

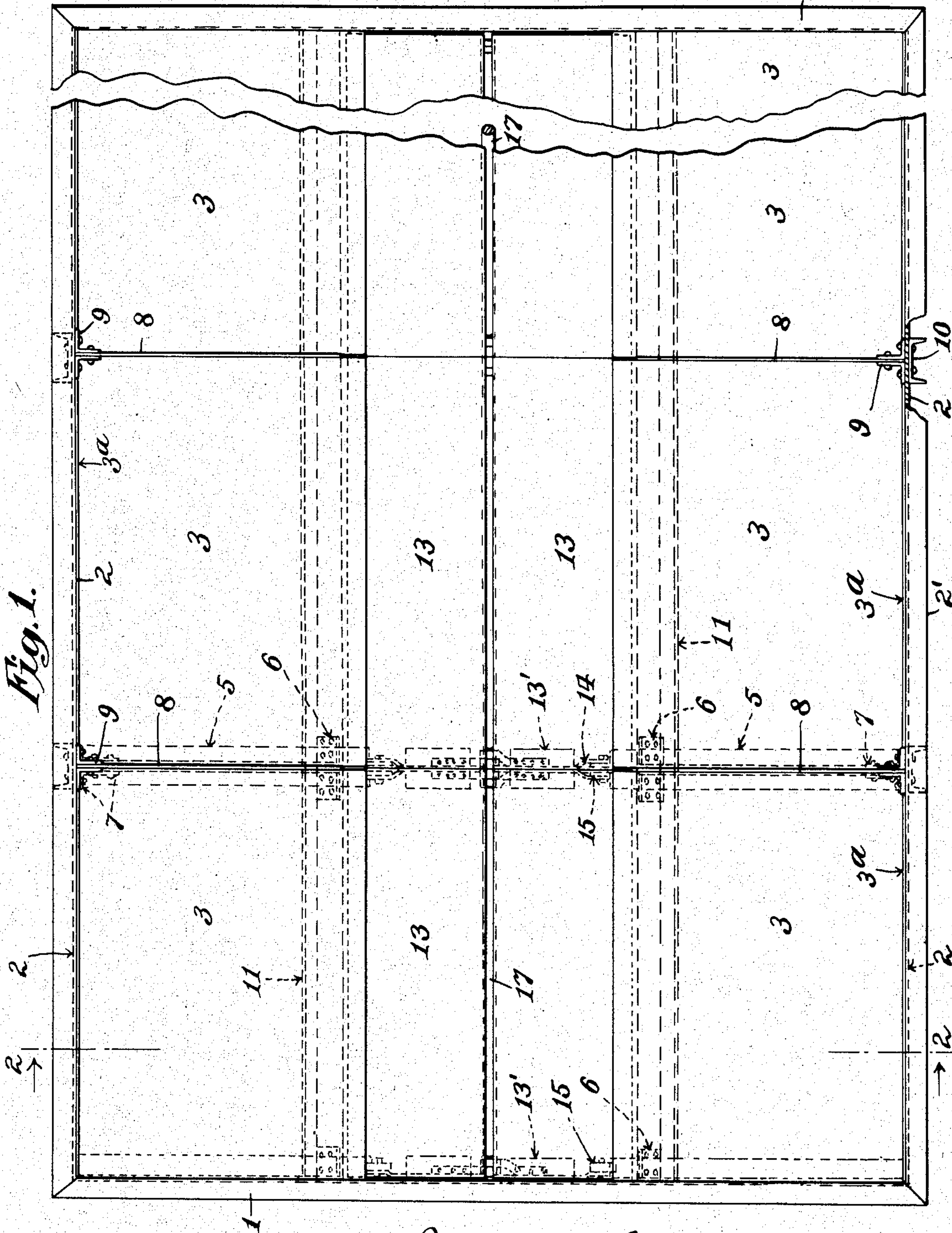
No. 816,009.

PATENTED MAR. 27, 1906.

J. M. GOODWIN.
DUMPING VEHICLE.

APPLICATION FILED JAN. 4, 1906.

6 SHEETS—SHEET 1.



Attest:
Edgeworth
H. Kimball

John M. Goodwin Inventor:
by *W. H. Moore* Attys.

No. 816,009.

