

No. 835,008.

PATENTED NOV. 6, 1906.

A. CAMERON.
DUMPING WAGON.

APPLICATION FILED FEB. 19, 1906.

4 SHEETS—SHEET 1.

Fig. 1.

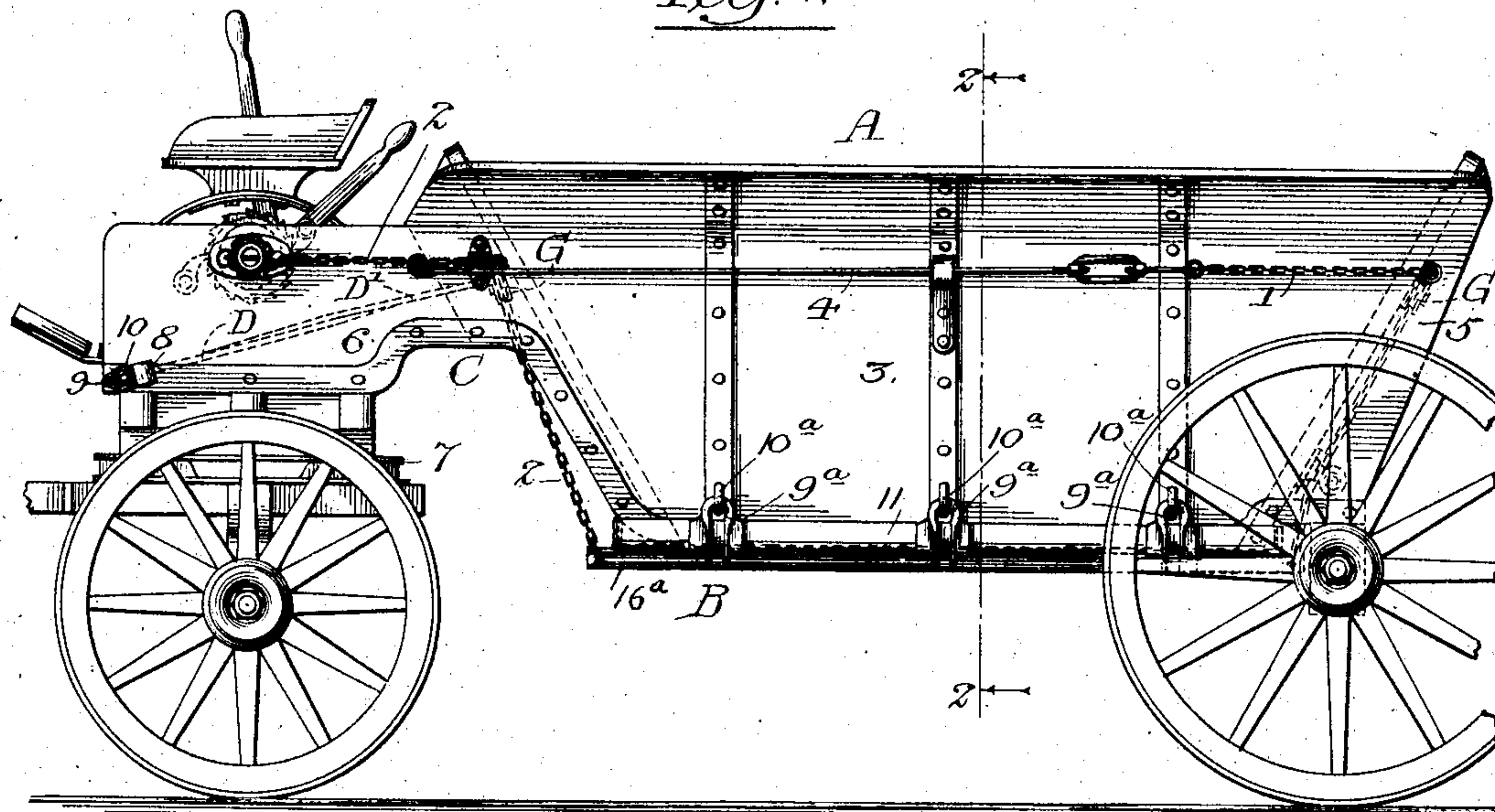
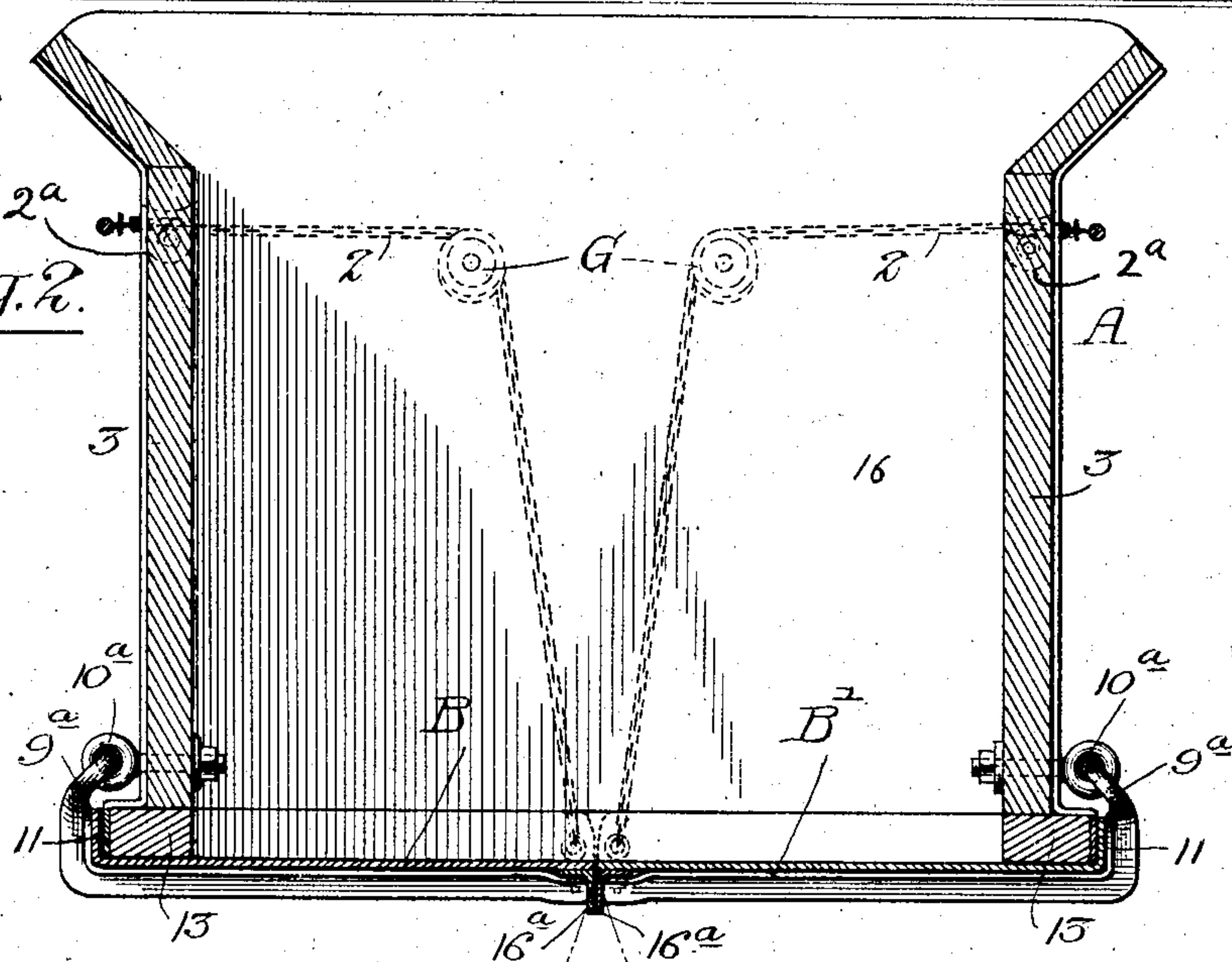


