

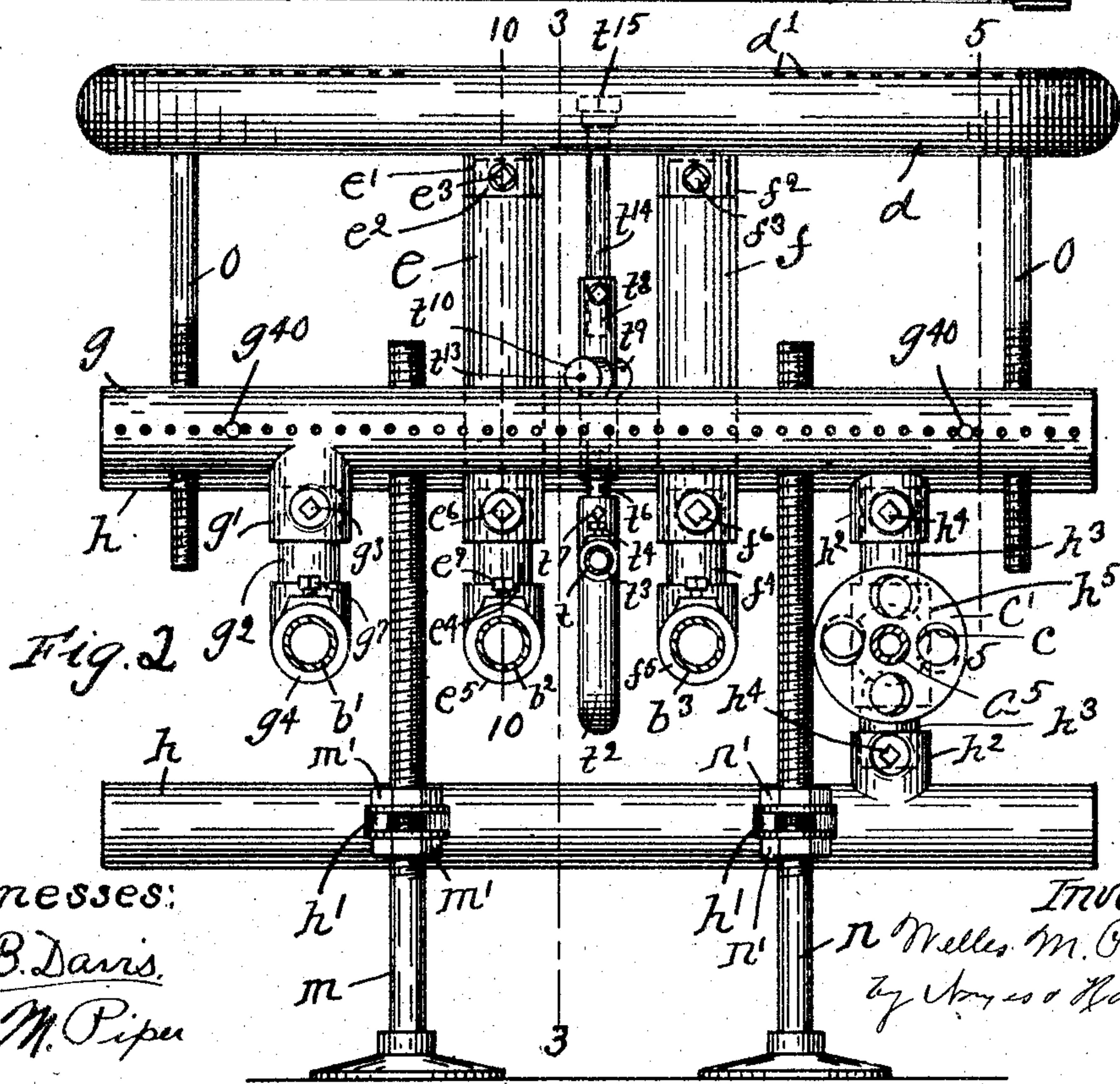
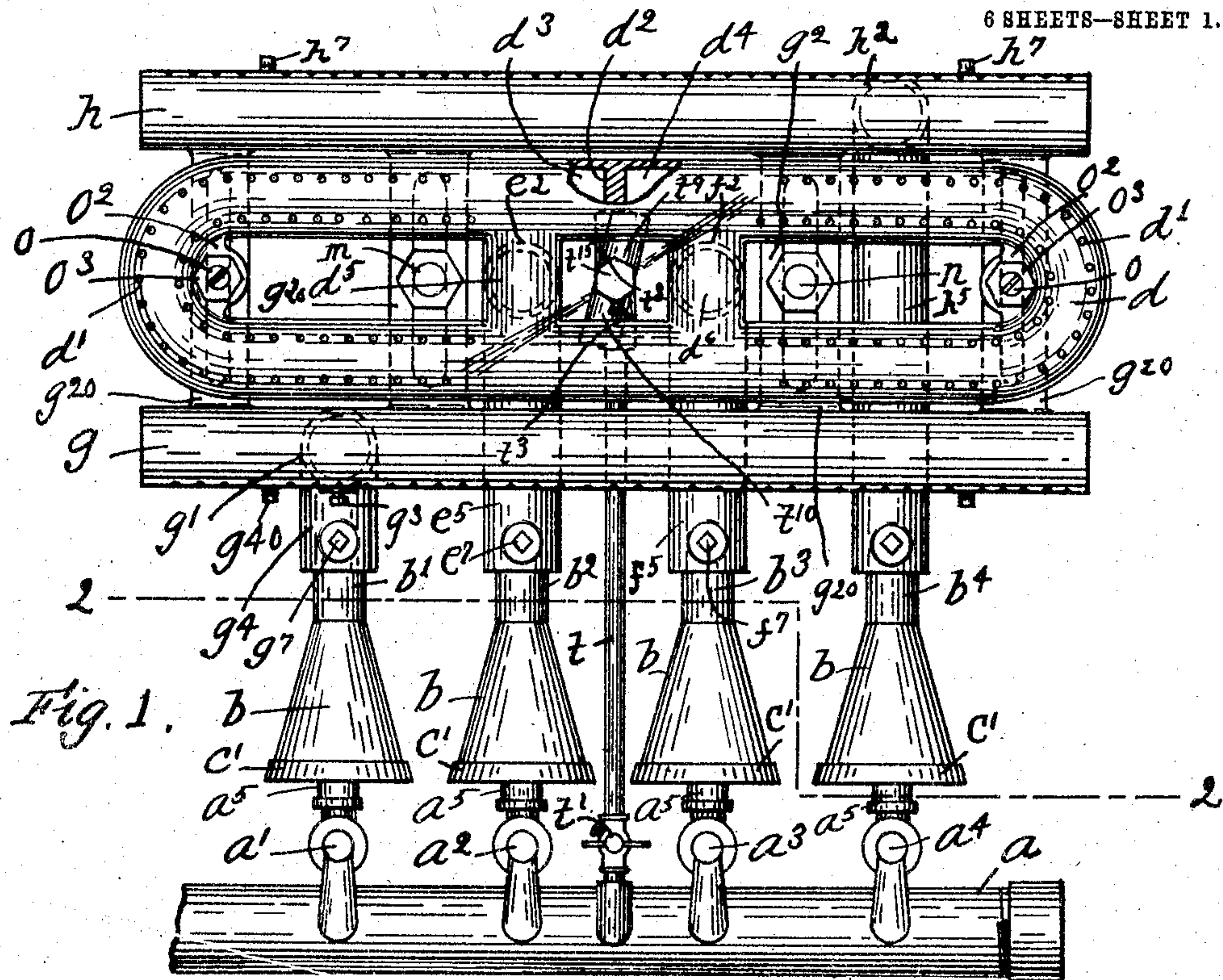
No. 781,020.

PATENTED JAN. 31, 1905.

W. M. PARTRIDGE.
GAS STOVE.

APPLICATION FILED FEB. 23, 1904.

6 SHEETS—SHEET 1.



Witnesses:
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6 SHEETS—SHEET 2.

