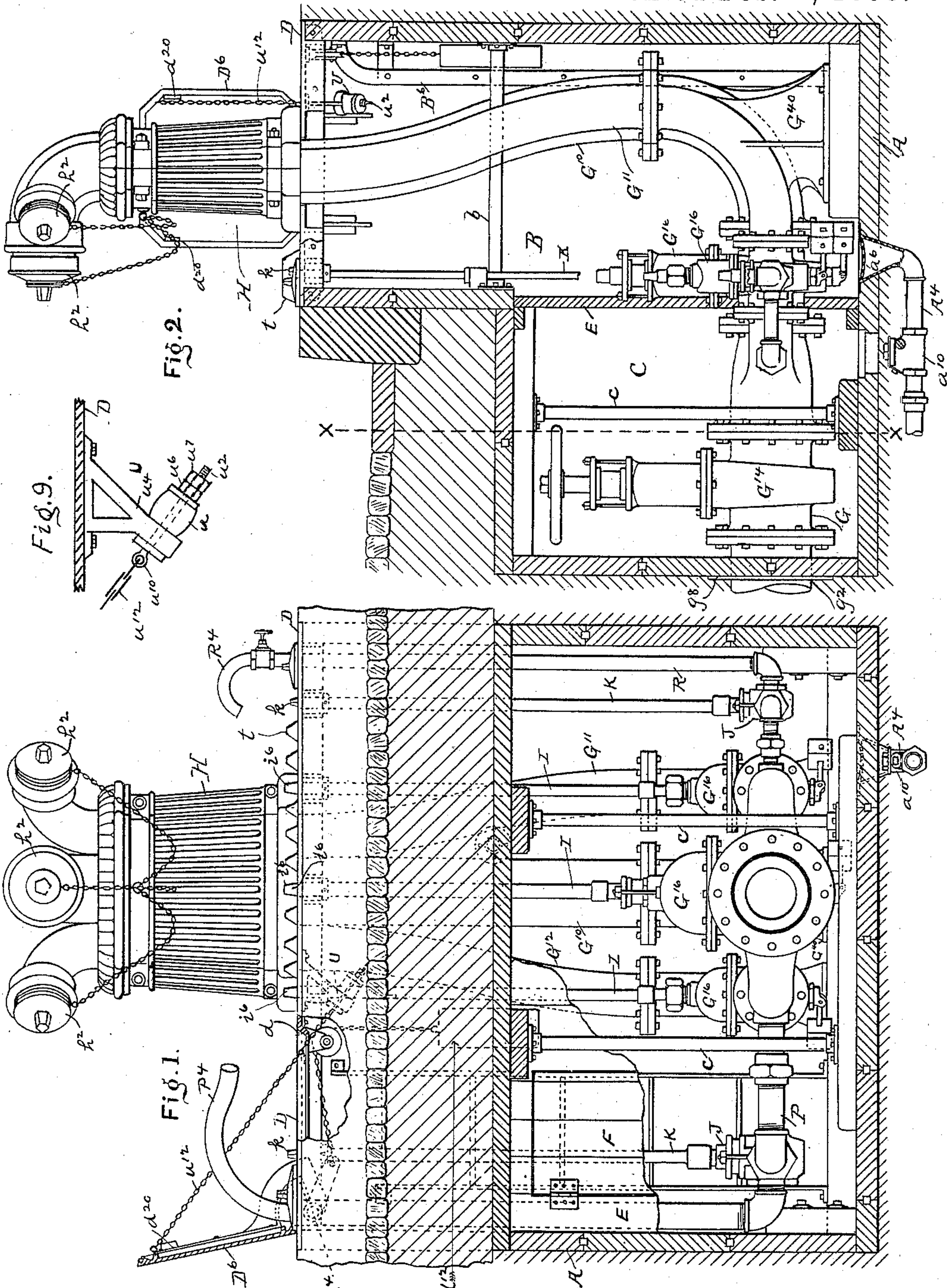


(No Model.)

