

(No Model.)

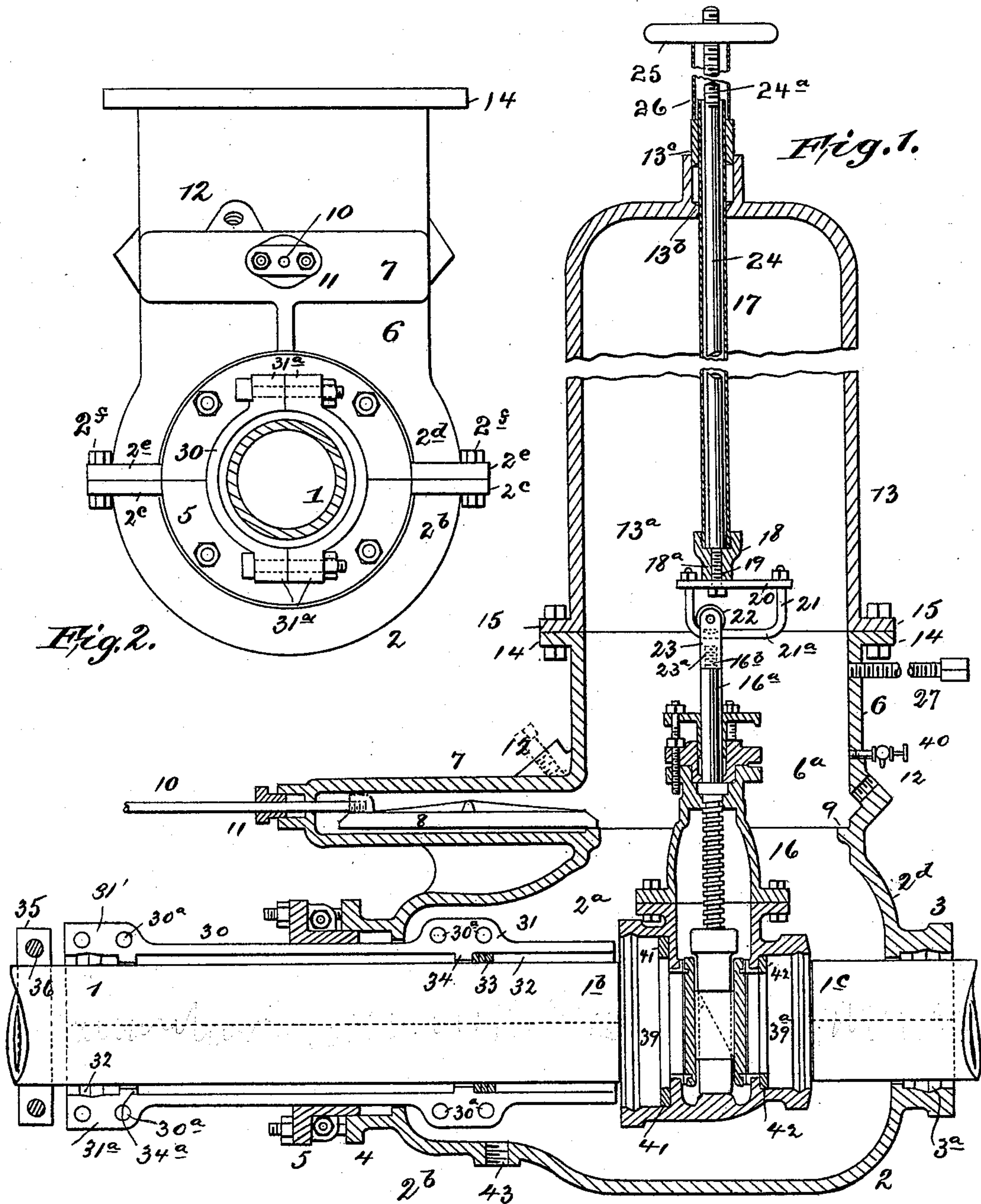
4 Sheets—Sheet 1.

D. W. FRENCH.

MEANS FOR INSERTING VALVES IN PIPES OR MAINS.

No. 587,092,

Patented July 27, 1897.



Attest.  
C. W. Benjamin  
M. Sherrard

Inventor:  
D. W. French  
By  
T. F. Bourne  
his atty

(No Model.)

