E. S. DORR & M. F. ROGERS.

GARBAGE WAGON.

APPLICATION FILED MAR. 25, 1908.

956,053.

Patented Apr. 26, 1910.

4 SHEETS—SHEET 1.

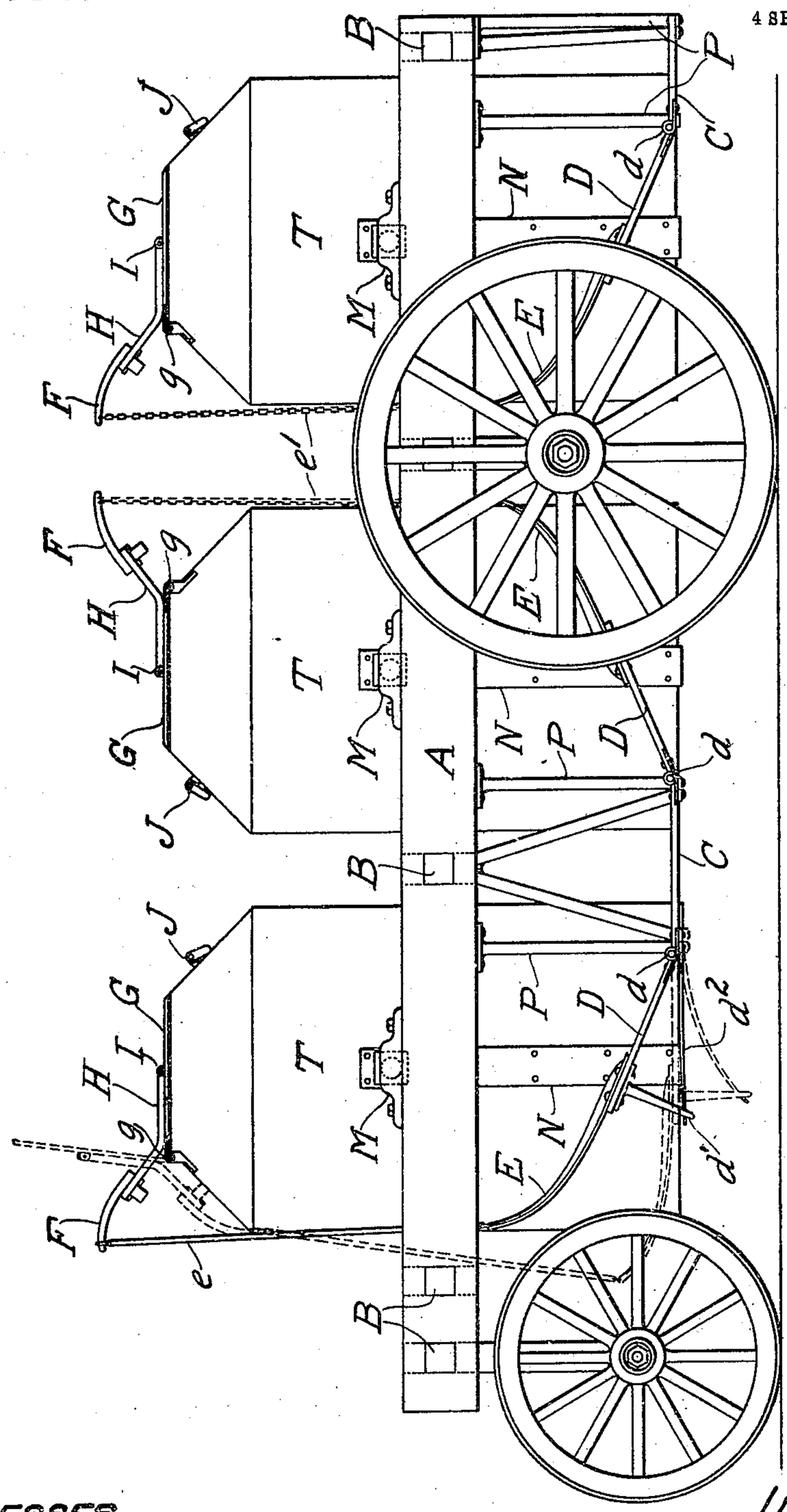

FIG. 1

