

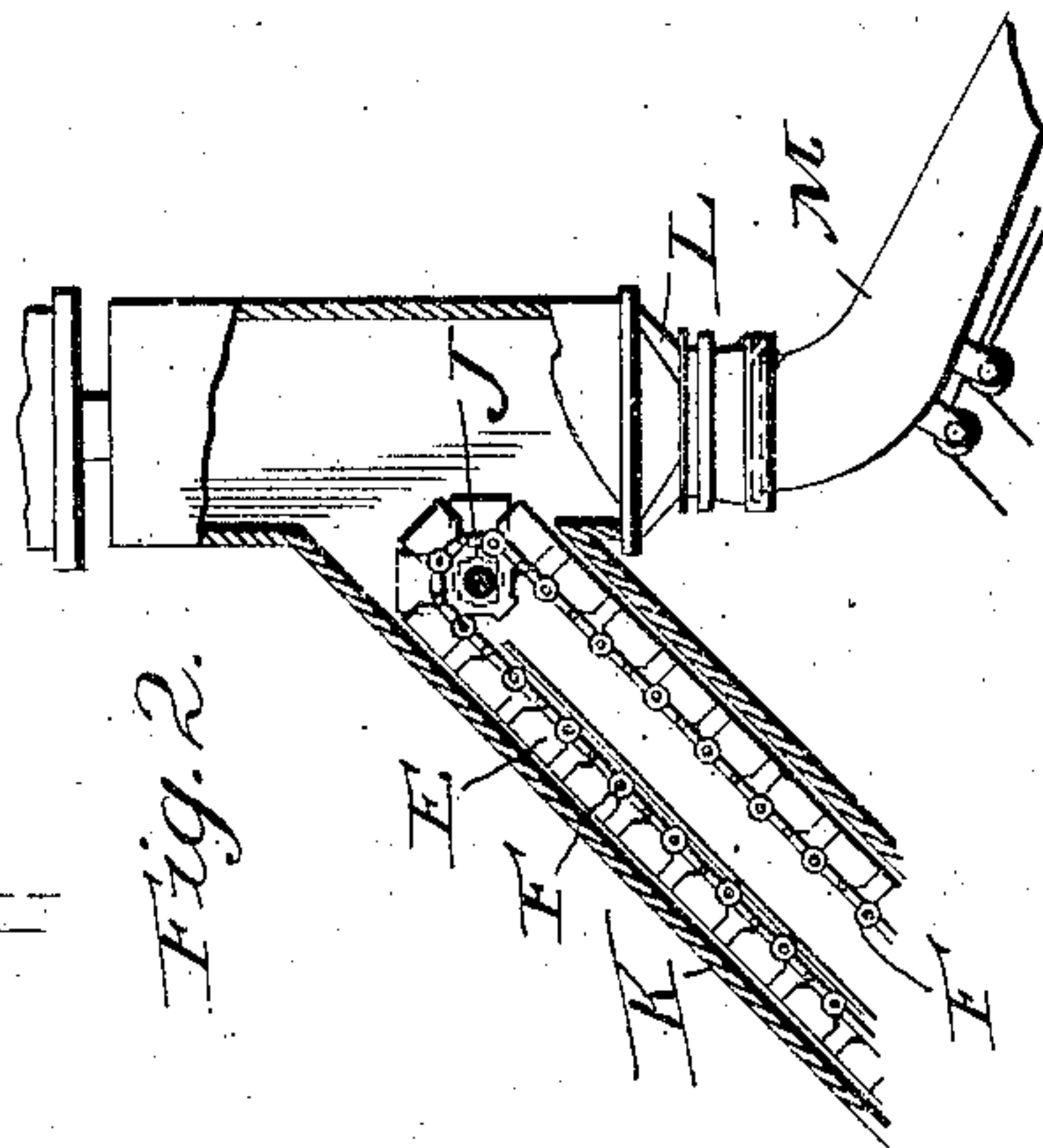