2 Sheets—Sheet 1.

A. S. GEAR.
APPARATUS FOR SUPPLYING WATER FOR EXTINGUISHING FIRES.
No. 598,703.
Patented Feb. 8, 1898.



Witnesses
Jesse Josephine Gear
A. Barritt
Alonzo Stockbridge Gear Inventor

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

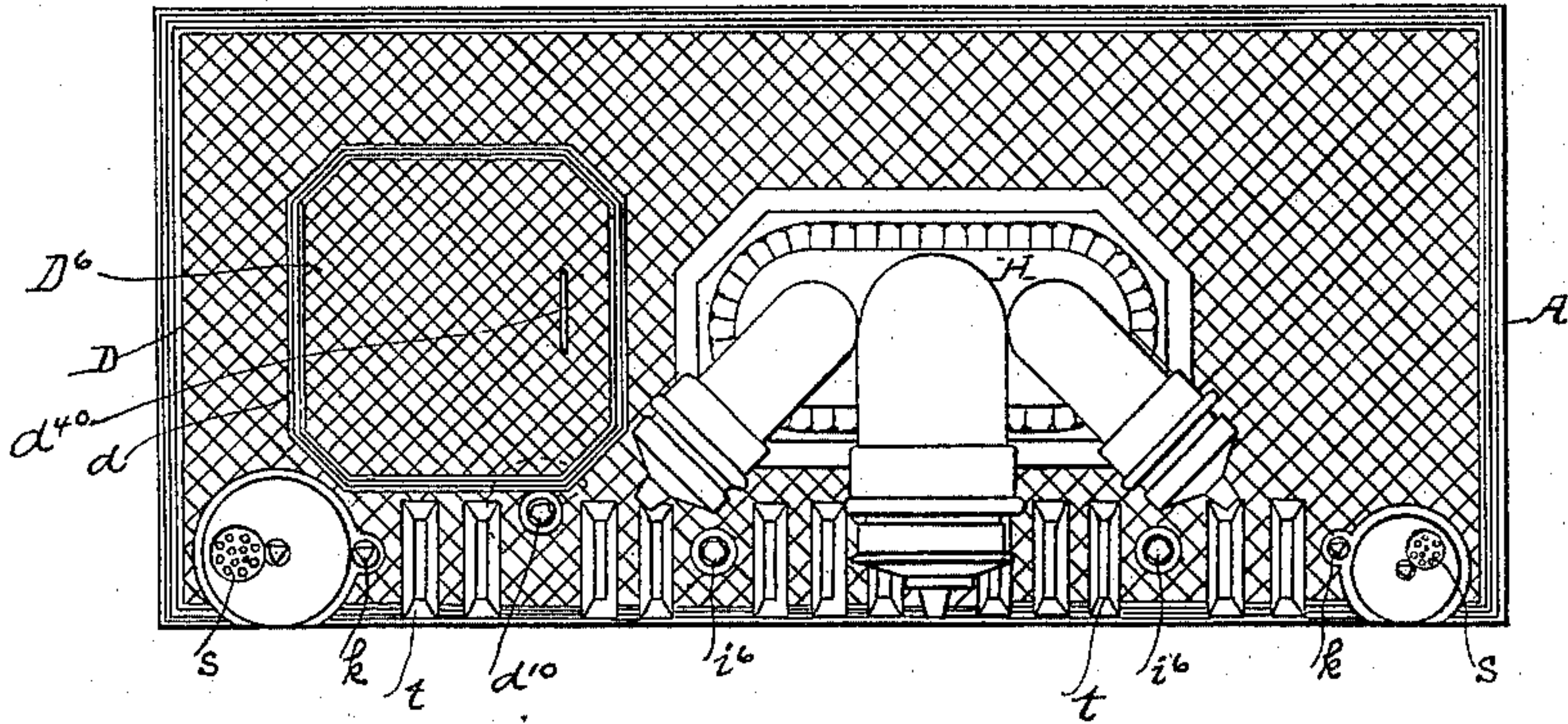


Fig. 4.