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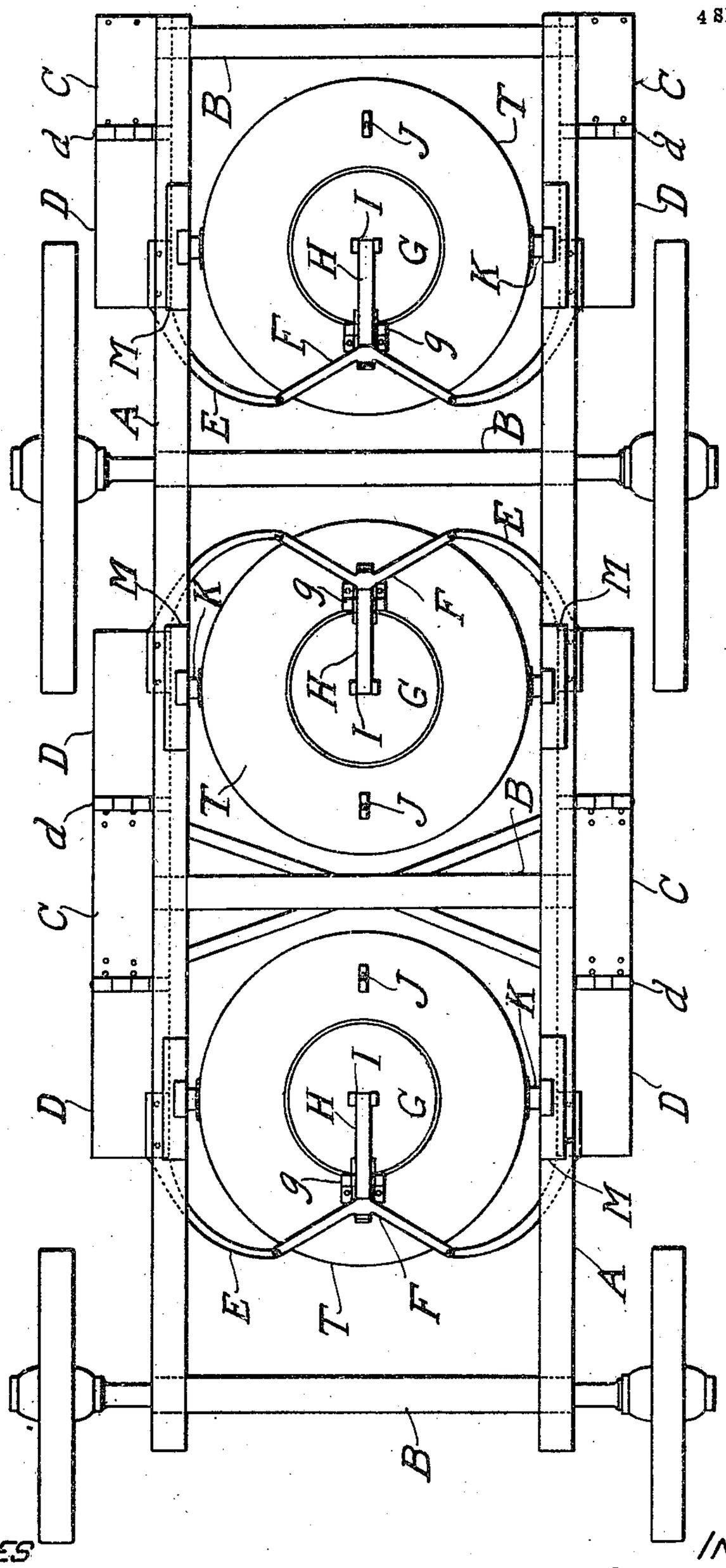

FIG. 2

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4 SHEETS—SHEET 3.