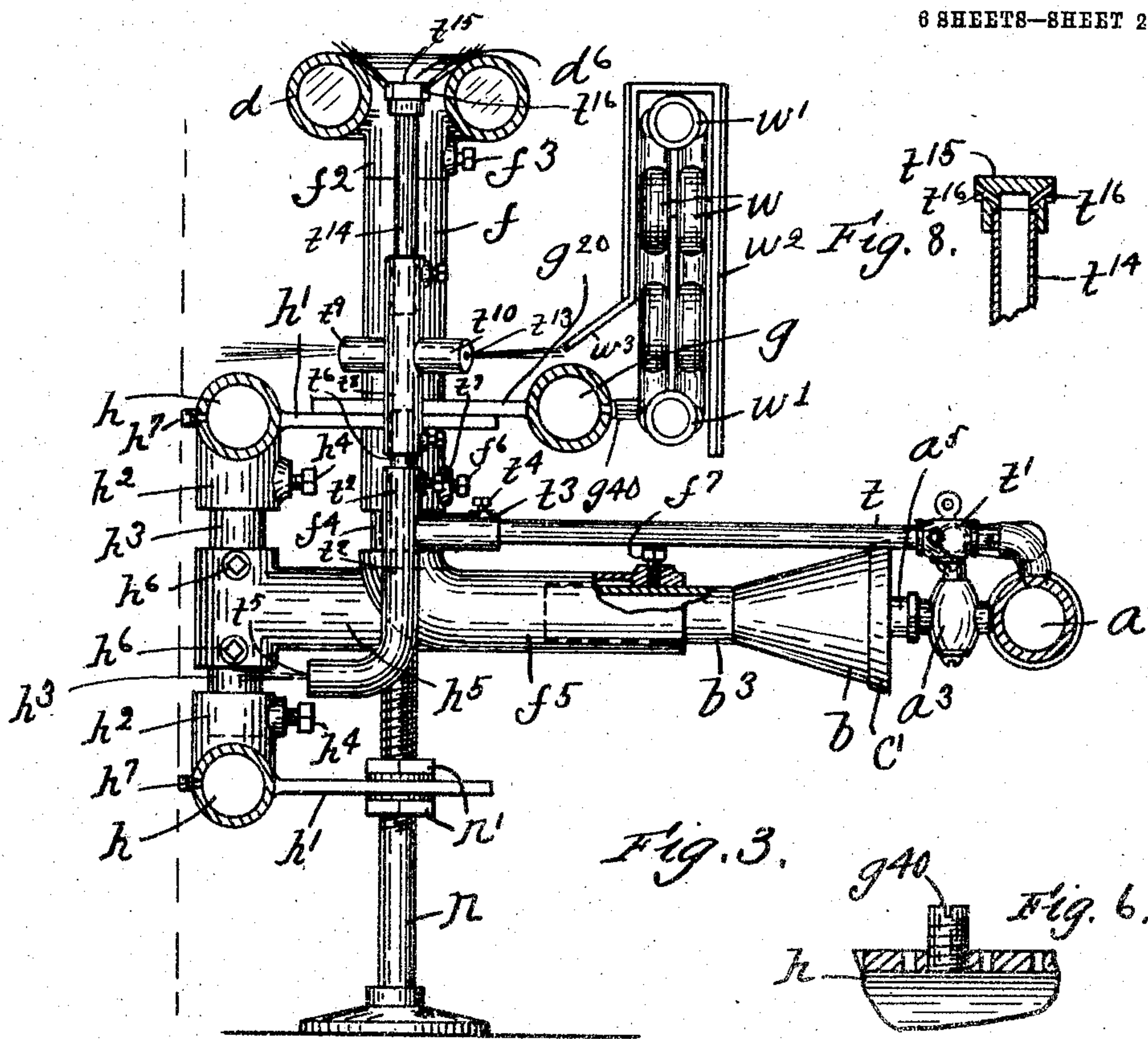


Fig. 3.

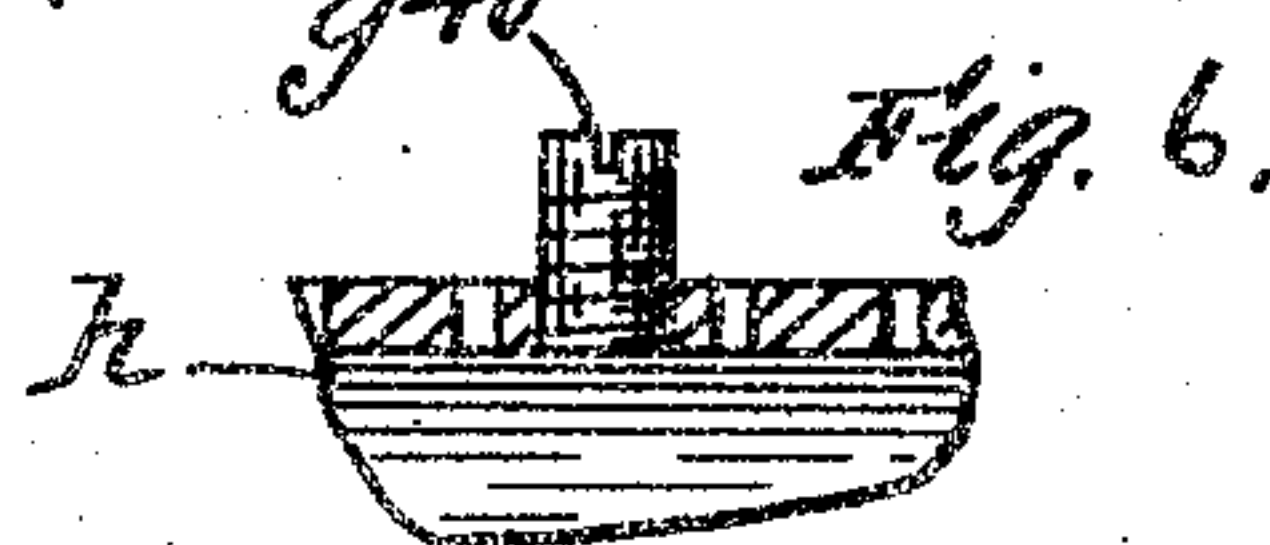


Fig. 6.

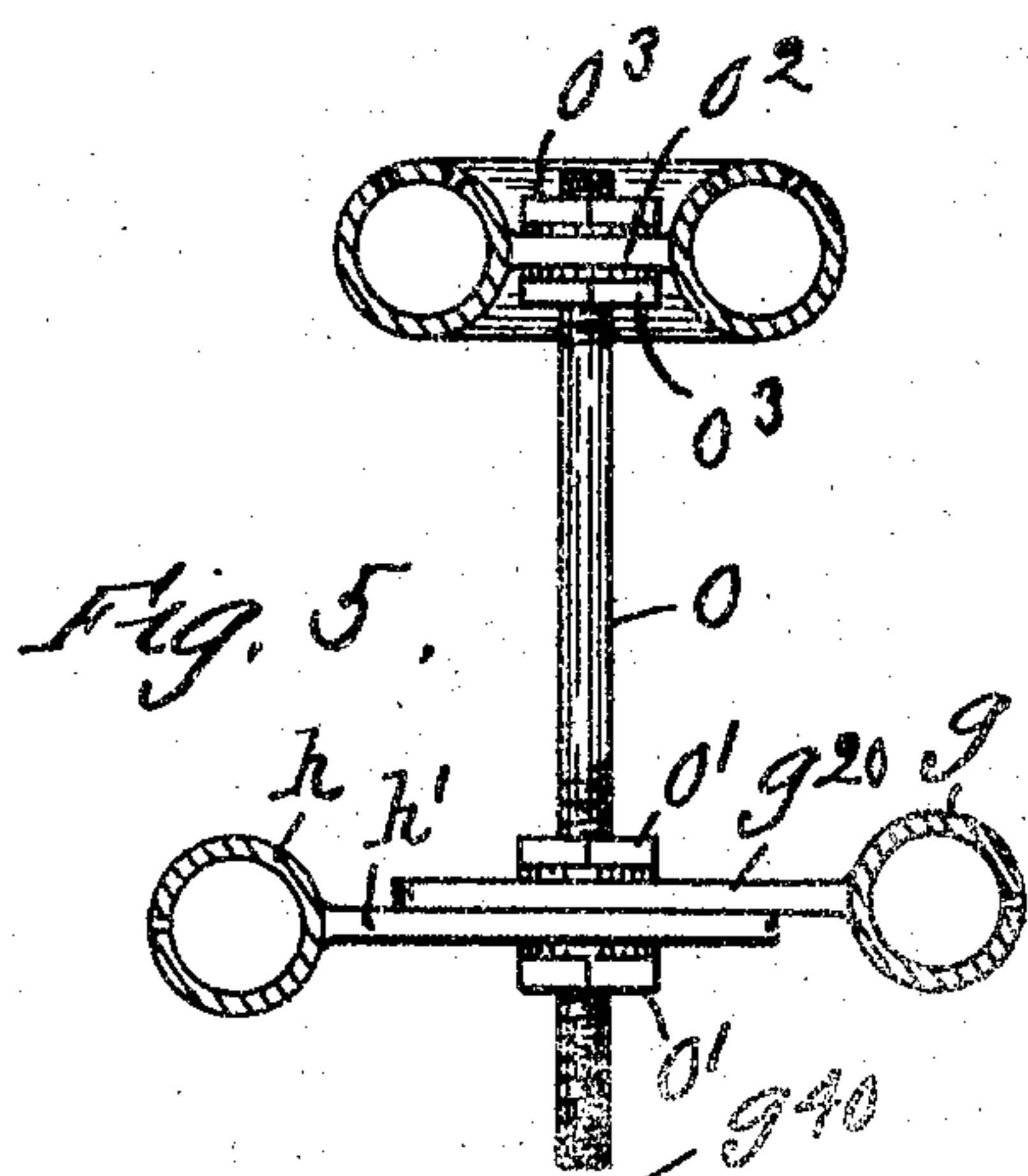


Fig. 5.