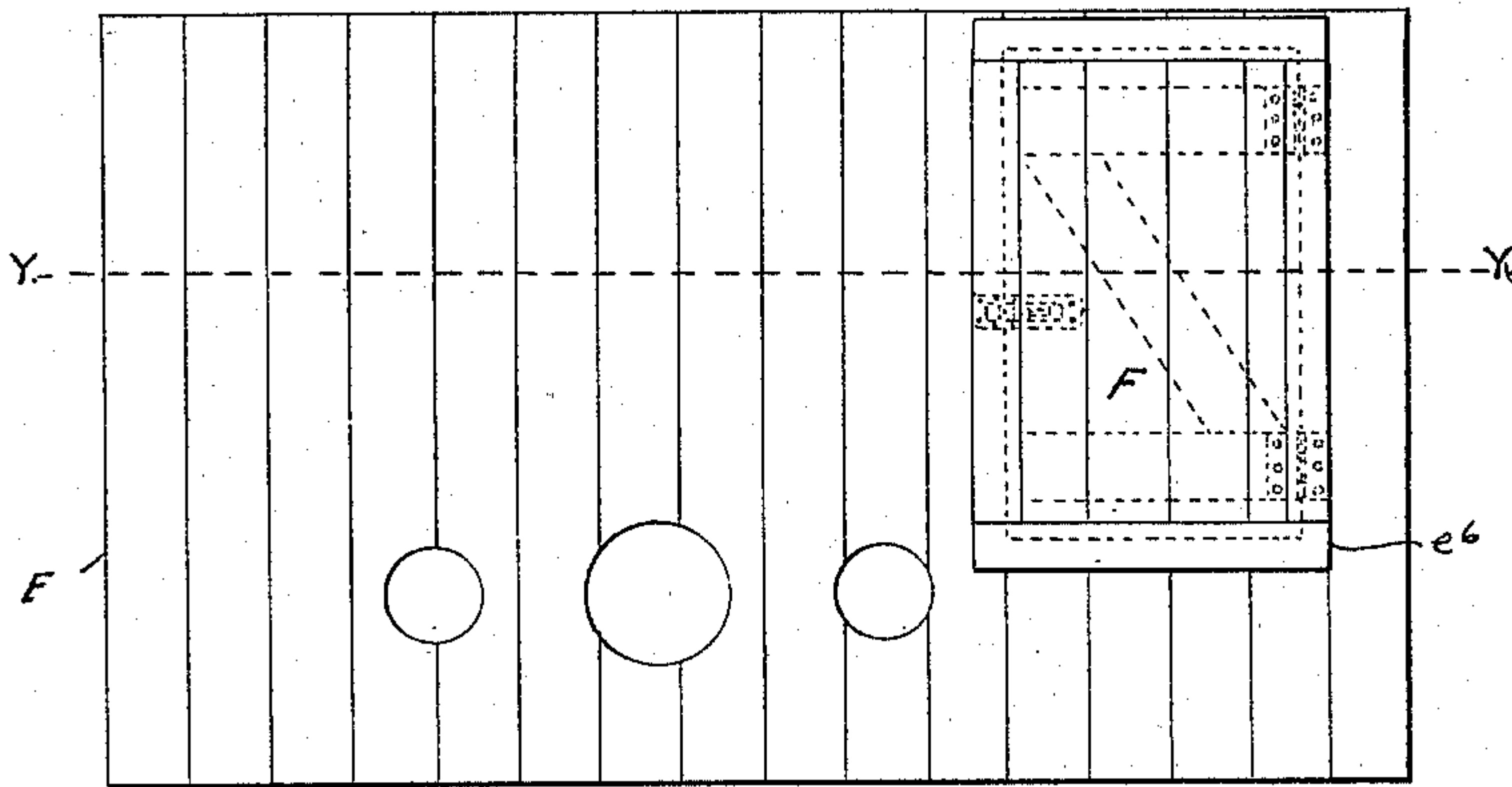


Fig. 5.

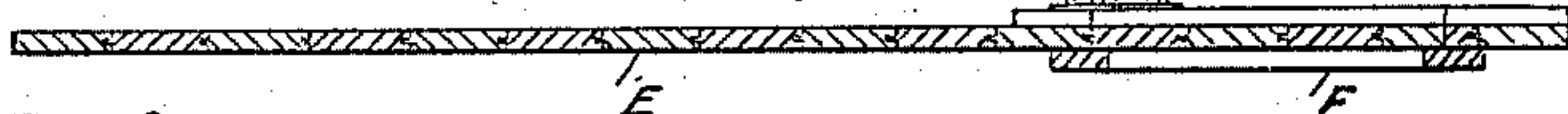


Fig. 6.