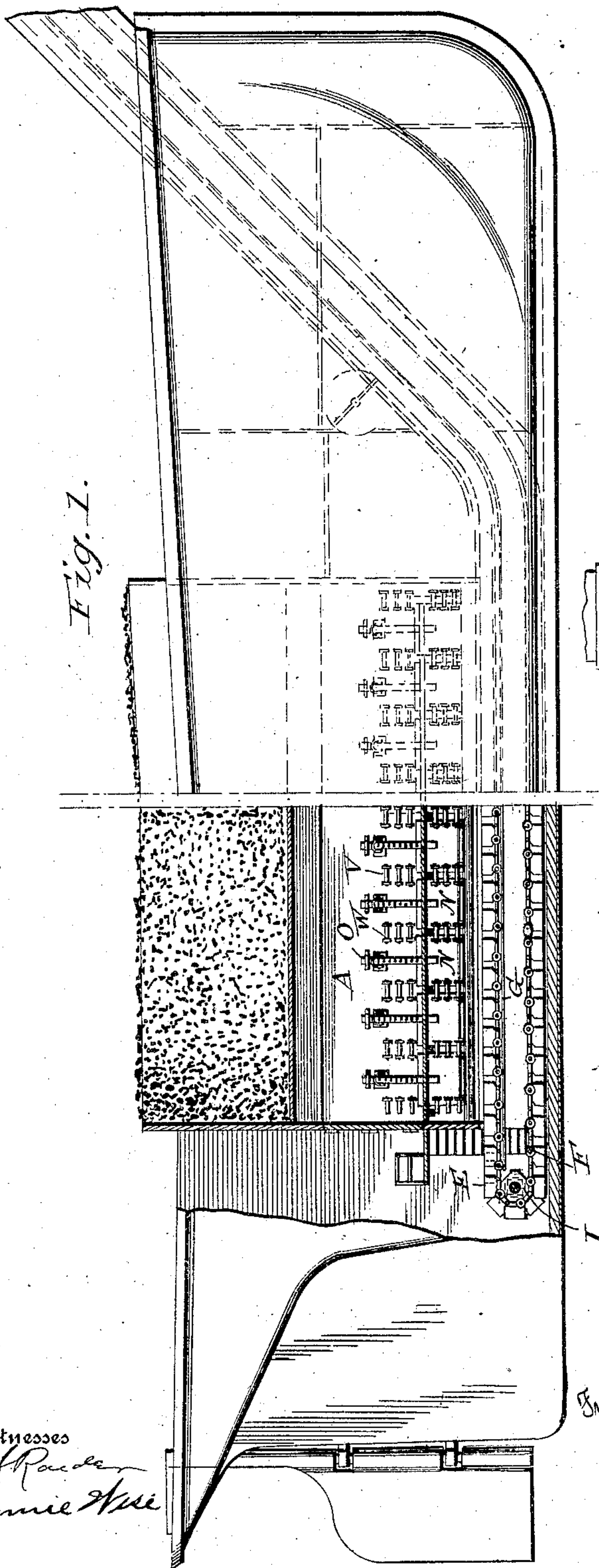
No. 850,683.