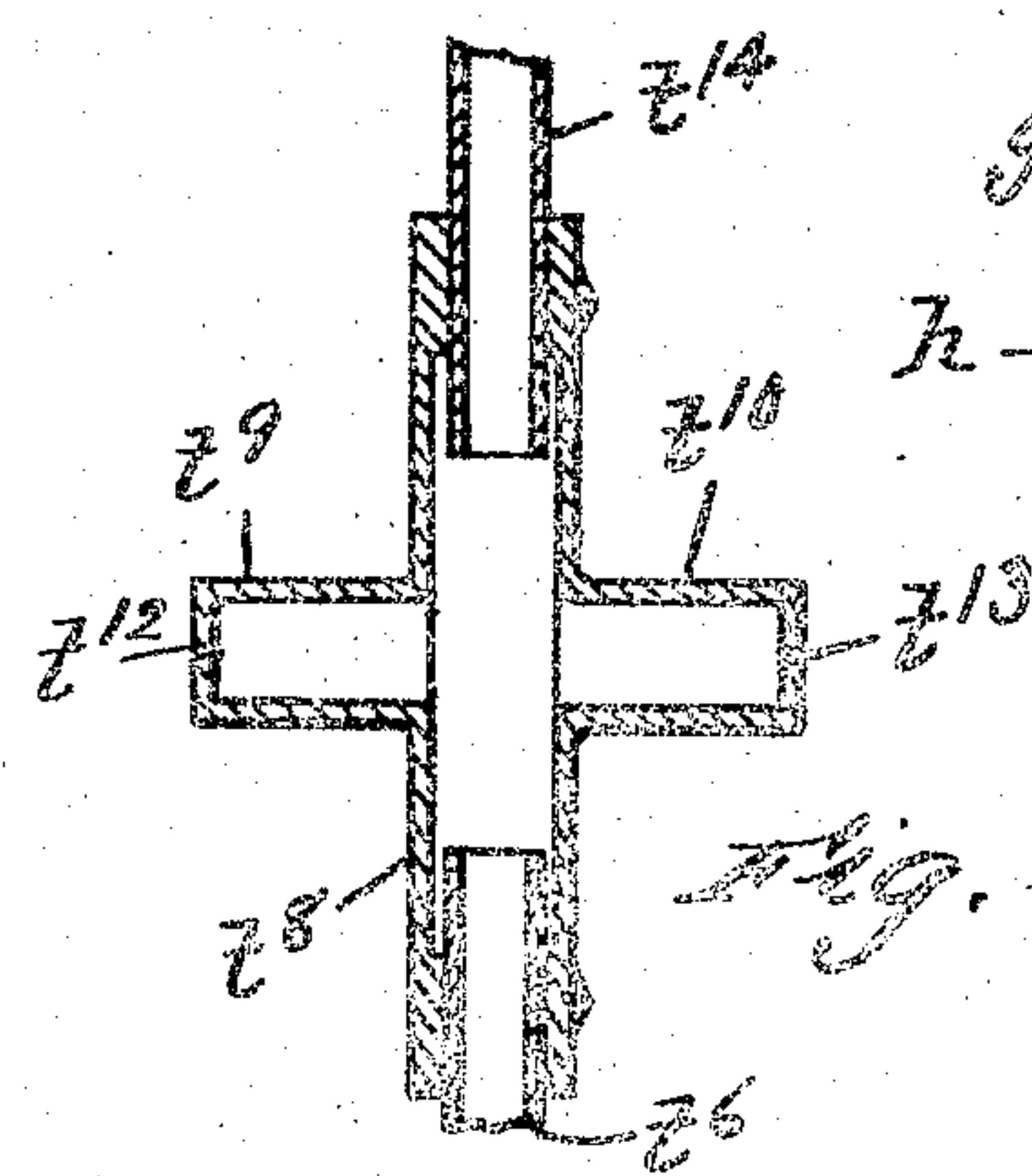


Fig. 9.

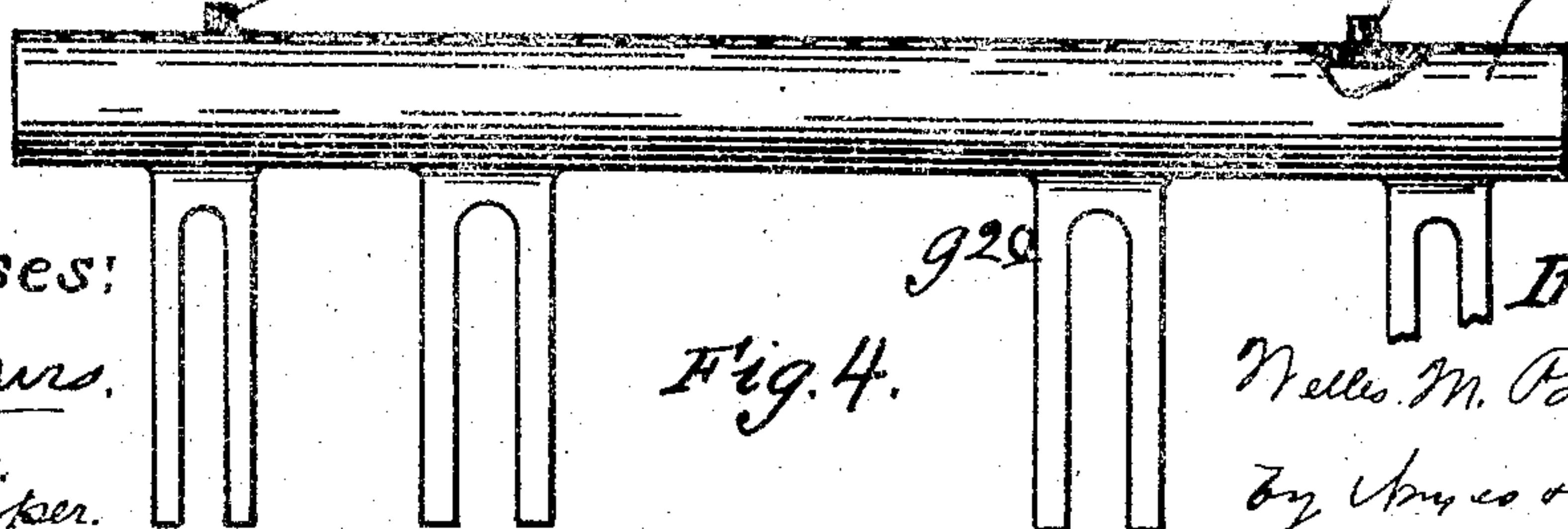


Fig. 4.

