'* in the case, and by which it is operated. The port *i*, when the valve is in position to allow it, communicates with the steam-supply pipe, while the port *i''* is connected to the blow-off passage *i'''* and exhaust-pipe.

The operation of the valve will be thoroughly understood by reference to the gage-scale indicated thereon. For instance, when the point 1 is at the guiding-mark the steam can flow freely into the pipe F, the current entering from the feed-pipe and passing over the beveled end of the valve and through the pipe F. If the valve is at 2 or 3 or any intermediate point, all the ports are closed to steam. When it is moved to 4, the exhaust-port *i''* is opened.

The operation of dumping has been sufficiently explained. Ordinarily the car-body, when steam is shut off, will drop by gravity to place. If it should happen, however, that it should stick from any cause, the exhaust-port is opened, which causes the pistons in the vertical steam-cylinders to pull the car-body forcibly down to closed position. In their

movement the sections of the body are guided by segmental projections *l l*, which bear on rollers *m m* journaled in the frame-work.

5 The main steam-pipe *F* is connected by a branch pipe, *n*, with the cylinder *K*. The piston-rod *o* of this cylinder is loosely attached to a lever, *p*, secured to or forming part of a crank-shaft, *q*, journaled in one of the brake-beams *r*. The cranked portion of this shaft
10 is connected to the other brake, *s*, as shown. The brakes are operated simultaneously by the exhaust, which causes the piston-rod to pull the brake *r* directly forward, and by slightly turning the crank to push the brake
15 *s* directly back.

It will be seen that the operation of the brakes in no way interferes with that of the dumping mechanism, since their application tends to cause the car-body to remain closed.

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

1. In a dumping-car, the combination of centrally-hinged platform-sections, a steam-pipe extending beneath the car, one or more

steam-cylinders having pistons connected to 25 the hinged sections, so as to operate them positively in both directions, and a controlling-valve having inlet and exhaust ports, whereby steam may be admitted to the cylinders to raise the platform, or exhausted therefrom to 30 lower it, substantially as described.

2. The combination, with the platform-sections hinged upon a central longitudinal rod, of steam cylinders and pistons beneath the car, such pistons being connected to the said rod, 35 substantially as described.

3. The combination, with the platform-sections hinged upon a longitudinal rod having a vertical movement in guides *b*, of steam cylinders and pistons connected to such rod, sub- 40 stantially as described.

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

ARTHUR O'HARA.

Witnesses:

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MICHAEL J. HOWLEY.