

(No Model.)

J. SCOTT.

APPARATUS FOR FLUSHING SEWERS.

No. 344,873.

Patented July 6, 1886.

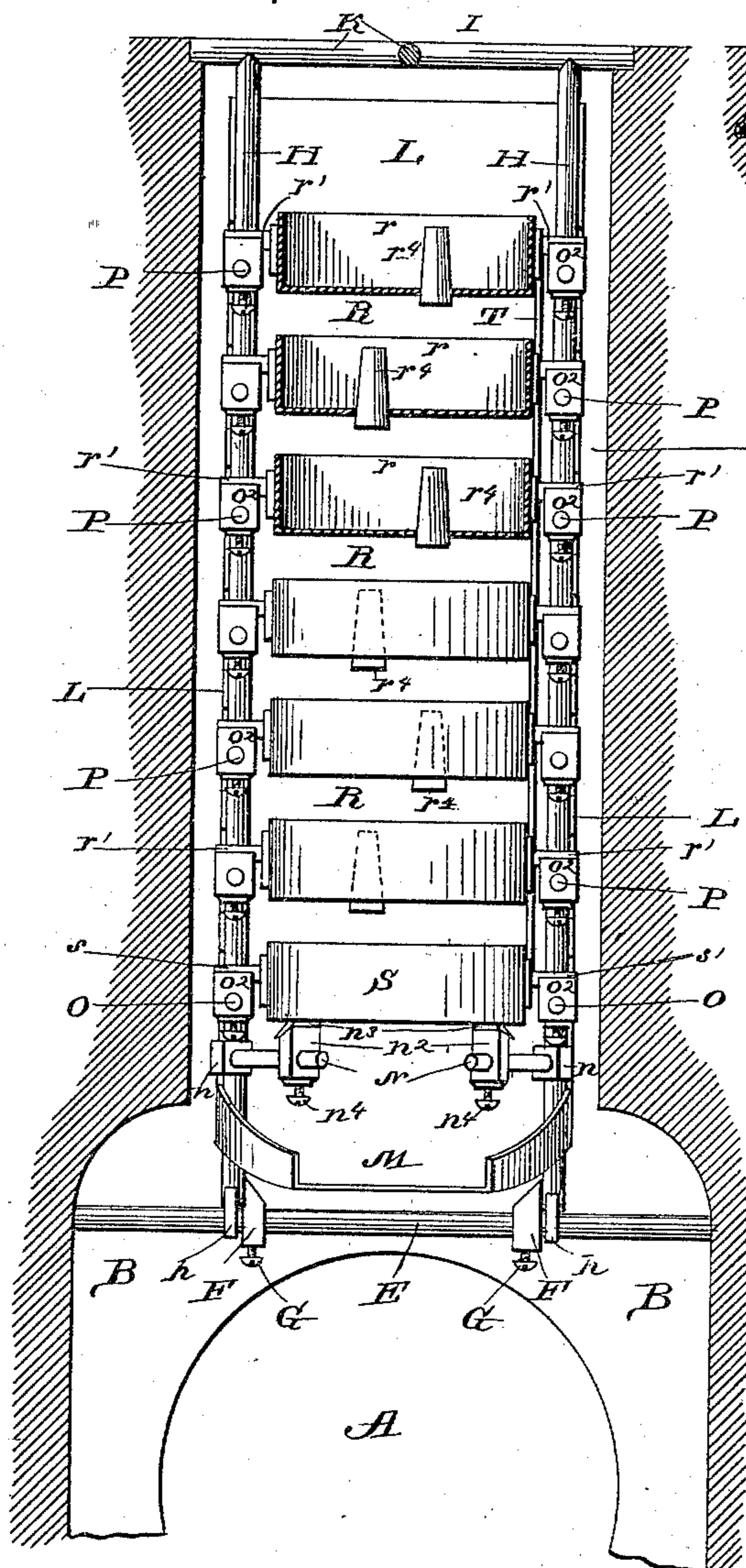


Fig. 2.