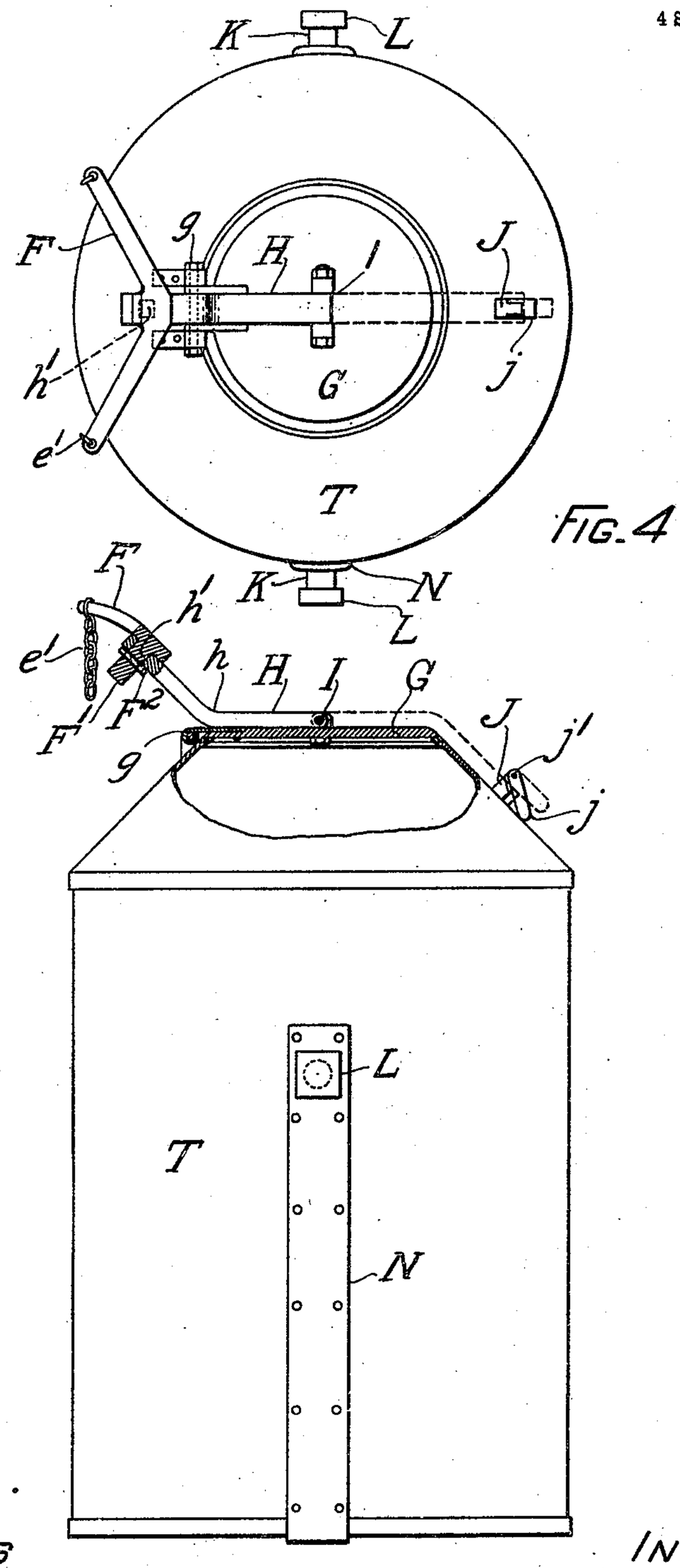

FIG. 4

FIG. 3

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4 SHEETS—SHEET 4.