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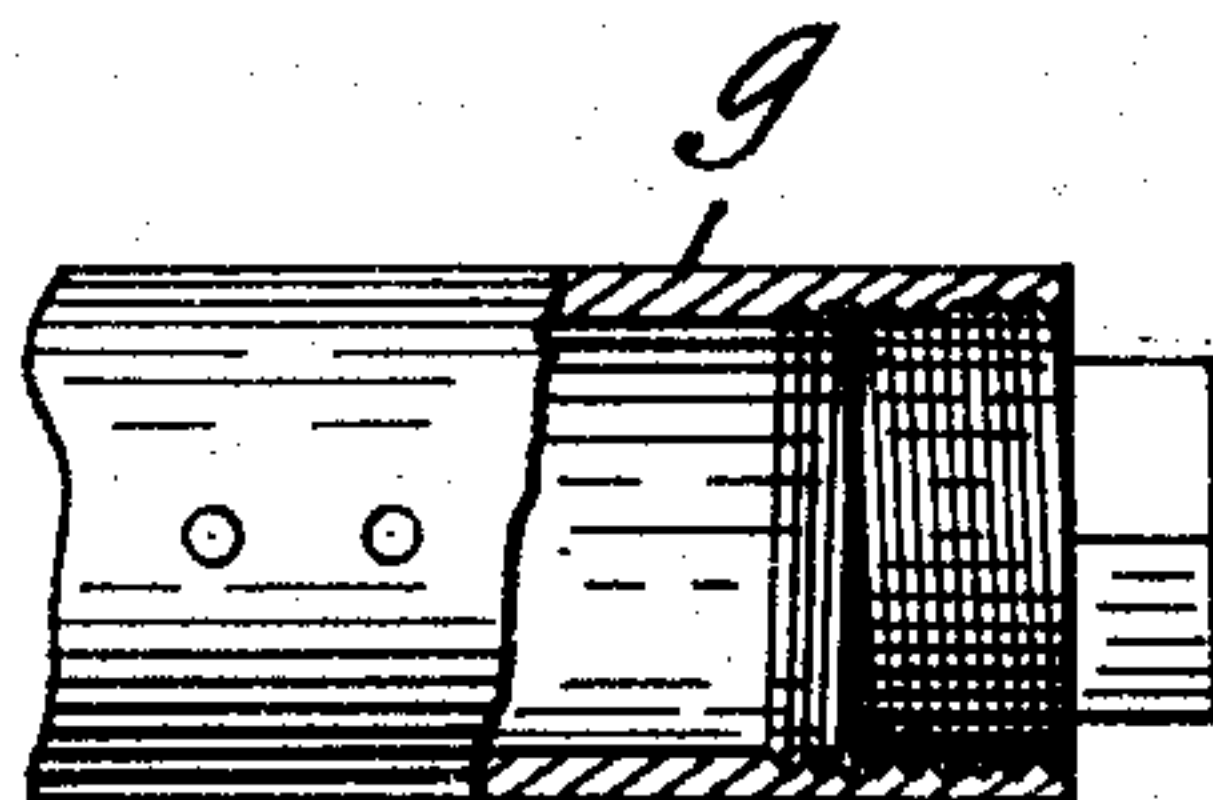
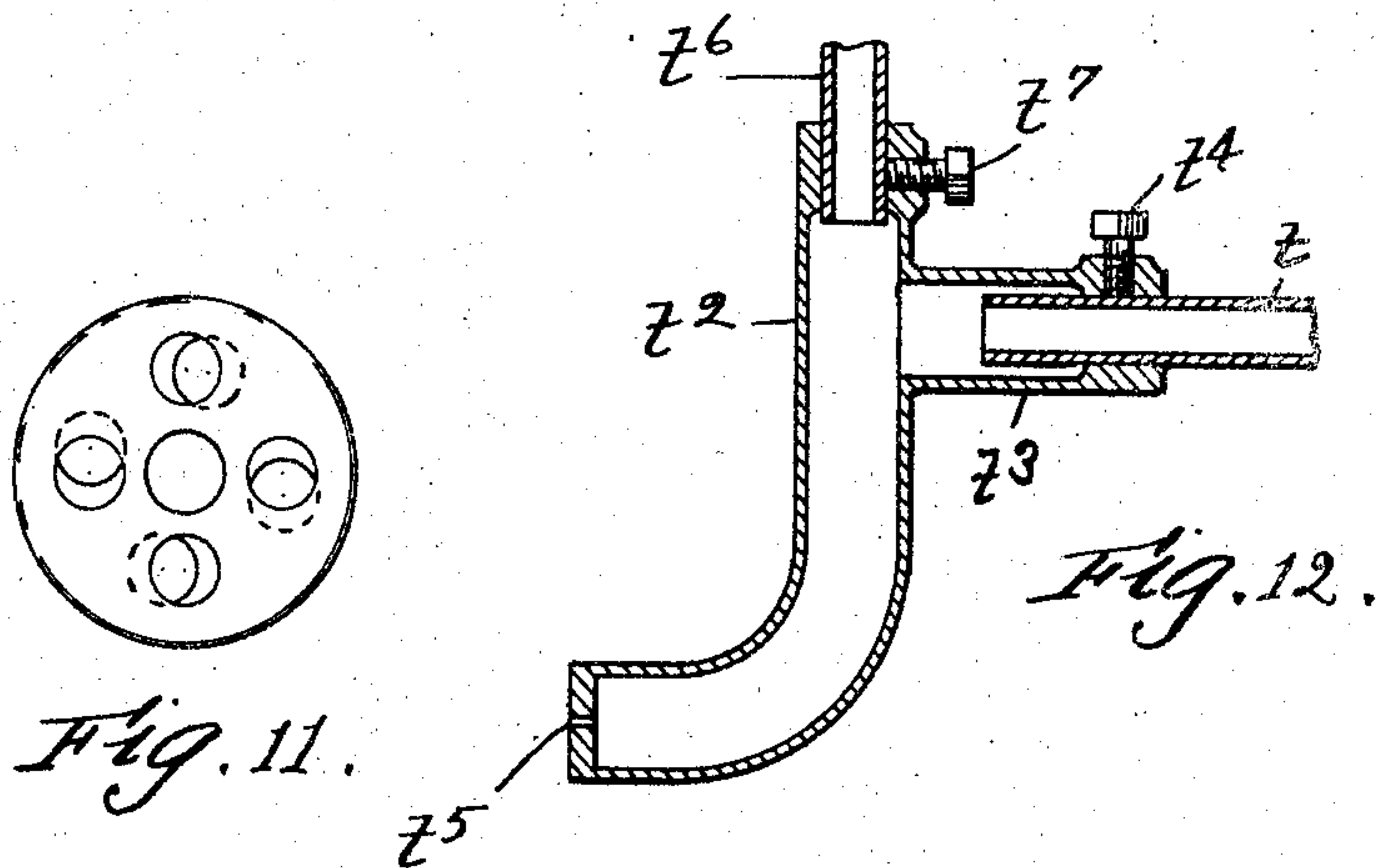
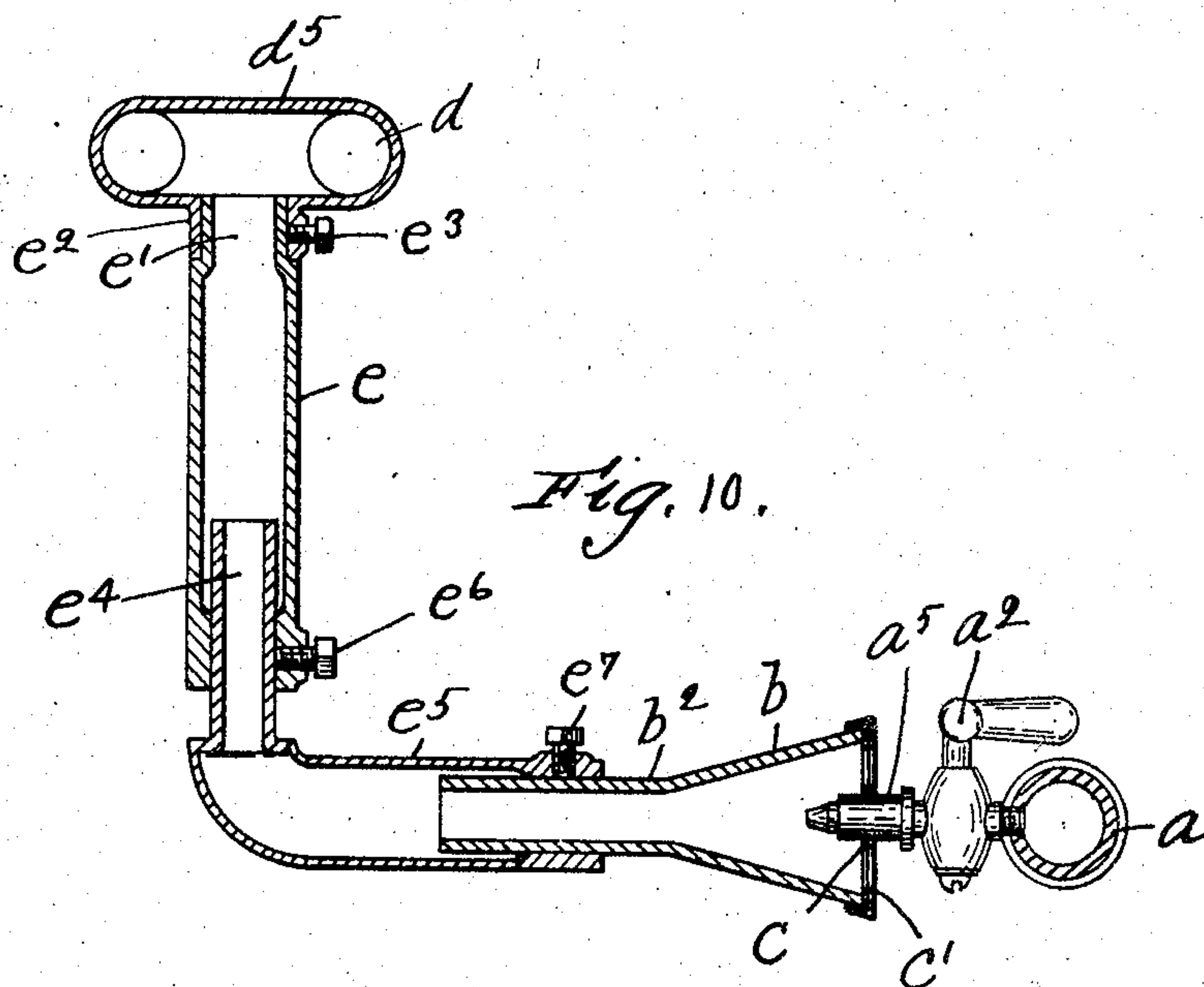
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6 SHEETS—SHEET 3.



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Fig. 13.

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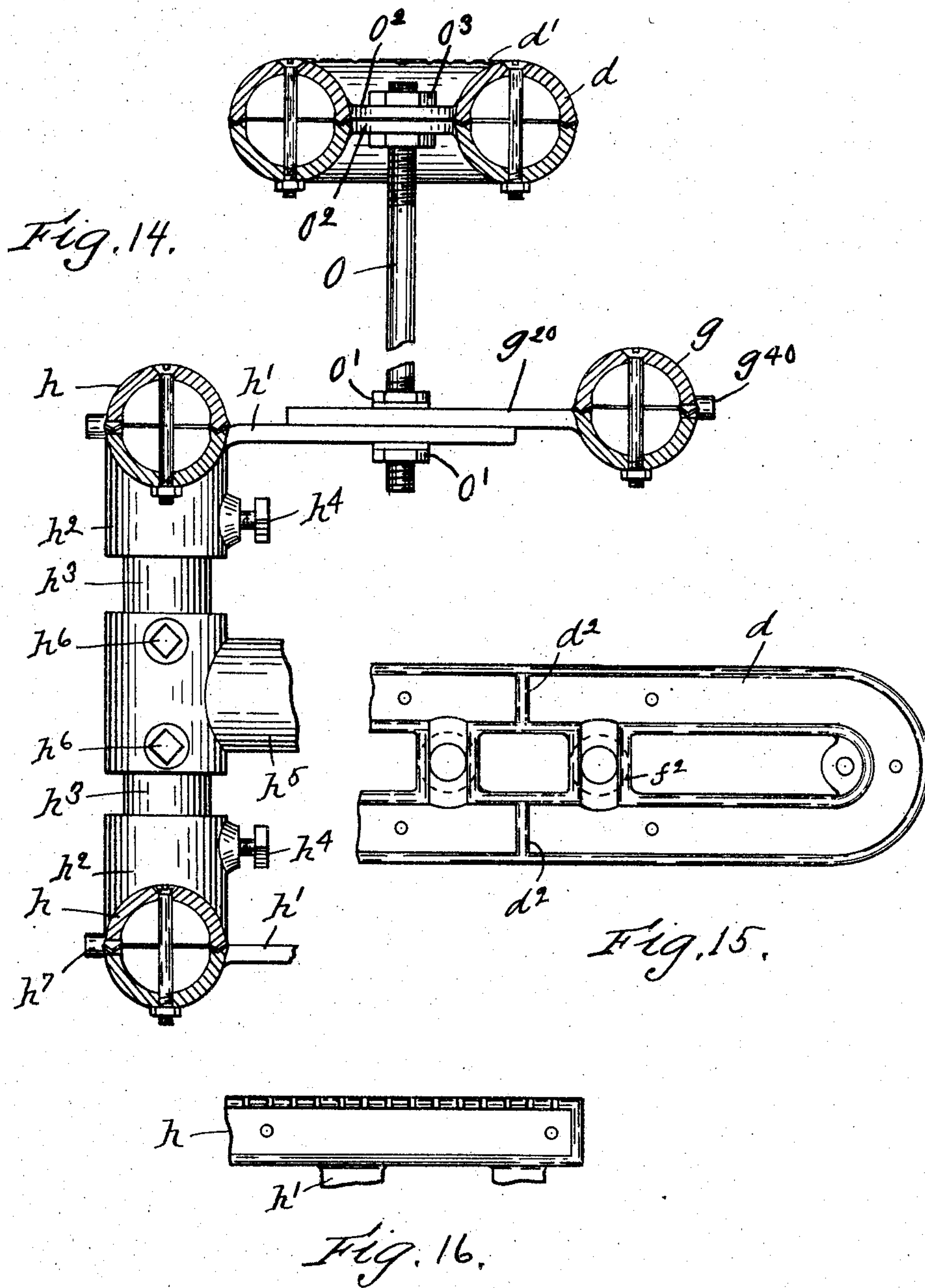
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GAS STOVE.