PATENTED APR. 16, 1907.

F. A. M. SMULDERS.
LIGHTER OR BARGE.

APPLICATION FILED FEB. 5, 1907.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 3.

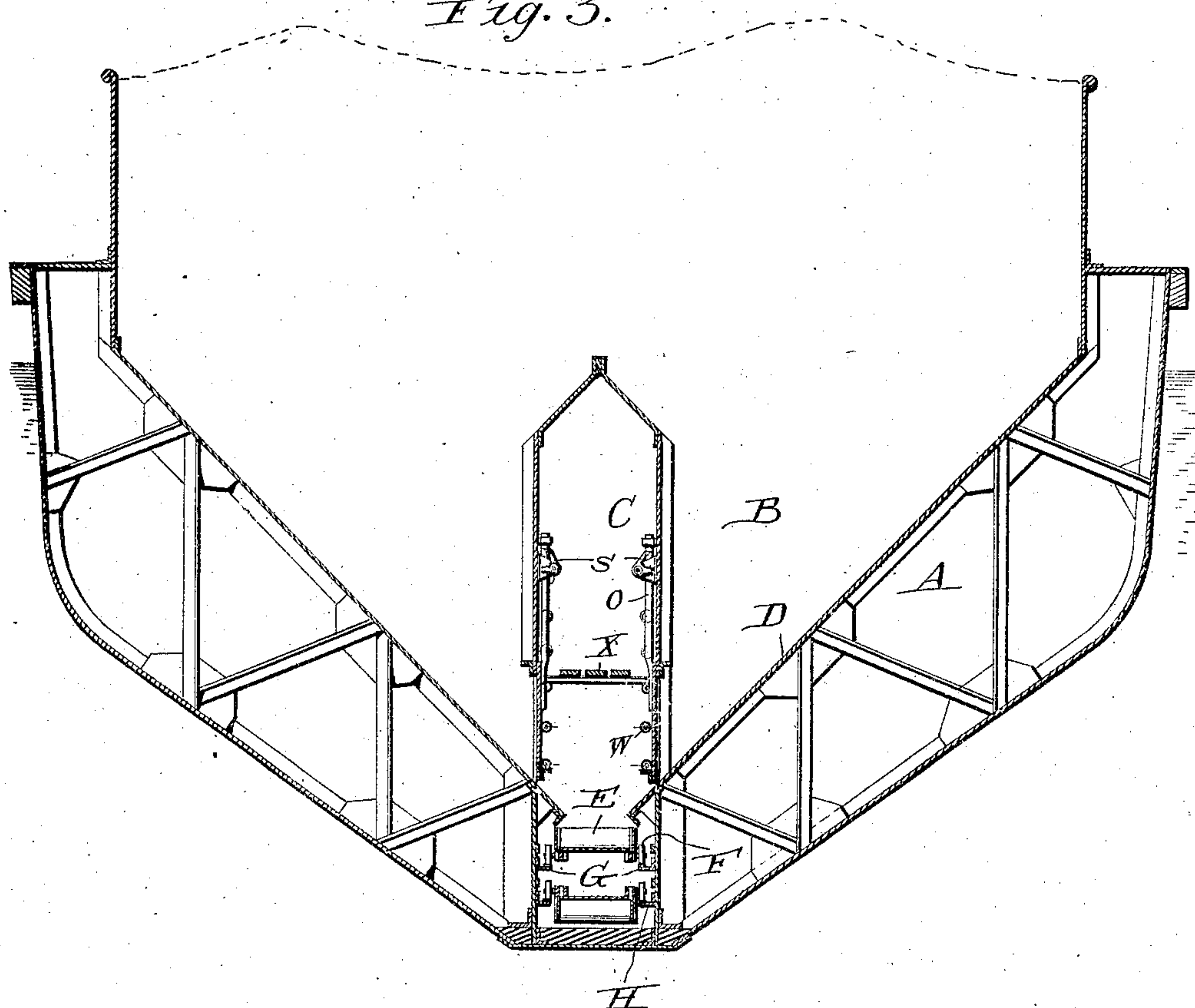


Fig. 4.

