

No. 719,794.

PATENTED FEB. 3, 1903.

H. S. HART.

DUMP CAR.

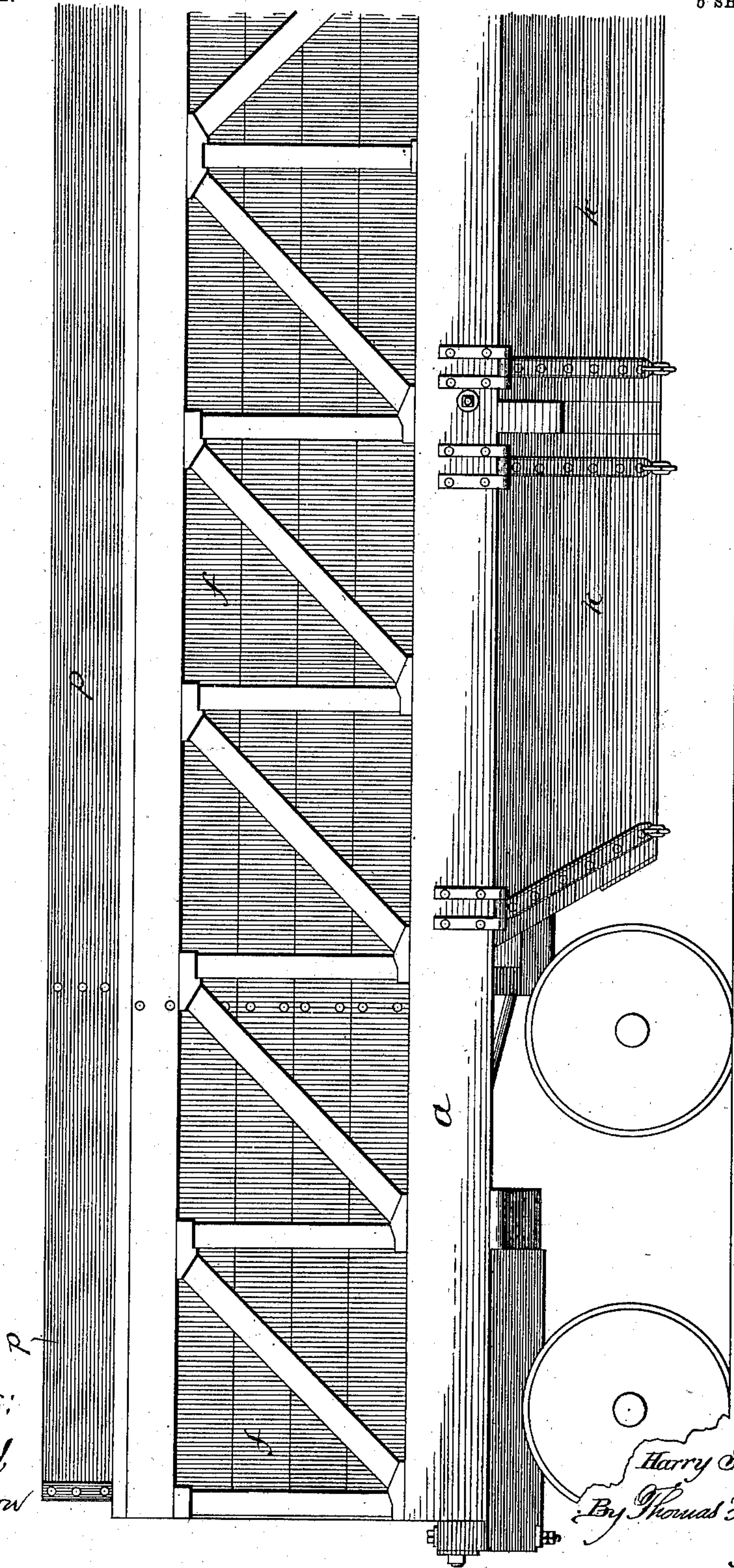
APPLICATION FILED SEPT. 20, 1901.