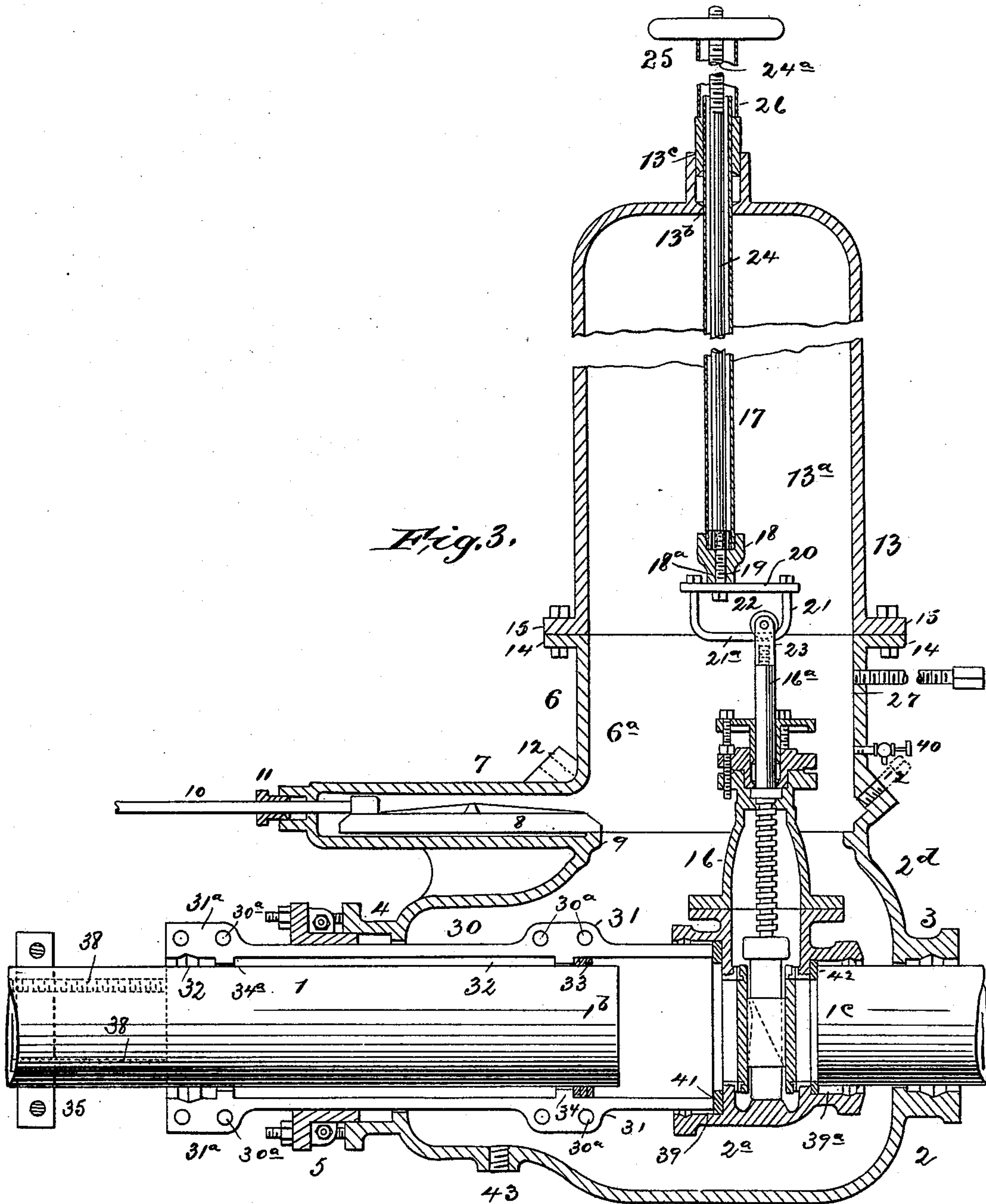
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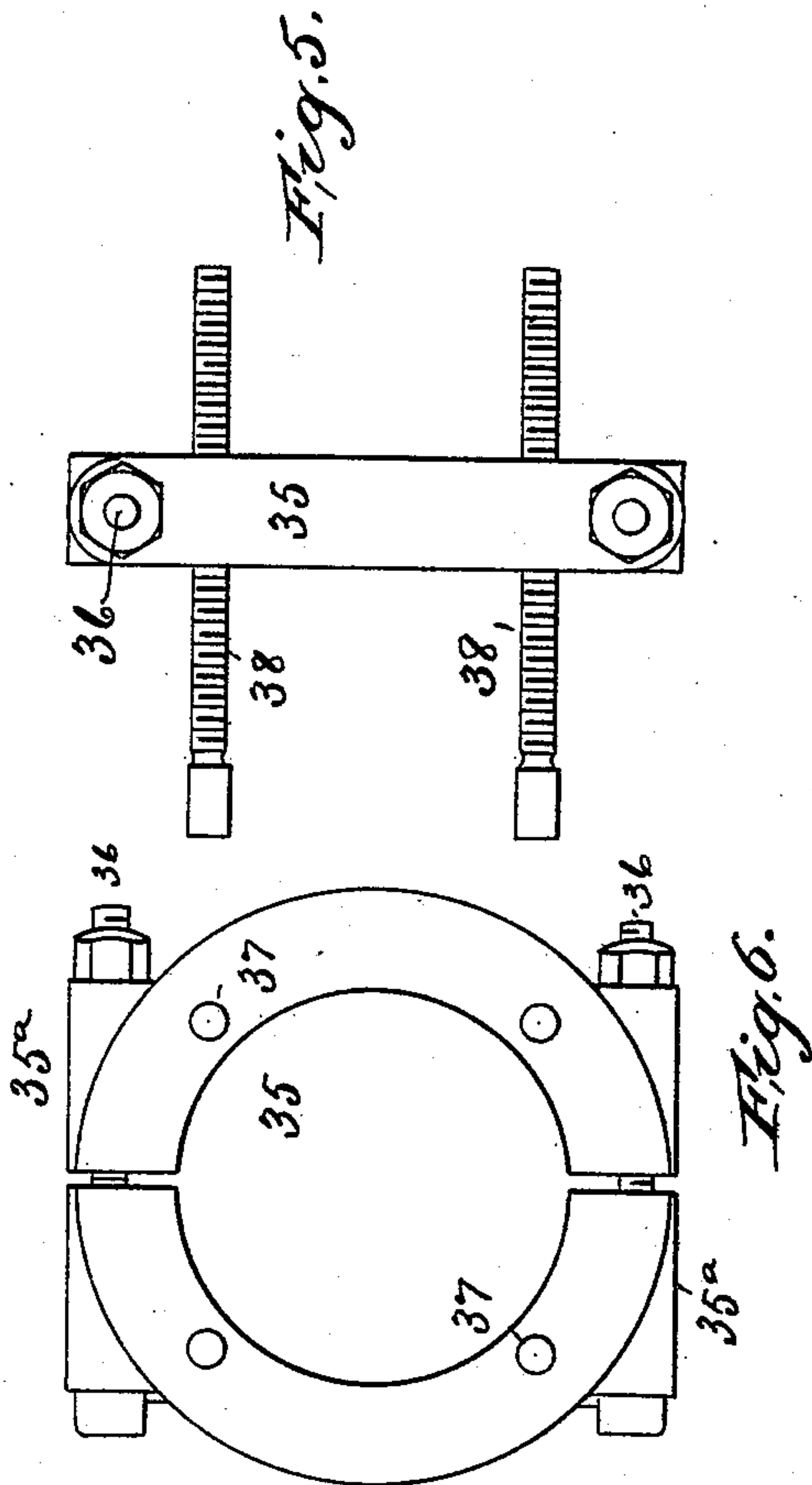