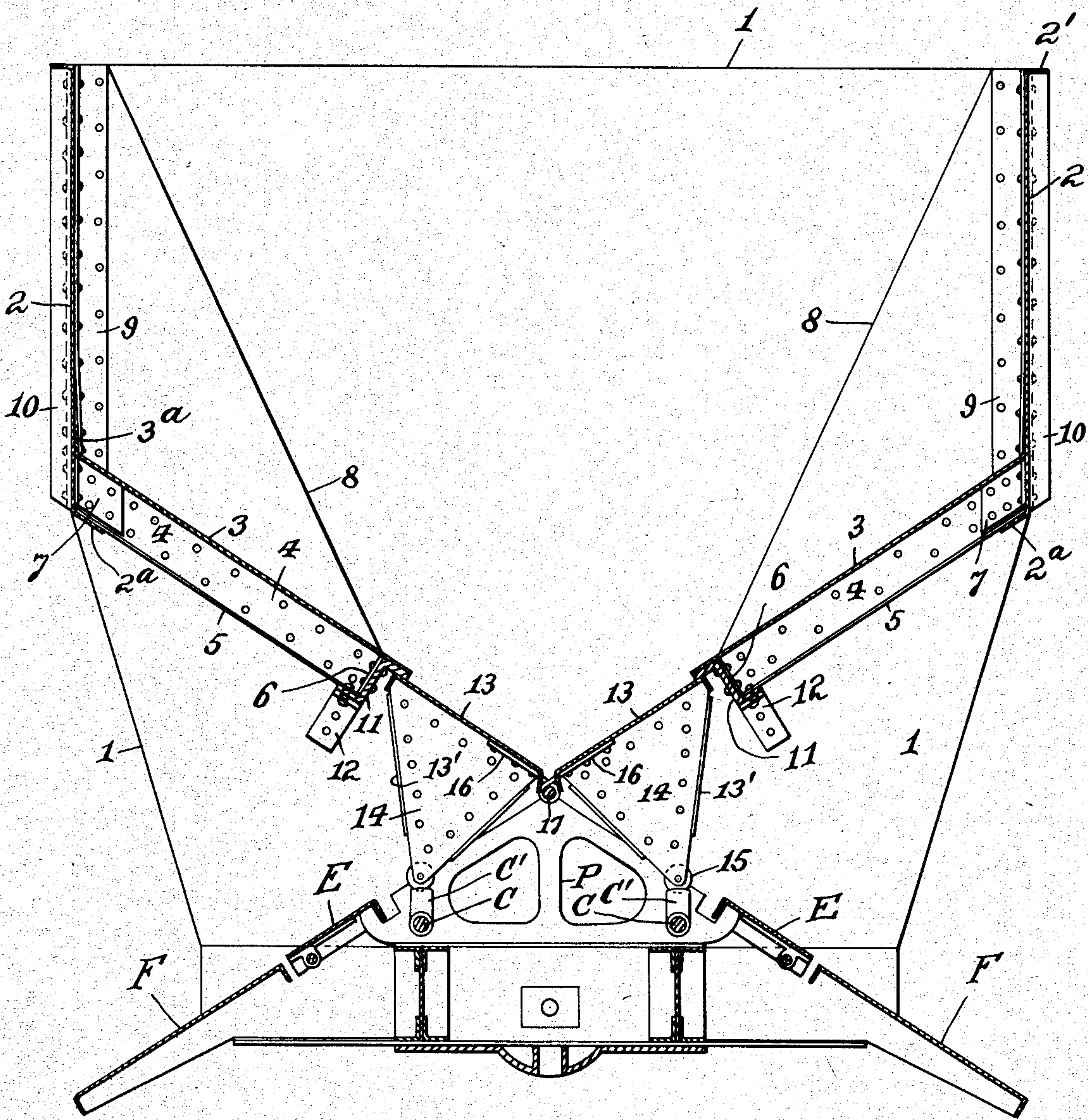
PATENTED MAR. 27, 1906.

J. M. GOODWIN.
DUMPING VEHICLE.

APPLICATION FILED JAN. 4, 1906.

6 SHEETS—SHEET 2.

Fig. 2.



Attest:
Edgworth Jones
H. G. Kimball

John M. Goodwin Inventor:
by *McQuay-Norris* Attys.

No. 816,009.

PATENTED MAR. 27, 1906.

J. M. GOODWIN.
DUMPING VEHICLE.

APPLICATION FILED JAN. 4, 1906.

6 SHEETS—SHEET 3.

Fig. 4.