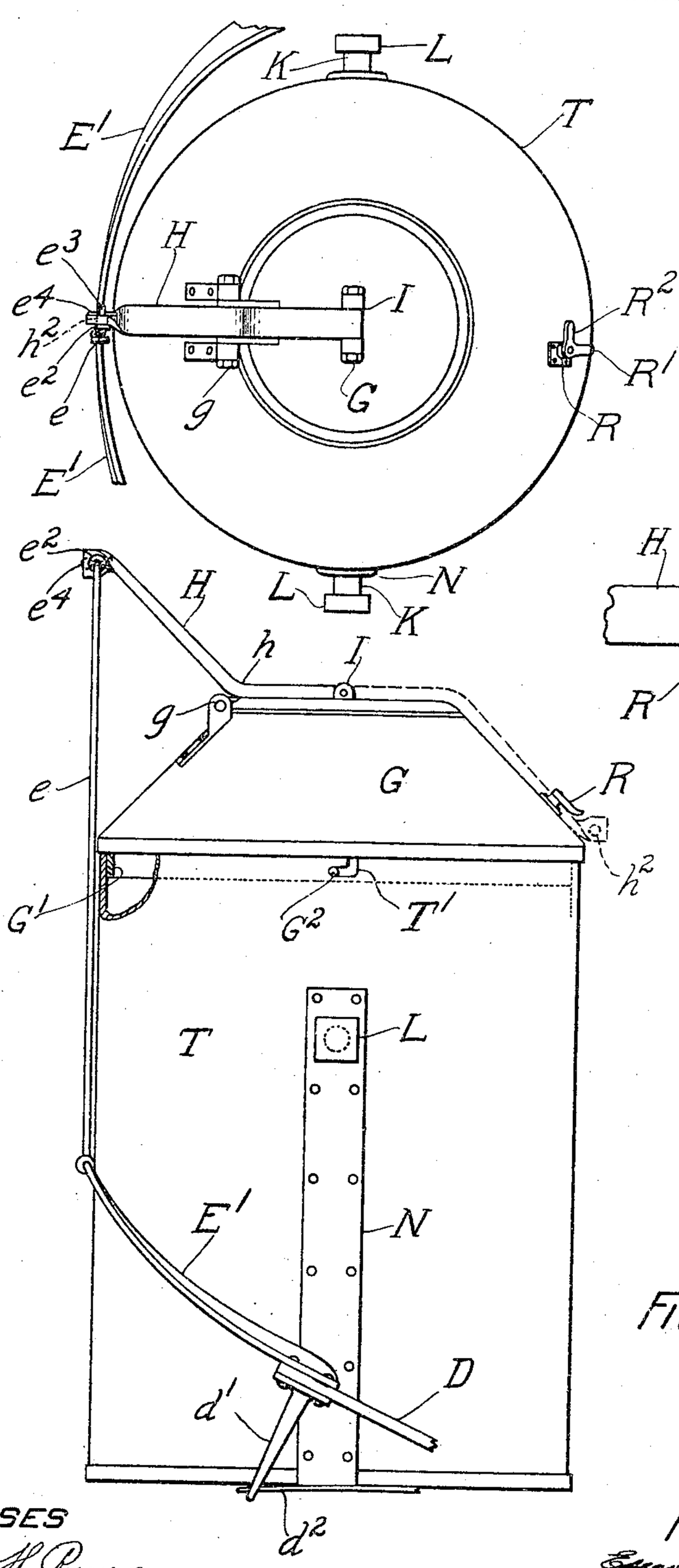

FIG. 6.

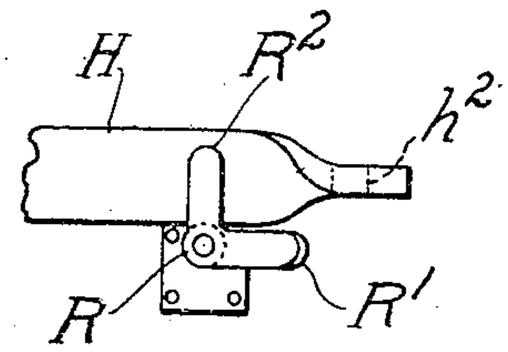

FIG. 7

FIG. 5.

