

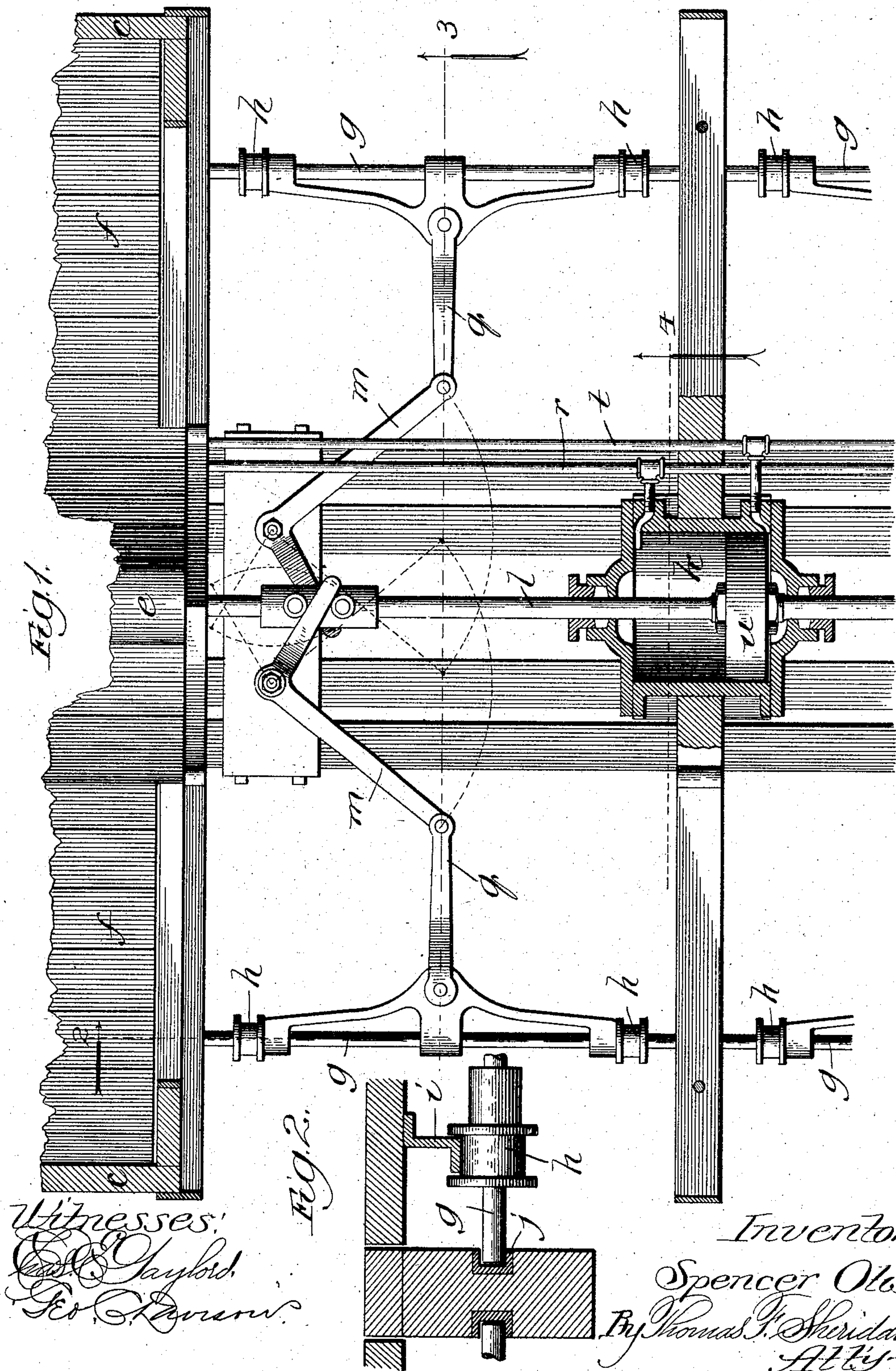
No. 780,761.

PATENTED JAN. 24, 1905.

S. OTIS.
DUMP CAR.

APPLICATION FILED JULY 11, 1903.

