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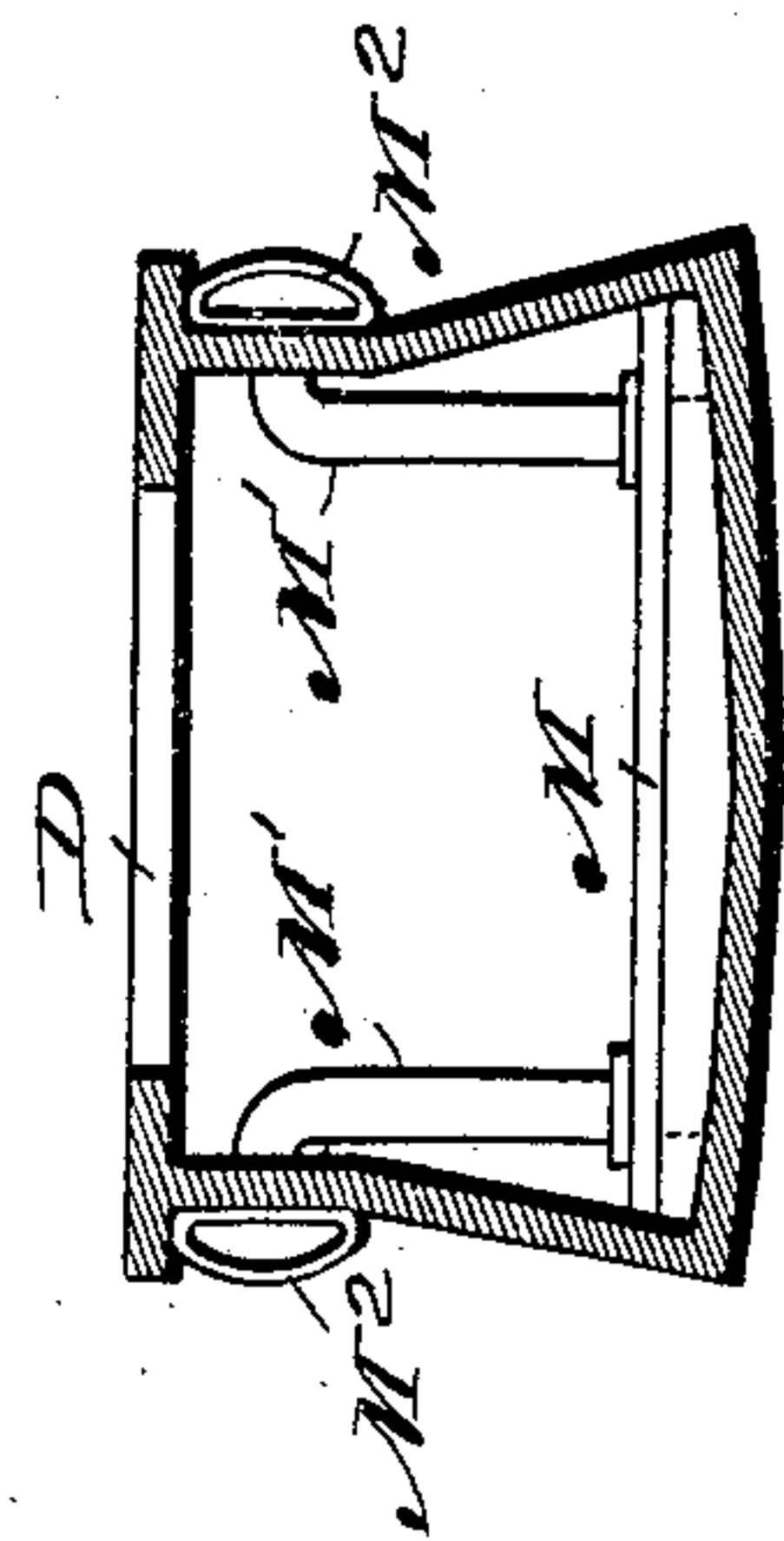
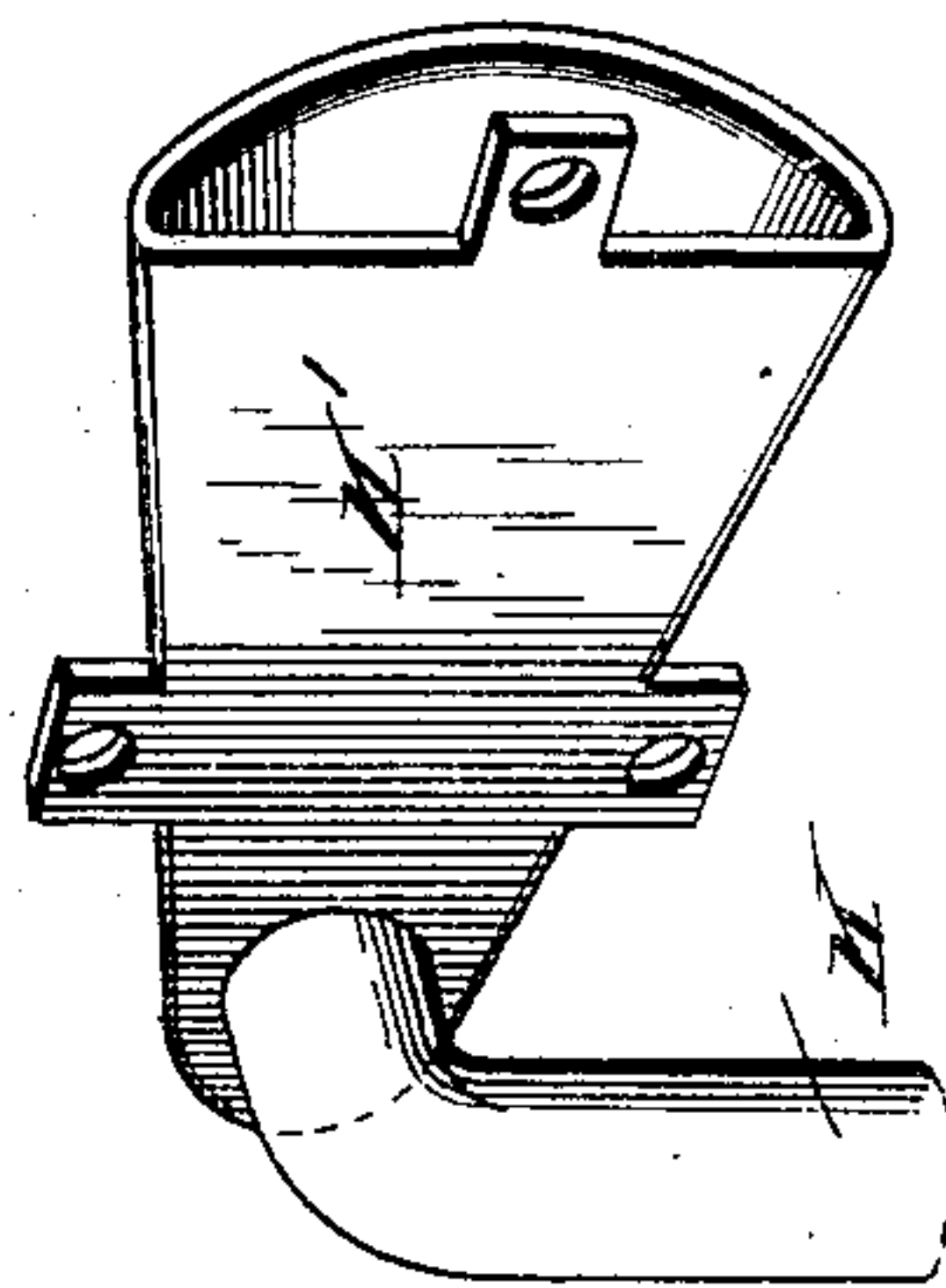