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UNITED STATES PATENT OFFICE.

EDGAR S. DORR AND MELVILLE F. ROGERS, OF BOSTON, MASSACHUSETTS.

GARBAGE-WAGON.

956,053. Specification of Letters Patent. **Patented Apr. 26, 1910.**

Application filed March 25, 1908. Serial No. 423,161.

To all whom it may concern:

Be it known that we, EDGAR S. DORR and MELVILLE F. ROGERS, citizens of the United States, and residents of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Garbage-Wagons, of which the following is a specification.

Our invention relates to vehicles for the conveyance and disposition of offensive materials such as the garbage of a city population which is of such a character that it cannot be conveniently or safely relegated to sewers and which, from the nature of the situation has to be conveyed through the public streets to some suitable depot. The reduction of garbage in furnaces is undoubtedly an effective mode of finally disposing of such objectionable material but even when this system of garbage disposition is employed, there still remains the necessity of collecting and transporting the garbage to the reducing furnaces, and its conveyance through the public streets, except in the coldest weather, inflicts a nuisance upon the population and also as is now well understood, exposes persons to the communication of diseases principally through the medium of transportation by flies or other insects which are attracted by exposed putrefying material. These objectionable and dangerous conditions are still further magnified when, as is the case in most localities, the reduction of garbage by heat is so expensive as to be self-prohibitory, so that it becomes practically necessary to convey the garbage to some dumping place where it may either be transferred to garbage scows on the seaboard or large water-ways, or spread out and covered with soil, ashes, cinders, or other absorbent or desiccating material. The maintenance of dumping stations for the transfer of garbage from wagons to the place of final disposition involves the free exposure of large masses of putrefying organic matter and increases the nuisance and danger incident to the systems of garbage disposition now in vogue.

Our invention consists primarily in the construction and arrangement of vehicles for garbage transportation and analogous purposes whereby the time of exposure of putrefying matter is reduced to a minimum and the garbage effectively sealed from the surrounding air, during the period of its transportation. Our improved vehicles, moreover, make it possible to adopt a system of garbage distribution, consistent with either the consumption of this material by heat or the more prevalent mode of collection at places of deposit from which it is distributed to its final place of deposit, which keeps the offensive material closed against the outer air during the entire period of its transit from the original place of collection to the place of its final disposition. Moreover by means of this improved vehicle, manipulation of the garbage is greatly facilitated so that labor-saving is added to the other advantages here enumerated. The principal essential is that the garbage receptacle on the transporting vehicle shall be provided with an opening only sufficient for the ready introduction of garbage as it is collected from house to house and that this opening shall be automatically closed as soon as the act of introducing a collected quantity of garbage is completed. Secondarily, it is desirable and important that the repeated opening of the garbage receptacle shall be accomplished with a minimum of trouble to the men employed. Specifically, we have contrived a method of opening and closing the garbage receptacle on the vehicle by which the weight of the men employed suffices to open the receptacle which closes automatically as soon as the weight is removed.

In order that the garbage receptacles may continue in their office of inclosing and protecting the garbage after the wagon on which they are suspended has reached its point of delivery, the receptacles are made easily detachable from the wagon body so that they may be removed therefrom, either for immediate discharge of the contents, as to a garbage consuming furnace, or may be placed upon suitable frames on, say a garbage scow, and discharged only when the scow has reached its destined delivery place. Moreover, by providing easily detachable garbage receptacles, the cleansing operation after the delivery of the garbage is greatly facilitated.