2 SHEETS—SHEET 1.



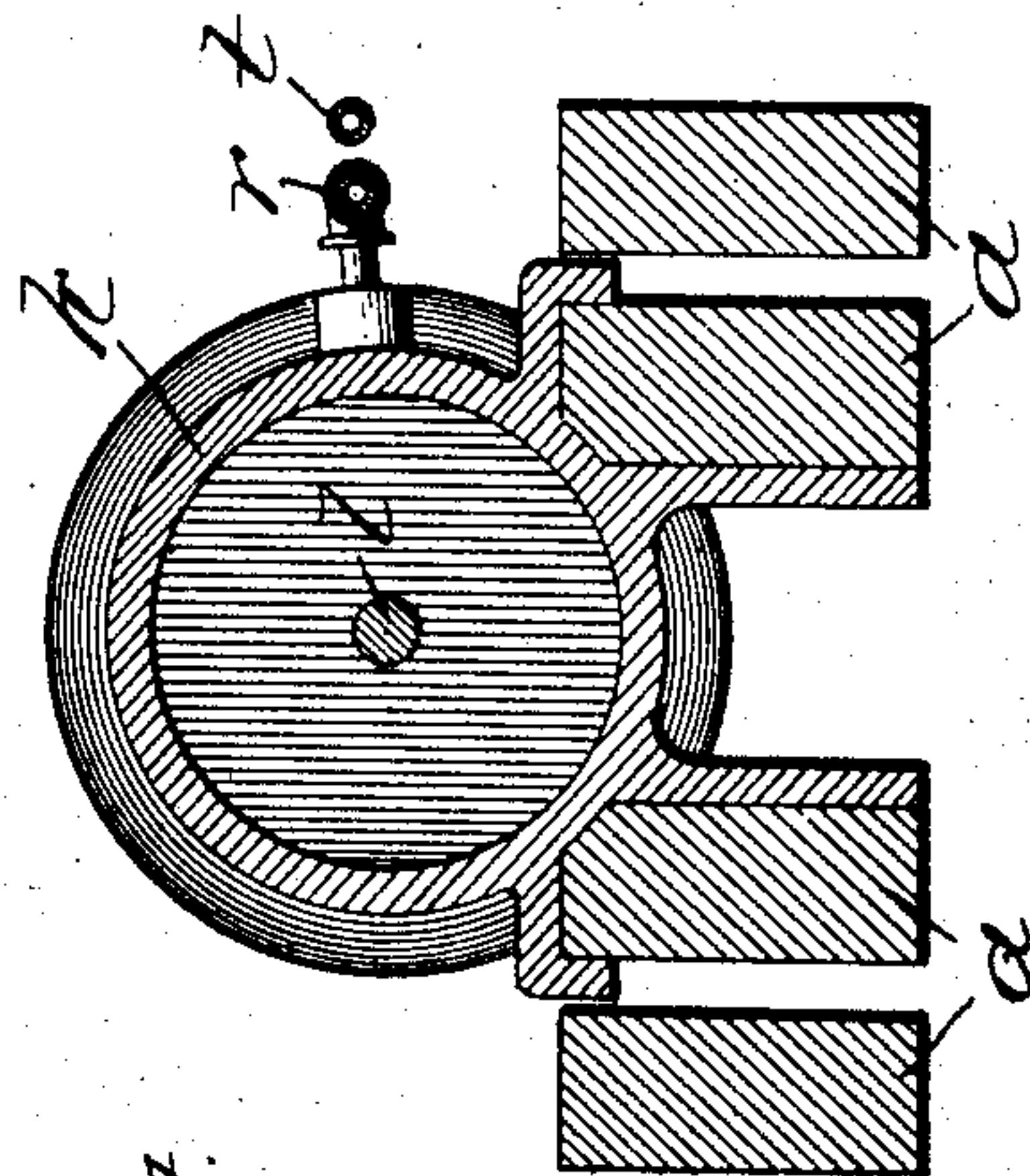
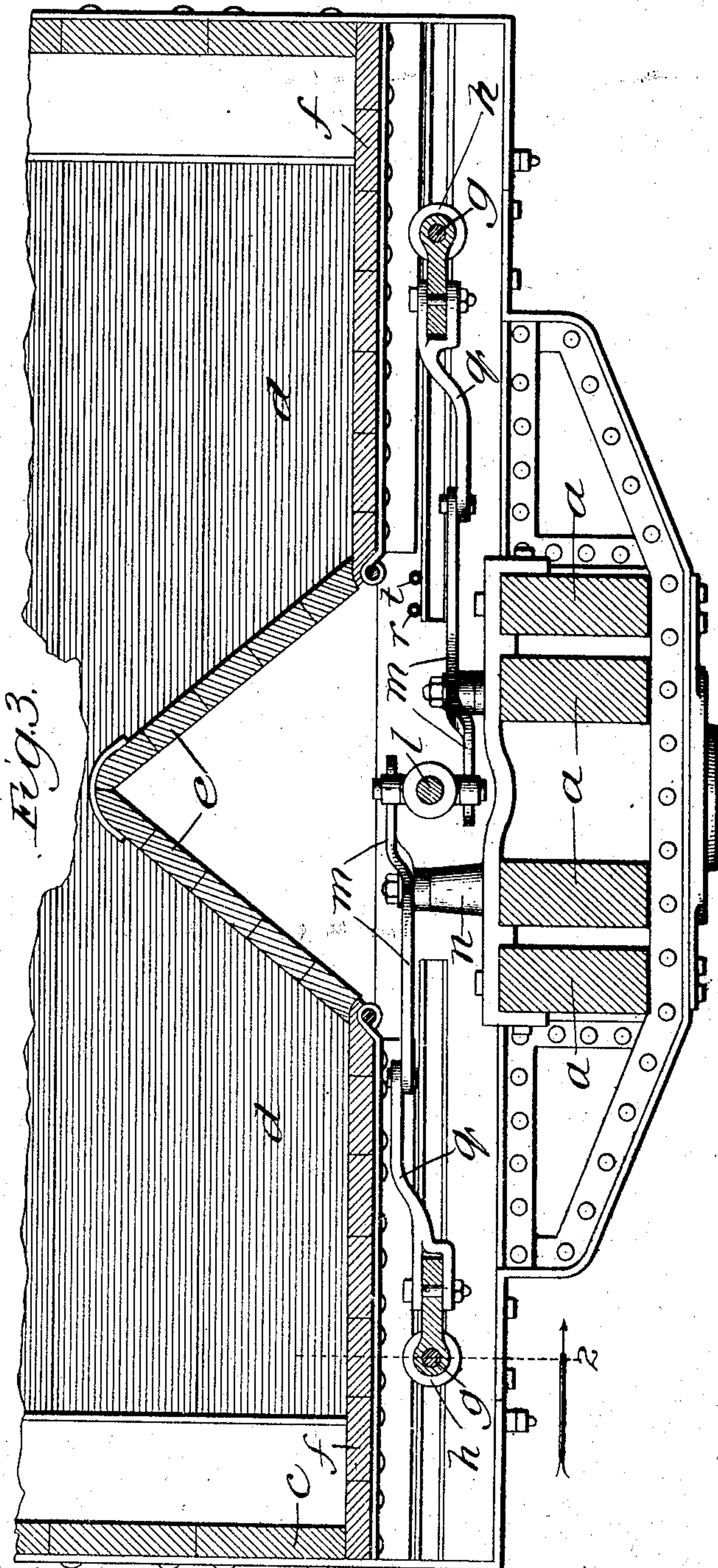
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2 SHEETS—SHEET 2.