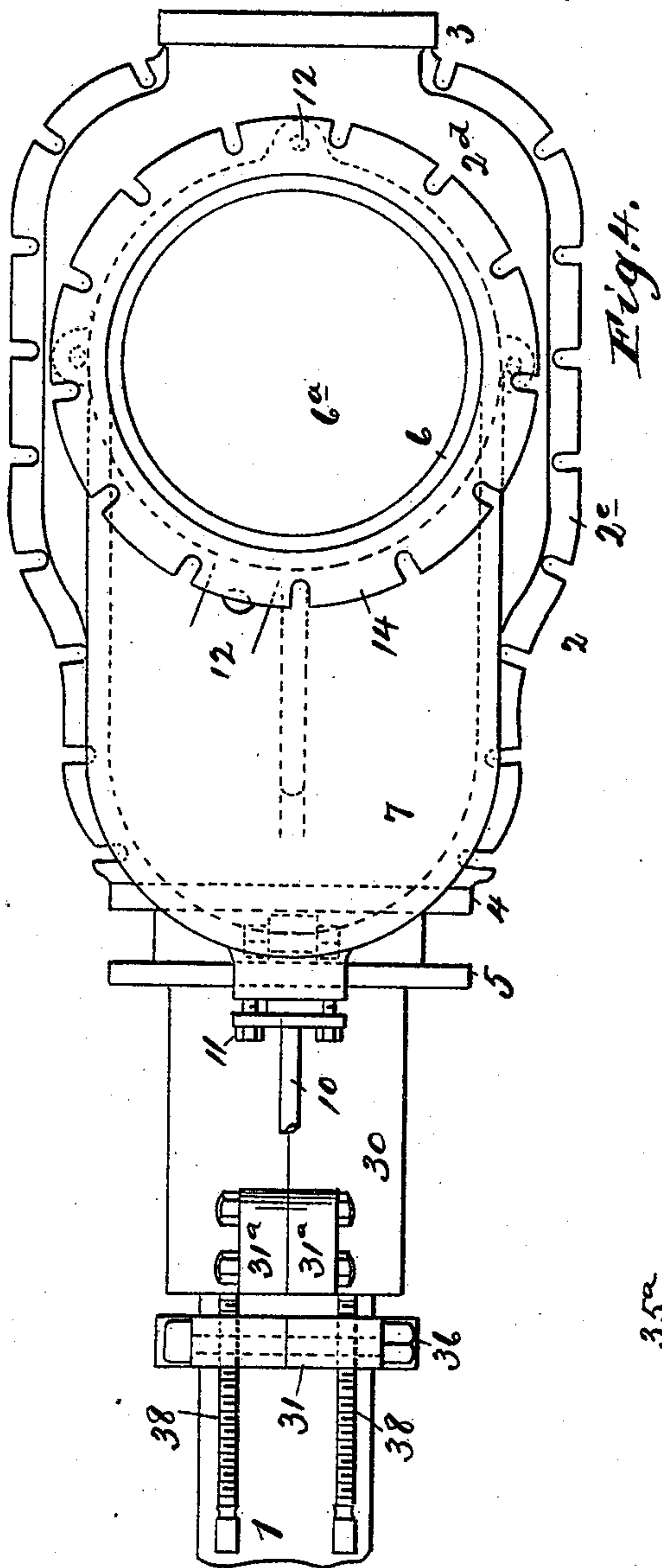
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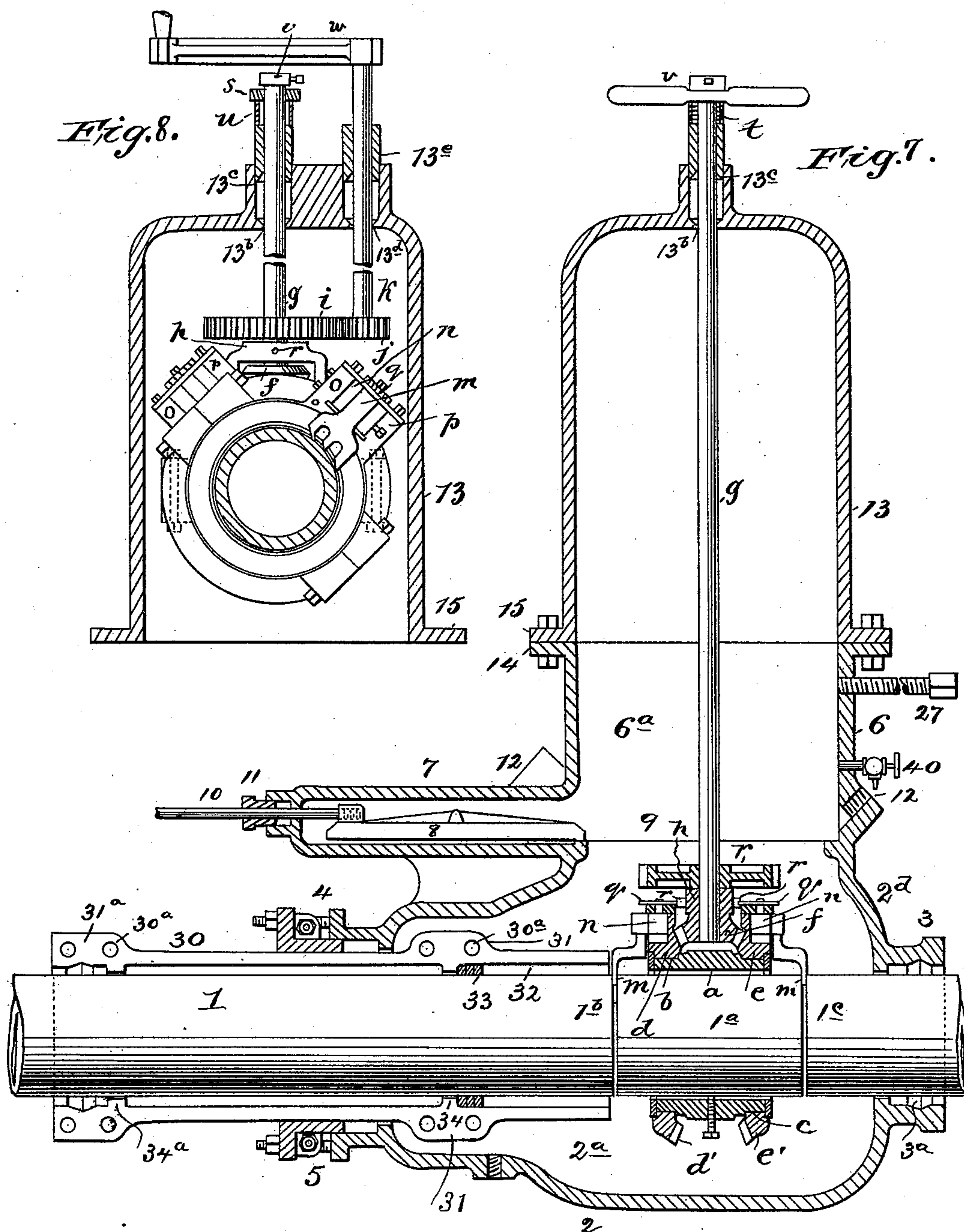