In the drawings hereto annexed which illustrate an embodiment of our invention, Figure 1 is a side elevation of a garbage wagon; Fig. 2 is a plan view of the same; Fig. 3 is a side elevation on an enlarged scale of a removable garbage receptacle; Fig. 4 is a plan view of the receptacle shown in Fig. 3; Fig. 5 is a side elevation of a removable garbage receptacle, showing modi-

fications of the structure; Fig. 6 is a plan view of the receptacle shown in Fig. 5; and, Fig. 7 is a detail of the fastening device shown in Figs. 5 and 6.

In these figures the wagon is shown as composed of longitudinal members A, joined by transverse members B; by preference these frame members should be composed of angle or channel iron. The running-boards C are suspended from the frame by means of hangers P. According to the desired capacity of the vehicle one or more tanks T are suspended on the wagon frame; these tanks should be stoutly constructed of impervious material, such as sheet steel, and may be cylindrical, prismatic or square in form, as desired. As shown in Fig. 1, we prefer to provide the tank T with an upper tapering portion so as to reduce the size of the opening therein to a minimum consistent with convenience of introducing or discharging the contents of the tank.

While our invention, in some of its aspects, is embodied in a wagon having a single removable tank of the character described, it is more fully expressed by a structure employing several tanks, as interchangeable, separate garbage compartments, by this arrangement, only one compartment will, in normal operation be opened at a time, so that the escape of effluvia is reduced to a minimum. Each tank is provided with a lid G hinged at *g;* the joint between this lid and the upper rim of the tank should be made fairly tight; gaskets may be used for this purpose. On the top of the lid G, a bar H is pivotally secured at I. The axis of this pivot and the proportions of the bar H are so arranged that a portion of the bar projects over the edge of the lid G and so that the bar may be swung from one side of the lid to the other. In the specific instance here shown, the pivot at I has a horizontal axis so that the bar H swings in a plane at right angles to the surface of the lid G; and the bar H is bent at *h* so that its projecting portion is offset from the plane of the lid G. When the bar H is swung to the position over the hinge *g*, its projecting portion slants upwardly. When the bar is turned to the opposite position its projecting portion lies close to the inclined upper tapering part of the tank T so that its perforation *h'* may engage with the fastening J (see Fig. 3); this fastening J is provided with a finger *j* hinged at *j'* so that the finger may be inserted in the perforation *h'* as the bar H descends to position, and by merely hanging over the end of the bar holds it in place with sufficient security. In this position the parts are secured when the tank T has received its entire contents and is to be transported to the place of delivery.

During the progress of garbage collection, when the garbage wagons pass from house to house, the bar H is swung to the position shown in solid lines in Fig. 3, and the lifting devices are secured thereto. An extension piece F which is preferably formed with diverging branches (as seen in Fig. 4) is attached to the projecting portion of the bar H, the key F^2 securing the lug F' and extension piece F in position. Light rods *e* (for which chains *e'* may be substituted, if desired) are secured to the branches of the extension piece F and their lower ends on either side of the wagon are secured to the curved arms E which are fastened to the movable foot-boards D, these being hinged to the running-board C at *d*. When the workman comes to the wagon to deposit therein a bucket full of garbage, he steps on the running-board C and then throws his weight on the movable foot-board D, depressing the latter and by the above named connections pulling the extension piece F downward thereby opening the lid G. When he has dumped a bucket of garbage into the tank T and steps off the running-board, the lid G automatically returns to place, closing the opening in the tank T.

As shown in the dotted lines in Fig. 1, we prefer so to arrange and proportion the lid lifting devices that the lid itself does not quite take a perpendicular position and so that its weight will suffice to close it, carrying the attached lifting connections upward in the act of closing. By this means only a light chain as *e'* is necessary to serve as the connection between the extension piece F and the lifting bar E. If more effective lid closing devices should be considered desirable, the following may be provided: a depending hanger *d'* secured to the movable foot-board D engages with a spring d^2 secured to the running-board so that the spring tends to lift the movable foot-board D. In this case the connection between the bar E and extension piece F should be a rod *e* of sufficient stiffness to communicate the effort of the spring d^2 to the extension piece F. The weight of the workman on the foot-board D overcomes the upward tendency of the spring d^2 which, however, when this weight is removed, presses the lid lifting connections upward so as to insure the automatic closing of the lid G.