Witnesses:
Chas. C. Gaylord.
Geo. C. Darwin.

Inventor:
Spencer Otis,
By *Thomas F. Sheridan,*
Atty.

UNITED STATES PATENT OFFICE.

SPENCER OTIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL COAL DUMP CAR COMPANY, OF RAPID CITY, SOUTH DAKOTA, A CORPORATION OF SOUTH DAKOTA.

DUMP-CAR.

SPECIFICATION forming part of Letters Patent No. 780,761, dated January 24, 1905.

Application filed July 11, 1903. Serial No. 165,077.

To all whom it may concern:

Be it known that I, SPENCER OTIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
 5 invented certain new and useful Improvements in Dump-Cars, of which the following is a specification.

This invention relates to that class of dump-cars which is provided with drop-bottom portions formed of a plurality of swinging sections pivotally secured to the supporting-frame of the car, and particularly to the means by which said swinging sections are opened and closed, all of which will more fully hereinafter appear.
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The principal object of the invention is to provide a drop-bottom dump-car with simple, economical, and efficient fluid-pressure-actuable mechanism to open and close said drop-bottom.
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The invention consists principally in a dump-car in which there are combined a supporting-frame, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured thereto, mechanism arranged to move
 25 forwardly and backwardly under each swinging section to open and close the same, and fluid-pressure mechanism connected therewith to operate the said door-operating mechanism.
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The invention consists, further and finally, in the features, combinations, and details of construction and arrangement hereinafter described and claimed.