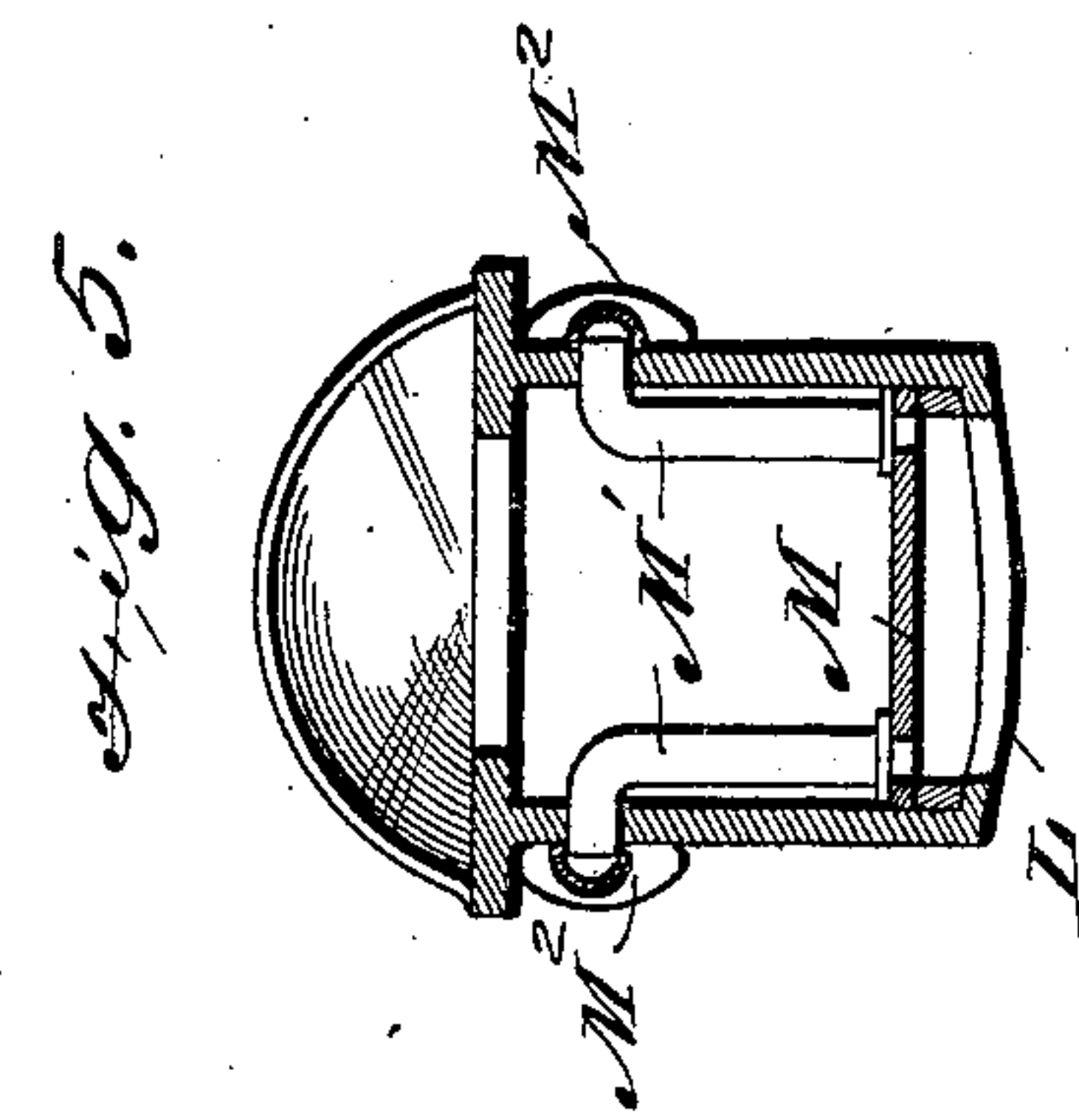
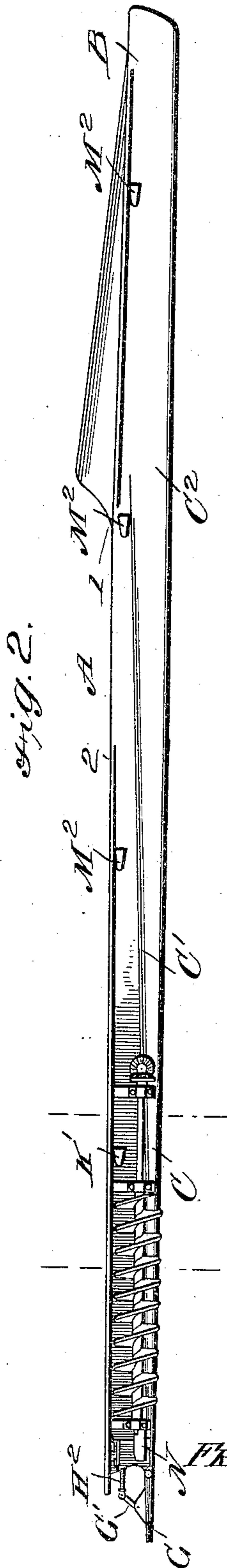
