G. P. BOWERS.

STOP-COCK BOXES.

No. 193,686. Patented July 31, 1877.

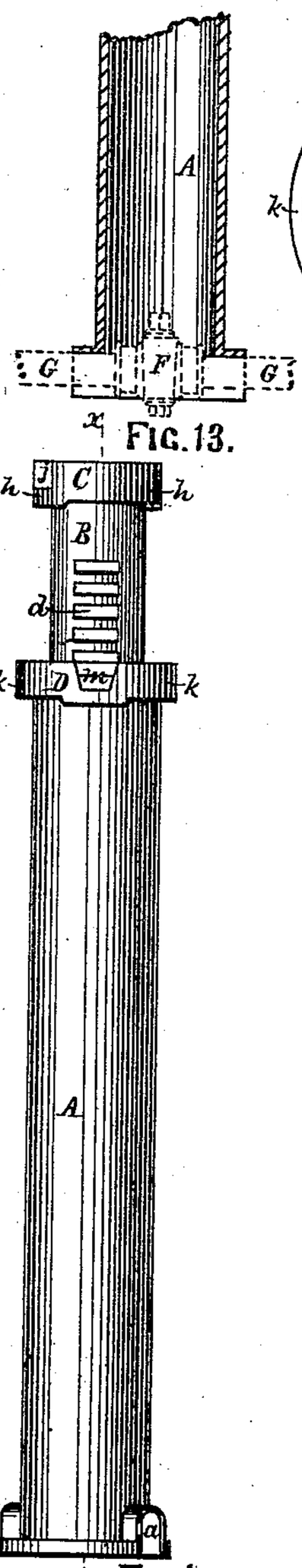

FIG. 13.

FIG. 1.

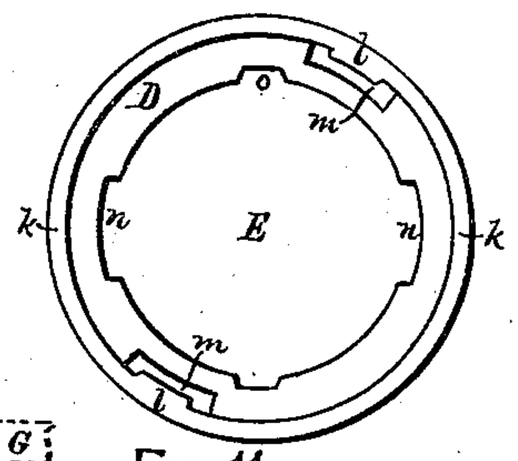

FIG. 11.

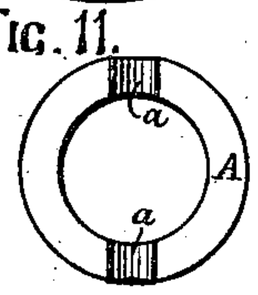

FIG. 6.

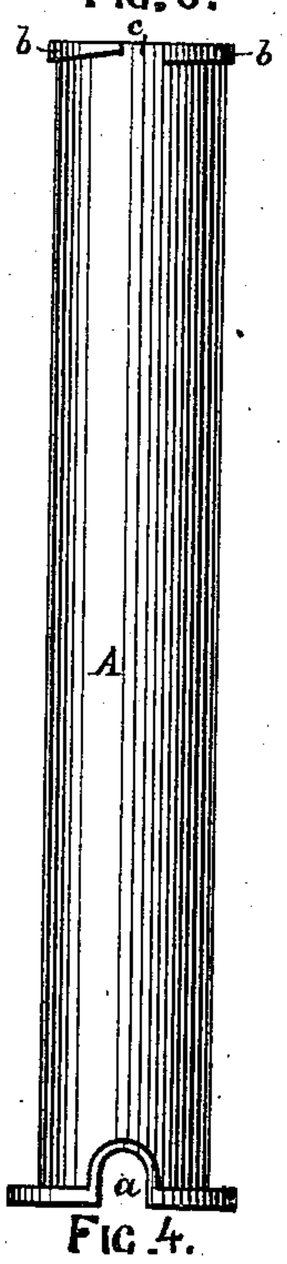

FIG. 4.