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# UNITED STATES PATENT OFFICE.

DAVID W. FRENCH, OF HOBOKEN, NEW JERSEY.

## MEANS FOR INSERTING VALVES IN PIPES OR MAINS.

SPECIFICATION forming part of Letters Patent No. 587,092, dated July 27, 1897.

Application filed March 31, 1897. Serial No. 630,129. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID W. FRENCH, a citizen of the United States, residing in Hoboken, Hudson county, New Jersey, have invented certain new and useful Improvements in Means for Inserting Valves in Pipes or Mains, of which the following is a specification.

Heretofore, so far as I am aware, when it was desired to insert a valve in a pipe or main to control the passage therethrough, especially when it was underground, it was the practice to shut off the supply of water, gas, or other fluid to the portion of the pipe where the valve was to be inserted. This is very objectionable, as it is not only a source of fire risk in case water is shut off, but it produces considerable disadvantage and inconvenience to the inhabitants of the shut-off district.

The object of my invention, therefore, is to provide simple and efficient means to enable a valve—such, for instance, as a gate-valve—to be inserted in a pipe or main while the latter is under pressure, or, in other words, without shutting off the flow of water or other fluid therethrough.

The invention consists in the combination of a casing adapted to be clamped around a pipe and having a chamber to receive a valve within it to enable said valve to be placed between the severed ends of the pipe while within said casing and means to prevent an outflow of fluid from the casing while the valve is being so placed in the line of pipe, with novel means within said casing adapted to secure the valve in the space between the severed ends of the pipe.

The invention also consists in the combination of a casing of the character above described with a sleeve adapted to be secured around the pipe and having one end within the casing adapted to enter a hub of the valve and to move said valve toward the opposite severed end of the pipe to secure the valve between the ends of the pipe.

The invention also consists in the combination of a casing of the character described with a sleeve adapted to be secured around the pipe so that one portion of the sleeve will lie within the casing and the other portion

will lie without the casing and means for moving the sleeve along the pipe to engage with a valve in the space between the severed ends of the pipe.

The invention further consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a vertical longitudinal sectional view showing my improvements in position on a pipe, also showing a gate-valve between the severed ends of the pipe in position to be clamped therebetween. Fig. 2 is a side elevation of the improvements, looking from the left in Fig. 1. Fig. 3 is a view similar to Fig. 1, but showing the valve in the final position in the line of pipe. Fig. 4 is a plan view of my improvements with the bonnet or cover of the casing removed. Fig. 5 is an edge view, enlarged, of the device for moving the sleeve along the pipe toward the valve. Fig. 6 is a face view thereof. Fig. 7 is a view corresponding to Fig. 1, but showing a pipe-cutter in position to cut out a section of the pipe; and Fig. 8 is a partly sectional view showing the pipe-cutter within the bonnet or cover, looking at right angles to Fig. 7.

In the accompanying drawings, in which similar numerals and letters of reference indicate corresponding parts in the several views, 1 indicates a pipe, and 2 is a casing adapted to be clamped around the pipe and having a chamber 2<sup>a</sup> to surround the pipe. The casing 2 is shown divided longitudinally or made in two parts adapted to be clamped together, and for this purpose the portion 2<sup>b</sup> of the casing is shown provided with a flange 2<sup>c</sup>, and the portion 2<sup>d</sup> of the casing has a flange 2<sup>e</sup>, the flanges 2<sup>c</sup> 2<sup>e</sup> being shown held together by bolts or screws 2<sup>f</sup> in well-known manner. By this means the casing 2 may be readily clamped upon and removed from the pipe, as desired. At opposite ends the casing 2 has openings and suitable divided hubs or bells 3 4, adapted to fit around the pipe, the hub 3 being shown provided with an annular recess 3<sup>a</sup> to receive lead or packing to make a tight joint upon the pipe, and the hub 4 is preferably provided with a stuffing-box or



gland 5, in well-known form, to make a tight joint, the stuffing-box or gland being divided to enable it to fit around the pipe.