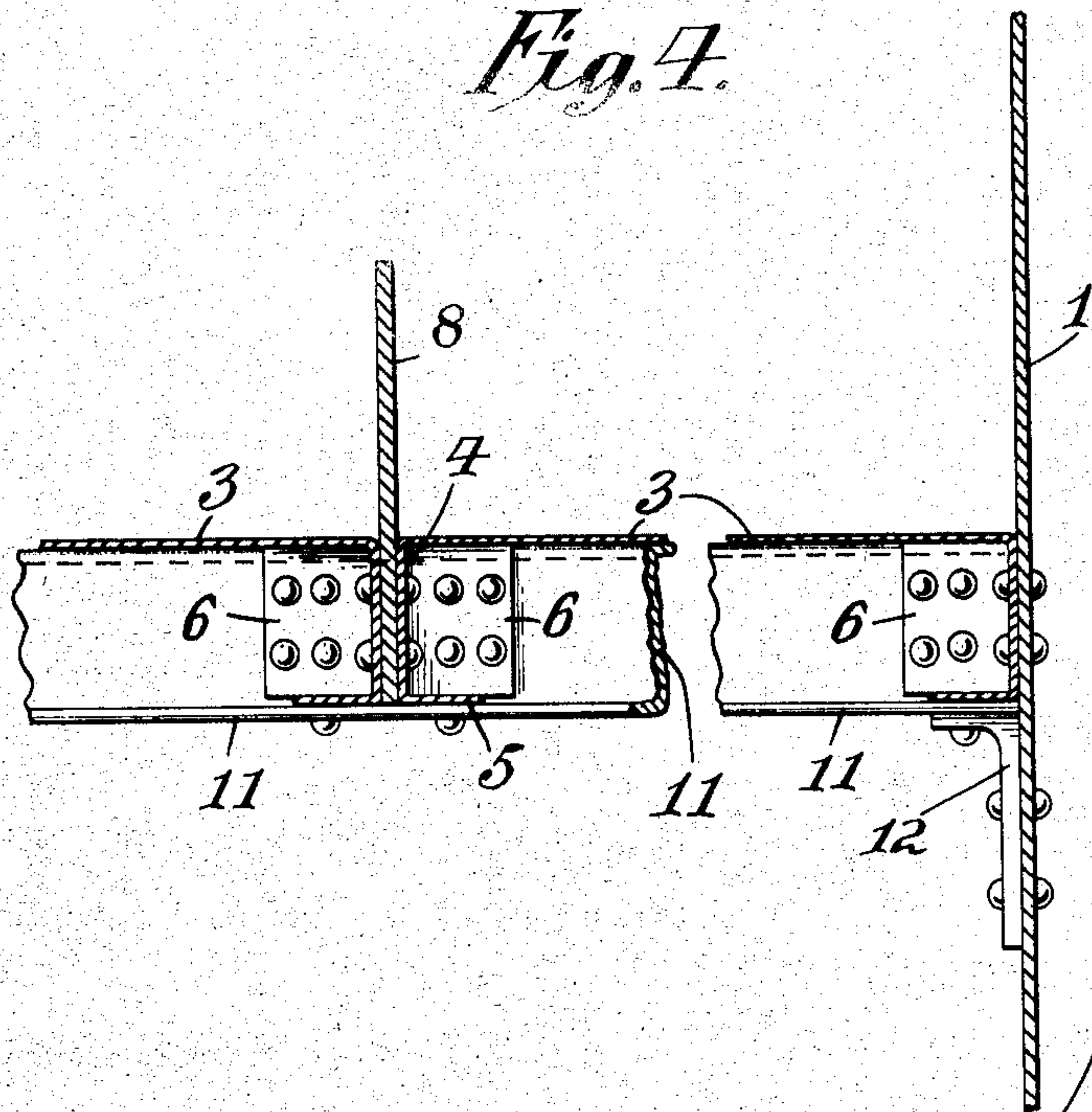
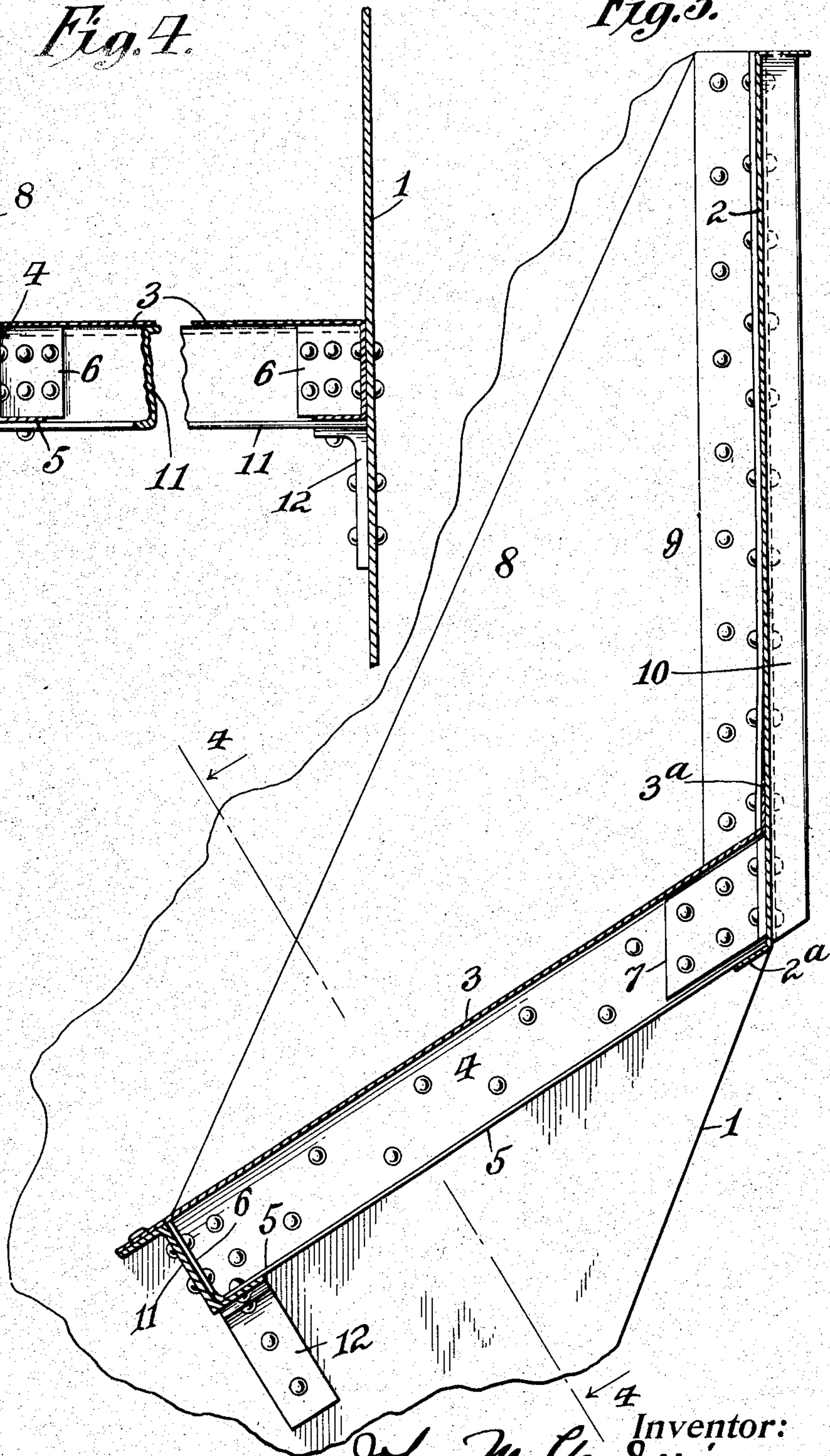