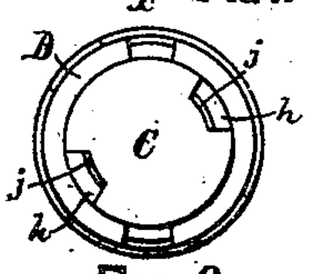

FIG. 3.

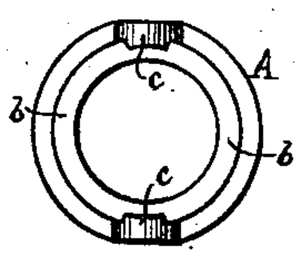

FIG. 5.

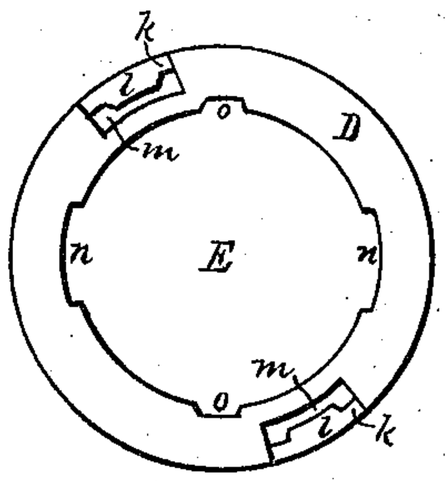

FIG. 10.

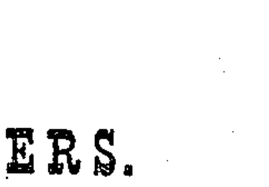

FIG. 9.

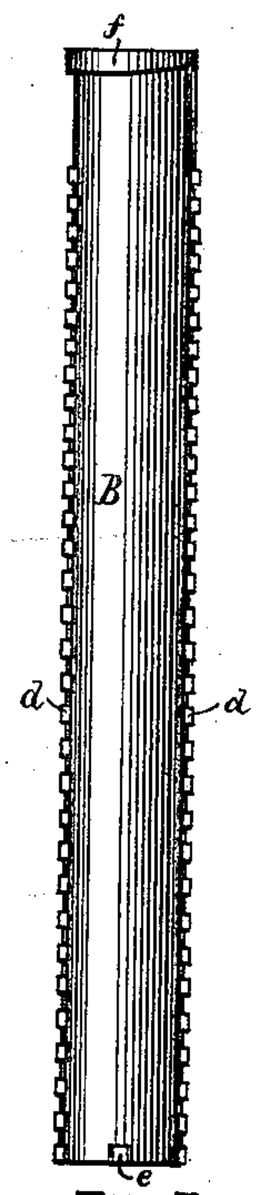

FIG. 7.

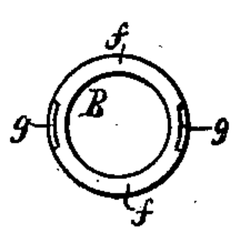

FIG. 8

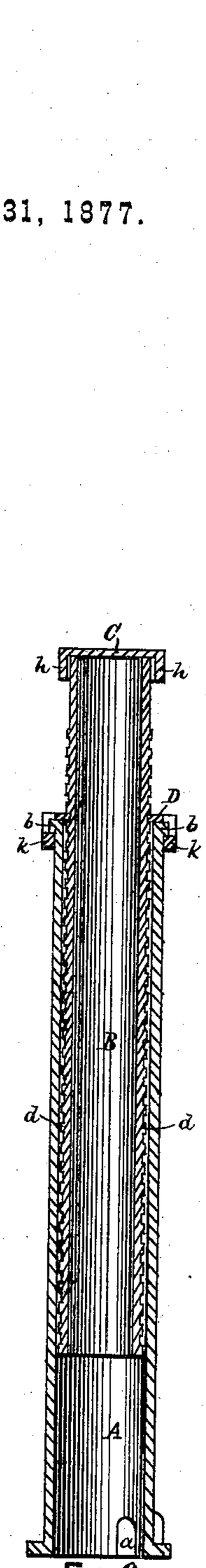

FIG. 2.