Fig. 2.



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4 SHEETS—SHEET 2.

Fig. 3.

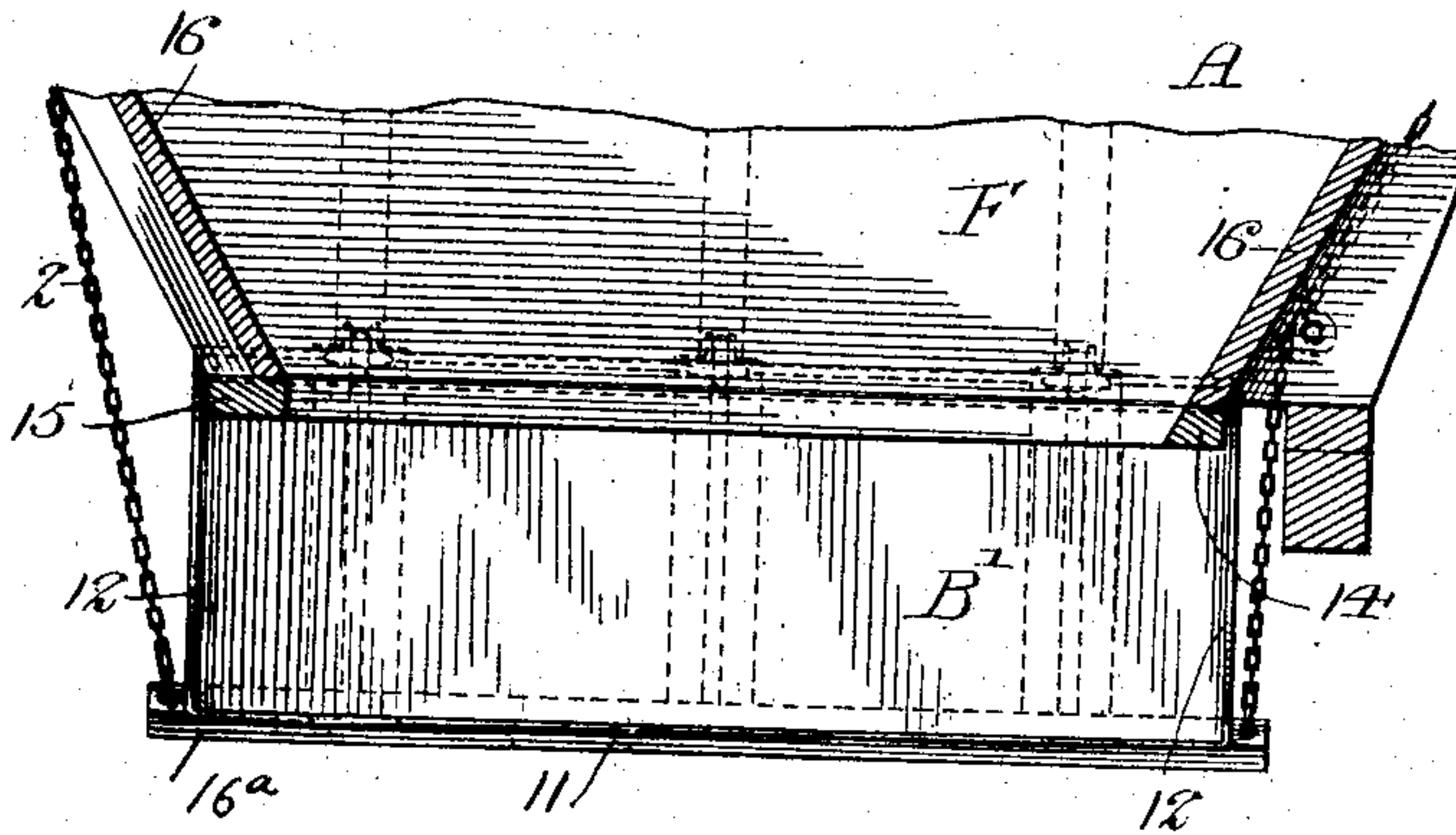
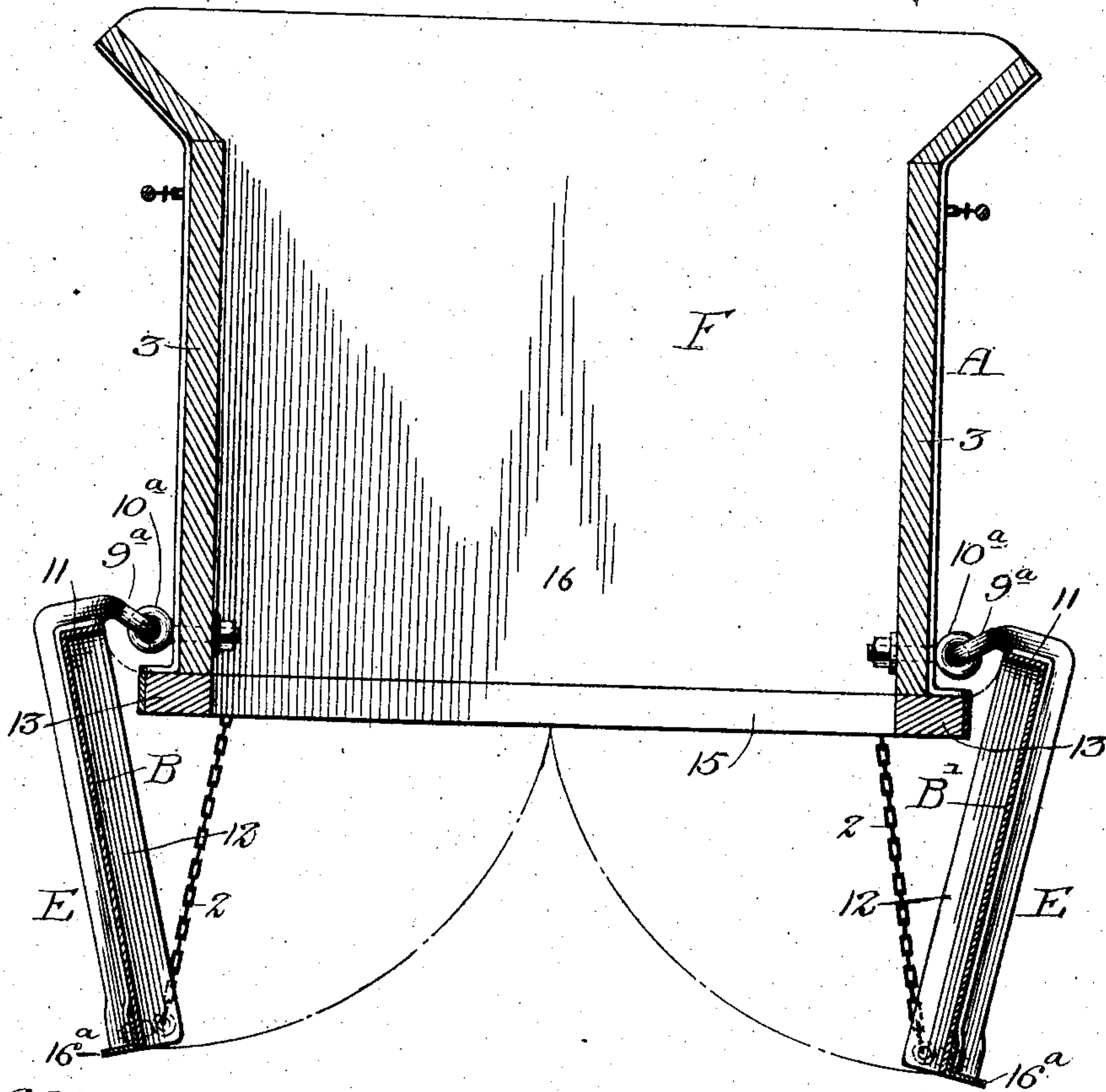


Fig. 4.



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4 SHEETS—SHEET 3.

Fig. 5.

