(No Model.) 4 Sheets—Sheet 1.

J. HENDERSON.

STAND PIPE FOR LOCOMOTIVES.

No. 596,590. Patented Jan. 4, 1898.

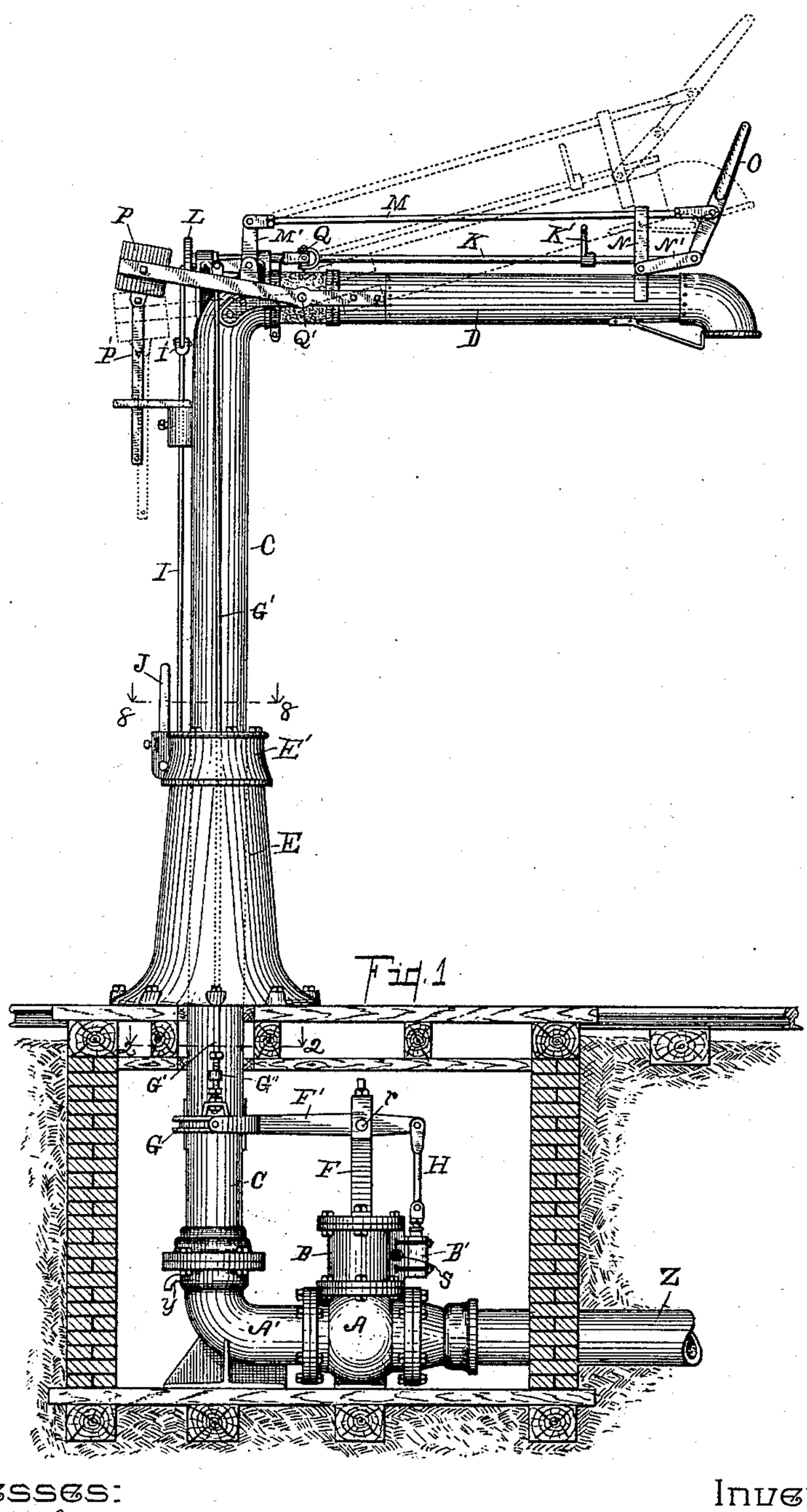

Fig. 1.

Witnesses:
Walter S. Strand
Marian Longyear.

Inventor,
James Henderson
By Fred L. Chappell
Atty.

(No Model.) 4 Sheets—Sheet 2.

J. HENDERSON.

STAND PIPE FOR LOCOMOTIVES.

No. 596,590. Patented Jan. 4, 1898.