Fig. 3.



Attest:
Edgeworth
W. H. M. Ball

Inventor:
John M. Goodwin
by *W. H. M. Ball* Attys.

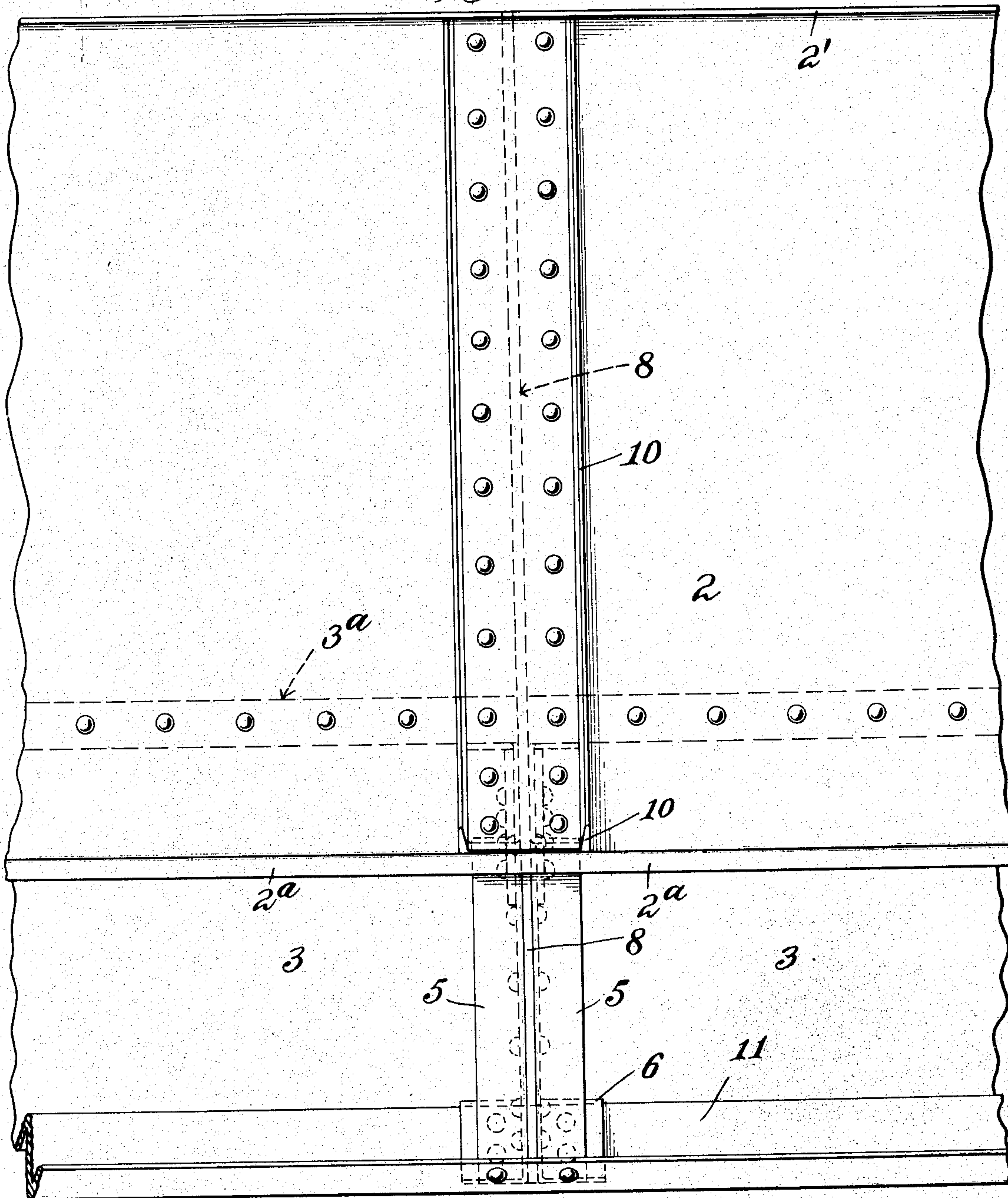
No. 816,009.

PATENTED MAR. 27, 1906.

J. M. GOODWIN.
DUMPING VEHICLE.
APPLICATION FILED JAN. 4, 1906.

6 SHEETS—SHEET 4.

Fig. 5.