The casing 2 is provided with an extension 5 or branch 6, which is hollow, or provided with a passage-way 6<sup>a</sup>, that leads to chamber 2<sup>a</sup> of the casing. The extension 6 is shown carried by the portion 2<sup>d</sup> of the casing. The casing 2 is also provided with a valve to prevent 10 the flow of fluid therefrom at certain times, and for this purpose I have shown the casing 2 (or its portion 2<sup>d</sup>) as provided with a chamber 7, which communicates with chamber 2<sup>a</sup> or passage-way 6<sup>a</sup>, and within which 15 chamber 7 a valve 8 is adapted to travel. The valve-chamber 7 is formed, as shown, by casting its walls integral with the metal of the casing 2 or the part 2<sup>d</sup> thereof, whereby joints are avoided. The valve 8 is adapted 20 to rest upon a seat 9, carried by casing 2, to close the outlet from chamber 2<sup>a</sup>. Suitable means may be provided for operating valve 8. I have shown a rod 10, having a threaded end to engage corresponding threads 25 carried by valve 8, which rod projects through an aperture in one wall of chamber 7 and through a stuffing-box 11, carried thereby, to make a tight joint around said rod. This rod enables valve 8 to be projected along and 30 withdrawn from seat 9. 12 are threaded apertures in branch 6<sup>a</sup> of casing 2 to receive screws that are adapted to press upon valve 8 to hold it upon seat 9 to enable certain adjustments to be made, as hereinafter explained; but I do not confine myself to the 35 arrangement of valve shown.

The casing 2 is also provided with a bonnet or cover 13, which is adapted to close the outlet through passage-way 6<sup>a</sup>, this bonnet 40 or cover being detachably connected with casing 2. For this purpose I have shown the bonnet or cover 13 as provided with a flange 15, adapted to fit upon a flange 14, carried by extension or branch 6, said flanges being 45 provided with apertures or slots to receive bolts or screws to enable the bonnet or cover to be firmly connected with the casing. The chamber 13<sup>a</sup> of bonnet or cover 13 is substantially of the area of passage-way 6<sup>a</sup>, and 50 when the bonnet or cover is in position on the casing the chambers 2<sup>a</sup>, 6<sup>a</sup>, and 13<sup>a</sup> become practically one and constitute the operative chamber of the casing. The volume or dimensions of the chambers 2<sup>a</sup>, 6<sup>a</sup>, and 13<sup>a</sup> 55 are such as to admit a valve, such as a gate-valve 16, within them, so that said valve can travel through said chambers to the pipe 1. (See Figs. 1 and 3.) The volume of these chambers is such also as to receive and permit 60 the passage and operation of a suitable pipe-cutting machine to enable it to cut out a section of pipe 1 while within the casing 2, so as to leave a space between the severed ends 1<sup>b</sup> 1<sup>c</sup> of pipe 1 to admit the valve 16 between them.

In Figs. 7 and 8 I have shown a pipe-cutting machine suitable for the purpose, which

may be described as follows: *a* is a frame which is divided crosswise and adapted to be clamped around pipe 1 within chamber 2<sup>a</sup> of 70 casing 2. Frame *a* has two parallel peripheral annular guideways *b c*, upon which cutter-carriers or rings *d e* are adapted to be clamped and rotated. The carriers *d e* have 75 gear-teeth *d' e'*, adapted to be engaged by a pinion or gear-wheel *f*, carried by a shaft *g*, journaled in a yoke or bridge *h*, carried by frame *a*. Shaft *g* may be rotated direct to rotate carriers *d e*; but I have shown it provided with a gear-wheel *i*, that meshes with 80 a pinion *j*, carried by a shaft *k*. (See Fig. 8.) Cutters or tools *m* are shown carried by sliding heads *n*, guided in ways *o p*, carried by the cutter-carriers or rings *d e*. To the heads *n* are connected star-wheels *q*, 85 adapted to encounter studs *r*, carried by yoke *h* or frame *a* to feed the tools intermittently as the cutter-carriers rotate. With this arrangement as the cutter-carriers rotate 90 around the pipe the two cutters or tools will be carried around the pipe in unison, so as to make two cuts in the pipe in parallel planes at such a distance apart as to cut out a section 1<sup>a</sup> of pipe. The bonnet or cover 13 has 95 a bearing 13<sup>b</sup> and a stuffing-box or packing 13<sup>c</sup> to receive shaft *g* and a bearing 13<sup>d</sup> and stuffing-box 13<sup>e</sup> to receive shaft *k*. These two shafts being thus guided and extending parallel serve to keep the pipe-cutter from 100 twisting, and thus keep the cut-out section of pipe from turning when it is being raised from pipe 1 by the pipe-cutter. *s* is a head or nut on shaft *g*, which may rest on the stuffing-box 13<sup>e</sup> or on interposed washers *t* or a tube *u* to sustain the pipe-cutter when 105 pipe 1 is cut through, and *v* is a handle on shaft *g* by which it and the attached pipe-cutter can be raised within bonnet 13 above valve 8. *w* is a crank on shaft *k* for rotating the latter. 110

After the section 1<sup>a</sup> of pipe 1 has been cut out the cutting-machine and said section are to be removed from chamber 2<sup>a</sup> of casing 2, and the valve 16 is to be inserted in the space 115 left between the severed ends of pipe 1. For this purpose I provide a rod or tube 17, which is adapted to pass through opening 13<sup>b</sup> and stuffing-box 13<sup>c</sup> of bonnet or cover 13 and from which the valve 16 is suspended within chambers 2<sup>a</sup> 6<sup>a</sup> 13<sup>a</sup>. The tube or rod 120 17 at its lower end is shown provided with a head 18, which is screwed to the former, and said head is provided with a threaded aperture 18<sup>a</sup> to receive a screw 19 for connecting valve 16 with tube or rod 17. 125

For the purpose of enabling valve 16 to be readily moved sidewise toward the end 1<sup>c</sup> of pipe 1 while within the chamber 2<sup>a</sup> of casing 2 I have shown a movable connection between 130 the valve and rod 17, which is arranged as follows: The screw 19 passes through a bar 20, from which depends a yoke 21, having a way or rail 21<sup>a</sup> to receive a roller 22, so that the latter can travel along said way or rail.