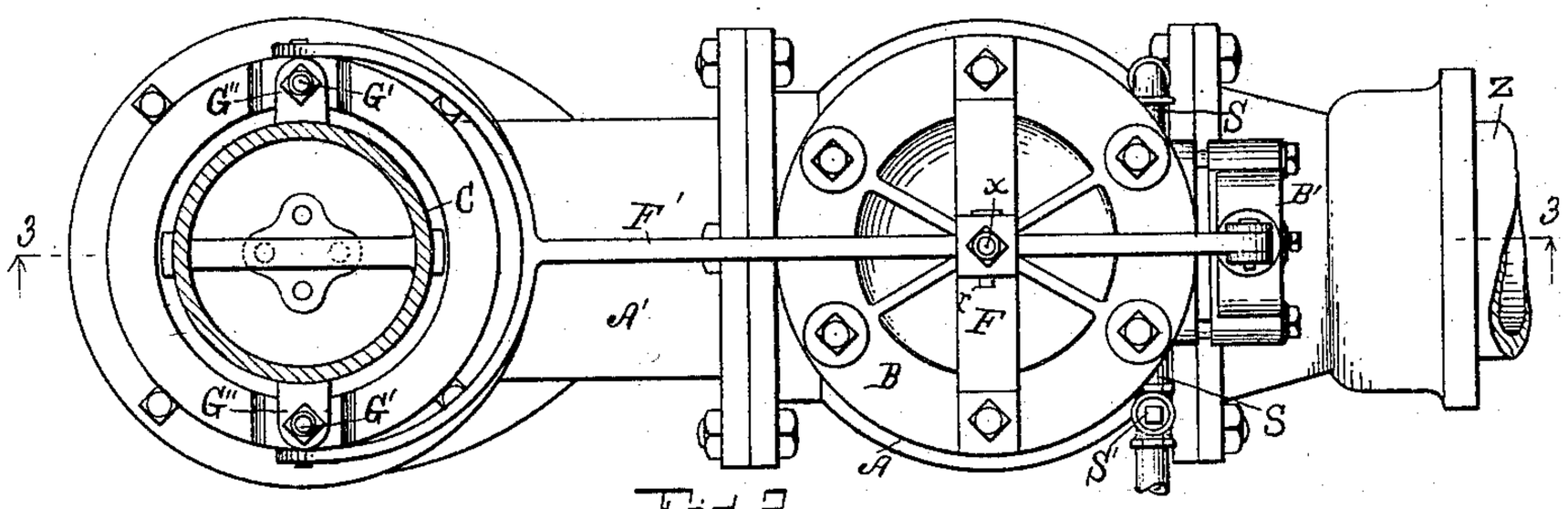

Fig. 2

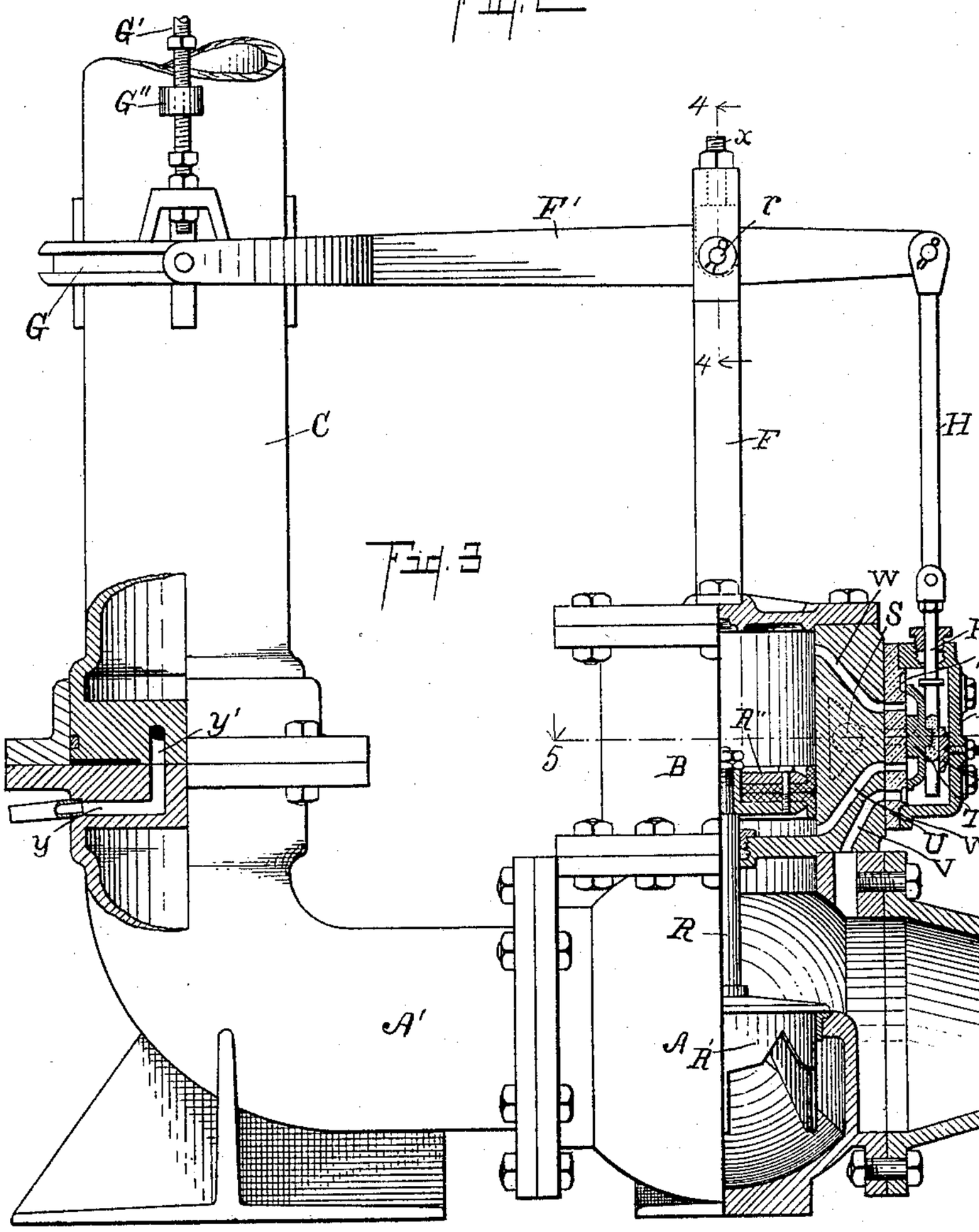

Fig. 3

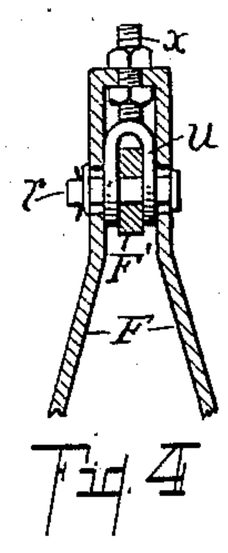

Fig. 4

Witnesses:
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(No Model.) 4 Sheets—Sheet 3.

J. HENDERSON.

STAND PIPE FOR LOCOMOTIVES.

No. 596,590. Patented Jan. 4, 1898.