Attest:
Edgeworth Smith
A. G. Hunter

John M. Goodwin Inventor:
by *Wm. H. Jones* Attys.

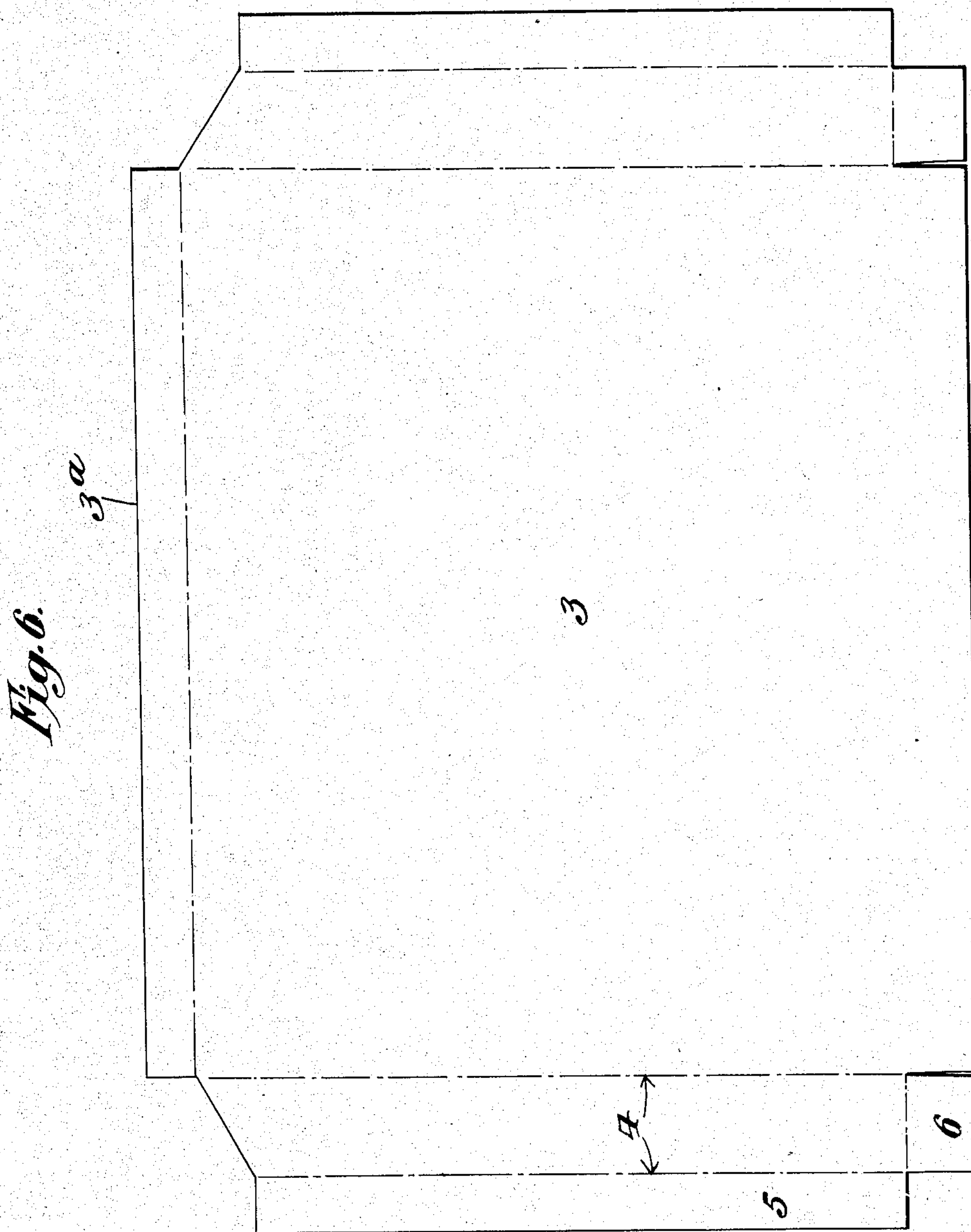
No. 816,009.

PATENTED MAR. 27, 1906.

J. M. GOODWIN.
DUMPING VEHICLE.

APPLICATION FILED JAN. 4, 1906.

6 SHEETS—SHEET 5.



Attest:

Edgeworth
H. H. M. Ball

John M. Goodwin Inventor:
by *McDonald & Jones* Attys.

No. 816,009.

PATENTED MAR. 27, 1906.

J. M. GOODWIN.
DUMPING VEHICLE.

APPLICATION FILED JAN. 4, 1906.

6 SHEETS—SHEET 6.

Fig. 7.