NO MODEL.

5 SHEETS—SHEET 1.

Fig. 1.

Witnesses:
Ed. Gaylord,
Geo. Davison



Inventor:
Harry Stillson Hart
By Thomas F. Sheridan,
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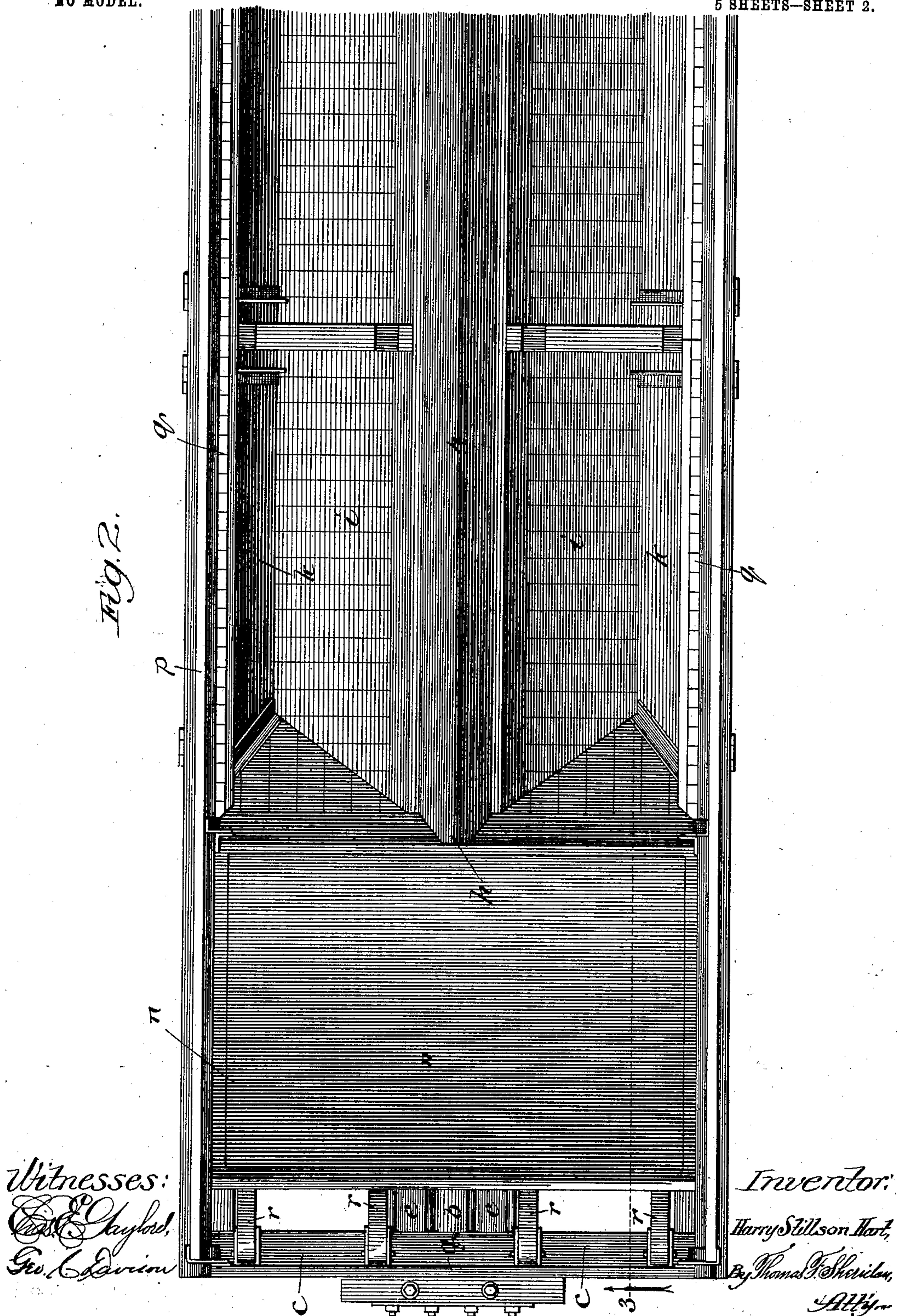
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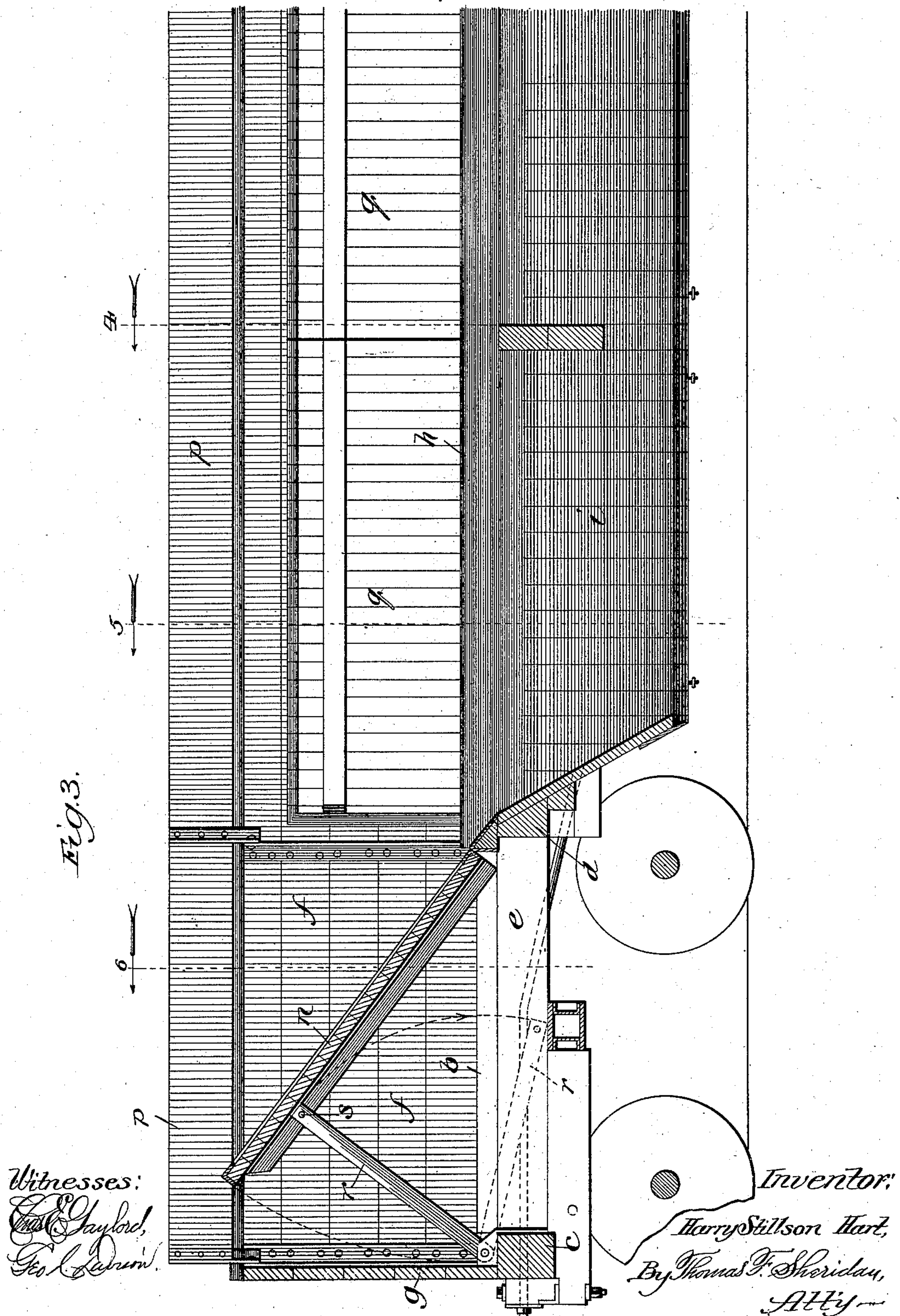