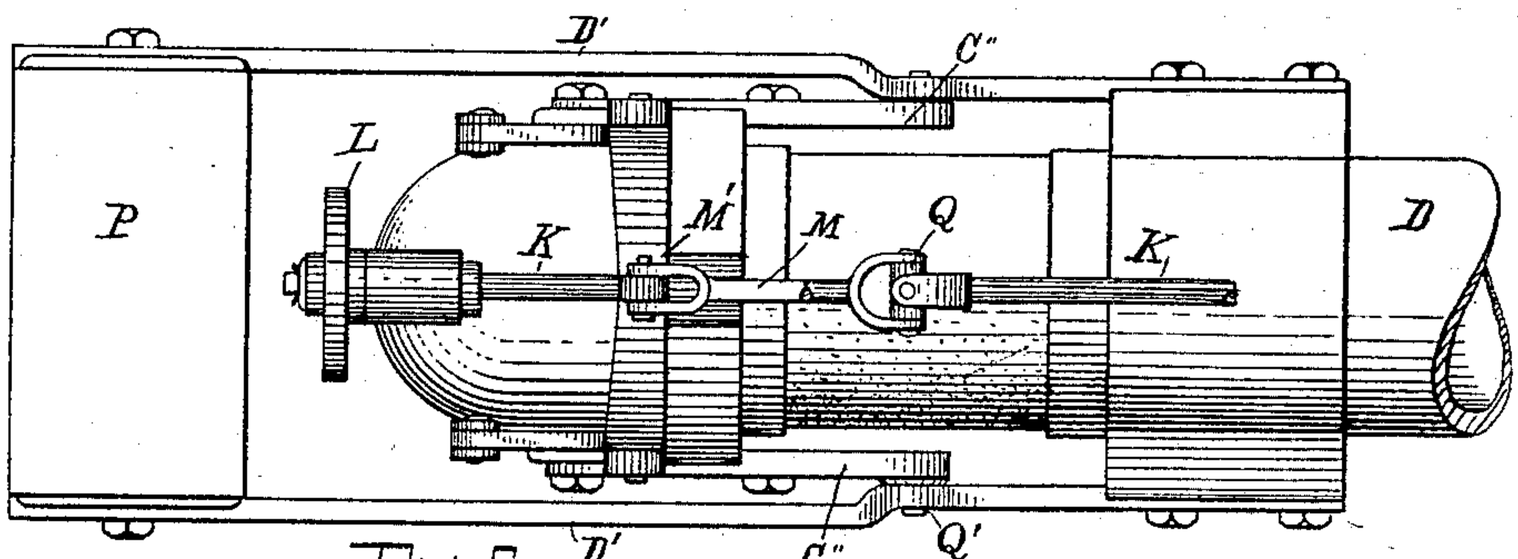

Fig. 6

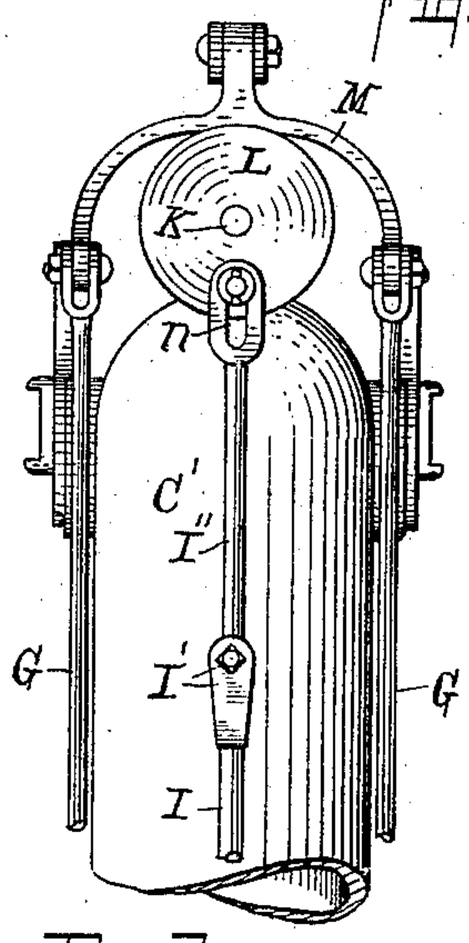

Fig. 7

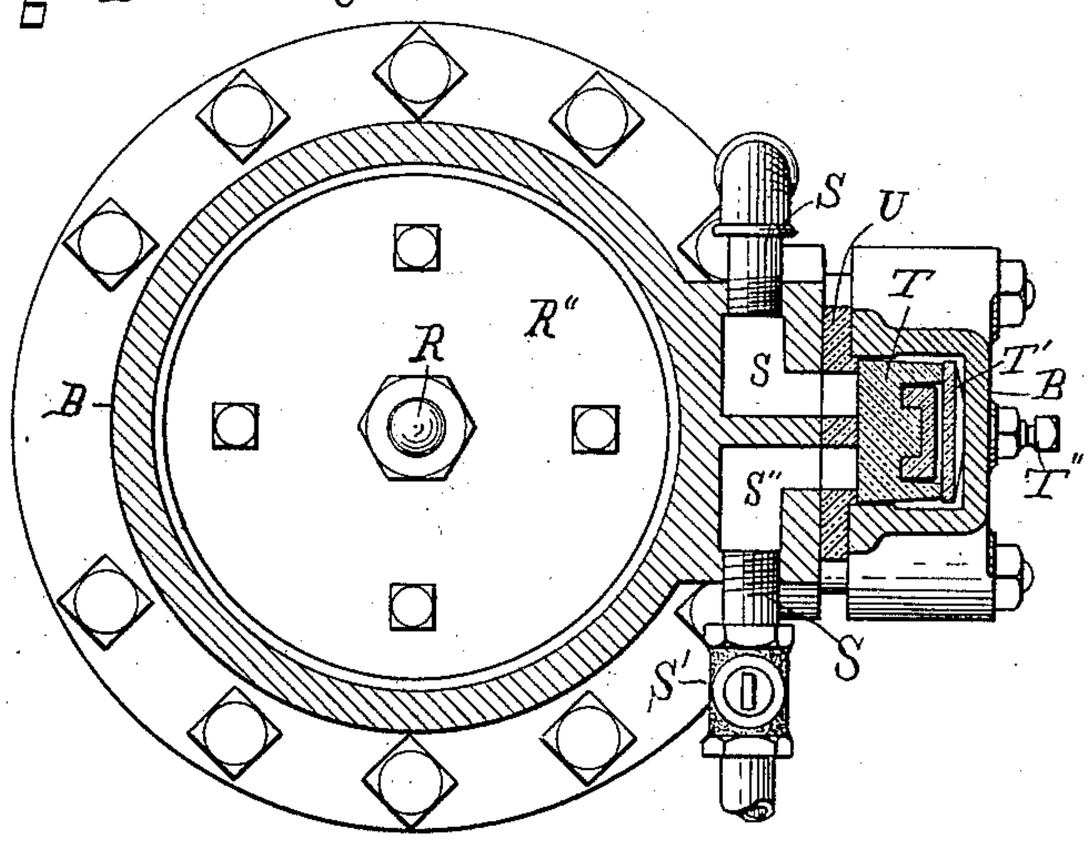

Fig. 5

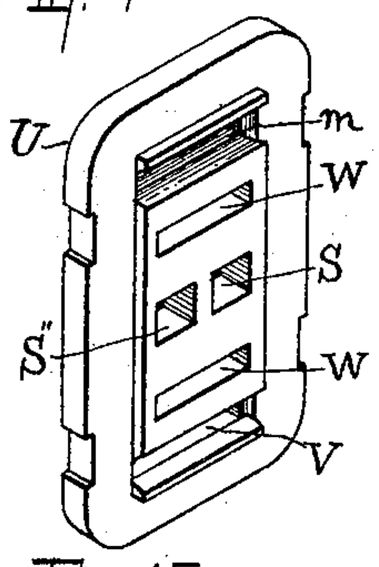

Fig. 15

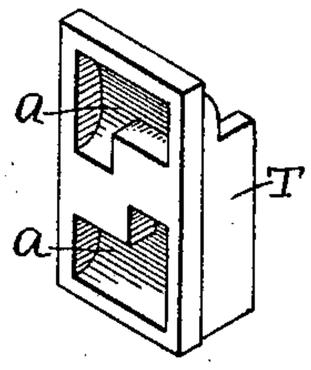

Fig. 16

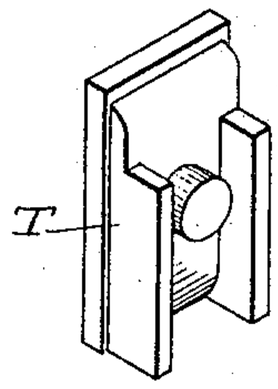

Fig. 17

Witnesses:
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James Henderson
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Att'y.