The roller 22 is journaled on a frame or hanger 23, that is connected with stem 16<sup>a</sup> of valve 16. The frame or hanger 23 is shown provided with a threaded recess 23<sup>a</sup> to receive the threaded end 16<sup>b</sup> of stem 16<sup>a</sup>, whereby said stem can be readily disconnected from its supports. The threaded end 16<sup>b</sup> of stem 16<sup>a</sup> is preferably similar to screw 19, so that said stem can be connected direct to head 18, if desired. With the above-described arrangement when the valve 16 is to be inserted between the ends 1<sup>b</sup> 1<sup>c</sup> of pipe 1 within casing 2 said valve is placed within the bonnet or cover so that roller 22 will be at one end of way 21<sup>a</sup>, while said way projects therefrom in the direction of end 1<sup>c</sup> of pipe 1, as in Fig. 1, so that when the valve is lowered between the ends 1<sup>b</sup> 1<sup>c</sup> of the pipe 1 said roller can travel along said way to allow the valve to move freely sidewise toward end 1<sup>c</sup> of pipe 1, as in Fig. 3. It is evident, however, that other means may be provided for allowing the valve 16 to move sidewise between the severed ends of the pipe. If the same bonnet or cover is used with the pipe-cutting machine and with the valve, the opening 13<sup>d</sup> will be closed or plugged when the valve is being inserted in the pipe and while shaft *k* is removed.

The tube 17 is of sufficient length to project through the stuffing-box 13<sup>c</sup> when the valve 16 is in position between the severed ends of pipe 1. 24 is a rod within tube 17 and connected therewith at one end, said rod projecting considerably above tube 17. The rod 24 is screw-threaded at 24<sup>a</sup> above tube 17 to receive corresponding threads in a bore in a hand-wheel or lever 25, and 26 is a tube whose bore is sufficiently large to freely receive tube 17, the tube 26 being placed around rod 24 and tube 17 and interposed between the stuffing-box and the hand-wheel 25. The arrangements above described are a convenient means for lowering valve 16 into the space between the severed ends of the pipe, as hereinafter explained.

To assure that valve 16 will pass properly between the ends 1<sup>b</sup> 1<sup>c</sup> of pipe 1, I may provide a screw 27 in the wall of extension 6 of casing 2, (or in the side of the bonnet, according to the proportions of these two parts,) which screw will be in such position as to be pressed against the valve or its stem to push it over in line with the opening between the ends of the pipe.

Having now described how a section of pipe may be cut out and a valve inserted in its place, all while casing 2 is secured upon pipe 1, it remains to be explained how the valve is secured between the severed ends of the pipe. For this purpose I provide a sleeve 30, which is adapted to surround and to travel along the pipe 1. This sleeve, in order to enable it to be clamped around the pipe while the latter is under pressure, is divided longitudinally and provided with apertures 30<sup>a</sup>, shown located in webs or extensions 31 31<sup>a</sup>,

carried by the respective portions of the sleeve. The apertures 30<sup>a</sup> are adapted to receive bolts or screws to hold the parts of the sleeve 30 firmly together around the pipe 1. In order to allow suitable packing to be placed between pipe 1 and sleeve 30, the latter is shown of greater diameter than the pipe to be encircled, a space 32 being thus provided to receive suitable packing 33. The space 32 at the outer end of sleeve 30 is arranged to receive lead or other suitable packing to make a permanent tight joint between sleeve 30 and pipe 1 after the sleeve is adjusted to its final position on the pipe. By preference the inner wall of sleeve 30 is provided with one or more annular ribs or shoulders 34 34<sup>a</sup>, which hold the sleeve 30 at such a distance from pipe 1 as to produce the space 32. These ribs or shoulders also by presenting a small surface to pipe 1 reduce the friction attendant upon the sliding of sleeve 30 along pipe 1. The rib or shoulder 34 furthermore serves as an abutment or seat for the packing 33 and causes the latter to slide along pipe 1 with sleeve 30, and it consequently acts by jamming to make a tight joint between the sleeve and the pipe. The rib or shoulder 34<sup>a</sup> serves as a seat or abutment for the packing that is finally placed around the pipe at the outer end of the sleeve. The sleeve 30 is adapted to pass through and to slide within the stuffing-box or gland 5, carried by casing 2, the arrangement being such that a sufficiently tight joint can be made between casing 2 and sleeve 30 to prevent the passage of fluid while permitting the sleeve to slide along pipe 1 toward valve 16.

Any suitable means may be provided for pushing sleeve 30 along pipe 1 toward the space between the severed ends of the pipe, or rather toward valve 16. I have shown for this purpose a frame or ring 35, which is adapted to be clamped upon pipe 1 and which is shown divided or split crosswise and provided with apertured lugs 35<sup>a</sup> to receive bolts or screws 36 to clamp it firmly upon the pipe. The frame or ring 35 is shown provided with threaded apertures 37 to receive screws 38, and which are preferably placed at ninety degrees apart. The screws 38 are adapted to act upon the sleeve 30 to push the latter along pipe 1. The inner end of sleeve 30 is adapted to pass within one of the hubs of valve 16, and as the sleeve 30 is of greater diameter than pipe 1 one of the hubs of the valve, as 39, has a bore sufficiently large to receive said sleeve, while the other hub 39<sup>a</sup> is smaller and adapted to properly receive one end 1<sup>c</sup> of pipe 1. (See Fig. 3.)