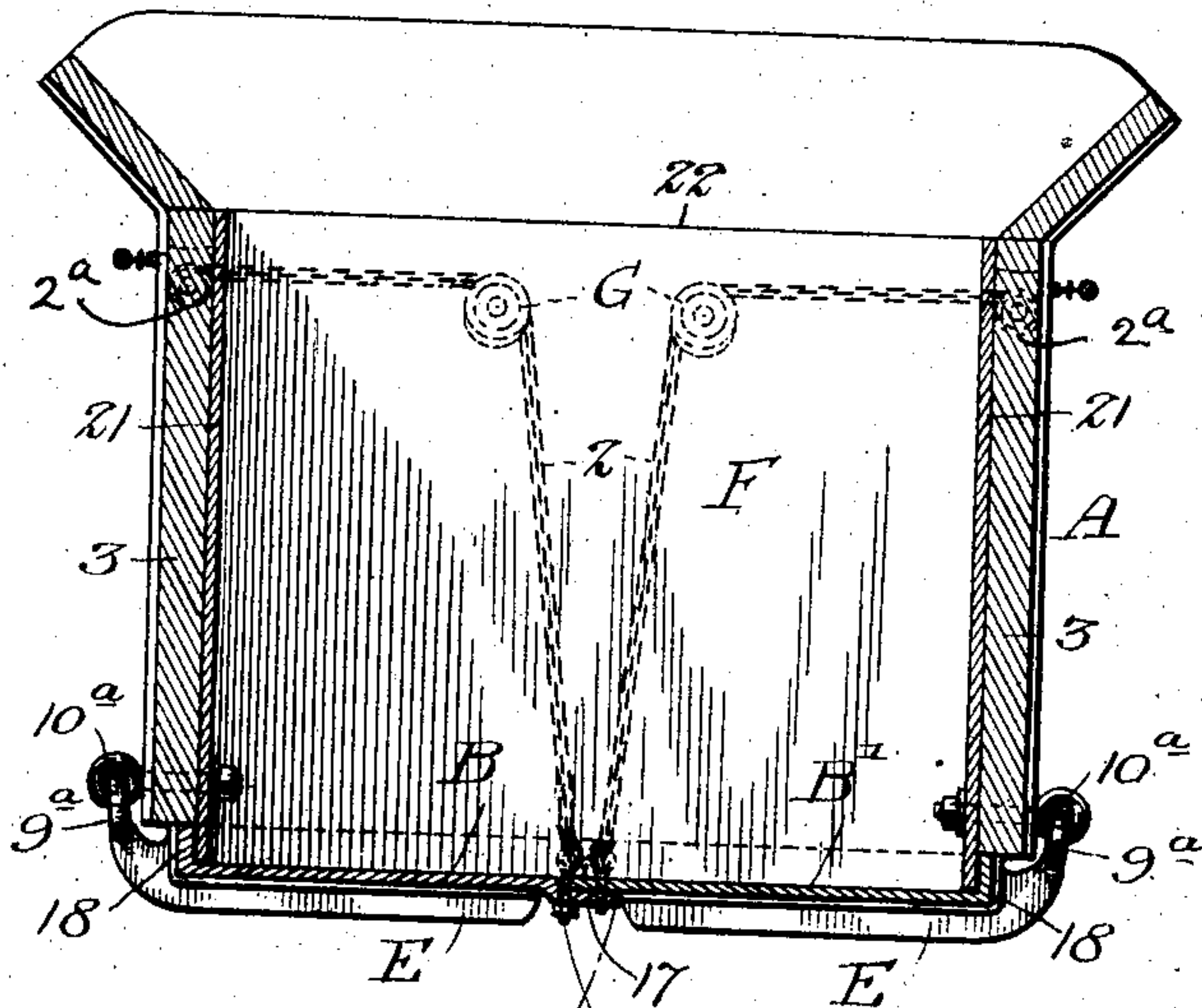
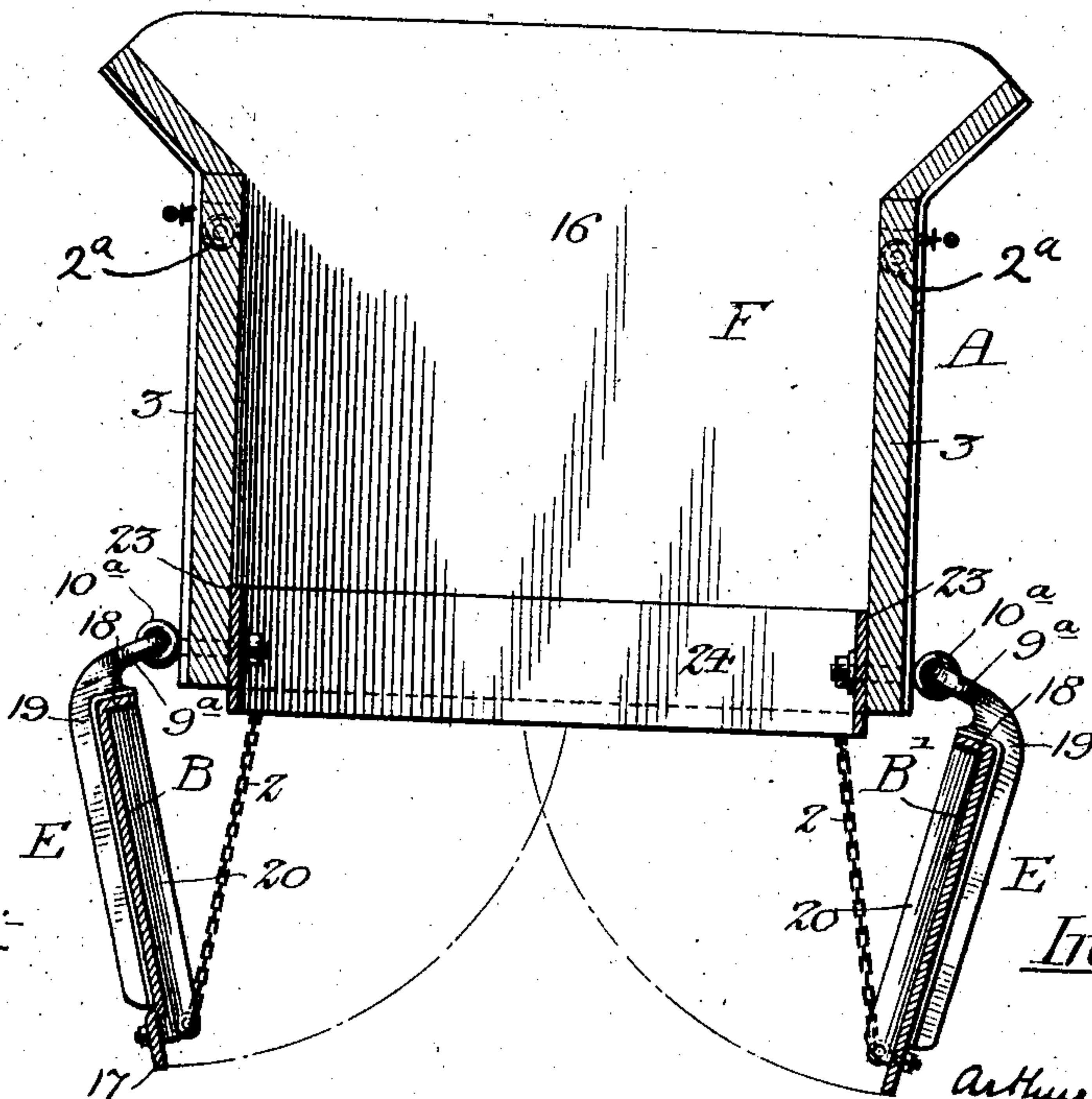


Fig. 6.