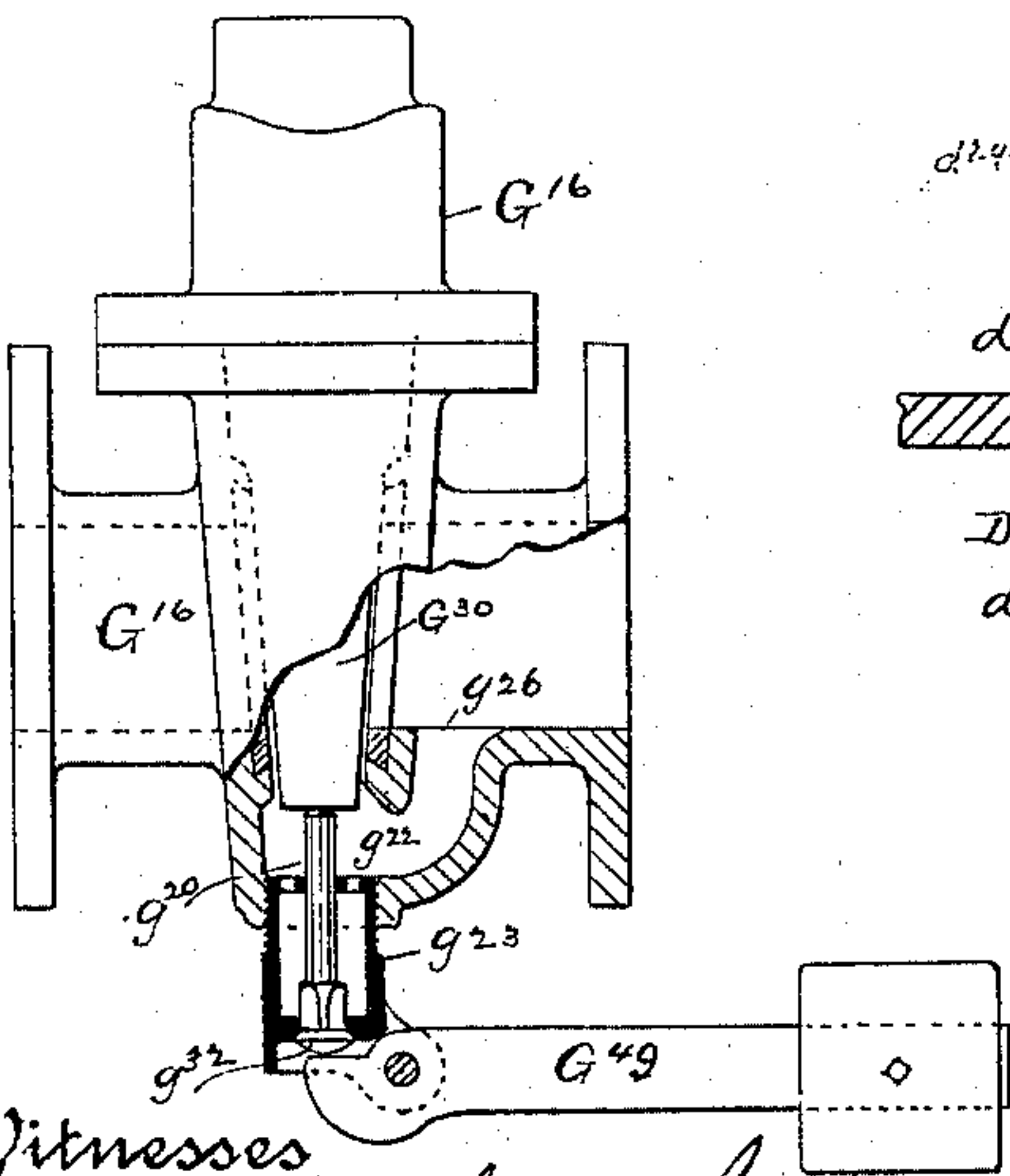


Fig. 7.