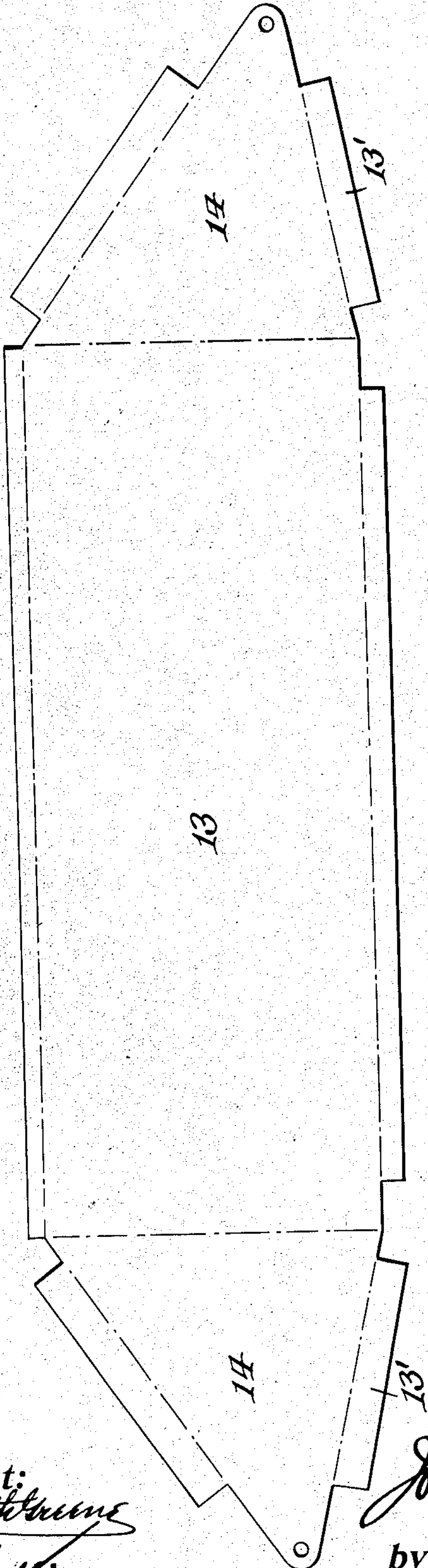
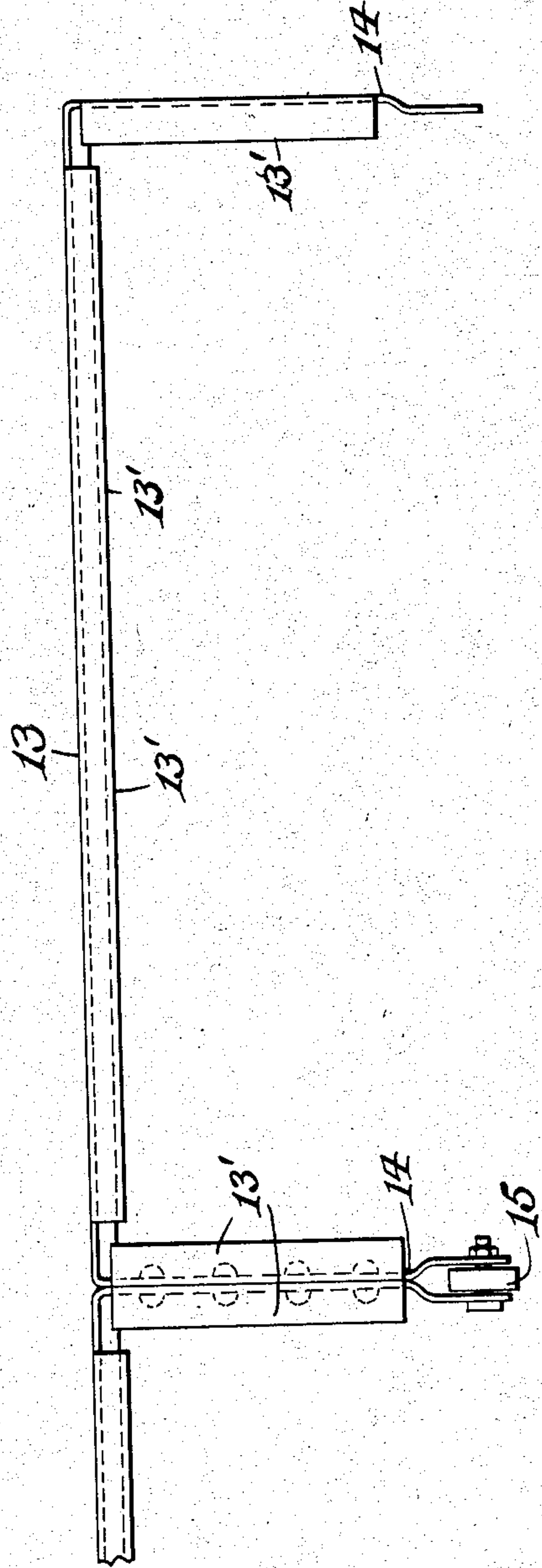


Fig. 8.



Attest:
Edgeworth Smith
J. H. Munroe

John M. Goodwin Inventor:
by *McNair & Co.* Attys.

UNITED STATES PATENT OFFICE.

JOHN M. GOODWIN, OF MOUNT VERNON, NEW YORK.

DUMPING-VEHICLE.

No. 816,009.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed January 4, 1906. Serial No. 294,521.

To all whom it may concern:

Be it known that I, JOHN M. GOODWIN, a citizen of the United States, and a resident of the city of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Dumping-Vehicles, of which the following, taken in conjunction with the accompanying drawings, is a full, true, and concise specification.

My invention relates to improvements in dumping-vehicles, and more particularly to certain improvements in the structural formation of the inclined bottoms of the cargo-carrying receptacles thereof, the object of my invention being primarily to increase the durability and load-carrying powers of such vehicles at a minimum of cost and without sacrifice to lightness of weight and load-resisting powers.