A modified construction of the lid operating device is illustrated in Figs. 5, 6, and 7. Instead of providing the yoke F we employ simply the bar H, extending the inclined portion of the latter to a length sufficient to allow the rod *e* to clear the side of the tank T. The rod *e* is provided with a fixed collar e^2 and a projecting end e^3, the latter perforated to admit the cotter pin e^4. The lower end of the rod *e* is secured to the middle of the bow E' which extends from one side of the wagon to the other, being secured at either end to a movable footboard D.

The fastening device for holding the bar H in the dotted line position (Fig. 5) is shown in detail in Fig. 7. The stud R, secured to the sloping part of the tank T, carries on it the button R′, R², whereof R′ is a handle and R² the finger, which when turned to place on the bar H, binds against the bar and holds it firmly.

Referring to Fig. 1; at suitable positions on the top of the wagon frame members A, there are secured blocks M which being arranged in pairs, are spaced apart so that the squared ends L of the trunnions K may fit into the sockets formed by the adjacent faces of the blocks M. This mode of support prevents the tank from rocking or swinging while on the wagon. The trunnions K are cylindrical so that the tanks T may be supported upon a frame having suitable journals which engage with rounded portions of the pins, so that they then may be readily inverted for dumping the contents or for cleaning. A dumping scow for instance, may be provided with such a journaled frame.

The proportions of the tanks and the supporting square headed trunnions are preferably so arranged with reference to the wagon on which the tanks are transported that space is left, as shown in Fig. 2 between the side of the tank and the longitudinal members of the wagon frame for the insertion of hooks or hook-bails for the purpose of lifting the tanks from the wagon. In order that the weight of the tanks which is borne by the square headed trunnions shall not be carried by the relatively thin sheet of metal of which the tanks are made, supporting strips N (Fig. 1) are secured to the sides of the tanks, a single strip extending down one side, across the bottom and up the other side from trunnion to trunnion. The trunnions are secured firmly in the upper ends of these reinforcing strips. When the tanks T have been filled, the yokes F (if used) are then detached from the extensions of the bars H; the bars turned to the locking position shown in dotted lines in Fig. 3 and the lids G securely fastened in closed position. The removal of the tanks from the wagon is effected by some suitable hoisting apparatus and they may be deposited on a scow or taken to a garbage reducing furnace, dumped, washed, and then returned to the wagons.

During the process of filling the tanks on the wagons, the lids G are only open during the few moments necessary for dumping the contents of buckets into the tanks so that during the major part of the operation of collecting garbage the likelihood of the contents of the tanks becoming offensive to persons on the street is reduced to a minimum and when the tanks are filled and in transit to the place of deposit they are tightly closed. The transfer of the garbage tanks to scows or other conveyances does not involve an exposure of the offensive contents to the air.

In order still further to facilitate the operations of emptying and cleaning the tanks T, we provide the structure shown in Fig. 5. The upper conical portion G, as there shown, is separate from the cylindrical portion, or main body, of the tank T, and is provided with a downwardly projecting lip G′, which fits into the tank T. The tank T is provided with the bayonet-joint slot T′, into which the pin G², secured to the conical top piece G, fits snugly. The conical top G is thus fitted into the tank T, the pin G² slipping into the slot T′; then a slight turn of the top G binds the pins G² in the slot. When it is desired (the connection *e* being unshipped, and the bar H locked in lid-holding position) the top G may be lifted bodily from the tank T, which can then be easily emptied and afterward cleaned. The inner surfaces of the top G can also be readily cleaned while the top is detached.