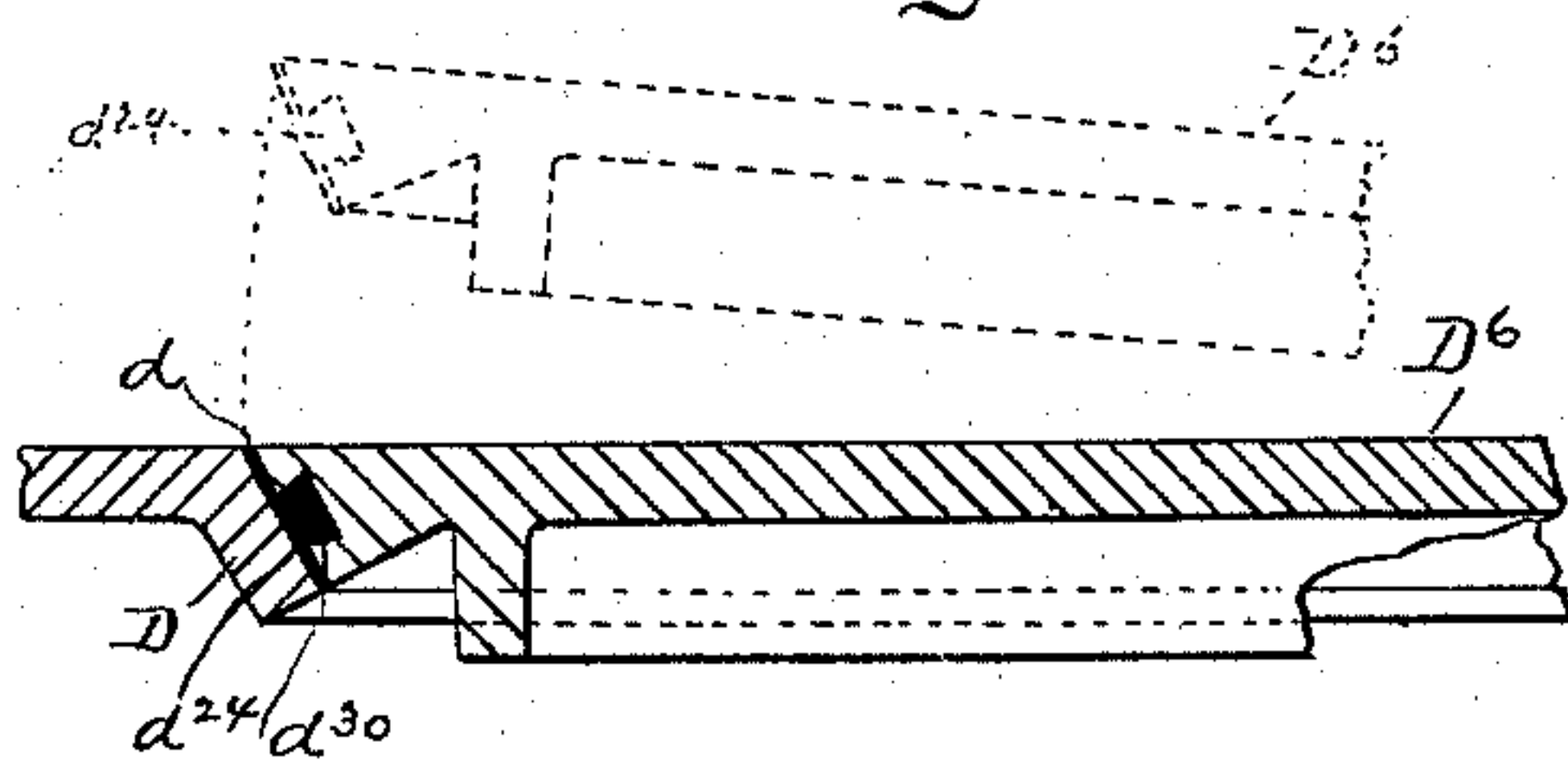
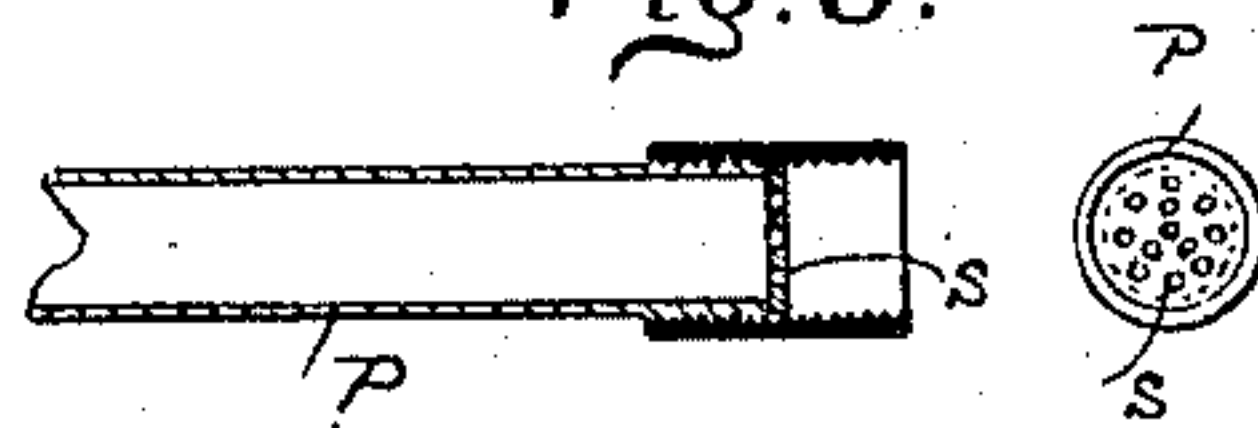


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALONZO STOCKBRIDGE GEAR, OF NEW YORK, N. Y.

APPARATUS FOR SUPPLYING WATER FOR EXTINGUISHING FIRES.

SPECIFICATION forming part of Letters Patent No. 598,703, dated February 8, 1898.

Application filed June 12, 1897. Serial No. 640,445. (No model.)

To all whom it may concern:

Be it known that I, ALONZO STOCKBRIDGE GEAR, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented new and useful Improvements in Apparatus for Supplying Water for Extinguishing Fires, of which the following is a specification.

The present invention relates to an apparatus for receiving, controlling, directing, conveying, and discharging water and other fluids under pressure or by suction, principally for the purpose of extinguishing fire.

The object of the invention is to provide in such an apparatus a chamber or box or casing located beneath the street-surface and having a cover flush with the street-surface, within which chamber or box or casing are located one or more hydrants and water-pipes communicating with a source of water-supply, said hydrants extending above the street-surface.