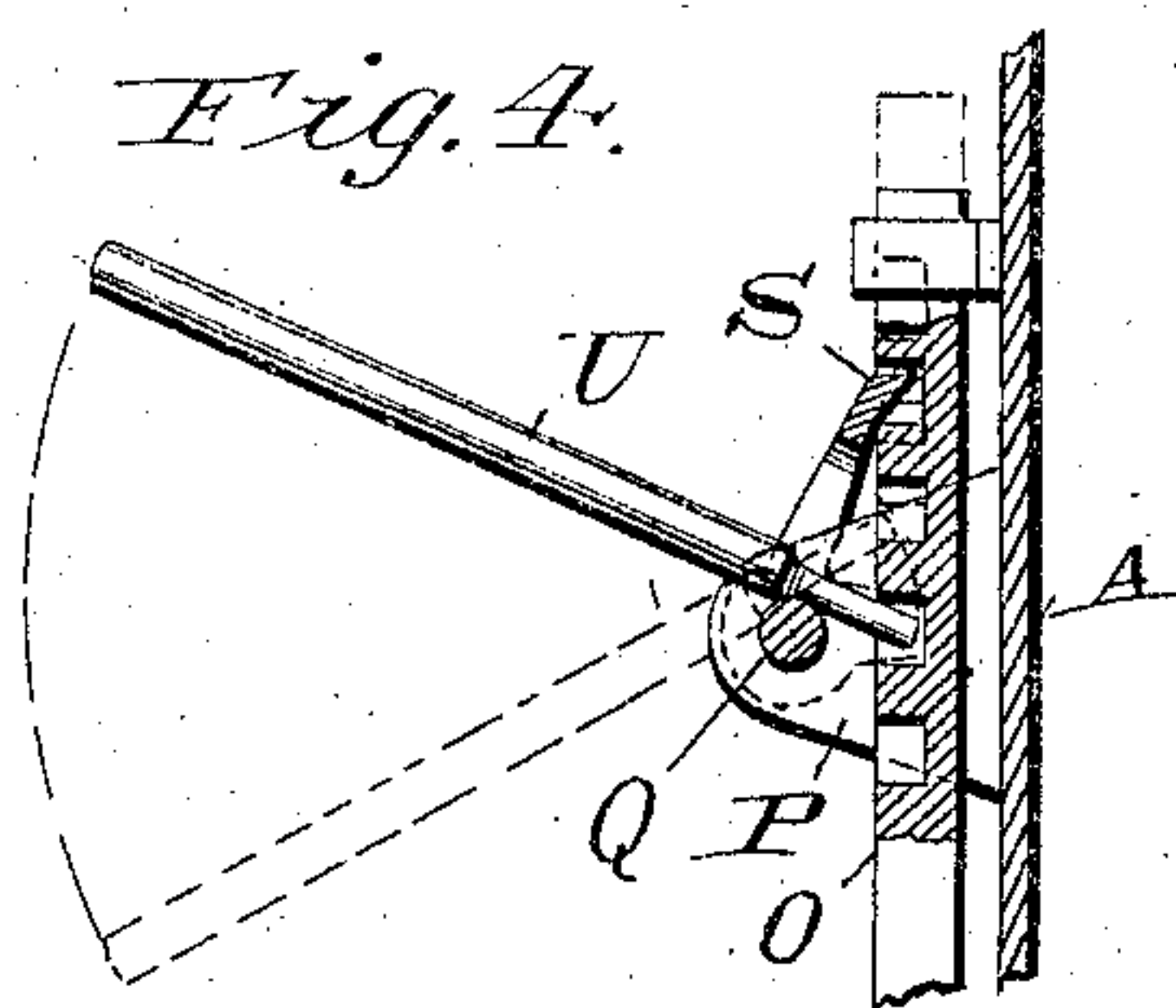
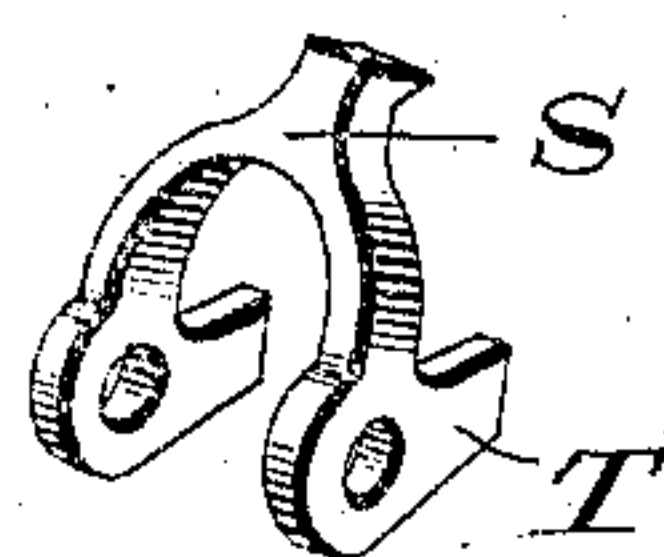


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 6.