The manner of inserting a valve in a pipe or main may be described as follows: If the pipe or main is buried under ground, a suitable excavation is made around the place where the valve 16 is to be inserted, and the pipe-cutting machine is then fitted properly upon the pipe and part of the cut made, if desired. Sleeve 30 is next clamped together



around the pipe, with its inner end near the line of cut of one tool *m*, and suitable packing is placed in space 32, preferably against rib or shoulder 34 and between that and the inner end of the sleeve. Casing 2 is next clamped around the pipe, the cutting-machine, and the sleeve 30, as shown in Fig. 7, and tight joints made where required. Valve 8 is withdrawn from seat 9, a bonnet or cover is secured over passage-way 6<sup>a</sup>, the shafts *g* and *k* being meanwhile adjusted in their respective bearings and stuffing-boxes or packing on the bonnet or cover and all joints made tight, the parts *s*, *u*, and *v* being also adjusted to sustain the pipe-cutter when the pipe is cut through. The tools *m* are now operated to cut out a section 1<sup>a</sup> of pipe 1, which of course remains attached to the cutting-machine. Water from the pipe will now fill the chambers 2<sup>a</sup>, 6<sup>a</sup>, and 13<sup>a</sup>, and the cutting-machine, with the attached section of pipe, is next lifted up into the bonnet or cover, (see Fig. 8,) and valve 8 is closed over its seat and secured to keep the water-pressure in chamber 2<sup>a</sup> from lifting it. Water may now be drained from the bonnet through a cock 40. The bonnet or cover and the pipe-cutting machine are next removed from the casing. The valve 16, to be inserted between the ends 1<sup>b</sup> of the pipe, (having suitable packing 41 in its hubs 39 39<sup>a</sup>,) is next placed upon valve 8 in passage-way 6<sup>a</sup>, properly connected with its operating tube or rod 17, and the bonnet or cover 13 is secured over passage-way 6<sup>a</sup>, thus inclosing the valve, the parts 24<sup>a</sup>, 25, and 26 being adjusted in position to control the passage of the valve to the space between the severed ends of the pipe. Wheel or lever 25 is now operated to raise valve 16 from valve 8, and the latter is withdrawn into its chamber 7. Valve 16 is next lowered into the space between the severed ends of the pipe, so that the bores of its hubs 39 39<sup>a</sup> will be alined with the end of sleeve 30 and the end 1<sup>c</sup> of pipe 1, respectively, as shown in Fig. 1. Sleeve 30 is next pushed along pipe 1 by means of the screws 38, (whose ring or frame 35 has been secured upon the pipe at any convenient time,) and its inner end passes into the bore of hub 39 until it abuts against the inner wall of said hub or against the interposed packing 41. A continued movement of said sleeve pushes the valve 16 toward the end 1<sup>c</sup> of pipe 1, so that its hub 39<sup>a</sup> passes over the end of the pipe until the latter abuts against the inner wall of said hub or against the interposed packing 42, all as clearly shown in Fig. 3, the movable connection between the valve and tube or rod 17, allowing the free lateral movement of the valve, the roller traveling along way or rail 21<sup>a</sup>, as shown in Fig. 3. All the screws 38 are now set up tightly to make a tight fit between the ends of the pipe and the valve. The packing 33 serves to prevent fluid from leaking through space 32. The water may now be drained from the casing through a plug-hole 43, (or a

cock connected therewith,) and if it is found that a tight joint has been made between the pipe and the valve the casing will be removed. If not, the screws 38 will be set up still tighter until a sufficiently tight joint is made. In removing the casing the tube or rod 17 will be detached from the valve and bonnet or cover 13 removed, the casing 2 thereafter being taken away, leaving the valve secured between the end 1<sup>c</sup> of pipe 1 and the sleeve 30. (See Fig. 3.) The joints around the hubs of the valve and at the outer end of sleeve 30 will next be leaded or packed in suitable or well-known manner to make permanent tight joints. The valve will thus be finally inserted in the line of pipe without stopping the flow of fluid therethrough at any time. The sleeve 30 will be the only part of the valve-inserting devices left on the pipe.

Having now described my invention, what I claim is—

1. A casing adapted to surround a pipe and having a chamber that is larger than the pipe to be surrounded so as to contain a valve that is to be connected with the pipe while within the casing, combined with a sleeve adapted to encircle the pipe and to travel therealong, said sleeve being arranged to pass through an opening in the casing so as to be partly within and partly without the casing, and adapted to connect said valve with said pipe, substantially as described.

2. A casing adapted to surround a pipe and having a chamber that is larger than the pipe to be surrounded so as to contain a valve that is to be connected with the pipe while within the casing, combined with a sleeve adapted to encircle the pipe and to travel therealong, said sleeve being arranged to pass through an opening in the casing so as to be partly within and partly without the casing, and adapted to connect said valve with said pipe while within the casing, and means to make a tight joint between the sleeve and the casing, substantially as set forth.

3. A casing adapted to surround a pipe and having a chamber and an opening to receive a valve that is to be connected with the pipe while within the casing and means to control said opening, combined with a sleeve adapted to be secured around the pipe and to travel therealong, and arranged to engage a valve to move one of its hubs over the end of the pipe, said sleeve extending through an opening in said casing, substantially as set forth.

4. A casing adapted to surround a pipe and having a chamber and an opening to receive a valve, and means to control said opening, combined with a sleeve adapted to be secured around the pipe and to travel therealong, said sleeve being adapted to enter a hub of the valve and to push the other hub of said valve over one end of the pipe, substantially as set forth.

5. A casing adapted to surround a pipe and having a chamber and an opening to receive



a valve, and means to control said opening, said casing having an opening of greater diameter than the pipe to be received, and a stuffing-box or packing at said opening, combined with a sleeve adapted to be secured around said pipe and to travel therealong, said sleeve being adapted to travel through said stuffing-box or packing, said sleeve being adapted to make connection with a valve to retain the latter between the severed ends of the pipe, substantially as set forth.

6. A casing adapted to surround a pipe and having a chamber and an opening to receive a valve, and means to control said opening, said casing having an opening of greater diameter than the pipe to be received, and a stuffing-box or packing at said opening, combined with a sleeve adapted to be secured around the pipe and to travel therealong, said sleeve being adapted to travel through said stuffing-box or packing, said sleeve being adapted to make connection with a valve to retain the latter between the severed ends of the pipe, and with means adapted to be secured to the pipe to operate said sleeve, substantially as set forth.