The invention also consists in providing valves for said pipes or hydrants in the box or casing and means for operating said valves, also located in the box or casing and operated from the street-surface without opening the cover of the box or chamber. Besides these objects are others incident to the apparatus, which will be more particularly described hereinafter and embodied in the claims at the end of the specification.

The invention is fully described in the following specification, of which the accompanying drawings form a part.

Figure 1 is a front elevation of my apparatus, partly in section, taken on line X X of Fig. 2. Fig. 2 is a side elevation showing the box in section. Fig. 3 is a plan view. Fig. 4 is a detached side view of the partition, showing door thereon. Fig. 5 is a sectional view on line y y, Fig. 4. Fig. 6 is an elevation of the gate-valve, partly in section to show the dripping device of same. Fig. 7 is a sectional view, enlarged, of the cover of the receptacle and jam, showing the position of the babbitting in same, the dotted lines in this figure showing the position of the door or cover when raised. Fig. 8 is a sectional view of the street-sprinkling pipe and coupling and an end view, both showing the strainer thereon. Fig. 9 is a detached

enlarged view of the buffer for the cover and the supporting-bracket secured to the top plate of the receptacle.

Similar letters refer to similar parts throughout the several views.

Letter A represents the receptacle or box made of any suitable material—of wood prepared to prevent decay, of iron, concrete, brick, cement, or paper. This box, as shown in the figures, is provided with a bottom and is so constructed that one portion, B, is placed under the sidewalk and the other portion, C, placed under the street. The portion B is covered by a metallic plate D, and the portion C is covered by the material comprising the box proper. These two portions or compartments are divided off by a partition E, fixed or removable, provided with a passage or opening e^6 , closed by a door F, which can be held thereto by hinges and bolts or by any other suitable means. The jamb of this door is provided with a flexible gasket or may be babbitted, as hereinafter to be mentioned, for the cover, and is made sufficiently wide so that other than a tight-fitting door would close tightly and exclude the air, prevent freezing, and also allow for expansion and contraction, so that it can always be easily opened. The inner compartment C of the box is internally supported by the posts c c , and the other compartment is also strengthened by the brace b . The pipes and valve within the compartment C are prevented from freezing by the partition, and the door in the partition permits a person entering the compartment for repairs and inspection of valves, &c. The top plate of the box is provided with an opening d sufficiently large to permit of a man entering and descending by means of a ladder B^6 into the compartment B of the box for inspection or repairing of valves, &c. This opening d from the top plate is closed by a cover D^6 , which is provided with hinges d^4 , made of any ordinary construction or made in accordance with those described in my former application, Serial No. 624,004, filed February 18, 1897. This cover can be secured down and locked by the device shown in my former application, or by any other suitable means, whereby the stem d^{10} of the locking device will extend through and above the top plate, so as to allow the lock to be manipulated from the

outside of the box. The cover is automatically thrown open by the weight d^{12} . To prevent the cover flying open too forcibly upon the hinges, so as to damage them, I use the buffer U, (see Figs. 1 and 9,) consisting of the flexible buffer u , supported on rod u^2 , passing through supporting-bracket u^4 , secured to the under side of the top plate. The buffer u is placed on rod between washers and held in place by the nuts u^6 u^7 . The eye u^{10} on the rod has fastened to it the chain u^{12} , which is also fastened to the cover. Now when the cover is thrown open by the weight it can only go back as far as the chain and buffer will permit it, which is not sufficient to affect the hinges. The cover is provided with lugs d^{20} , used for guiding door down into place.

The cover D^6 is provided with a dovetail groove d^{30} , (see Fig. 7,) into which is poured the Babbitt metal d^{24} by any suitable means, which is allowed to run along the crevice d and fill the same, the door being purposely made small to widen the crevice, so that it will retain a sufficient quantity of Babbitt metal. This use of Babbitt metal is accompanied with many advantages over gaskets formerly used. It insures a tight fit of the cover on the jamb, it is less liable to wear and tear, and because of its nature effectually shields out the water from getting between the jamb and cover into the receptacle when closed. I am aware that by forming a groove in the jamb of the cover and filling same with Babbitt metal after the manner of the cover a similar result will be produced; but I prefer to babbitt the cover, as before described.

The receptacle is drained by the pipe A^4 , placed in the bottom and leading therefrom to a sewer or cistern. It is provided with a strainer a^6 and with a check-valve a^{10} , which prevents an overflow into the box. This drainage-pipe A^4 can be carried horizontally through compartment C, out through the siding thereof. In that case the check-valve on pipe A^4 will be more easily accessible and repaired.