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Fig. 7.

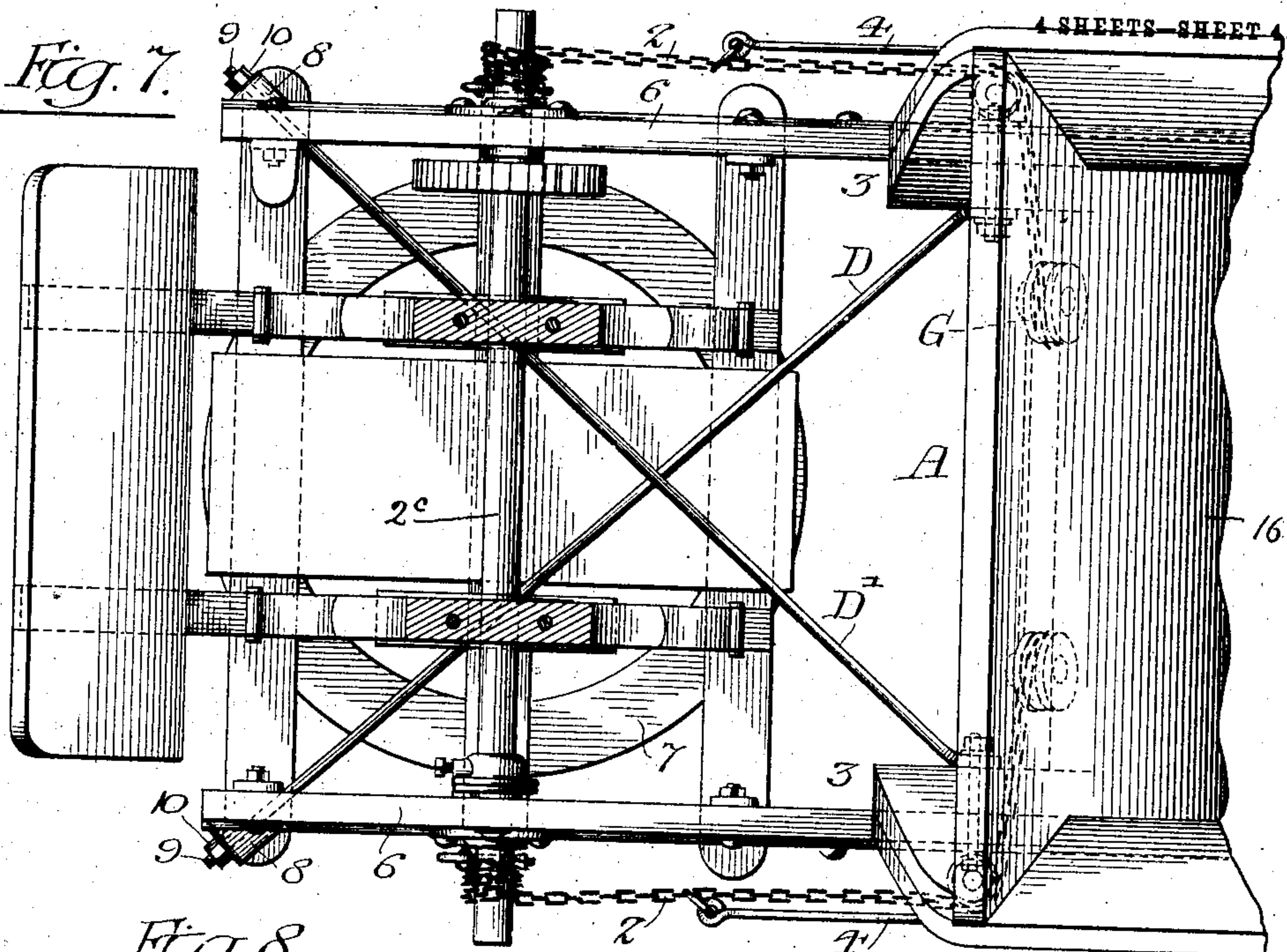
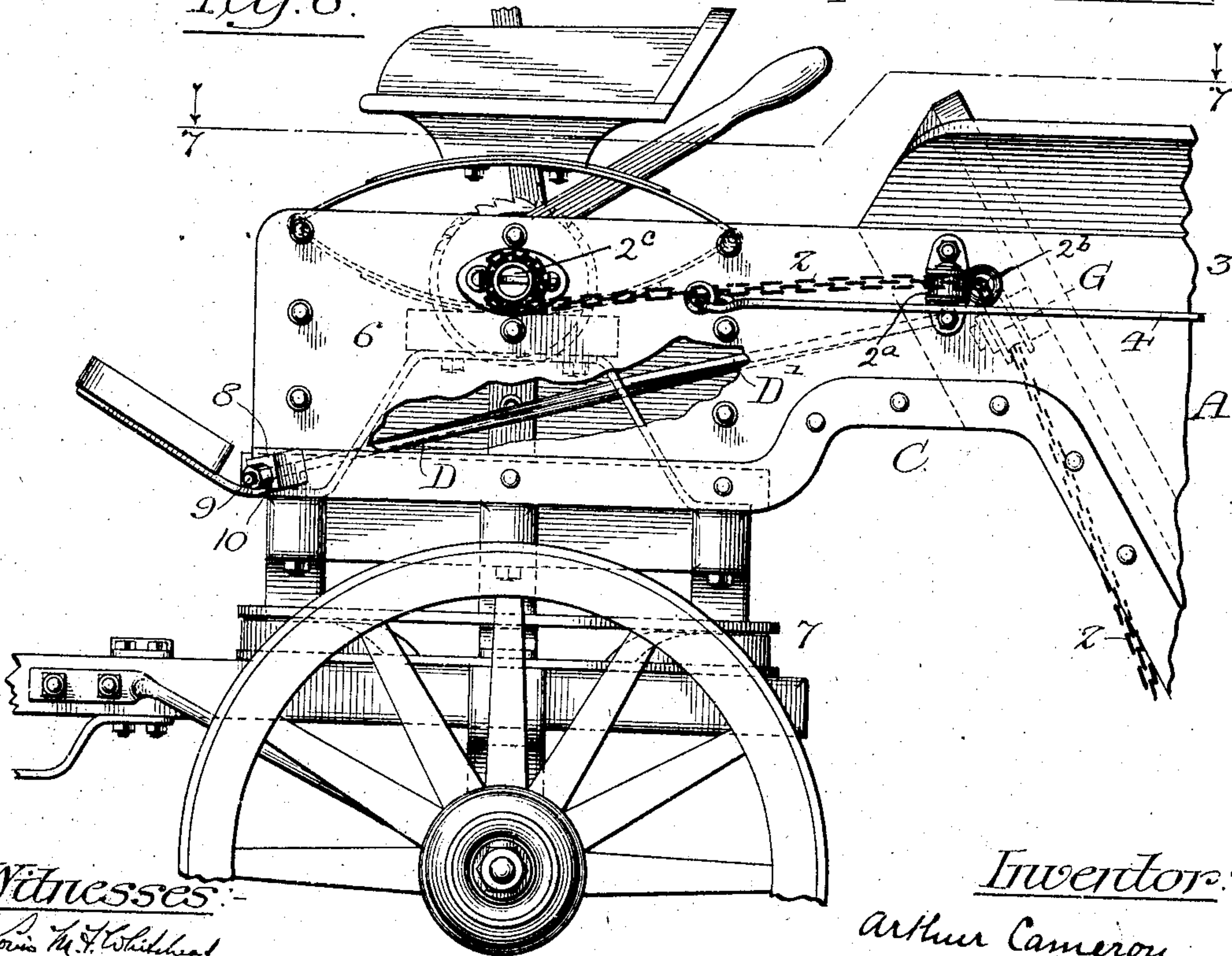