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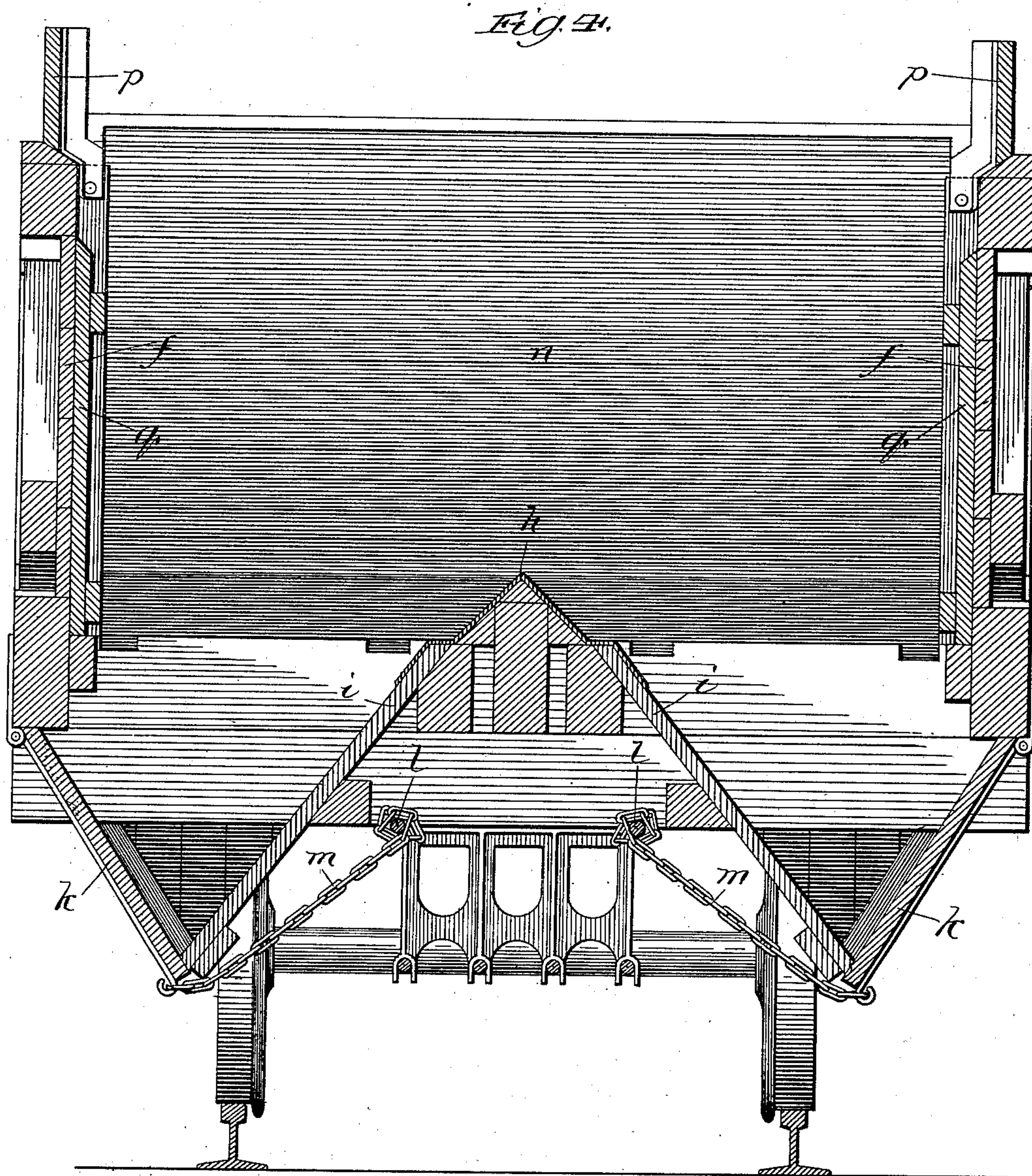
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APPLICATION FILED SEPT. 20, 1901.