(No Model.)

4 Sheets—Sheet 4.

J. HENDERSON.

STAND PIPE FOR LOCOMOTIVES.

No. 596,590. Patented Jan. 4, 1898.

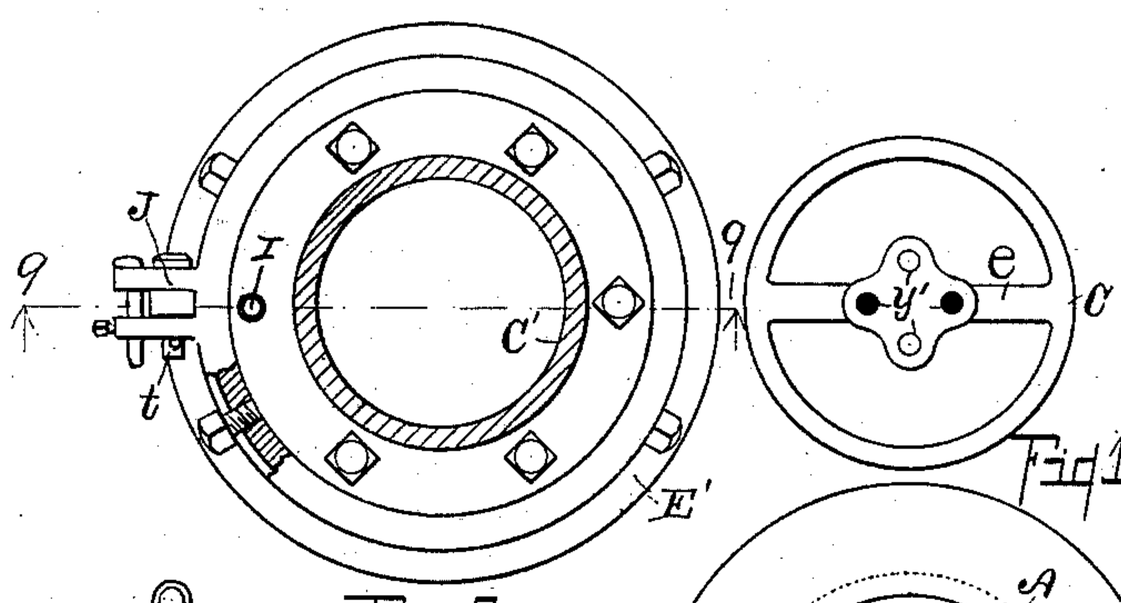

Fig. 8

Fig. 11

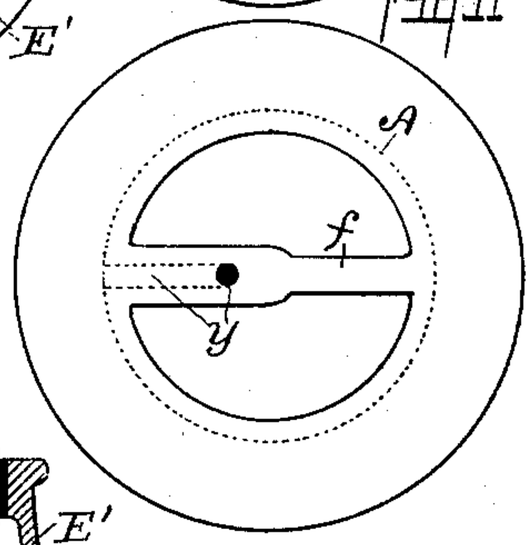

Fig. 12

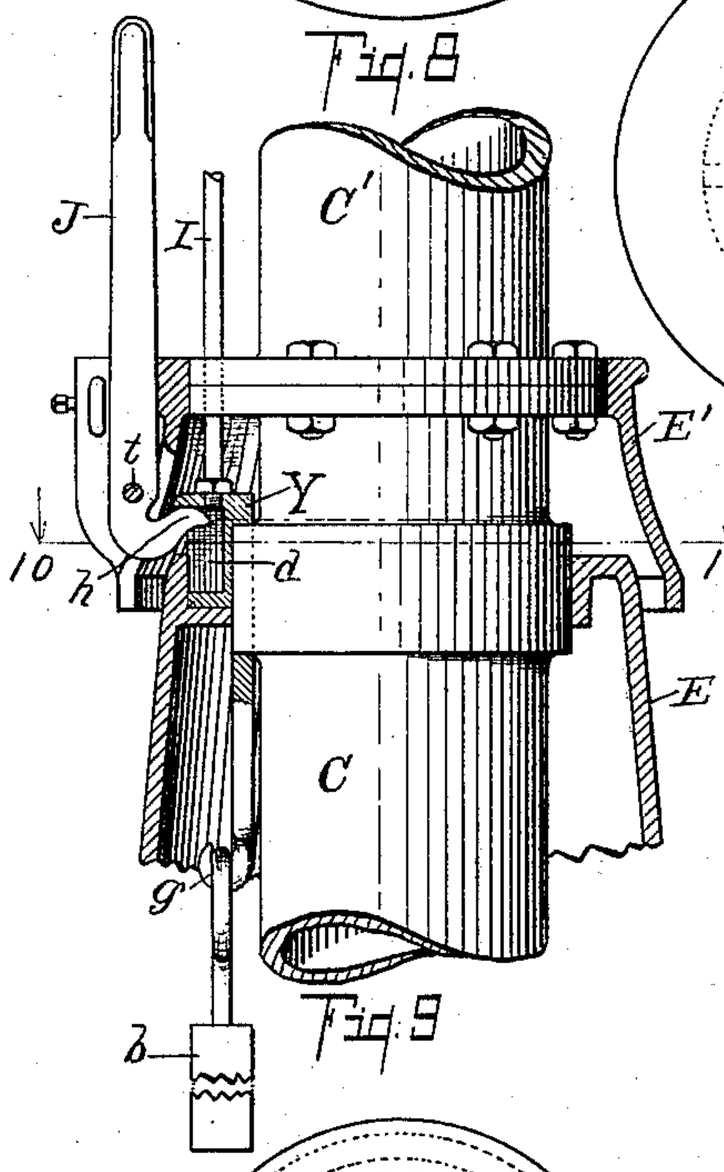

Fig. 9

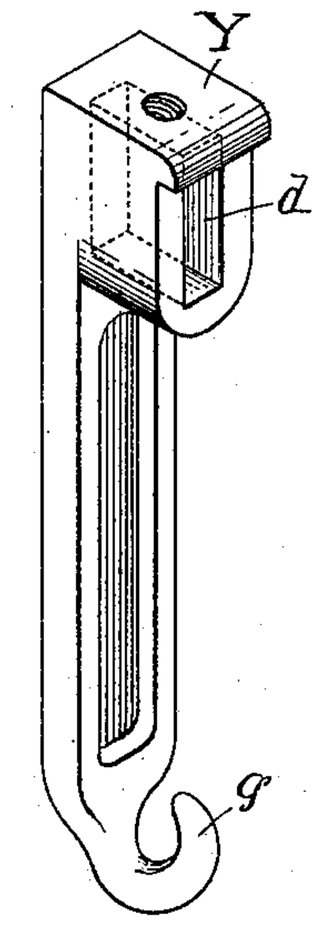

Fig. 13

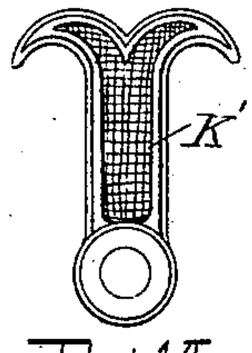

Fig. 14

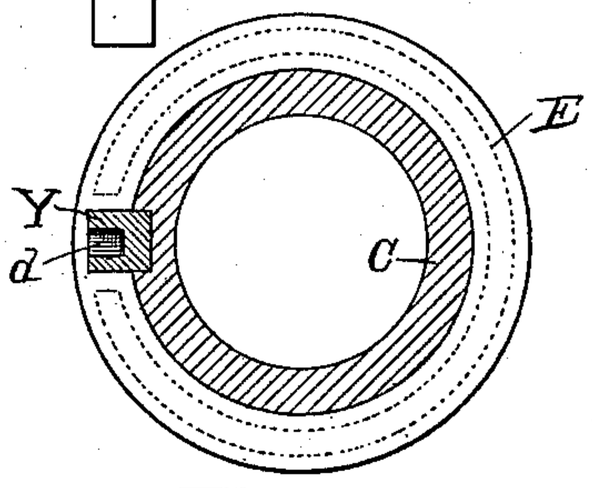

Fig. 10

Witnesses:
Katter L. Ward
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Inventor,
James Henderson
By Fred L. Chappell
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UNITED STATES PATENT OFFICE.

JAMES HENDERSON, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO THE SHEFFIELD CAR COMPANY, OF SAME PLACE.

STAND-PIPE FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 596,590, dated January 4, 1898.

Application filed August 24, 1895. Serial No. 560,339. (No model.)

To all whom it may concern:

Be it known that I, JAMES HENDERSON, a citizen of the United States, residing at the city of Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Stand-Pipes for Locomotives, of which the following is a specification.

My invention relates to stand-pipes for locomotives, and more particularly to that class of stand-pipes operated from the engine-tender.

As heretofore constructed numerous difficulties have been encountered in the construction of stand-pipes and in the operation of the same, among which are difficulties in securing a practical means of locking the stand-pipe in position at the side of the track and a binding of the pipe when it is turned, due to an unequal or uneven settling of the foundation and straining or breaking of the pipes by too rapid closing of the valve when water is shut off.

I have therefore for the objects of my invention, first, to provide a stand-pipe for railroads in which there is a positive locking mechanism which can be operated from an engine-tender for retaining the delivery-pipe in its position parallel to the direction of the track; second, to provide improved means of supporting the rotary part of the stand-pipe, so that a slight sinking or sagging of the foundation will not cause it to bind or become inoperative; third, to provide an improved valve for operating the engine, which opens and closes the valve, which will allow water to escape therefrom only slowly, so that as the valve closes it will not strain the water-main; fourth, to provide an improved means for locking and unlocking the pipe, which can be adjusted to be operated either from the engine-tender or from the ground; fifth, to provide improved means of locking the pipe, which can be adjusted to be operated from the ground, if desired, or can be so adjusted that it will be possible to operate the same only from the upper part, as from the tender of the engine; sixth, to provide an improved construction in stand-pipes, whereby the drainage of the pipe will become entirely automatic when it is operated, so