Fig. 8.



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UNITED STATES PATENT OFFICE.

ARTHUR CAMERON, OF JACKSON, MICHIGAN.

DUMPING-WAGON.

No. 835,008.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed February 19, 1906. Serial No. 301,835.

To all whom it may concern:

Be it known that I, ARTHUR CAMERON, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification.

My invention relates to dumping-wagons of the kind or class in which a box-body is sustained upon front and rear wheels and adapted to form a load-carrying receptacle having its bottom formed by a pair of oblong longitudinally-extending bottom doors hinged upon the box-body at their outer edges and operated by some suitable arrangement of chains or cables and winding means therefor. Prior to my invention dumping-wagons of such general construction have been formed with their longitudinal sides extended forward from the receptacle portion and shaped so as to form between the load-carrying receptacle and the fifth-wheel an undercut or gooseneck portion. In practice this undercut or gooseneck portion of the box-body has been the weakest portion of the same, and various defects in such construction have existed prior to my invention.

Objects of my invention are to adapt the box-body, including the undercut or gooseneck portion thereof, to form a rigid reach or structure; to avoid injury by reason of the side and torsional strains to which the undercut body portion is subjected during use; to maintain the front and rear wheels in relative track; to provide the load-carrying receptacle with relatively thin and suitably strong and rigid metal doors which will readily cut through a pile of dirt during the advancement of the wagon; to provide a tight closure when the doors are in closed position, and thereby avoid the sifting out of sand or soil from the receptacle of the wagon, and to provide further improved matters of detail hereinafter set forth.

In the accompanying drawings, Figure 1 is a side elevation of a dumping-wagon understood to involve my improvements. Fig. 2 is a transverse section on a larger scale on line 2 2 in said figure. Fig. 3 is a longitudinal section on a vertical central plane, showing in elevation one of the doors in an open condition. Fig. 4 is a view like Fig. 2, but showing the doors open. Fig. 5 is a section like Fig. 2 on a slightly-smaller scale, showing certain differences in detail, as hereinafter

ter more particularly described. Fig. 6 is a view like Fig. 5, but showing the doors open and also showing a metal lining of less height than the height of the metal lining shown in Fig. 5. Fig. 7 is a top plan, on an enlarged scale, of the forward end portion of the wagon, the seat being removed by taking a section on line 7 7 in Fig. 8, in which the seat is present. Fig. 8 is a side elevation of Fig. 7, the front wheels being removed in Fig. 7, while in Fig. 8 a portion of the near front wheel is shown.

The dumping-wagon is constructed with a box-body A, adapted to form the side and end walls of a receptacle for receiving and carrying a load, the bottom of the receptacle being formed by bottom doors B B', which are hinged upon opposite sides of the box-body and arranged to swing into position for closing the receptacle at its bottom, as in Figs. 2 and 5, and in alternation therewith to swing downwardly and outwardly from their closed position, as in Figs. 4 and 6, so as to dump the load.