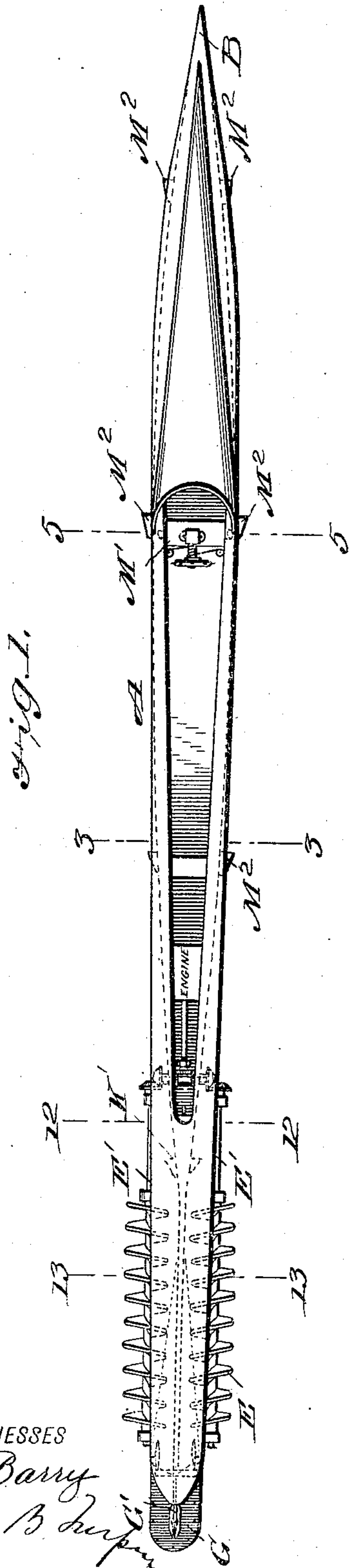
BOAT.