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6 SHEETS—SHEET 4.



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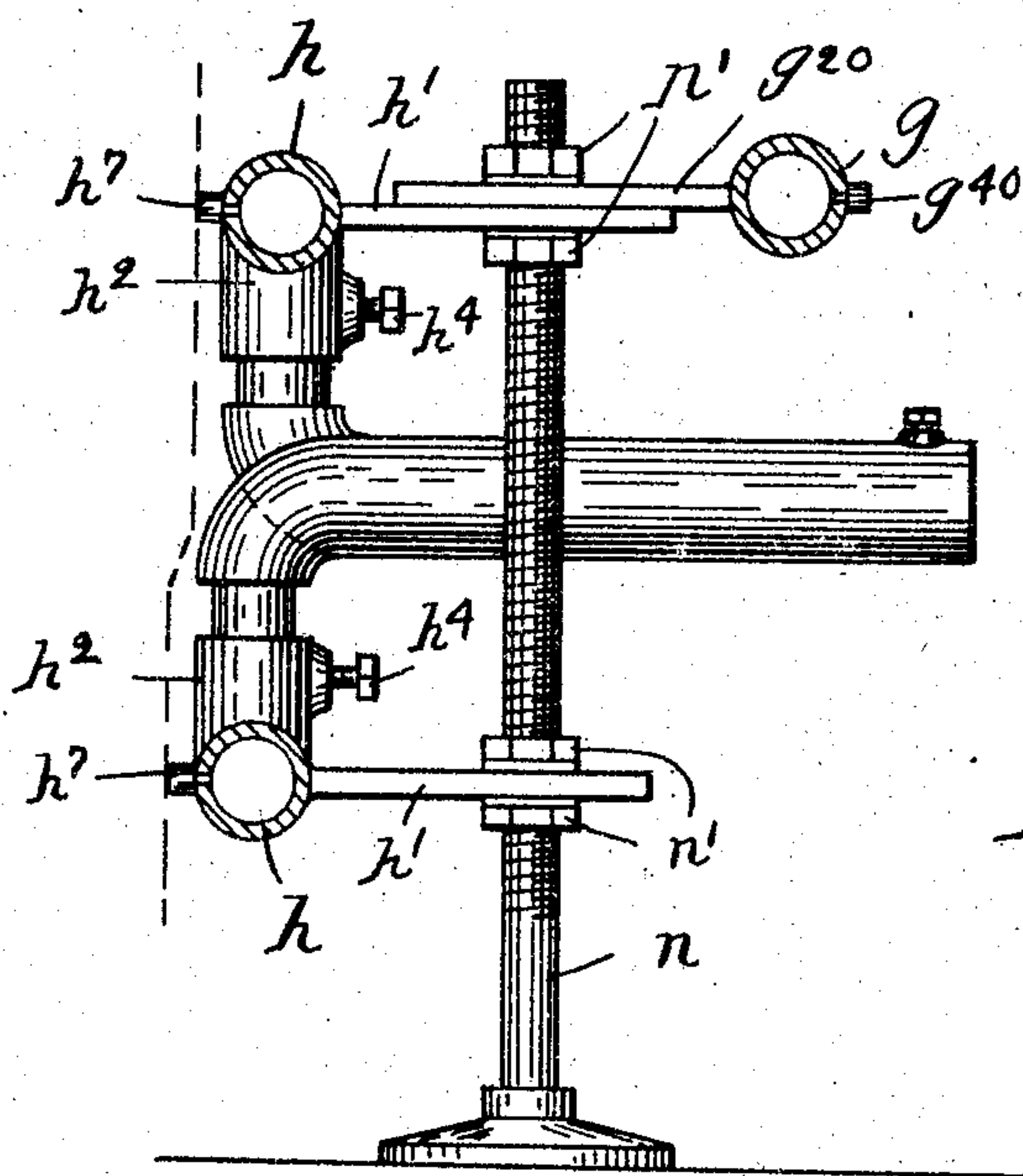
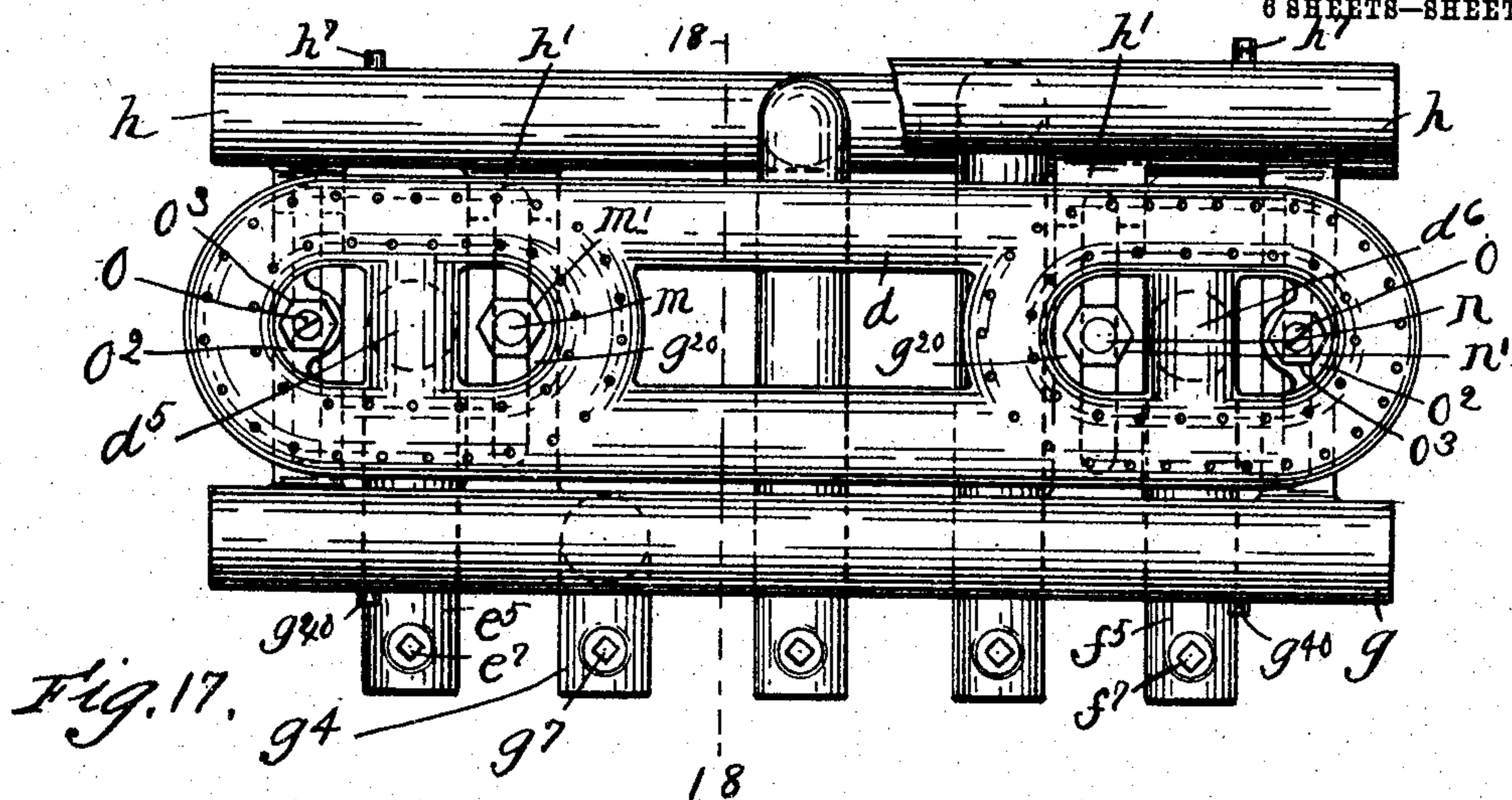
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6 SHEETS—SHEET 5.



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6 SHEETS—SHEET 6.