that all the pipe will be drained to a point below the frost-line in the pit below and will be drained only after the pipe has been used; seventh, to provide an improved lever and connections for operating the valve from the upper part of the pipe; eighth, to provide improved means of counterbalancing the weight of the horizontal portion of the delivery-pipe. Other objects will appear clearly from the detailed description. I accomplish these objects of my invention by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a locomotive stand-pipe embodying all of the features of my invention. Fig. 2 is an enlarged detail sectional view taken on line 2 2 of Fig. 1, looking down. Fig. 3 is an enlarged detail view, partly in section, on line 3 3 of Fig. 2. Fig. 4 is an enlarged detail sectional view on line 4 4 of Fig. 3, looking in the direction of the little arrows at the end of the section-line. Fig. 5 is an enlarged detail sectional view on line 5 5 of Fig. 3, looking down. Fig. 6 is an enlarged detail elevation of the upper portion of the pipe, showing counterpoise-weight and lever connections at that part. Fig. 7 is an end elevation of the portion shown in Fig. 6, taken from the left-hand side of that figure, the counterpoise-weight being removed. Fig. 8 is a sectional view on line 8 8 of Fig. 1, looking down. Fig. 9 is an enlarged detail view, partly in section, on line 9 9 of Fig. 8. Fig. 10 is an enlarged detail sectional view on line 10 10 of Fig. 9, looking down. Fig. 11 is an inverted plan view of the bottom end of the pipe C. Fig. 12 is a top plan view of the flange portion and upper end of the pipe-elbow A'. Fig. 13 is an enlarged detail view of the locking-dog, which locks the pipe in position to the side of the track. Fig. 14 is an enlarged detail view of the lever or arm K', which actuates, through its connections, the locking-dog. Fig. 15 is an enlarged detail view of the detachable brass seat to the valve which actuates the engine-cylinder. Fig. 16 is a front perspective view of the valve T, and Fig. 17 is a rear perspective view of the same.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, Z represents the water-main.

A represents the large globe-valve, opening from the water-main into the stand-pipe.

A′ is the lower elbow of the stand-pipe, which supports the remaining portions above it. The lower portion C of the main stand-pipe is supported on the upper end of the elbow A′. Secured to the upper end of this by suitable flanges is the upper part C′, to which the upper elbow of the pipe is attached, which connects to the drop-pipe. The water-main and the valve and the upper end of the elbow A′ are all in a suitable pit below the frost-line.

The valve A is constructed in the manner of an ordinary large-sized globe-valve and is actuated by the engine B. Water is admitted from the water-main to actuate this engine by means of my specially-constructed valve, which will be more fully described in detail hereinafter.