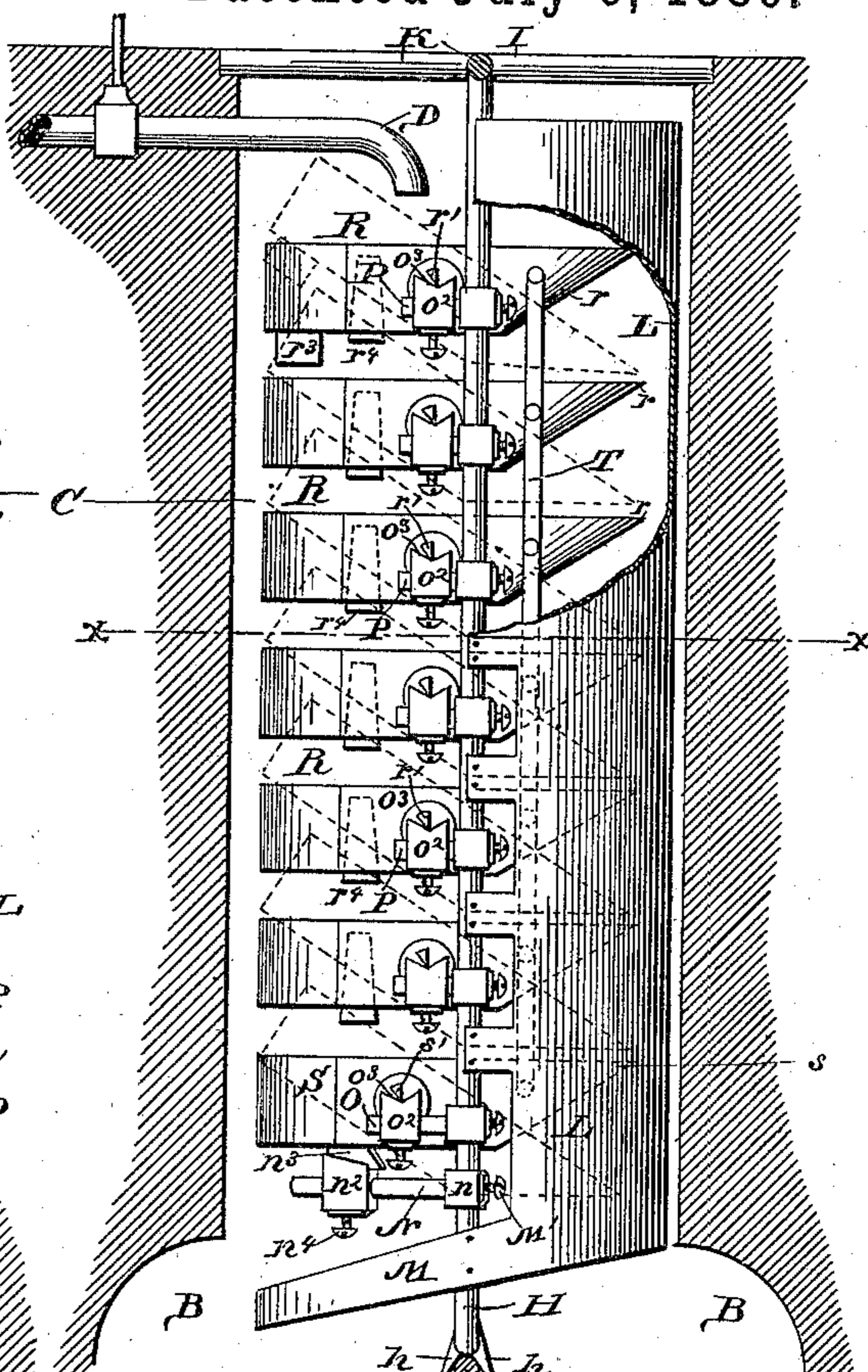


Fig. 1.