35 In the accompanying drawings, Figure 1 is a detailed plan view of a portion of a car constructed in accordance with these improvements; Fig. 2, an enlarged sectional detail in elevation taken on the lines 2 of Figs. 1 and
 40 3; Fig. 3, a cross-sectional elevation taken on line 3 of Fig. 1 looking in the direction of the arrow, and Fig. 4 a cross-sectional view of the fluid-pressure cylinder hereinafter more fully set forth.

45 In constructing a dump-car in accordance with these improvements I provide a supporting-framework having a plurality of longitudinally-arranged center sills *a* and transverse

deck-beams *b*, preferably provided with side and end boards *c* and *d*, extending upwardly therefrom. This frame portion is further provided with a floor portion formed of a centrally-arranged A-shaped apex *e* and a drop-bottom formed of a plurality of swinging sections *f*, pivotally secured to said frame at each side of the longitudinal center of the car and at their inner edges. To open and close these swinging sections whenever it is desirable so to do, a movable bar *g* is preferably slidingly mounted under each swinging section and carries antifriction-rolls *h* in engagement with trucks *i* on the under side of each swinging section. To operate these sliding bars forwardly and backwardly in their trackways *j*, a fluid-pressure cylinder *k* is provided, having a reciprocating piston-rod *l* extending out through each head thereof. A bell-crank lever *m* is pivotally mounted on a stud *n*, so that one of the arms may be contacted by a tappet-collar *p* on said piston-rod and be vibrated thereby in either direction. A link *q* is also provided and pivotally connected with the said sliding bar and the other arm of said bell-crank, the arrangement of parts being such that as the piston-rod reciprocates the sliding bar *g* is moved backwardly and forwardly under each swinging section to open and close the same. Combined inlet and outlet pipes *r* and *t* are provided for each end of the fluid-pressure cylinder and preferably connected with a source of compressed-air supply, which is essential to reciprocate the piston *u*, and thereby the piston-rod.
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I claim—

1. In a dump-car, the combination of a supporting-frame, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured thereto, mechanism arranged in engagement with the swinging sections and movable transversely of the car for operating such swinging sections, and fluid-pressure mechanism connected therewith to operate the said door-operating mechanism, substantially as described.
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2. In a dump-car, the combination of a supporting-frame, a drop-bottom portion there-
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for formed of a plurality of swinging sections pivotally secured thereto, sliding-bar mechanism for opening and closing the swinging sections, and fluid-pressure mechanism for operating the sliding bar, substantially as described.

3. In a dump-car, the combination of a supporting-frame, a drop-bottom therefor formed of a plurality of swinging sections secured thereto at each side of the longitudinal center of the car, a sliding bar contacting the under side of each swinging section, a fluid-pressure cylinder provided with a reciprocating piston connected with said sliding bar to operate the same and thereby each swinging section, substantially as described.

4. In a dump-car, the combination of a supporting-frame, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured thereto at each side of the longitudinal center of the car, a bar arranged to move backwardly and forwardly under each swinging section, a fluid-pressure cylinder provided with a reciprocating piston, and lever mechanism interposed between the said bar and piston-rod to operate the former, substantially as described.

5. In a dump-car, the combination of a supporting-frame, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured thereto at each side of the longitudinal center of the car, a sliding bar arranged under each swinging section to operate the same, a fluid-pressure cylinder provided with a piston-rod, a bell-crank lever connected with said piston-rod, and a link pivotally connected with the bell-crank lever and the said sliding bar, substantially as described.

6. In a dump-car, the combination of a supporting-frame, a drop-bottom therefor formed of a plurality of swinging sections, a trackway on the under side of each swinging section, a sliding bar provided with antifriction-roll mechanism contacting the trackway of each swinging section, a fluid-pressure cylinder provided with a reciprocating piston-rod, a bell-crank lever connected with the piston-rod, and link mechanism pivotally connected with the bell-crank lever and the link mechanism, substantially as described.

SPENCER OTIS.

Witnesses:

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