The bottom doors can be raised and closed by any suitable arrangement of chains or cables and winding device therefor and permitted to open by allowing the chains or cables to pay out from the winding device. Raising and lowering means for such purpose are common in dumping-wagons and well known in the art, and it is therefore regarded as unnecessary to enter into details of the winding device. As a matter of special improvement, however, the lifting-chains 1 and 2 for the near door extend upwardly from opposite ends of the door and pass over pulleys G G at opposite ends of the receptacle and thence pass outwardly through openings in front and rear extensions of the near side 3 of the box, said chains being connected by a chain or rod 4 and the chain 2 being extended forward to a winding device. It is also understood that a like arrangement of pulleys, chains, and connection therefor is provided in conjunction with the far or opposite door of the box and that the chain portions which extend upwardly from the doors to and thence pass through said openings in the front and rear extensions 5 and 6 of the box-body are outside the load-carrying receptacle. The sides 3 3 of the box-body form the sides of the load-carrying receptacle and are extended back therefrom to provide rear extensions 5, said sides 3 3 being also extended forwardly to provide the side

extensions 6. The forward extensions of the box-body are shaped to provide an undercut or goose neck. The box-body as a whole is therefore formed with an undercut or goose-neck portion C between the load-carrying receptacle and its forward end, it being observed that the front end wall of the load-receptacle inclines upwardly and forwardly in conformity with this undercut or goose-neck formation. The box-body, which is supported at its rear end upon the rear wheeled axle and supported at its forward end upon a fifth-wheel 7 on the front-wheeled axle, is both a box and a reach. In order to strengthen the undercut or gooseneck portion of such reach or box-body proportionally to its receptacle part, to brace and tie together its said two component parts, to avoid damage from lateral and twisting strains during use, and to keep the front and rear wheels in relative track, the forward end of the box-body is further connected with the portion of the box-body back of the undercut or gooseneck by a truss constructed with inclined and diagonally-arranged crossing truss-rods D D', arranged between and practically concealed by the forwardly-projecting side extensions 6 6 of the box-body. The forward lower ends of these rods are attached to lower front corner portions of the box-body, preferably by extending them through bearings 8, rigid with the box-body, and providing their threaded terminals 9, which extend out from such bearings, with tightening-nuts 10. With this arrangement the rear ends of the rods can be provided with eyes and secured to the sides of the box-body at points back of the undercut or gooseneck by bolts and nuts, as illustrated by dotted lines in Fig. 7. By this simple arrangement the spaced sides of the box-body are also relatively braced against lateral strains, and the draft of the load is sustained by the truss-rods, as well as by the gooseneck portion, it being clearly shown in Fig. 7 that these rods extend over the space within the arch of the undercut or gooseneck.

The bottom doors are each constructed of sheet-steel or a steel plate and further stiffened by upturned marginal edge portions, and also by long straps of the hinges by which each door is hung upon the box-body of the wagon.

Each hinge device consists of a metal hinge-strap E, extending across and secured to the bottom sides of the door and provided with a loop 9^a, which engages with an eye 10^a on the outer sides of the box-body. The metal hinge-straps extend across or substantially across the width of the doors to which they are secured, and in order to further stiffen the doors and advantageously secure the metal hinge-straps thereto each hinge-strap is formed as a long staple having its legs secured to the under side of a door and having

its bent middle portion turned up to form the loop 9^a for engaging with a suitable eye 10^a on the box-body.

In Figs. 2 and 4 each bottom door is formed with an upturned marginal flange 11 along its outer longitudinal edge portion and with like flanges 12 along its end edge portions. In said Figs. 2 and 4 the receptacle portion of the box-body is constructed with longitudinal side ribs or cleats 13, extending between the front and rear end walls of the receptacle and projecting laterally outward from the planes of the sides 3 of the box-body. The receptacle portion of the box-body shown in Figs 2 and 4 is also constructed with transverse ribs or cleats 14 and 15, arranged at the base portions of the inclined end walls 16 16, Fig. 3, of the load-carrying receptacle F. When the bottom doors are closed, their upturned marginal portions, forming longitudinal edge flanges 11, are in position against the longitudinal cleats 13 at the base portions of the sides of the load-carrying receptacle, an illustration of the closure thus afforded by the door-flanges 11, in conjunction with the ribs or cleats 13, being afforded by Fig. 2, in which the longitudinal flanges of the bottom doors are in close juxtaposition to the outer vertical sides of the longitudinal cleats 13 13 on the box-body. It will also be readily understood that when the doors are closed their end flanges 12 will be opposite and in close juxtaposition to the outer vertical sides of the transverse cleats 14 and 15. (Shown in Fig. 3.) When the doors are thus closed, with their outer side and end flanges in position alongside and close to the outer vertical sides of the cleats, leakage of sand or like fine material from the receptacle F will be prevented.

In Figs. 5 and 6 the doors and hinge devices generally correspond with the doors of preceding figures, and therefore like parts in all of the figures are correspondingly lettered. In Figs. 2 and 4, however, angle-plates 16^a are secured to the inner longitudinal edge portions of the doors and arranged to come close together or relatively abut when the doors are closed, as in Fig. 2; but in Figs. 5 and 6 the doors lap one another when closed, and while the inner longitudinal marginal portion of each door can be bent to form the temporary lap-joint connection it will only be necessary to bend or form one door with an offset 17, Fig. 6, which receives the longitudinal marginal portion of the opposite door when the doors are closed, as in Fig. 2. By thus lapping the closed doors there will not be a gap or open seam between them as long as they remain closed, and even should either door become shifted or set outwardly by reason of any bend or wear or the like of the outer hinge means the original extent of lap between the doors will be under all ordinary circumstances sufficient to maintain a

suitable degree of lap when the doors are closed, and thereby prevent leakage.

In Figs. 5 and 6 the longitudinal flanges 18 of the doors generally correspond with the flanges 12 of preceding figures, it being observed, however, that when the doors of Figs. 5 and 6 are closed the upper edges of the flanges 18 close against the lower edges of sides 3 of the box-body. It is also understood that the end flanges 20 in Figs. 5 and 6 can be formed like the side flanges 18 and that their upper edges can bear against the lower edges of the end boards of the load-carrying receptacle when the doors are closed.