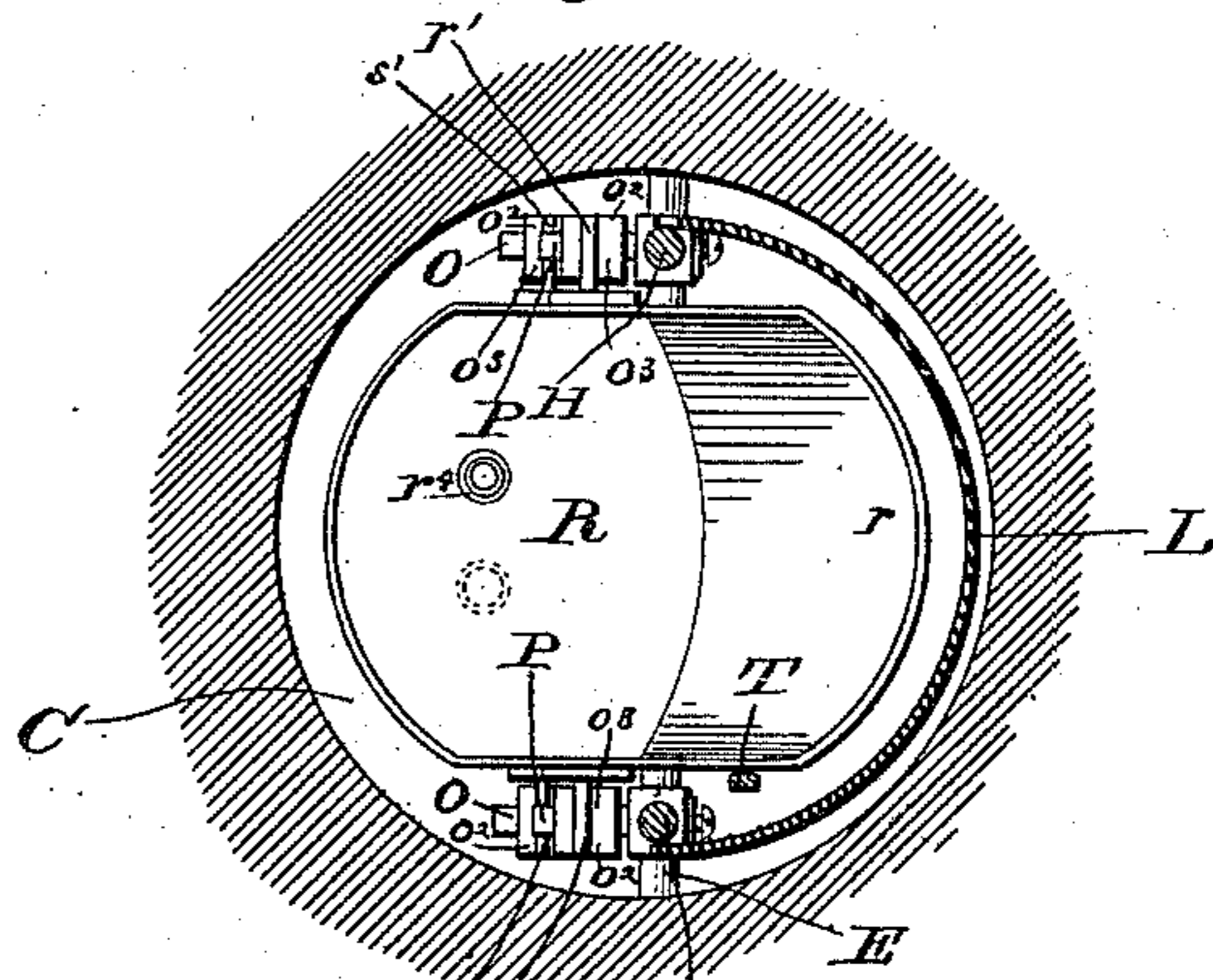


Fig. 3.

Witnesses

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# UNITED STATES PATENT OFFICE.

JAMES SCOTT, OF DENVER, COLORADO.

## APPARATUS FOR FLUSHING SEWERS.

SPECIFICATION forming part of Letters Patent No. 344,873, dated July 6, 1886.

Application filed April 12, 1886. Serial No. 198,602. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES SCOTT, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Improvement in Apparatus for Flushing Sewers, of which the following is a specification.

My invention relates to an improvement in apparatus for flushing sewers; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is partly an elevation and partly a vertical section of an apparatus embodying my invention, located in the man-hole of a sewer. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a horizontal section taken on the line  $x x$  of Fig. 1.

A represents a sewer provided with an enlarged catch-basin, B, and the usual man-hole, C, which extends vertically to the surface of the street.

D represents a water-supply pipe, which enters the man-hole near the upper end thereof. Across the catch-basin is secured a horizontal supporting-bar, E, which is provided with vertically-projecting laterally-adjustable stop-lugs F, which are secured at any suitable adjustment on the bar E by means of set-screws G.

H represents a pair of vertical standards, which depend from a frame, I, composed of two crossed bars, K, the said frame being placed on the upper side of the man-hole, thereby lowering the standards H therein. The lower ends of the standards are provided with diverging engaging-points  $h$ , which extend on opposite sides of the bar E, and support the lower ends of the standards thereon. To the standards H are secured the edges of a vertical convex guard-plate, L, which corresponds in length to the standards, and is provided at its lower end with an inclined discharge-spout, M.

N represents a pair of horizontal arms, which are provided at their inner ends with sleeves  $n$ , which fit on the lower ends of the standards, the said sleeves being provided with set-screws M', by means of which the arms N may be secured on the standards at any desired vertical

adjustment. On the outer ends of the said arms N are secured sliding boxes  $n^2$ , which carry buffers  $n^3$ , which are made of rubber or other suitable material, and the said sliding boxes are provided also with thumb-screws  $n^4$ , by means of which they may be secured on the arms N at any desired adjustment. Above the arms N on the standards are secured arms O, which are similar in construction to the said arms N, but are somewhat shorter than the latter, and the sliding boxes  $o^2$  on the outer ends of the arms O are provided on their upper sides with incised notches  $o^3$ , the sides of which form obtuse angles. Above the arms O on the standards are secured a series of arms, P, which correspond in construction with the arms O and N, but are shorter than the arms O. The said arms P are also provided with the boxes  $o^2$ , having the incised obtuse-angled notches  $o^3$  on their upper sides.