To this end the invention comprises the various features hereinbelow fully described and more particularly pointed out in the appended claims.

The drawings exhibit a preferred form of the invention.

Figure 1 is a top plan of a vehicle with parts broken away and in section. Fig. 2 is a vertical section taken on line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional detail showing the gusset-sheet and cognate parts; Fig. 4, a sectional view on lines 4 4 of Fig. 3. Fig. 5 is a detail in side elevation of a portion of the exterior of the vehicle. Fig. 6 is a developed blank from which the floor-sections are formed. Fig. 7 is a developed blank from which the center valve-sections are formed; and Fig. 8 is a detached view of a center valve-section, showing the antifriction-roller.

Referring first to Figs. 1 to 5, the cargo-receptacle of the vehicle is formed by two end bulkheads 1 1 of any appropriate construction and two parallel and upright side walls 2 2. The side walls are shown herein as formed each of a continuous sheet of metal connected by its ends with the end bulkheads and having a lateral top flange 2'. The bottom of the receptacle is formed by two fixed outer floors and two center pivoted floors or valves presently to be described, and the arrangement of these floors is preferably as shown in Fig. 2, wherein it will be seen that the bottom of the receptacle pitches inwardly from both sides. The fixed or upper inclined floor, which extends the entire length of the receptacle and on each side of the same,

is formed of a plurality of flanged sheet-metal sections 3, all of similar shape and arranged side by side, so that their flanges occupy planes which are transverse to the axis of the vehicle, while their outboard ends are adjacent to the lower margins of the side walls 2, to which they are securely fastened. The diagram of Fig. 6 indicates the manner of forming these floor-sections from a flat sheet. A blank is first cut of the shape shown in this figure, and the sides are bent down at right angles to the body to form the side flanges 4 4. The margins of the flanges thus formed are then bent inwardly to form stiffening-rims 5 5, and the inner separated ends of the flanges 4 4 are bent in at right angles thereto to form the tabs 6. The side flanges are of less length than the body portions, so that there is an overhang at each end. The outboard overhang 3^a is bent upwardly at an obtuse angle, as shown in Fig. 3, while the inboard overhang is allowed to remain flat. When the sections are in place, the overhang or upwardly-bent flange 3^a is fastened to the face of the side wall, as shown in the drawings, and the edge of the flanges 4 4 or the rims 5 5 rest upon the inwardly-turned bottom flange 2^a thereof, so that the strain of the load at the outer ends of the floor-sections is transmitted to the sides at two separate points. If desired, a further reinforcement may be provided by inserting an oblique angle-iron 7 in the angle between the flanges 4 4 and the side wall 2. The floor-sections are united together by their side flanges and are further supported from the sides of the vehicle by means of the triangular gusset-sheets 8, which have their lower extremities interposed and secured between the proximate flanges 4 4, while their outer margins are connected to the face of the side walls by means of the two angle-irons 9, Figs. 1, 2, and 3, the latter being riveted through the side walls to the vertical stiffener-beams 10 on the exterior thereof. The bases or lower extremities of the gusset-sheets 8 are substantially equal in width to the length of the side flanges 4 of the floor-sections, so that they therefore support the floor throughout its entire width and at a point below its upper surface. The inboard ends of the several floor-sections are supported by a longitudinal beam or bar 11, which finds its support upon the end bulkheads by means of suitable brackets 12, planted thereon, as shown in Figs. 2, 3, and 4. This bar is preferably a Z-beam, having its

upper flange turned toward the center of the vehicle and adapted to form the support for the flat overhanging ends of the floor-sections, while its other flange is disposed beneath the flanges 4 and rims 5, to which it is secured. The web of the Z-beam is also secured to the flanges 4 4 by being riveted to the tabs 6.

The two Z-beams 11 mark the lateral boundaries of the central discharge-opening of the vehicle, extending from bulkhead to bulkhead, through which the cargo is adapted to pass when released. The center dumping-valves 13, which constitute the movable floors of the bottom of the receptacle, are adapted to close this opening, as shown in Fig. 2, and when in closed position have their free edges directly beneath the inwardly-turned flanges of the Z-beams. The valves 13 are formed of a number of sheet-metal sections each cut from a flat blank with triangular ends or end flanges 14, Fig. 7, which ends are subsequently bent down at right angles, as shown in Fig. 8, the margins of the flat body portion, as well as of the end flanges, being turned at right angles to provide the stiffening-rims 13'. The several sections are placed end to end and joined together by their proximate end flanges, and the apices of the united flanges are spread apart and perforated to receive and support an antifriction-roller 15. The two center valves thus formed are pivotally supported by means of hinges 16 upon the central longitudinal shaft 17, carried by the pedestals P, and they are held in closed position by the rollers 15, resting upon the rotary detents C' C' on the rock-shafts C C. When one or both of these shafts are slightly turned, the valve or valves fall, opening the discharge-orifice of the receptacle and permitting the cargo to escape over one or both of the discharge-chutes F. By turning up the pivoted chute-section E the cargo may be discharged directly beneath the car.