The inner walls of the load-carrying receptacle can also be wholly or partially lined with metal plates or sheet metal, such as sheet-steel, and this lining can be extended below the lower edges of the wooden sides and ends of the receptacle, as in Figs. 5 and 6. In Fig. 5 the metal wall-plates or plate portions 21 21 and 22 extend substantially the height of the receptacle and also extend below the wooden sides 3 3 and the wooden ends 16 16 (shown in Fig. 3) of the receptacle F, and when the doors are closed they will close against the lower edges of the plates 21 and 22. In Fig. 6 the plates or plate portions 23 23 and 24 extend below the sides and ends of the receptacle and extend up only a portion of the height of the latter. These plates form entire or partial linings for the receptacle, and by extending them below the wooden receptacle-frame their lower edge portions form guards, against which the doors can close, and thereby provide tight closures.

In Figs. 2 to 6, inclusive, the bottom doors and their hinge devices involve substantially the same construction of hinge device, and each door of said figures has its marginal flange portion brought against the box-body structure at the base of the receptacle to form tight closures when the doors are closed. It is also obvious that the receptacle shown in Figs. 2 and 4 can be provided with metal lining and that the doors could close against the lower edge of such lining.

With further reference to the special and improved means for closing the doors and for permitting them to open for the purpose of dumping the bottom doors extend forwardly and rearwardly beyond the bottom portion of the receptacle F, as illustrated by Fig. 1, in which the forward end extension of one of such bottom doors is shown. The chains or cables 2 are attached to the forward end extensions of the bottom doors outside of the receptacle and at points near the inner edge portions of said doors, as in Figs. 2 and 5. Said figures also indicate in dotted lines the forward pulleys G arranged in front of the forward end wall of the receptacle and chains 2 extending from the bottom doors up to and over those two pulleys and thence to and

through openings in sides 3 of the box-body. At the points where chains 2 extend through sides 3 of the box-body the latter is provided with pulleys, over which the chains pass, these pulleys 2^a being illustrated by dotted lines in certain figures, while one of them is shown in full lines in Fig. 8. The portions of chains 2 between pulleys G and 2^a pass through suitable openings in the sides of the box-body at points forward of the receptacle, one of such openings 2^b being shown in Fig. 8, the connections between the forward ends of rods or links 4 and the chains 2 being outside the box-body, as in Figs. 7 and 8. The chains 2 extend forward to and connect with a well-known winding device, comprising, for example, a rotary winding-shaft 2^c and a pawl-and-ratchet device for operating and also for releasing the same. The rear chains or cables 1 are understood to extend through side openings in the rear side extensions 5 of the box-body and to pass over rear pulleys corresponding with the forward set of pulleys 2^a and G, the rear pulleys G being in rear of the receptacle, as in Fig. 1, in which one of the two rear pulleys G is illustrated in dotted lines. The rods or links 4 have their rear ends connected with the upper forward ends of chains 1 outside the box-body, the forward ends of these rods or links being connected with the chains 2 at points forward of the openings through which such chains extend.

In Fig. 3 the steel plate forming a door is shown formed with its end edge portions turned up to form the end flanges 12, and in such case the door is practically extended forwardly and rearwardly by the end portions of angle-plate 16^a, to which the chains 1 and 2 are attached; but in Figs. 5 and 6 the end flanges 20 of each door can be omitted and the lower edges of the plates 21 or 24 used to coact with the plane top surfaces of the doors to form closures when the doors are in closed position, or the flanges can be secured to the doors along transverse lines back from their ends.

What I claim as my invention is—

1. In a dumping-wagon, a box-body constructed with a load-carrying receptacle and supported upon front and rear wheeled axles, the box-body as a whole constituting a reach and being formed with an undercut or gooseneck between the receptacle and its point of support upon the front axle; and a truss device between the side portions of the body forward of the receptacle and consisting of diagonally and relatively crossing truss-rods attached at their forward ends to the forward end portion of the body and inclined upwardly and rearwardly from such points of attachment and extending back over the undercut and connected at their rear ends with opposite sides of the body.

2. In a dumping-wagon, a box-body con-

constructed with side boards forming opposite sides of the receptacle and extended forwardly from the receptacle and adapted to form an undercut or gooseneck, and a truss device comprising diagonal truss-rods, between the opposite sides forward of the receptacle and rigidly connecting the portion forming the receptacle with the side portions forward of the undercut.

10 3. In a dump-wagon, a box-body constructed with a load-carrying receptacle and provided with hinged bottom doors therefor, and a metal plate or plates secured on inner walls of the receptacle and projecting below
15 the same, the bottom doors and the plate or plates thus projecting below the receptacle being relatively arranged to permit the upper sides of the doors to close against the lower edges of the metal plate or plates when the
20 doors are in closed position.

4. In a dump-wagon, a box-body constructed with a load-carrying receptacle provided with a metal plate or plates secured to its inner wall and extending below the bottom of the load-carrying receptacle; and bottom doors hinged at opposite sides of the receptacle and having upturned flanges which close against the lower edge of vertical walls of the receptacle when the doors are closed,
25 the bottom doors and also the plate or plates thus projecting below the receptacle being arranged to permit the doors when brought

into closed position to fit against the lower edge portion or portions of the metal plate or plates projecting below the lower edge of the vertical walls of the receptacle against which the flanges of the bottom doors fit when the doors are closed. 35

5. In a dump-wagon, a box-body constructed with a load-carrying receptacle provided with hinged metal bottom doors having upturned marginal flanges which coact with the box-body to form a closure when the bottom doors are in a closed position, the load-carrying receptacle being also provided
40 upon inner walls thereof with metal plates extending below the receptacle to an extent to permit the doors when brought into closed position to fit against the lower edge portion of the metal plate or plates projecting below
50 the receptacle.

6. In a dump-wagon, the box-body constructed with a load-carrying receptacle and bottom doors therefor hinged to the longitudinal sides, said doors being steel plates having upturned marginal flanges, the upper
55 edges of such flanges being brought under and against or in juxtaposition to the bottom edges of walls of the receptacle when the doors are closed.

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