G represents the inlet or supply pipe, being a branch from the main or reservoir. (Not shown.) This inlet-pipe enters the compartment C at g^2 or at any other convenient place at or near the bottom. To prevent dirt or water entering the hole through which branch pipe entered, I surround the pipe with a collar g^8 , placed on the outside of box. This inlet-pipe extends within the box to about the center of the same, at which point it separates into three branches G^{10} G^{11} G^{12} , the center branch being the largest, although this order may be changed. This inlet-pipe is provided with a gate-valve G^{14} , and the three branches are each provided with gate-valves G^{16} , all of which are provided with an automatic dripping device, which not only drip the stand-pipes, but also the valves. This dripping device consists of the orifice g^{26} , leading into the space g^{22} under the gate G^{30} of the

valve, (see Fig. 6,) which space is connected to the outlet-tube g^{23} with drip-valve seat, against which rests the upward-closing drip-valve g^{32} with a stem g^{20} , acted upon by the gate of the valve. The drip-valve is kept closed by the weighted lever G^{49} . When the gate-valve is open, the drip-valve is closed by the weight; but when the gate is closed the said gate will force the stem of the drip-valve down and open the drip-valve and allow the water to drain off. The weight g^{50} is adjustable on the lever, so that it can be set to the force of the water against it, and this weight makes it less liable to get out of order than if a spring were used.

The three branches are extended from their valves upward on a curve line (see Fig. 2) within compartment B to the top plate of the same, where they take a straight line up through said plate and through casing H on the top of said box and then above same, where they are curved again outward, as shown in Figs. 2 and 3, and each of these branches is provided with a nozzle-cap h^2 of the construction shown in my former application, Serial No. 624,004, filed February 18, 1897, or any other suitable construction.

The stems I of the gate-valves of the three branch pipes extend up through the top plate of box, where they are provided with a suitable head i^6 , made to fit a wrench used only by the fire department. Branching out from the main to which the hydrant stand-pipes G^{11} G^{12} are connected there are two pipes P R, which extend up through the box, (see Figs. 1, 2, and 3,) where they are provided with covers similar or such as shown and described in my former application, Serial No. 624,004, filed February 18, 1897. These two pipes P R are respectively the street-sprinkling pipe P and street-cleaning pipe R, and they are each provided with valves J or stop-cocks, with valve-stem K extending likewise through top of box, where they are provided with suitable heads k , made to fit suitable wrenches. The wrenches used by the fire department will not open the valves of the sprinkling or cleaning pipes, or vice versa, each being provided with different-shaped stem-heads and wrenches. This prevents one department tampering with the other. The casing H surrounding the hydrant stand-pipes outside the box is made of iron and suitably ornamented.

The street-sprinkling pipe P is provided with the hose connection P^4 and the street-cleaning pipe R with the gooseneck R^4 , which latter is provided with a faucet or cock. These two supplemental attachments P^4 R^4 are detachable and when detached suitable coverings are placed over the discharged end of the street cleaning and sprinkling pipes. The covers to these pipes outside the box may be hinged and can be babbitted to make them water-tight and more easily operated in frosty weather.

The object of the supplemental valve G^{14} on the inlet-pipe or main branch leading into

the receptacle is to shut off the water from the main in case the valves or pipes in box need repairing. When the branch leading into the box outside the same has a valve, which is sometimes the case, then the supplemental valve is dispensed with. The supplemental valve on inlet-pipe obviates the necessity of shutting off some other valve at a remote distance away, which closes a whole district and deprives it of the use of water while the repairs are being made.

S S are strainers placed over and within the discharge-openings of the sprinkling and cleaning pipes P R, (see Fig. 8,) which prevents any hard substances being dropped into the pipes whenever the covers are left open. This omission to close the covers might happen, and if such substances were dropped down the pipes it might do damage to the valves.

The covers to the street cleaning and sprinkling pipes and the stems to the valves and locking-stem protruding through top plate above the same present more or less obstructions on the top plate and in some cases might be considered objectionable. This is overcome by forming raised ridges *t* on the surface of said top plate, (see Figs. 1 to 3,) which shield those obstructions, and the groove formed by these ridges will act as gutters to drain the water off the top.

The covers to the street cleaning and sprinkling pipes may be countersunk in the top plate to remove them from being obstructions thereon.

The curve of the stand-pipes can be changed from that shown, in order to throw the casing H back, which may be desirable in order to use a wrench of greater leverage for opening the valves of the stand-pipes.

The door D⁶ is provided with handle *d*⁴⁰, which is used to raise the cover, when necessary, by hand. G⁴⁰ is a supporting-bracket for the stand-pipes to secure them rigidly to the box and hold them in place securely against jarring incident to the working of the fire-engine. The gooseneck R⁴ and the hose connection P⁴ on their respective pipes are joined thereon by threads, but they may be connected by bayonet-joint.