It will be seen from the foregoing that the floor-sections formed as described and combined with the gusset-sheets form a rigid inclined floor or hopper-bottom for the receptacle, which is not likely to become distorted, and that therefore the margins of the discharge-opening will at all times be straight and of a character to cooperate properly with the valves.

Having described my invention, what I claim, and desire to secure by United States Letters Patent, is—

1. In a dumping-vehicle, the combination with the end bulkheads and side walls, of a fixed floor formed of a plurality of flanged sections, united by their flanges in planes transverse to the vehicle, and floor-supporting gusset-sheets secured to said sections between the proximate flanges thereof.

2. In a dumping-vehicle having a longitudinal center dumping-valve, the combination

of a side wall and a floor adjacent thereto formed of a plurality of flanged sheet-metal sections, united by their flanges, transverse gusset-sheets supported by said side wall and secured to said sections between the proximate flanges thereof.

3. In a dumping-vehicle, a cargo-receptacle having a dumping-valve at the center and a fixed floor adjacent to one of the side walls thereof, formed of a plurality of sheet-metal sections having downwardly-bent side flanges, in combination with a plurality of transverse gusset-sheets hung from said side wall and secured between proximate flanges of said sections, below the floor-surface.

4. In a dumping-vehicle having a longitudinal discharge-opening, a fixed floor adjacent said opening and parallel therewith, said floor being composed of a plurality of flanged sheet-metal sections, united by their flanges, in combination with a side wall of the vehicle and a plurality of gusset-sheets, approximately equal in width to the width of the fixed floor, supported by said side wall and secured to the said floor between the proximate flanges of the said united sections.

5. In a dumping-vehicle having end bulkheads, side walls and a longitudinal discharge-opening, a fixed floor located adjacent to and parallel with a side wall and formed of a plurality of flanged sheet-metal sections, united by their flanges, in combination with gusset-sheets hung from said side walls and secured to the sections between their proximate flanges, and a longitudinal beam located beneath the inboard ends of said sections and supported at its ends by said end bulkheads.

6. In a dumping-vehicle having a discharge-opening extending the inside length of the vehicle, a fixed floor located adjacent to said opening and formed of a number of sheet-metal sections, each of said sections consisting of a body portion and downturned side flanges of less length than the body portion, in combination with a longitudinally-disposed Z-beam located beneath the inboard ends of said sections, adapted to support the body portions of said sections upon one of its flanges and the side flanges of said sections upon the other of its flanges, and means at the ends of the vehicle for supporting said Z-beam.

7. In a dumping-vehicle having a longitudinal discharge-opening, a fixed floor located adjacent thereto and formed of a plurality of flanged sheet-metal sections, each of said sections consisting of a body portion and downturned side flanges of less length than the body portion, in combination with a side wall of the vehicle, gusset-sheets supported thereby and secured to the fixed floor-sections between the proximate flanges thereof, a longitudinal beam secured to the inboard ends of said side flanges and having an intumed flange located beneath the overhanging ends

of the body portions of said sections, and means for supporting said beam.

8. In a dumping-vehicle, a hopper-bottom cargo-receptacle having its bottom formed of 5 inner movable and outer fixed floors, said fixed floors being formed of sections of sheet metal provided with side flanges, and united by said flanges, in combination with triangular gusset-sheets interposed in the seams or 10 joints between the proximate side flanges of the sections and supported by the adjacent side wall of the receptacle.

9. In a dumping-vehicle, a side wall and a fixed floor adjacent thereto, said floor being 15 formed of sheet-metal sections having downturned side flanges, in combination with upturned outboard flanges on said sections secured to said side wall and a flange on the side wall turned inwardly under the said side 20 flanges of the sections.

10. In a dumping-vehicle having a hopper-bottom, a fixed floor composed of flanged sheet-metal sections united by their flanges in planes transverse to the vehicle, a longitudinal beam forming a support for the inboard 25 ends of said sections and having a flange turned toward the discharge-opening, in combination with a pivoted dumping-valve adapted to be supported with its free margin 30 beneath the said flange of the beam.

11. In a dumping-vehicle, the combination of fixed outer floors formed of flanged sheet-metal sections, united by their flanges,

and a beam supporting the inboard ends of said sections, with a center dumping-valve 35 formed of a sheet-metal blank with downturned ends and means for engaging said ends to support the valve in closed position.

12. In a dumping-vehicle, a center dumping-valve, formed of a body portion of sheet 40 metal and downturned end flanges of triangular shape, means for pivoting said body portion to the vehicle and means for supporting said downturned end flanges to hold the valve in closed position. 45

13. In a dumping-vehicle, a center dumping-valve formed of a number of sheet-metal blanks, each having downturned ends and said ends being secured together, in combination with bearing-rollers carried by said ends, 50 and detent means for supporting said rollers.

14. In a dumping-vehicle, a center dumping-valve formed of a number of sheet-metal blanks each having downturned ends and said ends being located respectively adjacent, 55 in combination with rollers secured between the proximate ends, and detent means for supporting said rollers and the valves in closed position.

In testimony whereof I have signed my 60 name to the specification in the presence of two subscribing witnesses.

JOHN M. GOODWIN.

Witnesses:

H. G. KIMBALL,
G. A. TAYLOR.