APPLICATION FILED APR. 27, 1909.

934,373.

Patented Sept. 14, 1909.

3 SHEETS—SHEET 1.



WITNESSES
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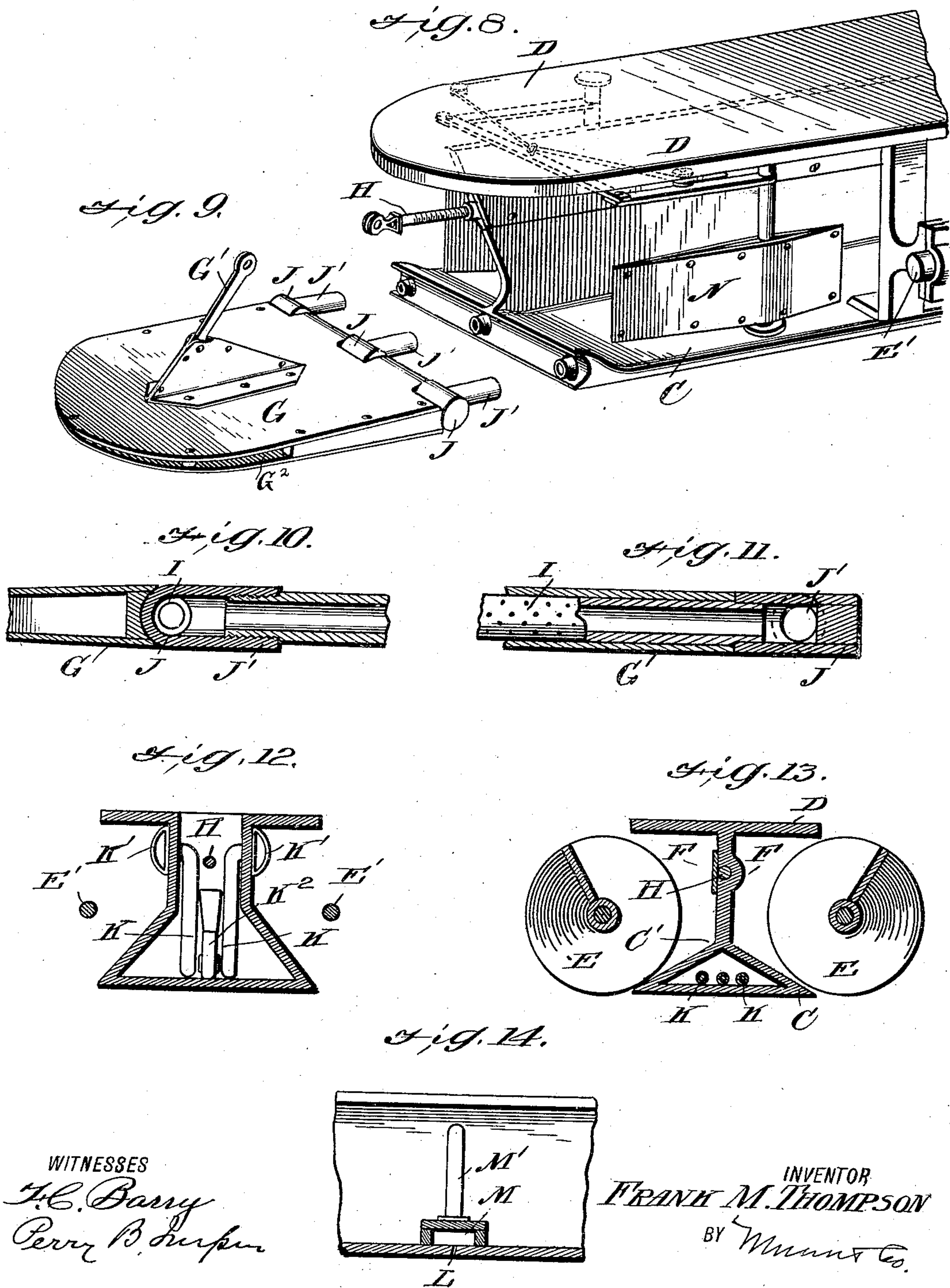
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

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BOAT.

934,373.

Specification of Letters Patent. Patented Sept. 14, 1909.

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To all whom it may concern:

Be it known that I, FRANK M. THOMPSON, a citizen of the United States, and a resident of East Liverpool, in the county of Columbiana and State of Ohio, have made certain new and useful Improvements in Boats, of which the following is a specification.