What we claim and desire to secure by Letters Patent is:

1. In a wagon for transportation of offensive material, the combination of a wagon frame, a tank removably supported on the frame, laterally projecting trunnions, squared in part, on said tank, squared sockets on the frame to receive the squared parts of the trunnions, the cylindrical portions of the trunnions being clear of the supports therefor to admit the introduction of hooks or like lifting means.

2. In a wagon for transportation of offensive material, the combination of a wagon frame, a tank removably supported on the frame, laterally projecting trunnions squared in part, on said tank, squared sockets on the frame to receive the squared parts of the trunnions, the cylindrical portions of the trunnions being clear of the supports therefor to admit the introduction of hooks or like lifting means, and a reinforcing strap, secured to the tank and extending from trunnion to trunnion under the bottom of the tank on the outside thereof.

3. In a wagon for transportation of offensive material, the combination of a wagon frame, a tank removably suspended on the frame, a hinged lid for said tank, a bar pivoted on the top of said lid, to swing from one side to the other, said bar projecting beyond the edge of the lid, and provided with means to coöperate with securing devices on one side, and lid lifting devices on the other, and said lifting devices.

4. In a wagon for transportation of offensive material, the combination of a wagon frame, a tank removably suspended on the frame, a hinged lid for said tank, a bar pivoted on the top of said lid, to swing

from one side to the other, said bar projecting beyond the edge of the lid, and provided with means to coöperate with securing devices on one side, and lid lifting devices on the other, said lifting devices, comprising a movable footboard suspended from the wagon frame, and connections from the footboard to the bar on the lid to open the lid when weight is applied to the footboard.

5. In a wagon for transportation of offensive material, the combination of a wagon frame, a tank removably suspended on the frame, a hinged lid for said tank, a bar pivoted on the top of said lid, to swing from one side to the other, said bar projecting beyond the edge of the lid, and provided with means to coöperate with securing devices on one side, and lid lifting devices on the other, and said lifting devices, comprising a movable footboard suspended from the wagon frame, an extension piece detachably secured to the projecting end of said bar, and connections from the movable footboard to the extension piece, to open the lid when weight is applied to the footboard.

6. In a wagon for transportation of offensive material, the combination of a wagon frame, a tank removably suspended on the frame, a hinged lid for said tank, a bar pivoted on the top of said lid, to swing from one side to the other, said bar projecting beyond the edge of the lid, and provided with means to coöperate with securing devices on one side, and lid lifting devices on the other, and said lifting devices comprising movable footboards, suspended from the wagon frame on either side thereof, and an extension piece formed with laterally extending branches removably secured to the projecting end of said bar, and connections from each branch of the extension piece to one of the movable footboards, to open the lid when weight is applied to either footboard.

7. In a wagon for transportation of offensive material, the combination of a wagon-frame, a plurality of interchangeable tanks, removably suspended on said frame, means to hold the tanks on said frame, lids on the tanks and means for opening said lids, comprising movable footboards, lid-controlling bars, and detachable connections from the footboards to the bars.

8. In a wagon for transportation of offensive material, the combination of a wagon-frame, a tank removably supported on said frame, a removable top for said tank, bayonet-jointed to the tank, provided with a filling aperture, a lid over said aperture, a movable footboard suspended from the wagon-frame, and connections from the movable footboard to said lid to open the latter when weight is applied to the former.

9. In a wagon for transportation of offensive material, the combination of a wagon-frame, a tank removably supported on the frame, a removable top for said tank, bayonet-jointed to the tank, provided with a filling aperture, a lid over said aperture, a movable footboard suspended from the wagon-frame, connections from the movable footboard to said lid, to open the latter when weight is applied to the former, and means to close said lid automatically when weight is removed from the footboard.

Signed by us at Boston, Massachusetts, this twenty third day of March 1908.

EDGAR S. DORR.
MELVILLE F. ROGERS.

Witnesses:
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CHARLES D. WOODBERRY.