The globe-valve A and the elbow A′ are supported by suitably-formed bases on the same, which rest on a suitable plank or other foundation at the bottom of the pit above mentioned. To the flange on the upper end of the elbow A′ is secured a collar by a suitable flange. The upper end of the elbow has a suitable cross portion *f*, into which a hole *y* is drilled and carried out to one side, as indicated in Fig. 3. This hole *y* is drilled to one side of the center. On the lower end of the pipe C is formed a cross-piece *e*, which is suitably perforated at *y′* at four points to each side of the center. Two of these points opposite each other are plugged, so that only two of the openings *y′* are left for the passage of water. All of the holes are made in the casting and two are plugged after the position of the pipe is determined by the side of the track where needed, and the plugging of the holes is determined by the comparative direction of the water-main and railway-track. One of these holes *y′* is located to register with the hole *y* after the pipe has been used and turned back to the side of the track. The pipe C, turning to one side, causes the hole *y′* to register with the hole *y* and drains the pipe down to this point; yet when the pipe is in use the drainage-hole is stopped, so that there is no leakage during the taking of water.

A further object attained by this construction is the support of the main heavy part of the pipe on the comparatively small space at the center of the pipe at this point and resting on the cross-piece *f*, the remaining parts at that point being a little separated, as is clearly indicated in Fig. 3. The support is at the central part and a packing-ring is around the lower end of the pipe C. The low collar, in connection with the central support, permits the pipe to tip slightly in any direction without causing it to bind in its bearings. This obviates a very great difficulty in the construction of heavy stand-pipes as ordinarily manufactured.

Surrounding the body of the pipe is a supplemental base portion E, which will be referred to hereinafter as the "platform-base" for guiding the pipe and retaining it in the vertical position. In the upper end of this portion, as indicated in Fig. 9, is an enlarged collar-like projection around the pipe C, and this is fitted into the upper end of the platform-base E and turns in the same, as in a bearing. Above this collar portion are suitable flanges, to which is secured the main upper vertical portion C′ of the pipe. Around the flanges at this point is supported a suitable cover E′ for the platform-base to afford the same protection and to carry the rotating and locking means.

In a suitable recess in the collar portion revolving in the upper end of the base E is supported a locking-dog Y, which is adapted to be carried around when the pipe is rotated. This dog consists of the lower slide portion with a hook at the bottom, to which a suitable weight *b* is attached to cause it to act promptly, and an outwardly-projecting engaging portion at the upper end. In this outwardly-projecting engaging portion at the upper end is a mortise *d*. The lever J is pivoted at *t* in the cover portion E′ and has an inwardly-projecting curved portion *h*, adapted to enter the mortise *d* in the dog Y. A suitable hasp and lock are adapted to lock the lever J in position when it is not desired to rotate the stand-pipe from that point. The under side of the locking outwardly-projecting portion is rounded, so that it will ride easily upon the upper edge of the base portion E. When the pipe is turned to one side, it carries the locking-dog Y to a suitable depression in the base E, when it drops down and locks the pipe securely in position. To this dog Y is attached the connecting-rod I, which passes up to the rear of the vertical portion of the stand-pipe and is attached to a suitable wrist-pin in the disk L. The disk L is secured to a rock-shaft K, which extends along the top of the horizontal or drop portion of the pipe out toward the outer end and contains a universal joint at Q, which permits of the bending of the rock-shaft. The shaft is supported in suitable bearings along the top of the delivery-pipe D, which allow it to slide back and forth when the drop-pipe D is raised and lowered. Projecting upwardly from this rock-shaft K is a hooked lever or arm K′, with hooks projecting to each side somewhat like the flukes of an anchor, as will be seen in Fig. 14. The connecting-rod I is connected to the wrist-pin on the back of the disk L by an elongated slot *n* in a suitable link or pitman connection I″, the portion I being suitably guided up and down back of the pipe C and connected thereto by the joint I′. The mortise *d* in the dog Y is also vertically elongated.

It will be seen, therefore, by this construction when an engine is brought along to the side of the track and the fireman wishes to take water he hooks his poker over the arm K′ and draws the same toward him. The pulling on the arm causes the rock-shaft K to rotate, which by its action swings the disk L part way around, which actuates the rod I through its connections with the wrist-pin on the disk L, which pulls up the dog Y and releases the pipe. The fireman, continuing to pull, swings the pipe around over the engine into the appropriate position for taking water and operates the valve by the lever O, the connections of which will be explained hereinafter. The elongated slot *d* permits the operation of the dog Y in this way by allowing it to pass up over the curved projection *h* of the lever J. When it is desired to release the pipe and turn it from below, the lever J is unlocked and it is pushed down and, acting through the projecting portion *h*, raises the dog Y, and the lever can be carried around and swing the pipe to the desired position, the slot in the upper connection I″ on the disk L allowing the rod connected to the dog to raise up without operating the rock-shaft above. This means is effective and convenient for the purpose of making it possible to lock the lever which actuates the stand-pipe in position below without in the least disturbing the operation of the same from the upper end, which is very desirable in constructions of this character. The method of securing and locking the lever J in position is sufficiently shown in Figs. 8 and 9. Any usual means for locking it in that position is all that is required. It will be seen that the lever can be immediately locked, and when the pipe is returned to its position parallel with the track the dog will drop and lock it automatically.

To the upper main part C′ of the pipe are secured forwardly-projecting arms C″. To the horizontal or drop pipe D are secured rearwardly-projecting arms D′. These arms are pivoted to the arms C″ considerably to one side of the main portion of the stand-pipe. To the rear ends of the arms D′ and between them is supported a heavy weight P, which counterbalances the weight of the drop-pipe D, so that it can be raised and lowered and will stay in any position desired. Pivoted to the under side of the weight P is a downwardly-extending bar P′, which passes through a suitable guide to the rear of the stand-pipe. Suitable stops are on the bar P′ to limit the motion up and down of the drop-pipe D. It will be seen that by pivoting the arms which support the drop-pipe to one side the weight for counterbalancing the drop-pipe can be greatly reduced, and thus lighten the entire weight of the stand-pipe.

Toward the outer end of the drop-pipe D is an upwardly-extending arm N. Through the upper end of this arm N extends a rod M. The rod M is connected by a suitable pivotal connection to the lever O and the lower end of the lever O is connected by the link N′ to the lower part of the upwardly-projecting arm N. On the upper end of the main upper portion C′ of the stand-pipe is supported a double bell-crank M′, to which the rod M is connected. The lower arms of the bell-crank project rearwardly to each side of the upper end of the stand-pipe and to a point even with the central point of the main portion of the same. To these arms are attached rods G′, which extend down at each side of the main vertical portion of the stand-pipe and are attached by a suitable joint G″ to a collar G, which is on the lower portion C of the stand-pipe. This collar is guided to place on the stand-pipe and contains an annular groove around its periphery. (Indicated in Figs. 1 and 3.)