NO MODEL.

5 SHEETS—SHEET 4.



Witnesses:
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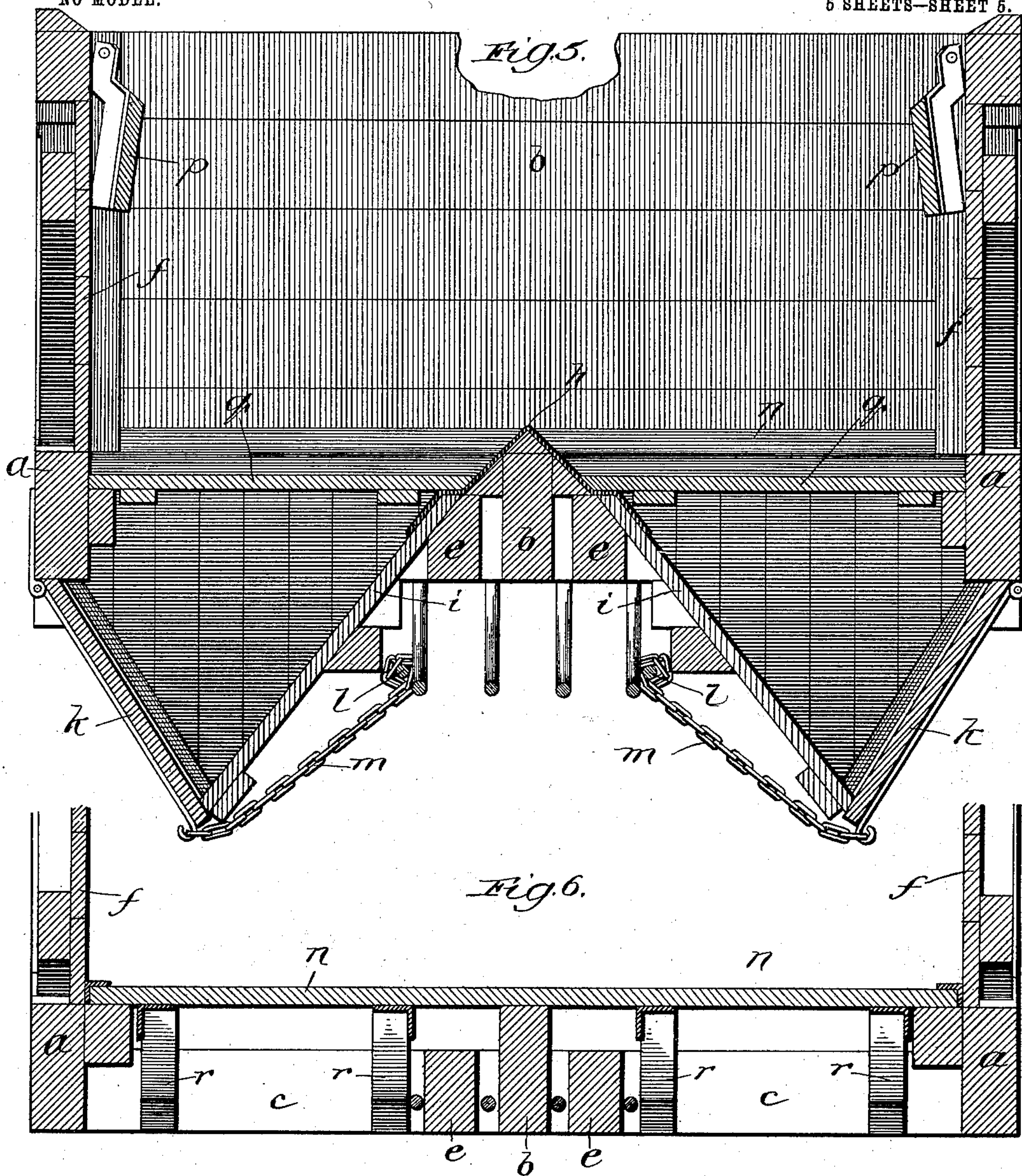
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DUMP CAR.