R represents a series of pans provided at one end with an inclined discharge-spout,  $r$ , and having trunnions  $r'$  projecting from opposite sides, the said trunnions being so arranged on the pan as to exactly balance the latter on the supporting-boxes  $o^2$  when the said pans are filled with water. The trunnions  $r'$  are V-shaped, and rest in the bottoms of the notches  $o^3$ , thereby pivoting the pans on the boxes in such a manner as to have very slight friction on the journals. The upper pan R is provided at one end, opposite the discharge-spout, with a counterbalancing-weight,  $r^3$ . Each of the pans R is provided with a vertical tube,  $r^4$ , which extends nearly to the top of the pan, the said tubes being open at their upper and lower ends, and the tube in each pan being arranged out of line with the tube of the sub-jacent pan.

S represents a pan, which is provided with a discharge-spout,  $s$ , and V-shaped trunnions  $s'$ , and is of corresponding size and construction with the pans R.

T represents a vertical connecting-bar, to which the pans R and S are pivoted.

As the arms O, upon which the pan S is supported, are longer than the arms P, which support the pans R, it follows that the said pan S is not balanced in its bearings, but that one end is larger than the other, and is thereby capable of holding a greater amount of water than the other.

The operation of my invention is as follows: The water from the pipe D falls into the upper pan R and fills the said pan, and when the water reaches the level of the top of the overflow-tube  $r^4$  it falls through the said tube into the pan below and fills the latter until the level of the top of its overflow-tube is reached, when the same operation is repeated until all of the pans R become filled. The water from the lower pan R falls into the pan S, and, as the said pan is not balanced on its bearings when it becomes filled, the weight of the water in the end of the said pan provided with the discharge-spout is greater than that of the water in the other end of the pan, thus destroying the equilibrium of the pan S, and causing the same to tilt to the position shown in dotted lines in Fig. 1, and the water therein to be discharged into the guard-plate L, and from thence through the spout M into the sewer. As the pan S is connected with each of the series of pans R by the rod T, as hereinbefore described, and as each of the said pans R has very slight friction in its bearings, it follows that all of the pans R and S will be tilted simultaneously when the pan S becomes filled, thereby discharging the water accumulated by all of the pans into the sewer at the same instant, and thereby effectually flushing the sewer. As soon as the water is discharged from the pans the weight  $r^3$ , which is attached to one of the pans R, as previously described, returns the pans R and S to their normal position, (shown in solid lines in Fig. 1,) when the operation is repeated, as before described.

An apparatus thus constructed is automatic in operation, is cheap and simple, and may be readily removed from one place to another when desired.

Having thus described my invention, I claim—

1. The combination of the balanced pans R, the counterbalancing-weight  $r^3$ , for returning the said pans to their normal position, and the pan S in unstable equilibrium, and connected to the series of pans R, for the purpose set forth, substantially as described.

2. The combination of the series of counter-balanced pans R, provided with the weight  $r^3$  and the overflow-tubes  $r^4$ , the pan S, journaled below the pans R and supported in unstable equilibrium, and connected to the pans R, for

the purpose set forth, substantially as described.

3. The combination of the standards H, the supporting-arms secured thereto and carrying the boxes provided with the incised oblique-angled notches, and the pans R and S, provided with the V-shaped trunnions bearing in the notches of the boxes, the said pans being connected together, and thereby adapted to tilt simultaneously, for the purpose set forth, substantially as described.

4. The combination of the standards carrying the tilting pans R and S, and the guard-plate L, secured to the said standards and provided at its lower end with the discharge-spout M, substantially as described.

5. The combination of the standards H, the adjustable supporting-arms secured thereto, and provided with the set-screws, the laterally-adjustable boxes secured on the said arms and provided with the incised oblique-angled notches, and the tilting pans connected in vertical series, provided with the projecting V-shaped trunnions bearing in the notches of the laterally-adjustable boxes, substantially as described.

6. The combination of the standards H, having the supporting-arms, the laterally-adjustable bearing-boxes secured on the said supporting-arms, and the tilting pans journaled in the said boxes, substantially as described.

7. The combination of the frame K, provided with the depending standards, with the tilting pans supported by the said standards, and connected together, and thereby adapted to incline simultaneously, substantially as described.

8. The combination, with the balanced pans R, of the pan S in unstable equilibrium, connecting with the pans R, and receiving the overflow of water therefrom, whereby the tilting of pan S serves to incline the other pans, and means for returning the pans to their normal positions, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES SCOTT.

Witnesses:

J. A. SMITH,  
HENRY L. TIERNAN.