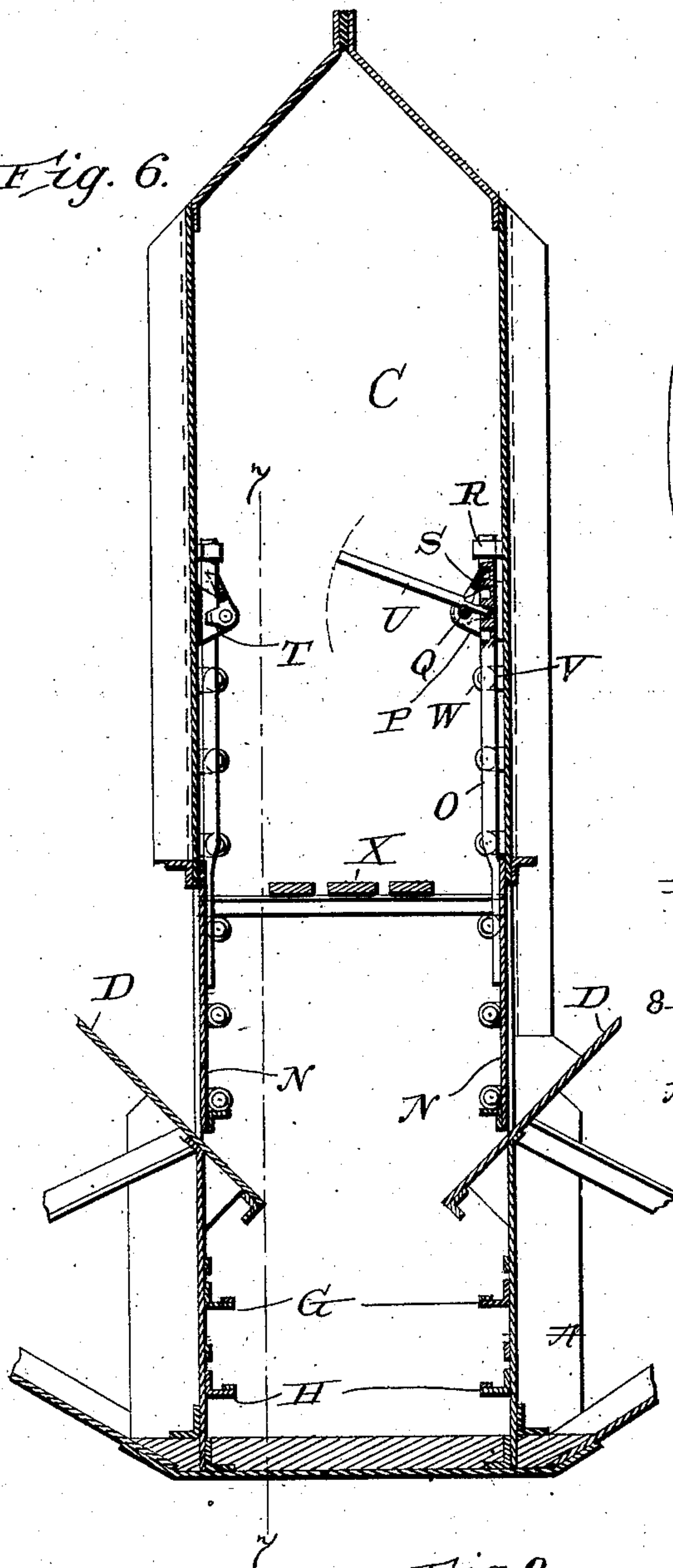


Fig. 7.