APPLICATION FILED SEPT. 20, 1901.

NO MODEL.

5 SHEETS—SHEET 5.



Witnesses:

Edw. C. Gaylord.
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UNITED STATES PATENT OFFICE.

HARRY STILLSON HART, 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. 719,794, dated February 3, 1903.

Application filed September 20, 1901. Serial No. 75,932. (No model.)

To all whom it may concern:

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

This invention relates to that class of cars known as "dump-cars," and particularly to the construction thereof by which a dump-car of large carrying capacity is obtained, all of which will be more fully hereinafter set forth.

The principal object of this invention is to provide a dump-car with a longitudinal A-shaped hopper portion, swinging side hopper-boards, and vertical side boards arranged considerably above the hopper to obtain an automatic dumping-car of larger carrying capacity.

Further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists principally in a dump-car in which there is combined a supporting-frame portion, side boards therefor, and an A-shaped portion arranged longitudinally of the car, with its apex substantially at the longitudinal center thereof and at the ordinary floor-level, the leg portions of which extend downwardly and outwardly to a point substantially outside the supporting car-wheels.

The invention consists, further, in the combination of a supporting-frame portion provided with the usual car-wheels, vertical side boards, an A-shaped hopper portion arranged longitudinally of the car, with its apex substantially at the longitudinal center thereof and at the ordinary floor-level, the leg portions of which extend downwardly and outwardly to a point substantially outside the car-wheels, and swinging hopper-boards depending downwardly and inwardly to meet the leg portions, complete a pair of (or twin) hoppers, and form discharging-doors therefor.

The invention consists, further and finally, in the features, combinations, and details

of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a car constructed in accordance with these improvements; Fig. 2, a plan view of the same looking at it from above and showing the parts arranged to form a twin-hopper dump-car; Fig. 3, a longitudinal sectional elevation taken on line 3 of Fig. 2 looking in the direction of the arrow; Fig. 4, a cross-sectional elevation taken on line 4 of Fig. 3, showing the parts arranged to form a twin-hopper dumping-car of maximum carrying capacity; Fig. 5, a cross-sectional elevation taken on line 5 of Fig. 3, showing the parts arranged to form a flat-bottomed gondola car; and Fig. 6, a cross-sectional elevation showing a part of the mechanism taken on line 6 of Fig. 3 looking in the direction of the arrow and with the inclined end board laid in a flat plane.

In illustrating and describing these improvements I have only illustrated and described that which I consider to be new, taken in connection with so much as is old as will properly disclose the invention to others and enable those skilled in the art to practice the same.

In constructing a dump-car in accordance with these improvements I make a supporting-frame portion, which is preferably composed of a pair of side sills *a*, center sills *b*, end sill *c*, cross-beam *d*, and intermediate sills *e*, all arranged to receive the shocks incident to the use of and distribute the same throughout the proper elements of the car. To provide for the carrying of the load, a pair of vertical side boards *f* is secured to the supporting-frame or underpinning and preferably connected together for purposes of stiffening at their end portions by a pair of vertical end boards *g*, which, as shown in Fig. 3, is secured to and rests upon the end sills.