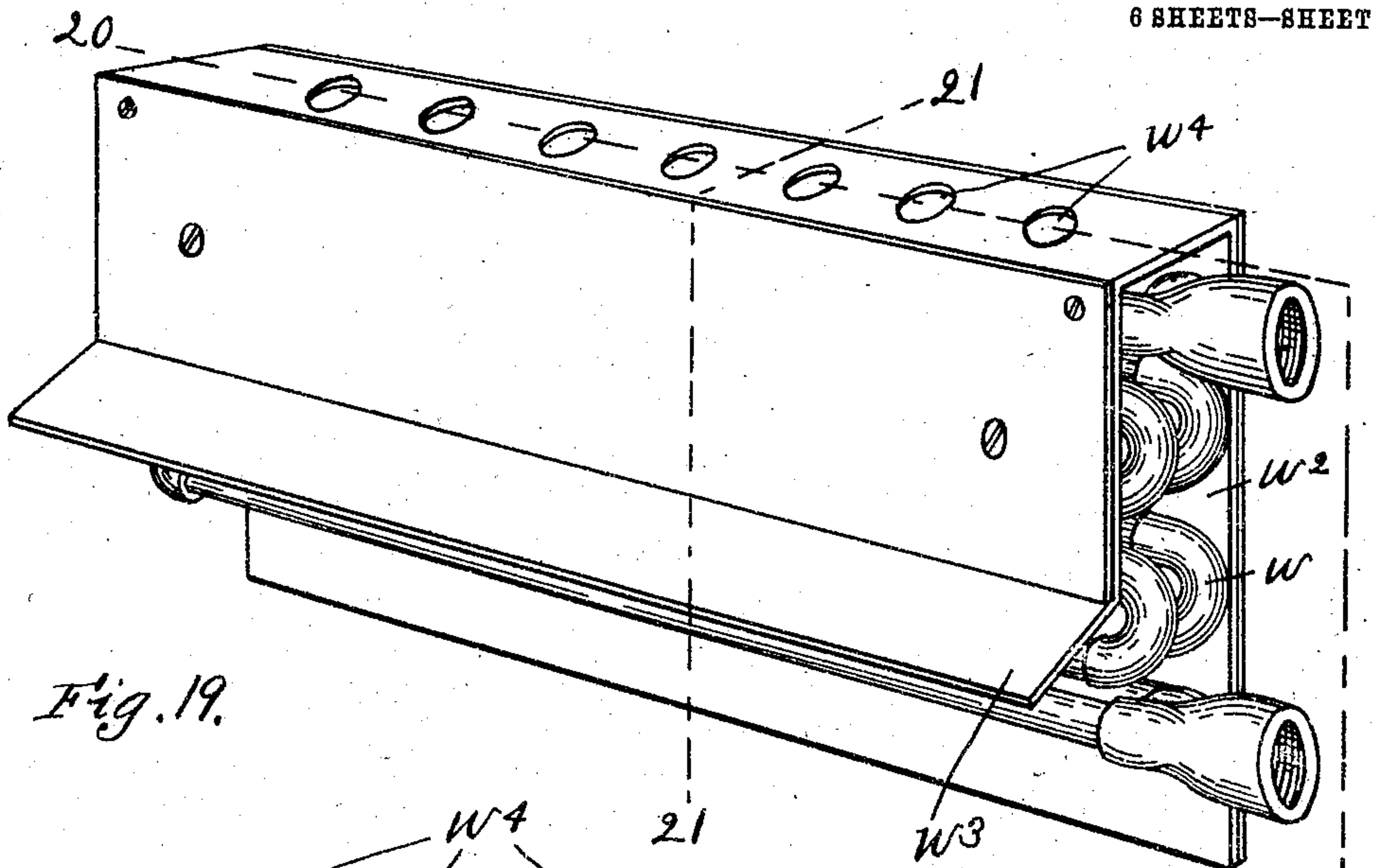


Fig. 19.

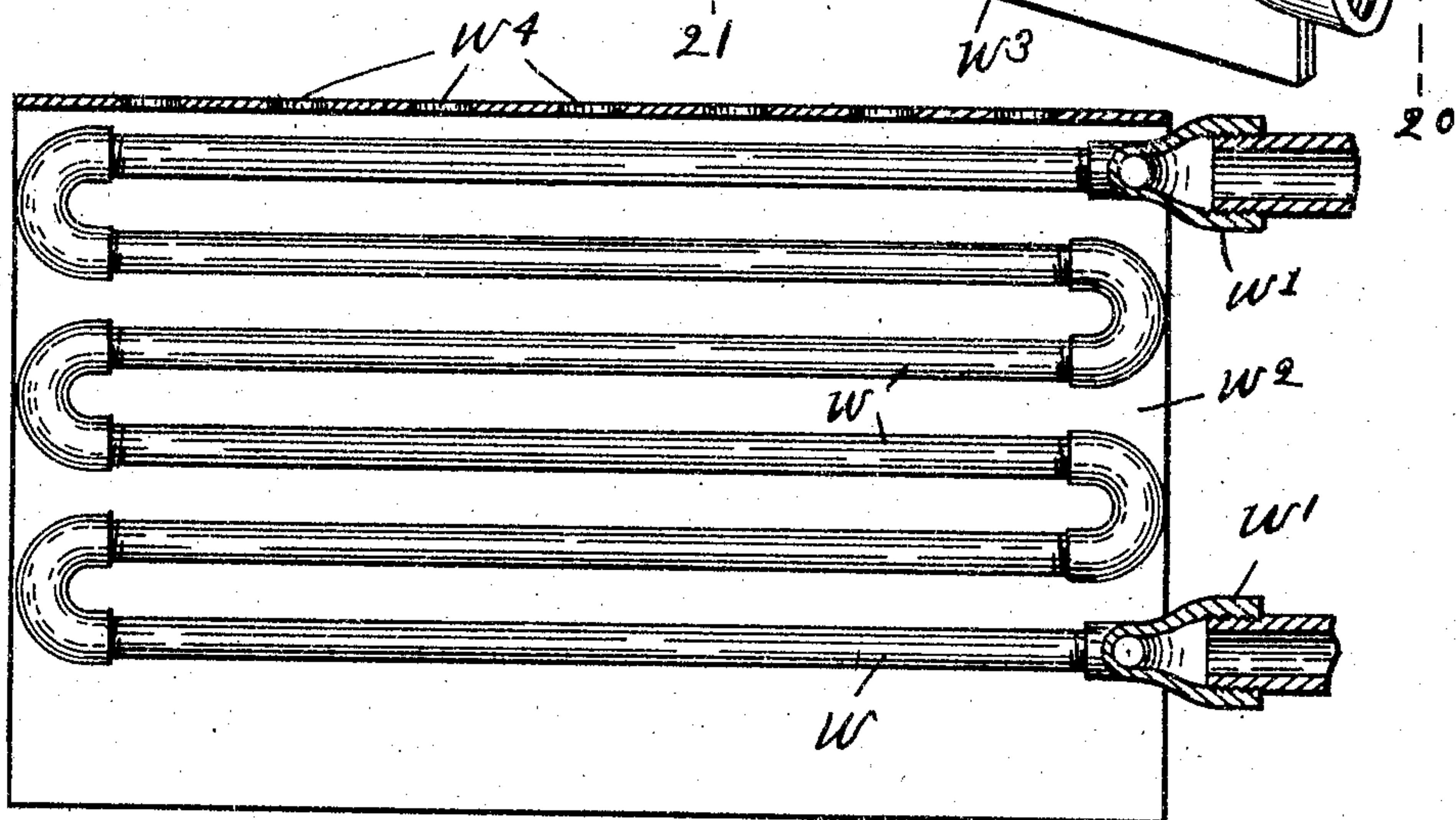


Fig. 20.

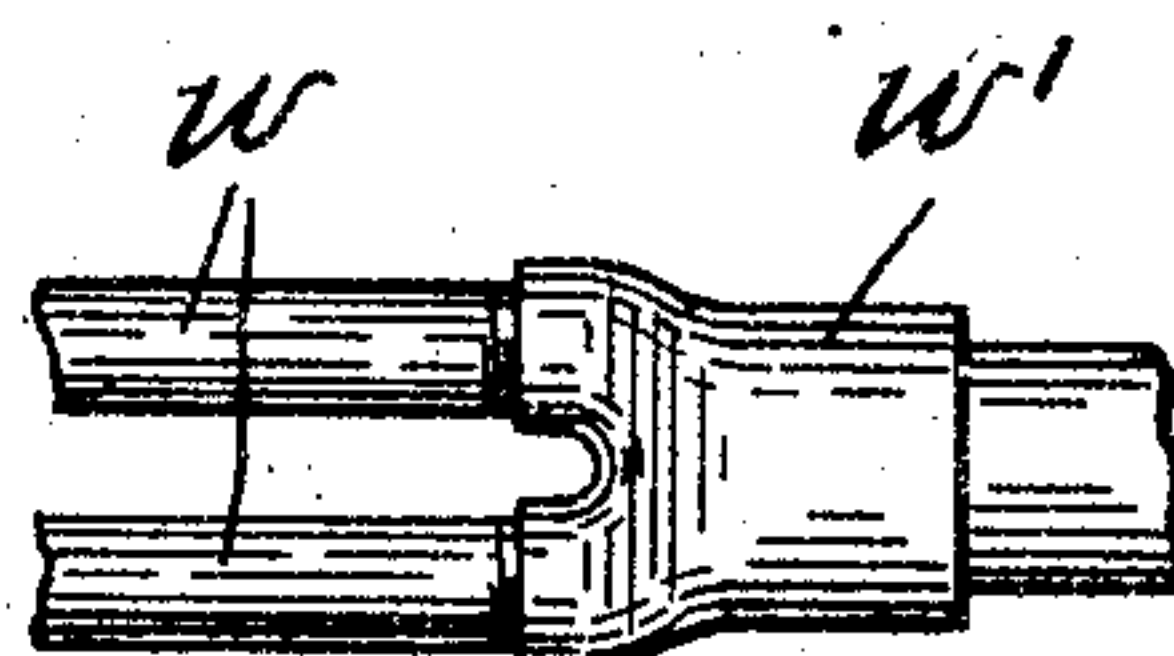


Fig. 22.