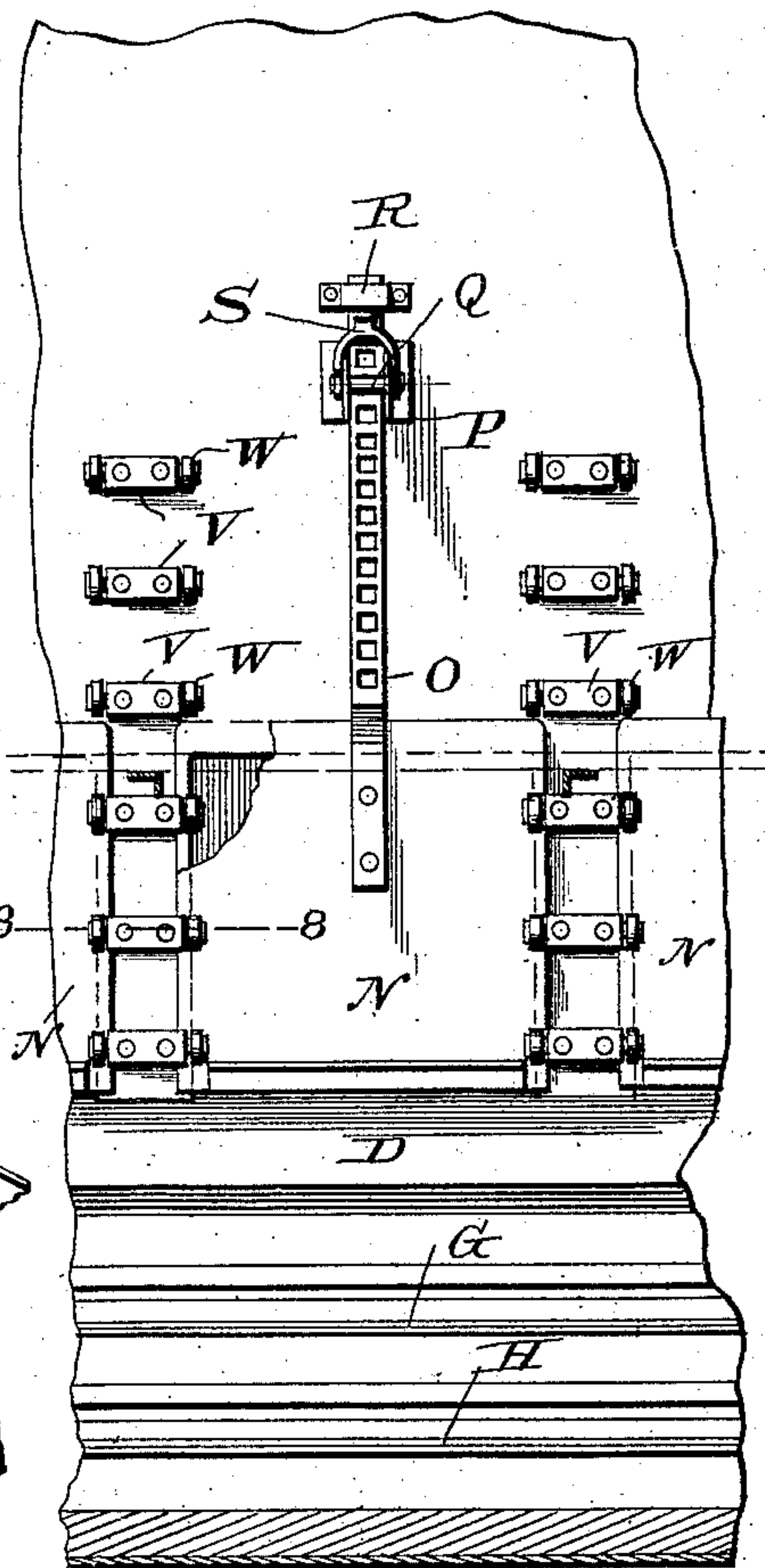
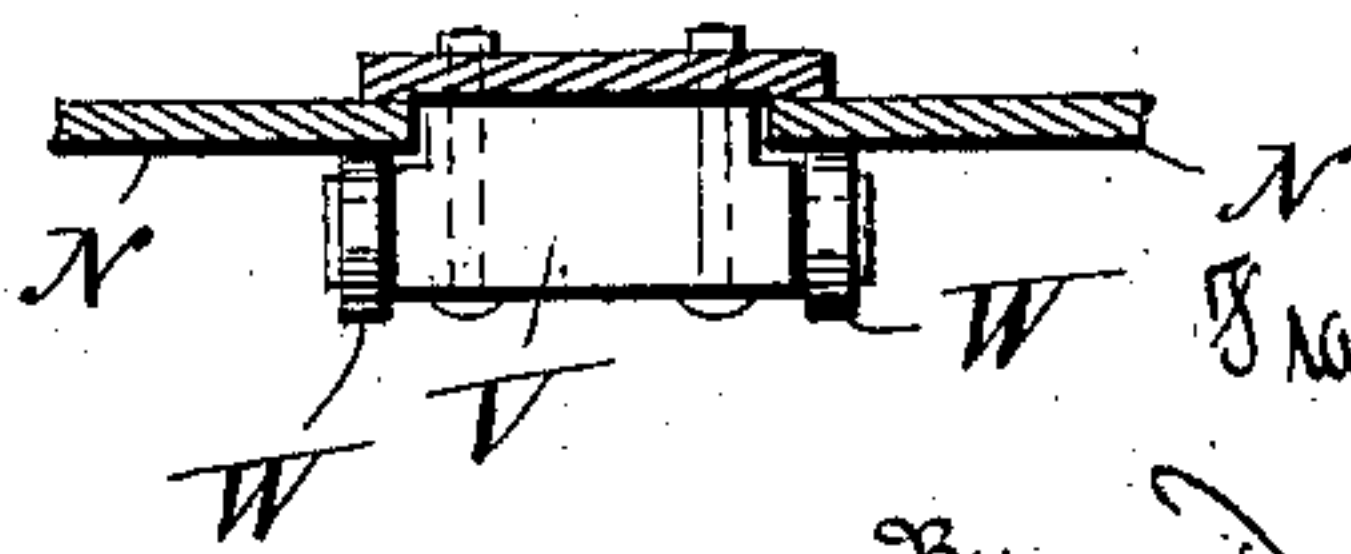