What I claim is—

1. In an apparatus of the character described, the combination of a chamber located beneath the sidewalk or street-surface, a cover for said chamber flush with the street-surface, a main supply-pipe, one or more branch pipes extending from the main supply-pipe and terminating in hydrant stand-pipes extending above the street-surface, valves for said branch pipes located in the chamber, and independent means for operating any one of said valves, said means being located in said chamber and operable to control the valves from the street-surface without opening the cover of the chamber, substantially as specified.

2. In an apparatus of the character de-

scribed, the combination with a box or casing, of a compartment communicating with said box or casing, a partition insulating the said compartment from variations of the outside temperature, a main supply-pipe divided into a plurality of branches in said compartment, and valves for each of said branches located in juxtaposition to the partition, so as when closed, to confine the water in the main and branches in the compartment closed by the partition, substantially as specified.

3. In an apparatus of the character described, the combination with a box or casing, a compartment communicating with the box or casing, a partition insulating the said compartment from variations of the outside temperature, an air-tight door in said partition, a main supply-pipe divided into a plurality of branches in said compartment, a valve for said main supply-pipe, and valves for each of said branches located in juxtaposition to the partition so as, when closed, to confine the water in the main and branches in the compartment closed by the partition, substantially as specified.

4. In an apparatus for receiving, controlling, directing, conveying and discharging water or fluids under pressure or by suction, a receptacle, casing or box provided with suitable cover and nearly water and air tight sides and bottom, and with a partition and placed beneath sidewalk and street and of sufficient capacity for the purpose described, in combination with main, reservoir and branches leading therefrom and hydrant stand-pipes provided with dripping-valves, said pipes extending above the box and suitably cased and the street sprinkling and cleaning pipes extending up as shown with covers and self-dripping valves as set forth.

5. In an apparatus for receiving, controlling, directing, conveying and discharging water, or other fluids under pressure or by suction, a receptacle or box provided with covers suitably fastened and nearly water and air tight, sides and bottom, and compartments with partition or partitions provided with an opening and means for closing same, said box placed beneath the sidewalk and street and having a sewer or cistern connection, provided with strainer and check-valve, and of sufficient capacity to permit entrance for purpose described, in combination with main reservoir and branches therefrom, and hydrant stand-pipe and pipes, extending within box and above same and provided with dripping gate-valves and stand-pipes extending to top of said box suitably covered, and provided with stop-cocks as set forth.

6. In an apparatus for receiving, controlling, directing, conveying and discharging water or other fluids under pressure or by suction, the stems of the hydrant stand-pipe valves and the stems of the street sprinkling and cleaning pipe valves, provided with different-shaped heads for preventing the different departments meddling with the sys-

tem other than their own, without the use of separately-formed wrenches, as set forth.

7. In combination with gate-valves connected with hydrant or stand pipes, the dripping device consisting of orifice g^{26} leading into space or chamber g^{22} between the seats of the valves in the bottom of the same, and opening g^{23} provided with valve g^{32} with stem acted upon by valve-gate, said valve acted upon by the weighted lever G^{40} as described and for the purpose set forth.

8. In an apparatus of the character described, a cover provided with a metal weather-strip consisting of Babbitt metal secured to the edges of the cover by a dove-tailed groove in said cover, substantially as specified.

9. The buffer U, consisting of a flexible buffer on a rod connected to a chain secured to the cover, said rod supported on a bracket secured to top plate; and said flexible buffer held on rod between washers and by set-nuts, as and substantially as set forth.

10. In an apparatus of the character described, the combination of a chamber located beneath the street-surface, a cover therefor flush with the street-surface, a main supply-pipe, and a hydrant stand-pipe passing through said chamber and extending

above the street-surface, said hydrant consisting of a gradually progressively curved portion extending from the main supply-pipe through the chamber to the upper portion thereof, a straight portion extending from the upper portion of the chamber and projecting above the street-surface, and a final and gradually progressively curved nozzle portion extending from the straight portion, whereby is provided a continuous unobstructed water-way free from sharp turns to obviate "water-ram," substantially as specified.

11. In an apparatus of the character described, the combination of a box or casing, a main supply-pipe, one or more branch pipes extending from the main supply-pipe, a street-sprinkling and a street-cleaning pipe each provided with a strainer, said pipes being in communication with the water-supply, substantially as specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 10th day of June, 1897.

ALONZO STOCKBRIDGE GEAR.

Witnesses:

F. BARRITT,

JULIUS E. HOFFMANN.