Projecting upwardly from the top of the engine-cylinder B is an arm F. On the upper end of this arm F is a pivotal support *r*, which is adjusted up and down by the screw *x* at the top, a yoke *u* extending downwardly to embrace the pivot *r*. On the pivot *r* is supported a lever F′, which is forked at its end next the stand-pipe and has suitably inwardly projecting portions to engage in the groove in the collar G, so that the collar can rotate within the forked arms of the lever F′ and engage the lever to operate it up and down. Connected to the other end of the lever is a pitman or link H, which connects to the valve-stem H′, which operates the engine-valve, which admits water from the water-main to actuate the engine-cylinder B.

The link connections to the lever O at the upper end of the stand-pipe and the sliding support for the rod M above permit the drop-pipe D to be raised and lowered, as indicated by dotted lines, without actuating the lever O to operate the valve, so that the drop-pipe D can be swung back and forth and raised and lowered, as desired, when required, and by operating the lever O the valve below can be opened and closed when the drop-pipe D is in the position required.

In the engine-cylinder B is a suitable piston-head R″, which is connected by a piston-rod R to the valve R′, which is in the valve-casing A. This piston R″ is suitably packed with a hydraulic packing. Suitable ports W W lead from the side of the cylinder to the slide-valve seat at the side. The seat portion of the valve U is made detachable, so that it can be renewed at any time. The slide-valve T operates over this valve-seat U. This valve is so connected that it takes water from the water-main to actuate the piston R″ to open the valve R′ in the stand-pipe, and this valve is so constructed that the exhaust-portage to the slide-valve is very large when the main valve in the stand-pipe is being opened and the exhaust-portage is comparatively small when the valve is being closed to retard the motion and close the same slowly to prevent undue strain on the water-main or hammering of the same. The valve is a slide-valve

and operates much the same as an ordinary slide-valve by the stem H operating the same. The slide-valve T is pressed in place securely against its seat by the set-screw T''' acting on the plate T'. The stem H engages the boss on the back of the valve T, which appears clearly in Fig. 17 and also in Fig. 3. It is necessary to hold the compression-plate T' firmly against the valve, for under certain conditions and positions of the valve the pressure is all from the under side of the valve and tends to displace it, which is overcome by the compression-plate. A port V leads from the water-main up through the valve-seat and into the valve-chest B', as shown at V in Fig. 15. The valve-seat is constructed in much the same manner as an ordinary valve-seat, with the exception that the exhaust-port at the center is here divided longitudinally of the valve into two exhaust-ports S and S'', which extend separately to the outside atmosphere and exhaust separately to each side, as is indicated by the exhaust-pipes. (See Fig. 5.) An inlet-port *m* at one end is a mere depression in the valve C. The recesses *a a* in the valve T are formed to correspond to the ports S'' S, and these recesses are divided so that one end of the cylinder exhausts through the port S and the other end of the cylinder through the port S'', the exhaust end of the recess in the valve-slide being reduced in size and moved to one side and only of sufficient size to cover one of the exhaust-ports at a time. The recesses in the valve are substantially L-shaped and are symmetrical with each other. In the exhaust-port from which water exhausts when the piston is operating to close the main valve a suitable stop-cock S' is placed. (See Fig. 5.) The size of the opening in this exhaust is reduced in size to such an extent as to allow water to escape from the cylinder only slowly, which will cause the valve to move slowly to its seat and prevent undue strain upon the pipe due to the quick closing of the valve.

Having pointed out the various parts of my improved stand-pipe and described them particularly, I will now briefly state its operation from beginning to end when in use.

The pipe in its normal position stands with the drop-pipe D parallel with the track. The locomotive in taking water will stop so that its tender will be in the appropriate position. The fireman will take his poker, hook it over the hooked lever K', and draw toward him. This, acting through the rock-shaft and its connection, raises the dog Y and releases the pipe. He continues to pull and the pipe swings around to its appropriate position over the manhole of the tender. He then bears the end of the drop-pipe D down until it is well in the manhole. He then pulls the lever O toward him. This lever, through its connections with the rod M, the bell-crank M', the rods G', the collar G, the lever F', and the link H, actuates the slide-valve and admits water into the lower end of the cylinder B, which raises the piston quickly and opens the valve quickly and allows water to pass up through the stand-pipe and be delivered out into the tender of the engine. When the tank is full, the lever O is pushed back, which reverses the position of the valve T, allows water from the water-main to enter the upper end of the cylinder R, and exhausts it from the lower end. The exhaust from the lower end is choked by the stop-cock S', so that it can only exhaust slowly. The valve R' is thus pushed gradually to place and any hammering of the water in the main is prevented. The drop-pipe is then pushed by the poker back to its position parallel to the side of the track, to either side as desired. When it reaches the right position, the dog Y drops down and retains it securely there. In this position one of the holes *y'* registers with the hole *y* and drains the stand-pipe down to that point to prevent any bad effects from freezing. The main body of the pipe, resting by cross-piece *e* on the central portion of the cross-piece *y*, revolves very easily, and the packing-ring around the lower end of the pipe prevents any leakage. Thus the pipe operates with great ease and certainty and safety.

I desire to say with regard to my improved stand-pipe that it can be considerably varied in its details without departing from my invention, and various features of it can be used with entirely different styles of stand-pipes and accomplish their results in a very satisfactory manner, although they enter into the combination here and are particularly adapted to this style of construction of stand-pipe. For instance, the drainage feature of my improved stand-pipe could be made of use in almost any stand-pipe where the main body of the pipe rotates. It would also be desirable to support any of the usual styles of stand-pipes on a cross-piece at the center in order that they might swing easily on their axes. The particular balancing of the drop-pipe D is also adapted for use in any style of stand-pipe which makes use of a drop-pipe. By dispensing with the other connections than the lever J to the dog Y a very satisfactory pipe can be produced which is as quick and convenient in its operation as any two-man stand-pipe can possibly be. On the other hand, this lever could very conveniently be dispensed with where the connections at K' at the top are used for operating the same. I prefer, however, to construct my stand-pipe so that both of these features are attainable in the same pipe for matter of convenience and certainty. The improved valve which I have here shown could also be successfully used wherever it is necessary to close the valve against a large water-main on account of its efficiency and certainty of its action and the ease and convenience with which it is governed.

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

1. In a stand-pipe for locomotives, the combination with the water-main, Z, of the valve-casing A; the engine-cylinder, B containing a piston connected to the valve in said casing for actuating the same; a slide-valve consisting of the seat having the port, V, connected to the water-main, and the ports W, W, to the cylinder, and the port, *m*, and two exhaust-ports, S, S″, at the center; a slide, T, containing the L-shaped recesses, *a*, *a*, oppositely facing each other to slide over the valve-seat to admit water from the water-main to the engine-cylinder, B, and allow it to exhaust alternately through the ports, S, and S″, through suitable passages to the exterior; and a stop-cock, S′, to regulate the flow of the exhaust, S″, to permit the piston to operate slowly in closing the valve to prevent injury from sudden closing, as specified.