To provide for the automatic dumping of the load and at the same time to form a large-capacity car, an A-shaped-hopper portion is provided and arranged longitudinally of the car, with its apex *h* substantially at the longitudinal center thereof. It will also be no-

5 ticed from an inspection of Fig. 3 that the apex is arranged substantially at the ordinary floor-level and not only provides a car of large carrying capacity, but one in which the entire load will discharge itself, and thus dispense with all of the manual labor of shoveling. The legs *i* and *j* of this A-shaped portion, as shown in Fig. 4, extend downwardly and outwardly to a point substantially outside of the supporting car-wheels—that is, all of the load discharging over such legs will pass to a point outside of such wheels, thus providing for a car that may carry any material that it is desired to discharge outside of the trucks and prevent the derailing of the car. To complete the hopper portion—that is, to form a pair of (or twin) hoppers—a pair of swinging hopper-boards *k* is provided, hinged, preferably, to the under side of the side sills and depending downwardly and inwardly to meet the leg portions above described. These swinging hopper-boards not only complete the twin hoppers, but they also form the discharging-doors therefor. A pair of shafts *l l* is provided and connected to the swinging hopper-boards by means of the chains *m m*, which act to lock such boards in position or permit them to be opened. These shafts should be provided with ratchet-and-pawl mechanism (not shown) to prevent their being operated only at desired times, all of which is understood in the art. An inspection of Fig. 3 will show that the supporting car-wheels limit the length of the twin hoppers and that therefore some means must be provided for carrying the load above the wheels and permitting it to be automatically discharged when desired. To accomplish this result, a pair of inclined end boards *n n* is provided and inclined substantially from the apex of the A-shaped portion upwardly and over the car-wheels to a point adjacent to the stationary vertical end boards. This arrangement, it will be seen, effectually dispenses with all manual shoveling. To still further increase the carrying capacity of the car whenever it may be desirable or necessary, a foldable extension *p* is provided for each side board, which in one position is folded upwardly (see Fig. 4) to rest on the upper edge of the side boards and provide for the carrying of the maximum load, while in a second position (see Fig. 5) they may be dropped downwardly and substantially out of the way. At times it is quite desirable, and indeed necessary, to provide for the conversion of this type of car into a "gondola car." To provide the necessary elements for this conversion, a pair of supplementary side boards *q q* are made and arranged to be raised in a vertical plane and form, as it were, supplementary side boards for the twin hopper in one position (see Fig. 4) or laid in a flat plane and form a portion of the bottom of a gondola car in a second position. (See Fig. 5.) These supplementary side boards may be provided with

hooks (not shown) to more effectually hold them in their vertical position. The inclined end boards (see Fig. 3) are also held foldably in position by means of the struts *r*, which may be removed by withdrawing the connecting-pins *s*, and thus permit such end boards to be laid in a flat plane and complete the bottom of a gondola car.

I claim—

1. In a car of the class described, the combination of a supporting-frame portion, vertical side boards supported thereon, an A-shaped hopper portion arranged longitudinally of the car with its apex substantially at the longitudinal center thereof and at the ordinary floor-level, the leg portions of which extend downwardly and outwardly to a point substantially outside the supporting car-wheels which limit the length of such portions, swinging hopper-boards depending downwardly to meet such leg portions, complete a pair of hoppers and form discharging-doors therefor, and a pair of swinging end portions arranged to form inclined end boards for a hopper-car and extend over the car-wheel in one position and to complete the floor of a gondola car in a second position, substantially as described.

2. In a car of the class described, the combination of a supporting-frame portion, vertical side boards supported thereon, an A-shaped hopper portion arranged longitudinally of the car with its apex substantially at the longitudinal center thereof and at the ordinary floor-level, the leg portions of which extend downwardly and outwardly to a point substantially outside the supporting car-wheels which limit the length of such portions, swinging hopper-boards depending downwardly to meet such leg portions, complete a pair of hoppers and form discharging-doors therefor, and swinging side boards arranged to form supplementary vertical side boards in one position and to form a portion of the bottom boards of a gondola car in a second position, substantially as described.