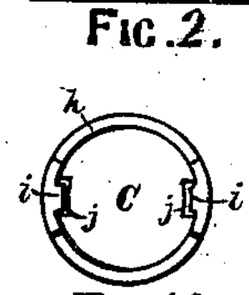

FIG. 12.

WITNESSES.

N. C. Lombard.

C. A. Hemmenway.

INVENTOR.

Geo. P. Bowers

UNITED STATES PATENT OFFICE.

GEORGE P. BOWERS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN STOP-COCK BOXES.

Specification forming part of Letters Patent No. **193,686**, dated July 31, 1877; application filed June 12, 1877.

To all whom it may concern:

Be it known that I, GEORGE P. BOWERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Gate-Pipes, to facilitate the working of underground cocks or gates, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a device to be set in the ground above and directly over the shut-off cock, in a surface, water, or gas pipe which leads from the street main to the building where the water or gas is to be used, and is designed to facilitate the working of said cock or gate.

It is necessary to have a pipe or tube set in the ground above such cock or gate, in order that the water or gas may be cut off from the building without the expense and trouble of digging down to the cock or gate; and it has been customary to use for the purpose a wooden tube or a plain iron pipe, cut to the proper length, and provided with a cap on a level with the sidewalk or street. This answered a very good purpose when once fitted, until it was desired to change the grade of the sidewalk or street, when the earth had to be dug away, and the pipe taken up and cut off to a shorter length, if the grade was to be lowered, or a new pipe of greater length put in its place if the grade was to be raised.

This is a serious objection and a source of much expense in cities and towns where changes in the grade of the streets are constantly occurring, and the object of my invention is to overcome this objection; and it consists, first, in the use, for such purpose, of a pipe made in two pieces, fitted one within the other, and adapted to be adjusted at will, so as to vary the length of the whole pipe, so that its upper end may be brought to the level of the grade of the street or sidewalk, the inner or smaller section of the telescopic pipe being provided with one or more series of rack-like teeth, in combination with one or more inwardly-projecting lugs or lips formed in the inner periphery of the upper end of the outer or larger section of the pipe, or a head or annular cap secured thereto, with which the teeth upon the exterior of the inner pipe engage, to hold the said inner pipe at the desired height.

My invention further consists in the use of two or more small lugs projecting from the periphery of the smaller pipe, near its lower end, at points on its circumference between the sets of rack-teeth, and projecting from said pipe the same distance as the said rack-teeth, to serve as bearing-points against the inner periphery of the larger pipe, and thus aid in holding the upper or adjustable pipe in a perpendicular position, or in line with the lower or stationary pipe.

My invention further consists in a peculiar formation of the cap of the upper tube and the annular head of the lower tube, whereby they may be cast without the employment of cores, as will be described.

Figure 1 is a side elevation of my improved gate-pipe. Fig. 2 is a central vertical section on line *x x* on Fig. 1. Fig. 3 is a plan. Fig. 4 is an elevation of the outer and lower pipe. Fig. 5 is a plan, and Fig. 6 is an inverted plan, of the same. Fig. 7 is an elevation of the inner or adjustable pipe as viewed from a point at right angles to Fig. 1. Fig. 8 is a plan, and Fig. 9 an inverted plan, of the same. Figs. 10 and 11 are, respectively, a plan and an inverted plan, of the annular head or cap of the outer pipe, and Fig. 12 is an inverted plan of the cap of the inner or adjustable pipe, and Fig. 13 shows the manner of applying my gate-pipe to a shut-off cock.

A is the outer or stationary pipe, provided with the slot *a* across its lower end, and two wedge-shaped lips, *b b*, partially surrounding its upper end, said lips being separated from each other by the notches *c c*, as shown in Figs. 4 and 5. B is the inner or adjustable pipe, provided with two rows of shallow rack-like teeth, *d d*, arranged upon opposite sides of said pipe, and extending nearly the whole length of the pipe, and with two small lugs, *e*, at its lower end, and projecting therefrom at points equidistant between the two rows of teeth, and the same distance as said teeth.

The upper end of said pipe B is also provided with two projecting lips, *f f*, extending partially around said pipe, but separated from each other by the notches *g g*, and having their under sides tapered or beveled to form

a sort of a wedge, similar to the lips *b b* on the pipe A.