7. A casing adapted to surround a pipe and having a chamber and an opening to receive a valve, and means to control said opening, said casing having an opening of greater diameter than the pipe to be received, and a stuffing-box or packing at said opening, combined with a sleeve adapted to be secured around the pipe and to travel therealong, said sleeve being adapted to travel through said stuffing-box or packing, said sleeve being adapted to make connection with a valve to retain the latter between the severed ends of the pipe, and with a clamp or frame adapted to be secured upon the pipe and a screw or screws carried thereby to move the sleeve along the pipe, substantially as set forth.

8. The combination of a casing of the character described, with a sleeve adapted to encircle a pipe and to travel therealong within said casing, said sleeve having an inner rib or shoulder to provide a space between the pipe and the sleeve to receive packing, said sleeve being adapted to make connection with a valve to retain it between the severed ends of the pipe, substantially as set forth.

9. A divided or split sleeve provided with means to secure it around a pipe and having closed walls, said sleeve having divided or split inner annular ribs or shoulders to provide a space between the pipe and the sleeve when the latter is in connection with the former, substantially as set forth.

10. A casing adapted to surround a pipe and having a chamber and an opening to receive a valve that is to be connected with the pipe while within the casing, and means to control said opening, combined with a valve adapted to pass within the casing, said valve having two hubs, one hub having a bore of greater diameter than the other, and with a sleeve adapted to be secured around the pipe

and to travel therealong and to enter said larger hub, the other hub being adapted to pass over one of the ends of the pipe, substantially as set forth.

11. A casing adapted to be secured upon a pipe and having a chamber and an opening to receive a valve, means to control said opening, and a removable bonnet or cover adapted to receive the valve within it and to be secured to said casing in line with said opening, and means to control the placing of the valve between the severed ends of the pipe while within the casing, combined with a sleeve adapted to be secured around the pipe and to travel therealong to make connection with the valve to push a hub of the latter over an end of the pipe, and means carried by a wall of the casing and adapted to be passed therethrough to direct the valve between the severed ends of the pipe, substantially as set forth.

12. A casing adapted to be secured upon a pipe and having a chamber and an opening to receive a valve, means to control said opening, and a removable bonnet or cover adapted to receive the valve within it and to be secured to said casing in line with said opening, and means to control the placing of the valve between the severed ends of the pipe while within the casing, said casing having an opening of greater diameter than the pipe to be received, combined with a sleeve adapted to be secured around the pipe and to travel therealong and also to travel through said opening, and means for moving said sleeve along said pipe to make connection with the valve to secure the latter between the severed ends of the pipe, substantially as described.

13. A casing adapted to be secured upon a pipe and having a chamber and an opening to receive a valve, means to control said opening, and a removable bonnet or cover adapted to receive the valve within it and to be secured to said casing in line with said opening, said casing having an opening of greater diameter than the pipe to be received, combined with a tube or rod adapted to travel through an opening in said bonnet or cover, a movable connection carried by said tube or rod to connect the latter with said valve, and with means carried by the pipe adapted to make connection with said valve to secure it between the severed ends of the pipe, said movable connection being adapted to permit the valve to move laterally while within the casing, substantially as set forth.

14. A casing adapted to be secured upon a pipe and having a chamber and an opening to receive a valve, means to control said opening, and a removable bonnet or cover adapted to receive the valve within it and to be secured to said casing in line with said opening, said casing having an opening of greater diameter than the pipe to be received, combined with a tube or rod adapted to travel through an opening in said bonnet or cover,



a movable connection carried by said tube or rod to connect the latter with said valve, and with a sleeve adapted to be secured around the pipe to travel therealong and to travel  
5 through the opening in the casing around the pipe, said sleeve being adapted to make connection with the valve to secure it between the severed ends of the pipe, said movable connection being adapted to permit the valve  
10 to move laterally while within the casing, substantially as set forth.

15 15. A casing adapted to be secured upon a pipe and having a chamber and an opening to receive a valve, means to control said opening, and a removable bonnet or cover adapted to receive the valve within it and to be secured to said casing in line with said opening, said casing having an opening of greater diameter than the pipe to be received com-  
20 bined with a tube or rod adapted to travel through an opening in said bonnet or cover, a rail or way carried by said tube or rod, a roller to travel thereon, a frame or support connected with said roller for connection with  
25 the valve, and a sleeve adapted to be secured around the pipe and to travel therealong to make connection with the valve, said rail or way and the roller being adapted to permit the valve to move laterally while within the  
30 casing, substantially as set forth.

16. A casing adapted to be secured upon a pipe and having a chamber and an opening to receive a valve, means to control said opening, and a removable bonnet or cover adapted  
35 to receive a valve within it and to be secured to said casing in line with said opening, said

casing having an opening of greater diameter than the pipe to be received, combined with a tube or rod adapted to travel through an opening in said bonnet or cover, a head 18 for  
40 connection with said tube or rod, a bar 20 connected therewith, a rail or way connected with said bar, a roller to travel on said rail or way, a frame connected with said roller for connection with the valve, and a sleeve adapted to be  
45 secured around the pipe and to travel therealong to make connection with the valve, said rail or way and the roller being adapted to permit the valve to move laterally while within the casing, substantially as set forth. 50

17. The combination of a casing adapted to be secured around a pipe and having a chamber and an opening, means to control said opening, a bonnet or cover to be connected with said casing, and means to permit a valve  
55 to be placed between the severed ends of the pipe, with a sleeve adapted to be secured around the pipe and to travel therealong, said casing having an opening to permit the passage of said sleeve toward the valve to make  
60 connection therewith to push a hub of the valve over one end of the pipe, substantially as set forth.

18. A valve having hubs or bells on opposite sides, the bore in one hub being of greater  
65 diameter than the bore in the other hub and a wall at the inner end of each hub, substantially as set forth.

D. W. FRENCH.

Witnesses:

T. F. BOURNE,  
M. R. SHERRERD.