Fig. 8.



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UNITED STATES PATENT OFFICE.

FRANCIS ANTON MARIE SMULDERS, OF ROTTERDAM, NETHERLANDS.

LIGHTER OR BARGE.

No. 850,683.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed February 5, 1907. Serial No. 355,899.

To all whom it may concern:

Be it known that I, FRANCIS ANTON MARIE SMULDERS, a subject of the Queen of the Netherlands, residing at Rotterdam, in the Province of South Holland and Kingdom of the Netherlands, have invented certain new and useful Improvements in Lighters or Barges, of which the following is a specification.

My present invention pertains to improvements in lighters or barges designed, primarily, for handling coal or other minerals, the vessel being provided with suitable means for discharging the coal overboard onto another vessel or ashore.

The construction of the vessel is best shown in the drawings, wherein—

Figure 1 is a sectional elevation thereof; Fig. 2, a like view of the upper portion of the conveyor and the discharge-chute into which it empties; Fig. 3, a transverse vertical sectional view of the vessel; Fig. 4, a sectional elevation of the mechanism employed to raise and lock one of the doors in its adjusted position; Fig. 5, a perspective view of one of the locking dogs or detents; Fig. 6, an enlarged sectional view of the tunnel or way which extends beneath and through the lower portion of the hopper; Fig. 7, a sectional view taken on the line 7 7 of Fig. 6, and Fig. 8 a sectional view taken on the line 8 8 of Fig. 7.

The main object of the invention is to provide a vessel from which coal or other material may be readily discharged by a continuous conveyer, the gates which control the discharge of the material from the hopper onto the conveyer being readily accessible and at all times under the control of the attendant.

Referring to the drawings, A denotes the hull of the vessel, built up in any approved form so as to insure stability, the vessel being provided with a central longitudinally-disposed hopper B, through which, from end to end, extends a tunnel C, preferably formed with a peaked or pointed roof, so as to facilitate the discharge of coal or other material therefrom as the cargo or bulk is reduced. The lower inclined floors D of the hopper extend into the tunnel, as best shown in Figs. 3 and 6, the ends of said floors overlaying to a slight extent the buckets E of the upper run of the endless conveyer. Said conveyer may be of any approved type; but I prefer to employ that shown and claimed in my copend-

ing application, filed on or about the 5th day of February, 1907, Serial No. 355,900.

The conveyer will be provided with a series of supporting rollers or wheels F, the rollers of the upper stretch running upon tracks or ways G, secured to and extending inwardly from the side walls of the tunnel. The wheels of the lower stretch are supported upon similar tracks H, also extending inwardly from the side walls of the tunnel.

In a compartment at the stern of the vessel and outside of the tunnel proper the endless conveyer passes around a drum or wheel I. It also passes about a similar wheel or drum J, located at the upper end of the inclined discharge chute or conduit K, which extends forward and upward from the front of the lower portion of the tunnel. The endless conveyer discharges into a hopper or receptacle L, which in turn empties into a spout M, through which the coal may be carried to any desired point. Each side of the tunnel is provided with a series of openings each of which is designed to be opened and closed by a vertically-moving door. The doors are designated by N, and inasmuch as all of the doors and their operating devices are similar in form a description of one door and its mechanism will suffice.