C is a cover for the pipe B, provided with a downwardly-projecting annular ring, *h*, from the lower edge of which projects inwardly the two lugs or short lips *i i*, so formed and proportioned that they will drop over the pipe B in the notches *g g*, while the ring *h* surrounds the outer edges of the lips *f f*, when, by partially rotating the cap C the lugs *i i* are carried under the lips *f f*, and along their inclined under surface till the cap is drawn down hard upon the end of the pipe. Directly over the lips *i i*, in the upper corners of the cap C, are formed the two recesses *j j*, for the purpose of facilitating the casting of the cap without the employment of a core.

D is an annular cap for the pipe A, provided with the downwardly-projecting ring *k*, lugs *l l*, and recesses *m m*, all constructed and designed to operate in connection with the lips *b b* and notches *c c* in precisely the same manner as above described in connection with the cap C. In the center of the top plate of the cap D is formed an opening, E, the general outline of which is circular in form, and having the two enlargements *n n* for the passage of the teeth *d d*, and two smaller enlargements or slots, *o o*, cut in the inner edge of the upper plate of the cap D for the passage of the lugs *e e* in inserting or withdrawing the pipe B from the pipe A.

The operation of my device is as follows:

The pipe A is cast complete in the form shown in Figs. 4, 5, and 6, and the cap D is applied thereto, as described, in connection with the cap C and pipe B, and pinned or otherwise secured from becoming loosened by adjusting the pipe B. The pipe A is then placed in a perpendicular position directly over the shut-off cock or gate F, (shown in dotted lines in Fig. 13,) and may be secured to the pipe G (also shown in dotted lines in Fig. 13) in any suitable manner, and the earth is filled in around it, so as to hold it in a perpendicular position. The pipe B is then dropped endwise into the pipe A by passing the two rows of teeth *d d* through the enlargements *n n* of the opening E in the top plate of the annular cap D, and the lugs *e e* through the slots *o o* till the top of the pipe B is brought to the proper level, when the pipe B is rotated about its axis till the inner edge of the plate of the cap D passes between two of the teeth *d d*, and is then secured against accidental rotation by wedges driven into the enlargements *n n*. The cock or gate F is operated by means of a long-shanked socket-wrench inserted through the pipe in the usual manner. The upper end of the pipe B is closed by dropping the cap C over its end, the lugs *i i* passing through the notches *g g*, and then partially rotating the cap till the lips *i i* are brought in close contact with the inclined under side of the lips *f f*.

When it becomes necessary to change the grade of the street it is only necessary to remove the earth around the portion of the pipe B which projects above the cap D, and partially rotate the pipe B till the teeth *d d* will pass through the enlargements *n n*, when the pipe B may be raised or depressed till its top end coincides with the new grade, when the pipe is again partially rotated till the inner edge of the cap D engages again with two of the teeth *d d*, as before described.

It is obvious that the pipe B might be adjusted by means of a screw by substituting for the teeth *d* a male screw-thread on the exterior of the pipe B, and forming a female screw-thread or nut in the head D or in the upper end of the pipe A, but I prefer the method of adjustment heretofore described as being cheaper, more easily operated, and less liable to become inoperative by reason of corrosion of the metal.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The pipe B, provided with one or more sets of teeth, *d*, in combination with the pipe A, provided with the central opening E and enlargements *n n* thereof in its upper end, or in a cap secured thereto, all arranged and adapted to operate substantially as and for the purposes described.

2. In combination with the pipe A, provided with the central opening E and enlargements *n n*, and slots *o o* formed in its upper end or in a cap secured thereto, the pipe B provided with one or more sets of teeth, *d*, and two or more lugs, *e*, all arranged and adapted to operate substantially as and for the purposes described.

3. In combination with a cap provided with a downwardly-projecting annular ring, and one or more lips or lugs projecting inwardly from the lower edge of said ring to engage with lips on the pipe to which it is to be secured, one or more notches or recesses, *j j*, cut into and through the upper corner of said cap, substantially as and for the purposes described.

Executed at Boston, Massachusetts, this 8th day of June, A. D. 1877.

GEO. P. BOWERS.

Witnesses:
N. C. LOMBARD,
E. A. HEMMENWAY.