This invention is an improvement in boats, and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings Figure 1 is a top plan view, and Fig. 2 is a side view of a boat embodying my invention. Fig. 3 is a cross section on about line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of one of the air inlet funnels. Fig. 5 is a cross section on about line 5—5 of Fig. 1. Fig. 6 is an enlarged top plan view of the stern portion of the boat. Fig. 7 is a vertical longitudinal section thereof. Fig. 8 is a detail perspective view of the stern portion of the hull with the rudders in place and the tail piece detached. Fig. 9 is a detail perspective view of the tail piece. Fig. 10 is a detail sectional view illustrating the connection between the tail piece and the flat base plate. Fig. 11 is a detail sectional view illustrating the air discharge pipe at the hinge joint of the tail piece. Fig. 12 is a detail cross section on about line 12—12 of Fig. 1. Fig. 13 is a detail cross section on about line 13—13 of Fig. 1, and Fig. 14 is a detail vertical longitudinal section drawn through one of the conduits covering its air outlet in the bottom of the boat.

In carrying out my invention I prefer to embody it in a long narrow hull A, having a sharp prow B, and provided with a flat base plate C, which at its rear end extends laterally in both directions beyond the body of the hull and whose upper side gradually tapers toward the upright as best shown at C' in Fig. 2, until it merges at C² in the upright sides of the hull, the slope of the upper side of the base plate C from its horizontal rear portion thus gradually approaching the vertical until as before stated, it merges with the sides of the hull at a point slightly in advance of amidships. By this construction I avoid so far as possible any disturbance of the water as the hull passes through it and deliver the water onto the flat base plate C, and deliver the water between the said flat base plates and the

overhanging plates D of the hull where it will, to a certain extent, be confined and enable the propellers E to act thereon with the maximum force in propelling the boat. As shown the propellers E are spiral propellers extending longitudinally within the spaces F provided therefor in the opposite sides of the body of the hull at its rear end, and the shafts E' of the propellers are suitably connected with an engine, which may be in the manner best illustrated in Figs. 1 and 2 of the drawings. This flat base plate extending laterally in both directions from the body of the hull at the rear end thereof, operates to steady the boat in the water and enables me to use with safety a much narrower hull than would otherwise be practicable.

The upper surface of the boat from a point 1 to about a point 2, see Fig. 2, stands approximately level or horizontal when the hull is in normal position, and the upper side of the hull slopes downwardly from the point 1 toward its prow and rearwardly from the point 2 to the stern of the boat as best shown in Fig. 2 of the drawings.

To the rear end of the base plate I hinge the front end of what for convenience of reference I term a tail plate G, whose rear end may be raised and lowered as indicated in dotted lines Fig. 7, suitable means being provided for such purpose, and consisting as shown, of a rod H having a handle H¹ at its front end and a threaded portion H² turning in a threaded bearing with the rod connected with a bracket G' projecting upwardly from the tail plate so the rod when moved longitudinally may operate to tilt the tail plate up and down as indicated in Fig. 7. By tilting the tail plate up and down the prow of the boat may be caused to rise and fall in the water as may be desired in the manipulation of the boat. To aid in overcoming any suction that may occur at the stern of the boat and to break up any vacuum formation at such point I provide for discharging air in the tail plate and I do this with the aid of the means by which the tail plate is hinged at its front edge to the rear edge of the base plate. To this end the tail plate is made hollow with its chamber G² open at its rear end and communicating at its front end with a perforated pipe I, which forms the pintle of the hinge of the base plate and receives air from the

cylindrical knuckles J, which have the tubular stems J' threading on the rear ends of the air pipes K which extend forwardly and communicate at their front ends with hoods K' disposed alongside the hull of the vessel and receiving air as the boat progresses on its course. The hood may be of the form shown in Fig. 4, and will operate to collect air and deliver it in force to the pipes. A vent K² having a knuckle shape head at one end is pivoted at its other end in connection with the air delivery pipes K so it can be raised and lowered, and when lowered to bring its knuckle shaped head to the bottom of the boat, and will be found useful in drawing off any water that may have accumulated in the bottom of the hull. In this operation it will be noticed the air is collected in the hoods K' and delivered thence to the tail plate and discharged at the rear edge thereof in the manner desired.