Secured to the door and extending upwardly therefrom is a rack-bar O, passing between a pair of lugs or ears P and beneath a cross bar or rod Q, secured in the outer portion of said ears. The bar also passes through a guide block or member R, secured to the wall of the tunnel at a point above the ears P. Fulcrumed or pivoted upon the cross-bar Q is a locking dog or detent S, provided with stop-arms T, (best shown in Fig. 5,) which, while permitting the dog to ride out of the notches or recesses in the face of the rack-bar as the same is elevated, prevent it from throwing outwardly too far as the rack-bar and door are raised. The elevation of the door or gate is effected through the medium of a lever U, which may be projected into one of the openings in the rack-bar O, said lever resting upon the cross-bar Q, which serves as a fulcrum therefor and permits the rack-bar and its attached door to be elevated. The locking dog or detent S will enter one of the notches as it comes opposite the same, and thus hold the bar in its adjusted position. By applying slight pressure upon the outer end of the lever U the

door may be raised to such an extent as to free the dog or detent from the rack-bar, and upon the withdrawal of the lever the door may readily be closed, the dog or detent at such time being held out of contact with the rack-bar.

Secured to the side walls of the tunnel is a series of blocks V, each of which carries a roller W at either end, the adjacent rollers overlapping the edges of the door and holding the same in relatively close contact with the walls of the tunnel. (See Fig. 8.)

A platform X extends throughout the tunnel, said platform being located at a point adjacent to the upper portion of the openings from the hopper which are controlled by the doors. Thus the attendant can readily move from one end to the other of the tunnel and keep close watch upon the discharge of the material from the hopper onto the conveyer, opening or closing the doors as occasion may require and having absolute control of the feeding of the material onto the conveyer.

As will be readily appreciated by those skilled in the art, a suitable weighing device may be employed in conjunction with the discharge mechanism, said device being located in the hopper L or at any other suitable point.

It will of course be understood that means will be provided for manipulating or positioning the spout M and also positioning the upper end of the chute or conduit K.

Having thus described my invention, what I claim is—

1. A barge or the like, provided with a hopper having a tunnel extending there-through; an endless conveyer mounted in the lower portion of the tunnel below openings formed in the sides thereof through which material from the hopper may be discharged; a series of doors for controlling said openings; a platform extending through the tunnel above the openings; and means located in the upper portion of the tunnel at a point above the platform for controlling the opening and closing of said doors.

2. A barge or the like, provided with a hopper having a tunnel extending throughout the length thereof, the lower portion of the tunnel being at a point below the bottom of the hopper; an endless conveyer mounted in the lower portion of the tunnel and adapted and designed to receive the material discharged through openings formed in the side walls of the tunnel at a point adjacent to the bottom of the hopper; a platform extending

through the tunnel at a point out of line with the discharge-openings; a series of doors for controlling said openings; and means located in the upper portion of the tunnel and above the platform for opening and closing the doors.

3. A barge or the like provided with a hopper having inclined floors discharging toward a centrally-disposed tunnel extending throughout the length of the hopper; an endless conveyer mounted in the lower portion of the tunnel, the upper stretch of the conveyer standing adjacent to the inwardly-projecting portions of the inclined floors of the hopper; a series of doors for controlling openings formed in the side walls of the tunnel adjacent to the bottom of the hopper; a platform extending throughout the length of the tunnel; and means for opening and closing the doors, said means being located within the tunnel at a point above the platform.

4. A barge or the like, provided with a hopper; a tunnel extending through the hopper; an endless conveyer mounted in the lower portion of the tunnel and adapted to receive the material discharged from the hopper through openings formed in the side walls of the tunnel; a series of doors for controlling said openings, each of said doors being provided with a rack-bar extending upwardly therefrom; a pair of lugs extending inwardly from the side walls of the tunnel adjacent to each rack-bar; a cross-bar secured to said lugs; and a locking dog or detent arranged to coact with the rack-bar and to hold the same in its adjusted position.

5. A barge or the like provided with a hopper; a tunnel extending through the hopper; an endless conveyer mounted in the lower portion of the tunnel and adapted to receive the material discharged from the hopper through openings formed in the side walls of the tunnel; a door for each of said openings; rollers bearing upon the inner faces of said doors and serving to guide and sustain the same; a rack-bar extending upwardly from each door; means for engaging and moving said rack-bar; and a locking dog or detent for holding the rack-bar in its adjusted position.

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

FRANCIS ANTON MARIE SMULDERS.

Witnesses:

J. NOOHEBOOR,
C. Y. PALET.