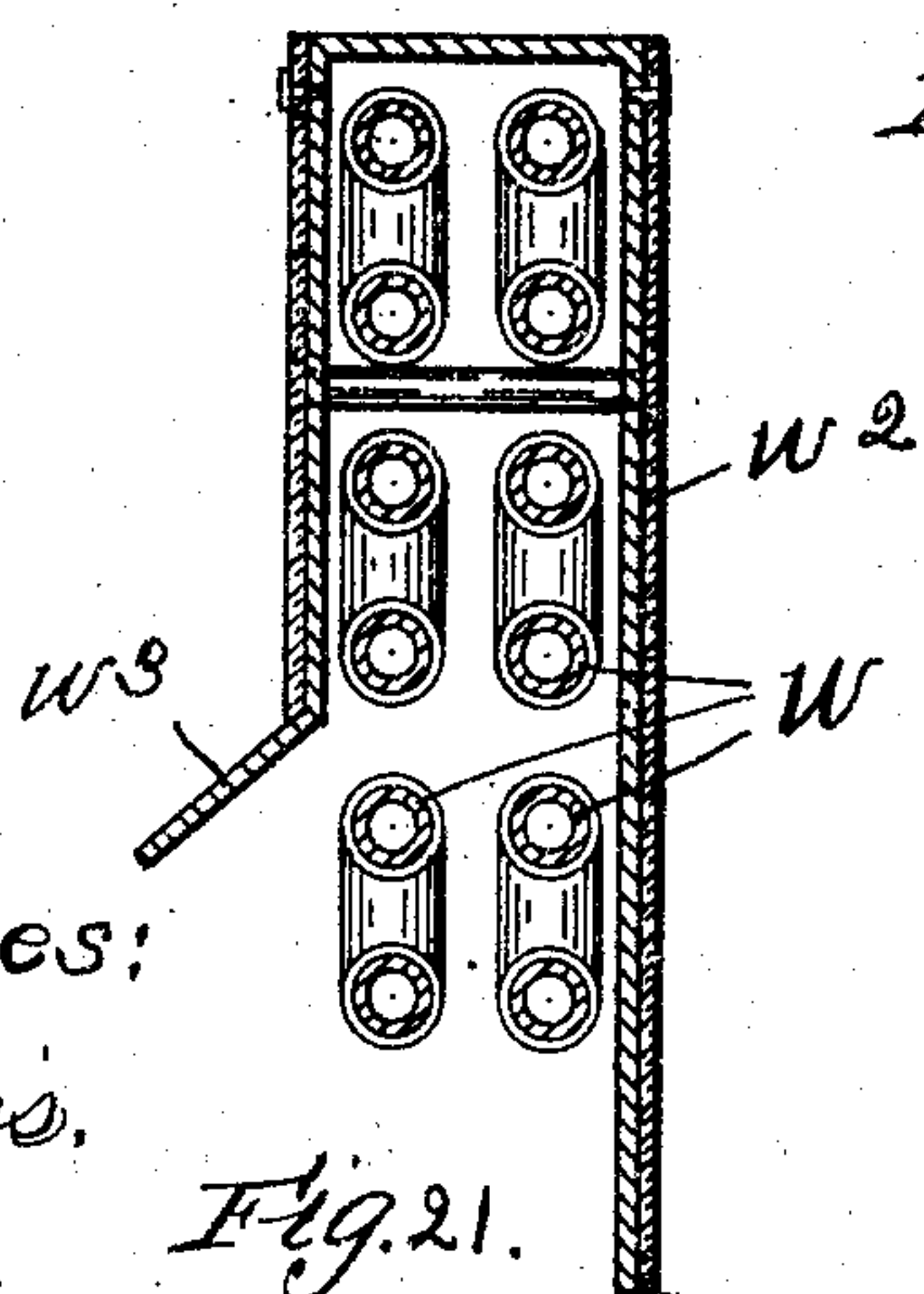


Fig. 21.

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Inventor:
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UNITED STATES PATENT OFFICE.

WELLES MORTIMER PARTRIDGE, OF PEABODY, MASSACHUSETTS.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 781,020, dated January 31, 1905.

Application filed February 23, 1904. Serial No. 194,745.

To all whom it may concern:

Be it known that I, WELLES MORTIMER PARTRIDGE, of Peabody, county of Essex, State of Massachusetts, have invented an Improvement in Gas-Stoves, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to gas-stoves or appliances especially adapted to be placed in an ordinary kitchen stove or range having an oblong or oval-shaped fire-pot without permanently altering said stove or range, and is intended as an improvement upon the gas-stove or appliance shown in my application for Letters Patent, Serial No. 747,474, dated December 22, 1903.

My present invention has for its object to improve the construction of the appliance to the end that it may be more easily constructed and adapted to fit fire-pots of different sizes and that the burners may be supported at regular distances from the side walls of the differently-sized fire-pots and a pilot-light provided for each burner of the appliance and an improved form of water-front provided especially adapted for use in connection with my burner, although the ordinary water-front may be employed in lieu thereof.

Figure 1 shows in plan view a gas-stove embodying this invention. Fig. 2 is a longitudinal vertical section of the gas-stove, taken on the dotted line 2 2, Fig. 1. Fig. 3 is a transverse vertical section of the stove, taken on the dotted line 3 3, Fig. 2. Fig. 4 is a plan view of one of the burners. Fig. 5 is a detail showing in vertical section three burners and one of the upright supports for the top burner. Fig. 6 is a detail showing the means for regulating the distance from the water coil or front and the opposite side wall of the fire-pot, respectively, that the side burners shall occupy. Fig. 7 is a modification of the means shown in Fig. 6 for regulating the distance from the water coil or front and the side wall of the fire-pot, respectively, that the burner shall occupy. Fig. 8 is a sectional detail of the uppermost pilot-light. Fig. 9 is a sectional detail of the pilot-light for the two oppositely-disposed side burners. Fig. 10 is a vertical sec-

tion of the top burner and pipes leading thereto and the gas-supply nozzle. Fig. 11 is a detail showing the means for adjusting the air-supply. Fig. 12 is a sectional detail showing the lowermost pilot-light. Fig. 13 is a modification showing a different way of closing the ends of the burners. Fig. 14 is a detail showing the several burners made as half-castings bolted together. Figs. 15 and 16 are details of portions of the burners made as half-castings. Fig. 17 is a plan view of the burner, showing a modified form of top burner and showing means for delivering gas to each side burner separately. Fig. 18 is a vertical section of the side burners, taken on the dotted line 18 18, Fig. 17. Fig. 19 is a perspective view of a water-front which may be employed. Fig. 20 is a longitudinal vertical section of the water-front shown in Fig. 19, taken on the dotted line 20 20. Fig. 21 is a transverse vertical section of the water-front shown in Fig. 19, taken on the dotted line 21 21. Fig. 22 is a detail of one of the fittings of the double coil of the water-front.

a represents a gas-supply pipe having at one side a plurality of openings into which the shut-off valves a' , a'' , a''' , and a'''' are screwed, each shut-off valve having secured to its case a nozzle a^5 , (see Fig. 10,) which projects into the enlarged end b of a pipe which delivers the air and gas to the burners, four such delivery-pipes b' , b'' , b''' , and b'''' being herein shown. The enlarged end b of each delivery-pipe is made conical and forms a mixing-chamber, and upon the outer end of each conical end portion b two plates are placed, which are disposed one upon the other, one of said plates, as c , being rigidly secured to the end portion b and the other, as c' , having a marginal lip or flange formed on it, which overlies and loosely engages the plate c and is thereby free to revolve on said plate c . Both plates c and c' have several circular or other shaped holes through them, and as the outermost plate c' is turned relative to the fixed plate c air-inlets of greater or less dimensions will be provided.

A pair of burners are provided at the top of the appliance, which consist of a horizontally-disposed tubular casting d , having semicircular end portions, and a pair of parallel side

portions provided with transverse walls d^2 , located at points intermediate therein to thereby form two separate tubular compartments, and jet-orifices d' are provided along the upper surface of the semicircular end portion and along a portion of the side portions, as best shown in Fig. 1. Two tubular transverse portions $d^5 d^6$ are formed integral with the casting d near the middle, which respectively connect with the tubular compartments $d^3 d^4$. A vertical pipe e leads to the transverse portion d^5 , the upper end of which is shouldered to provide a reduced neck e' or end portion which is adapted to fit into a tubular projection or boss e^2 on the transverse portion, and a set-screw e^3 is provided for holding the pipe e in any adjusted position relative to the transverse portion. The lower end of the vertical pipe e has fitted into it the reduced neck or extension e^4 , formed on a horizontal pipe e^5 , being held in place by a set-screw e^6 , thereby providing for vertical adjustment of the top burners, and the pipe b^2 is fitted into the opposite or outer end of said horizontal pipe e^5 , being held in place by a set-screw e^7 , thereby providing for horizontal adjustment of the enlarged end portion d . The pipes e^5 and e deliver the air and gas directly to the transverse tubular portion d^5 , and consequently to the tubular compartment d^3 . A similar vertical pipe f leads to the transverse portion d^6 , the upper end of which is shouldered to provide a reduced neck or end portion which is adapted to fit into a tubular projection or boss f^2 on the transverse portion, and a set-screw f^3 is provided for holding the pipe f in any adjusted position relative to the transverse portion. The lower end of the vertical pipe f has fitted into it a reduced neck or extension f^4 , formed on the horizontal pipe f^5 , being held in place by a set-screw f^6 , thereby providing for vertical adjustment of the top burners, and a pipe b^3 is fitted into the opposite or outer end of said horizontal pipe f^5 , being held in place by a set-screw f^7 , thereby providing for horizontal adjustment of the enlarged end portion b . The pipes f^5 and f deliver the air and gas directly to the transverse tubular portion d^6 , and consequently to the tubular compartment d^4 . Adjustment of the pipes can be readily made by simply loosening the set-screws and moving the parts, whereas in the application above referred to, showing screw adjustments, much difficulty has been encountered in adjusting the parts, as the several pipes had to be adjusted practically at the same time and the distance between the top burners d and the stove-lids remained a constant after the appliance was once installed, thus giving no chance to adjust the burners according to the draft, so as to get perfect combustion and maximum heat from the burners.