In order to deliver air to the bottom of the body and thus aid in relieving the skin friction, I provide any desired number of openings L extending transversely across the bottom of the body and covered by a cross conduit M with which connect pipes M' communicating with hoods M² at the outer side of the body and which may be formed and operate similarly to the hoods K' illustrated in Figs. 2 and 4 of the drawings. By this means air is delivered to the conduits and discharges thence below the boat hull in such manner that the hull in operation will be practically supported on air, this greatly facilitating the propelling of the boat. Manifestly, any form of engine may be used in driving the propellers.

Together with the flat base plate and the vertically rocking tail plate, before described, I provide rudder mechanism, which as shown, includes two rudder plates N, disposed in the spaces F in rear of the propellers and in advance of the tail plate and pivoted in the base plates C and the overhanging plates D whereby they are strongly supported in the position where they act with the greatest force upon the water discharged rearwardly from the propellers. These rudders D are connected with the operating devices so they may be moved when desired in the operation of the invention.

I claim—

1. A boat hull having at its rear end a flat base plate extending laterally in both directions beyond the body of the hull and gradually sloping on its upper side from a horizontal plane at its rear portion, to vertical planes merging at their front ends with the sides of the boat hull, overhanging plates projecting from the hull above the flat base plate, propellers operating in the spaces between the overhanging plate and the base plate, rudders also operating in said spaces,

and a tail plate hinged at its front end at the rear end of the base plate and adapted to be raised and lowered at its rear end, all substantially as set forth.

2. A boat hull having at its rear end a flat base plate extending laterally in both directions from the body of the hull and gradually tapering on its upper face on both sides of the body of the hull into vertical planes merging in the body of the hull at the forward portion of the boat, substantially as set forth.

3. A boat hull having at its rear end a base plate extending laterally beyond the body of the hull, a hollow tail plate hinged at its front end to the rear end of the base plate and movable vertically at its rear end and having an air discharge opening, and means for delivering air to said hollow tail plate.

4. A boat provided with a tail plate hinged at its front end and adapted to be raised at its rear end combined with means for delivering air to said tail plate, substantially as set forth.

5. A boat provided with a tail plate hinged at its front end, said hinge having a hollow perforated pintle adapted to deliver air to the tail plate, and pipes communicating with said hollow pintle to deliver air thereto, substantially as set forth.

6. The combination in a boat with a tail plate, of hollow knuckles coöperating in hinging said tail plate, and having tubular stems, and air supply pipes threaded to said tubular stems, substantially as set forth.

7. A boat hull having at its rear end flat base plates, and plates on the hull and overlying the base plates, and propellers mounted in the space between said base and overhanging plates, substantially as set forth.

8. A boat having its hull provided at its rear end with a base plate extending laterally beyond the body of the hull, and with overhanging plates above the base plates, and rudder plates in the space between the base and overhanging plates and on opposite sides of the hull substantially as set forth.

9. The combination with the boat hull having at its rear end a flat base plate extending laterally in both directions from the body of the hull, and provided over its said base plate with overhanging plates, of propellers mounted in the space between the base and overhanging plates, and rudder plates also mounted in said spaces in rear of the propellers on opposite sides of the body of the hull, substantially as set forth.

10. The combination with a boat hull having an outlet and air pipes discharging thereto, of a bailing pipe hinged in connection with the air pipe and adapted to be lowered for the entry of any water that may accumulate in the hull of the boat.

11. The combination with a boat hull, of

a vertically rocking tail plate at the rear end thereof, and means for supplying air to said plate.

5 12. The combination of a boat hull having a flat base plate at its rear end, a tail plate, a hollow perforated pintle cooperating in hinging said tail plate, knuckle plates cooperating with said perforated pintle and

having tubular stems, and air pipes threaded in connection with said tubular stems, 10 substantially as set forth.

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Witnesses:

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