2. In a stand-pipe for locomotives, the combination with the water-main; of a valve for opening and closing said water-main; an engine-cylinder, B, containing a piston connected to the lid in said valve for actuating the same; an engine slide-valve to said cylinder with a seat having ports to said water-main, ports to each end of the cylinder, and two exhaust-ports leading to separate passages to the outside; a slide with double recesses therein to admit water to the cylinder, each recess adapted to exhaust from the cylinder through its appropriate exhaust-port so that the exhaust from one end of the cylinder shall be through one port and from the opposite end through the other; and a suitable means of restricting the exhaust-port from the cylinder when the valve in the water-main is closing to regulate the closing of the valve to prevent damage from sudden closing of the same, as specified.

3. In a stand-pipe for locomotives, the water-main; the valve for opening and closing the same; an engine-cylinder containing a piston connected to said valve for actuating the same; a slide-valve to said engine-cylinder consisting of a seat as U; a slide portion, T, with guideways at the back; a compression-plate, T′, to rest on said guideways; a set-screw, T″, for compressing said plate, T′, against the slide, T, for holding it securely against its seat; a valve-stem, H′, with a suitable recess therein for engaging a boss on the back of said slide, T, to permit the valve to be pressed to place securely and guided there to be actuated by the stem, without bending the same, as specified.

4. In a stand-pipe for locomotives, the combination with the water-main of a main elbow, A′, the outer end of which is pointing upward; a cross-piece, *f*, across the upper face of said elbow containing a drainage-opening, *y*, which opens into the cross-piece to one side of the center; a suitable collar secured to the flange on the upper end of said elbow; an upright pipe supported inside of said collar; a cross-piece, *e*, across the lower end of said pipe, the central portion of which projects slightly downward and is adapted to rest on the cross-piece, *f*, the central part of the said central portion containing perforations, *y′*, *y′*, adapted to register with the drainage-opening, *y*, in the cross-piece, *f*, when the pipe is out of use and swung to one side of the track; a suitable packing-ring on the lower end of the upright pipe to form a water-tight joint between the lower end of the pipe and the collar, for the purpose specified.

5. In a stand-pipe for locomotives, the combination of the water-main with an upwardly-pointing elbow connected therewith; a cross-piece across the upper face of said elbow containing a drainage-opening, opening to one side of the center of the elbow; an upright pipe having a cross-piece at its lower end suitably guided to rest upon the cross-piece of said elbow and containing perforations which are adapted to register with the drainage-opening of the cross-piece of the elbow so that when the pipe is swung out of use the perforations shall register with the drainage-passage and drain the pipe to this point, and so that when the pipe is swung to the position for use the drainage-opening will be closed to prevent leakage at that point, as specified.

6. In a stand-pipe for locomotives, the combination of the upright revoluble pipe; a supplemental platform-base surrounding said pipe to guide the same in position; a suitable cover secured to the upright pipe projecting over the upper part of said platform-base to protect the same; a suitable weighted dog, Y, guided to the side of the upright pipe and adapted to travel around with the pipe and upon the upper edge of the platform-base; a suitable notch for said dog to engage in the upper edge of the base to secure the pipe in position; a lever, J, pivoted to the cover with an inwardly-projecting part projecting into an elongated mortise, *d*, in the dog, Y, to actuate the same to release the pipe so that it can be turned from side to side; a horizontal drop-pipe, D, connected to the upper end of the upright pipe; a rock-shaft, K, along said drop-pipe containing a universal joint near the point of connection of said drop-pipe and upright pipe; a disk, L, on the rear end of said rock-shaft; a connecting-rod, I, projecting upwardly from the dog, Y, through suitable guides; a link or pitman, I″, connected by the joint, I′, to the rod, I, and by a slotted aperture, *n*, to a wrist-pin on the disk, L; an upwardly-projecting double-hooked lever, K′, secured to the rock-shaft, K, in a suitable position on the drop-pipe to be engaged by the poker of the fireman so that he can exert force upon the same to rotate the rock-shaft and raise the dog, Y, and swing the pipe in position to deliver water to the locomotive or so that the pipe can be operated by the lever from the ground below without interfering with the remaining mechanism, all substantially as described for the purpose specified.

7. In a stand-pipe for a locomotive, the com-

bination with the upright revoluble pipe, of a suitable base surrounding the same to guide it to hold it in position; a drop-pipe connected to the upper part of said upright pipe; a rock-shaft supported on said drop-pipe; a disk, at the rear end of said drop-pipe; a dog guided on said upright pipe and adapted to engage a suitable notch in the upper edge of the base to lock the pipe when not in use, and connections from said dog to the disk on the rock-shaft; and an upwardly-projecting lever adapted to be engaged by suitable means so that force exerted at that point will raise the dog and swing the drop-pipe to position for delivery of water to a locomotive, all coacting as specified.

8. In a stand-pipe for locomotives, an upright revoluble portion; a drop-pipe connected thereto; a rock-shaft on said drop-pipe; a suitable dog on said upright pipe adapted to hold the pipe in position; connections from said dog to the rock-shaft for actuating the same; and a lever on said rock-shaft toward the outer end of the same adapted to be engaged by suitable means to actuate the rock-shaft to disengage the dog and release the pipe and allow the pipe to swing to position to deliver water to a locomotive, as specified.

9. In a stand-pipe for locomotives, an upright revoluble portion; a drop-pipe connected to the upper end thereof; a dog on said upright portion for locking the same in position when not in use; a lever at the upper outer portion of the drop-pipe; suitable connections from said lever to the dog so that force can be applied to the lever at the upper outer end of the drop-pipe to disengage the dog and carry the drop-pipe around in position to deliver water to a locomotive, as specified.

10. In a stand-pipe for locomotives, the combination of an upright pipe; a horizontal drop-pipe connected by a flexible connection thereto; a suitable auxiliary platform-base surrounding said upright pipe; a dog guided on said upright pipe adapted to travel on the upper edge of the platform-base and engage a suitable notch therein to retain the pipe; a suitable connection to said dog extending to the top of said upright pipe; an elongated slot in the upper end of said connection and an elongated slot in the lower part of said connection to said dog; means of actuating said connection above; and means of actuating said dog below, both operating against the upper sides of said slots so that the dog can be operated from the upper or lower position without interfering with each other or the remaining mechanism, as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

JAMES HENDERSON. [L. S.]

Witnesses:

W. J. WILLITS,

L. B. PLACE.