The side burner g consists of a tubular casting integrally closed at its ends or plugged, as shown in Fig. 13, and having a row of jet-

orifices along one side, and said casting has formed on it a tubular projection or boss g' , into which is fitted a vertical pipe g^2 , which is held securely therein by a set-screw g^3 . The vertical pipe g^2 has fitted onto it or formed integrally with it a short horizontal pipe g^4 , into which is fitted a delivery-pipe b' , which is formed with an enlarged end portion b . The burner g is thus vertically and horizontally adjusted. The burner g has formed integral with it a plurality of slotted ears g^{20} , which receive the supports for the burner in an adjustable manner, whereby the burner may be fitted to fire-pots of different widths. As the jet-orifices are located at the side of the burner, it is important that the burner be held a short distance away from the water-front for the latter to receive the maximum amount of heat from the lateral gas-jets, and therefore I have provided the burner with laterally-projecting lugs g^{40} , which are shown in Fig. 6 as short screws screwed into holes in the burner, and in Fig. 7 I have shown said lugs or projections formed integral with the burner. I may provide the burners with lugs of either form and may employ as many lugs as desired.

The water-front herein shown consists of a double coil of pipe w , (see Figs. 3 and 19 to 22,) which is connected at the ends by suitable fittings w' with the inlet and outlet pipes, and said coil of pipe is contained within or inclosed by a jacket or casing w^2 , which is open at the bottom, and one side wall of said jacket or casing has an outwardly-projecting lip w^3 , which extends over the side burner g and which directs the heat to the coil of pipe. The jacket or casing has holes w^4 at the top. The jacket or casing may be covered wholly or partially with asbestos sheeting.

The burners h , though two in number, are connected together so as to really constitute a single burner and are located at the side of the fire-pot opposite the burner g , so as to heat the oven, and said burners each consist of a tubular casting closed at the ends integrally or with plugs and constructed substantially the same as the burner g , each having a plurality of slotted ears h' . Each burner h has a tubular projection or boss h^2 , into which is fitted a short vertical pipe h^3 , said short pipe being held therein by set-screws h^4 , and a horizontal pipe h^5 is provided, having a tubular projection or boss above and below, into which said short vertical pipes are also fitted, being held therein by set-screws h^6 , and said horizontal pipe has fitted into its inner or front end a delivery-pipe b^4 , which is held therein by a set-screw. The air and gas are thus delivered to both burners h . As these burners are adapted to be held at the proper distance from the oven-wall of the fire-pot to heat the oven, they also have jet-orifices at the side and are provided with laterally-projecting lugs h^7 .

As supports for the several burners two

stands $m\ n$ are provided, each consisting of a base adapted to rest on the bottom of the ash-pit and an upright bar rising from it, screw-threaded for a portion of its length and made of a diameter to pass freely through the slots in the ears on the burners, and nuts $m'\ n'$ are placed on said uprights above and below said ears. The burners $g\ h\ h$ are supported by these stands, being adjustable thereon vertically and also horizontally. Upright bars o , two in number, are located between the burner g and the uppermost burner h , which are screw-threaded at each end, and the lower ends of said bars pass through the slots in the ears on said burners and have placed thereon suitable nuts o' above and below said ears, and the upper ends of said bars pass through holes in the ears o^2 on the uppermost burner, and nuts o^3 are placed on said bar above and below said ears. The upper ends of the bars o are slotted to receive a screw-driver. By means of the upright bars o the uppermost burner is supported in an elevated position and is also independently adjustable to different elevations, so as to bring the top gas-jets to the proper distance from the top of the range.

The pilot lights or burners, which are provided for the several burners, are constructed as follows: t represents a horizontal pipe which leads from the gas-supply pipe a and has connected in it a by-pass valve t' of any usual or suitable construction. A vertical pipe t^2 has formed in it a horizontal tubular extension t^3 , which is adapted to receive the end of the pipe t , which latter is securely held therein by a set-screw t^4 . The pipe t^2 is bent at right angles near its lower end, (see Figs. 3 and 12,) and the end of said pipe is closed except for a small hole or jet-orifice t^5 for the gas. The lower end of the pipe t^2 is directed toward and terminates near the vertical wall of the fire-pot above the lower burner h , and the gas which rises from said lower burner h crosses the path of the flame issuing from the jet-orifices t^5 , and hence becomes ignited. The lower end of the pipe t^2 , having the jet-orifices t^5 , therefore serves as the pilot light or burner for the lower burner h . The upper end of the pipe t^2 has fitted into it a short pipe t^6 , which is held securely therein by a set-screw t^7 , and the upper end of said pipe t^6 is fitted into the lower end of a vertical pipe t^8 , which is formed or provided with two tubular projections $t^9\ t^{10}$, which extend in opposite ways, each of said projections having a closed end except for a small hole or jet-orifice, as $t^{12}\ t^{13}$. The tubular projections $t^9\ t^{10}$, having the jet-orifices, serve as pilot lights or burners for the upper burner h and the burner g and are directed toward the opposite side walls of the fire-pot just above said burners, and the gas issuing from said burners h and g crosses the path of the flames issuing from the pilot lights or burners $t^9\ t^{10}$ and is thereby ignited.

Into the upper end of the pipe t^8 a pipe t^{14} is fitted, which is held securely therein by a set-screw, and a cap t^{15} (see Figs. 3 and 8) is screwed onto the upper end of said pipe t^{14} , which is formed or provided with two jet-orifices t^{16} , leading in opposite ways, slanting upward and outward. The upper end of the pipe t^{14} terminates between the parallel side bars of the uppermost burner and at an elevation, whereby the cap t^{15} occupies a position below the top of said burner in order that the lighted jets of gas issuing therefrom shall not be extinguished by the products of combustion from the burner g as said products pass over top burners d , and the flame issuing from the jet-orifices t^{16} passes across the top of said uppermost burners, being directed toward the jet-orifices of said burners, as shown in Fig. 1, so that the gas issuing from the jet-orifices of said burners will be ignited. By constructing the pilot lights or burners in this manner it will be seen that the same are vertically and horizontally adjustable throughout, so as to be moved into relatively correct positions for use in connection with the several burners.

Herein many of the parts are referred to as "pipes;" but I desire to include within the meaning of said term any form of tubular casting.

Instead of making the burners as cored castings they may be made as half-castings, as shown in Figs. 14, 15, and 16, the parts being bolted together and cement interposed between them, if desired. The top burner d may be made as a casting having the jet-orifices arranged in elliptical form, as represented in Fig. 17, and in such event the transverse tubular portions $d^5\ d^6$ will be located substantially midway the length of said elliptical portion. The side burners $h\ h$ instead of being connected together in such manner as to form a single burner with a double row of jet-orifices may be made as separate burners, as shown in Figs. 17 and 18, each having a separate delivery-pipe leading to it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a gas-stove, a pair of burners consisting of a horizontally-disposed oval-shaped tubular casting having transverse walls within it, at points intermediate its length, to form two separate tubular compartments, and having jet-orifices, and also having two tubular transverse portions in open communication with said tubular compartments, delivery-pipes leading to said transverse portions composed of vertical pipes and horizontal pipes, telescopically connected together, having set-screws for holding the pipes in their adjusted position, and a nozzle projecting into each delivery-pipe which is connected with a gas-supply pipe, substantially as described.

2. In a gas-stove, a pair of burners consist-

ing of a horizontally-disposed oval-shaped tubular casting having transverse walls within it, at points intermediate its length, to form two separate tubular compartments, and having
 5 jet-orifices and also having two tubular transverse portions in open communication with said tubular compartments, delivery-pipes leading to said transverse portions, composed
 10 of vertical pipes formed with reduced necks which fit into tubular projections on the transverse portions, horizontal pipes having vertically-reduced necks which fit into the lower ends of the vertical pipes, horizontal
 15 pipes which fit into the ends of the burners, horizontal pipes having enlarged end portions, and nozzles projecting into the enlarged end portions, which are connected with a gas-supply pipe, substantially as described.

3. In a gas-stove, a pair of burners consisting of a horizontally-disposed oval-shaped tubular casting having transverse walls within
 20 it, at points intermediate its length, and having jet-orifices, a pilot light or burner located between said burners in close proximity thereto, having oppositely-disposed jet-orifices directed toward the burners, and a pipe leading
 25 from said pilot light or burner to the gas-supply pipe, substantially as described.

4. In a gas-stove, a pair of burners consisting of a horizontally-disposed oval-shaped tubular casting having transverse walls within
 30 it, at points intermediate its length, and having jet-orifices, a vertically-adjustable pilot light or burner located between said burners, in close proximity thereto, having oppositely-
 35 disposed jet-orifices directed toward the burn-

ers, and a pipe leading from said pilot light or burner to the gas-supply pipe, substantially as described.

5. In a gas-stove, a pair of burners consisting of a horizontally-disposed oval-shaped tubular casting having transverse walls within
 40 it, at points intermediate its length, and having jet-orifices, a pilot light or burner located between said burners in close proximity thereto, consisting of a cap having two oppositely-
 45 disposed jet-orifices, slanting upward and outward, a pipe to which said cap is applied, and a pipe leading from said pipe to the gas-supply pipe, substantially as described. 50

6. In a gas-stove, a horizontal side burner having jet-orifices at the side, means for delivering gas thereto, a water-coil at the side
 55 of said burner, a jacket inclosing said coil having a lip which extends over said burner, substantially as described.

7. In a gas-stove, a horizontal side burner having jet-orifices at the side, means for delivering gas thereto, a water-coil located at
 60 the side of said burner, a jacket inclosing said coil open at the bottom above the jets issuing from said burner, and comprising a pair of side walls and a perforated top wall, substantially as described.

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

WELLES MORTIMER PARTRIDGE.

Witnesses:

B. J. NOYES,
 H. B. DAVIS.