3. In a car of the class described, the combination of a supporting frame portion, vertical side boards supported thereon, an A-shaped hopper portion arranged longitudinally of the car with its apex substantially at the longitudinal center thereof and at the ordinary floor-level, the leg portions of which extend downwardly and outwardly to a point substantially outside the supporting car-wheels which limit the length of such portions, swinging hopper-boards depending downwardly to meet such leg portions, complete a pair of hoppers and form discharging-doors therefor, swinging side boards arranged to form supplementary vertical side boards in one position and to form a portion of the bottom boards of a gondola car in a second position, and a pair of end portions arranged to form inclined end boards for a hopper-car and extend over the car-wheels in

one position and to complete the floor of a gondola car in a second position, substantially as described.

4. In a car of the class described, the combination of a frame portion, two sets of trucks upon which such frame is mounted, side boards upon the frame, two hoppers arranged side by side longitudinally of the car, the inner side of each beginning substantially at the center and bottom of the car and extending downward and outward at an incline to a point outside of the trucks, a door for each hopper extending from outside of the car to the bottom of the hopper, a pair of supplementary movable side boards extending longitudinally along the top of the hoppers throughout their entire length adapted to be swung into a horizontal position to cover the hoppers for forming a flat bottom for the main portion of the car when it is to be used as a gondola car and into a vertical position when the hoppers are in use, and an end bottom at each end of the car extending from the outer end of the car-frame to the top of the hoppers, substantially as described.

5. In a car of the class described, the combination of a frame portion, two sets of trucks upon which such frame is mounted, side boards upon the frame, two hoppers arranged side by side longitudinally of the car, the inner side of each beginning substantially at the center and bottom of the car and extending downward and outward at an incline to a point outside of the trucks, a pair of supplementary movable side boards extending longitudinally along the top of the hoppers throughout their entire length adapted to be swung into a horizontal position to cover the hoppers for forming a flat bottom for the main portion of the car when it is to be used as a gondola car and into a vertical position when the hoppers are in use, an inclined end bottom at each end of the car extending from the outer end of the car downward and inward at an incline to the top of the hoppers, a swinging door for each hopper extending from the side of the car downward and inward to the bottom of the hopper, and means for holding the doors in closed position and permitting them to be swung open, substantially as described.

6. In a car of the class described, the combination of a frame portion, two sets of trucks upon which such frame is mounted, side boards upon the frame, two hoppers arranged

side by side longitudinally of the car, the inner side of each beginning substantially at the center and bottom of the car and extending downward and outward at an incline to a point outside of the trucks, a pair of supplementary movable side boards extending longitudinally along the top of the hoppers throughout their entire length adapted to be swung into a horizontal position to cover the hoppers for forming a flat bottom for the main portion of the car when it is to be used as a gondola car and into a vertical position when the hoppers are in use, a swinging inclined end portion at each end of the car extending from the outer end of the car-frame downward and inward at an incline to the top of the hoppers in one position and substantially level with the top of the hoppers to complete the floor of a gondola car in the other position, and a door for each hopper extending from the outside of the car to the bottom of the hopper, substantially as described.

7. In a car of the class described, the combination of a frame portion, two sets of trucks upon which such frame is mounted, side boards upon the frame, two hoppers arranged side by side longitudinally of the car, the inner side of each beginning substantially at the center and bottom of the car and extending downward and outward at an incline to a point outside of the trucks, inclined ends for each hopper extending from between the side walls of the trucks to a point over such wheels and stopping at a point substantially level with the car-bottom, a pair of supplementary movable side boards extending longitudinally along the top of the hoppers throughout their entire length adapted to be swung into a horizontal position to cover the hoppers for forming a flat bottom for the main portion of the car when it is to be used as a gondola car and into a vertical position when the hoppers are in use, a swinging inclined end portion at each end of the car extending from the outer end of the car-frame downward and inward at an incline to the top of the hoppers to complete the floor of a gondola car in the other position, and a door for each hopper extending from the outside of the car to the bottom of the hopper, substantially as described.

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Witnesses:

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ANNIE C. COURTENAY.