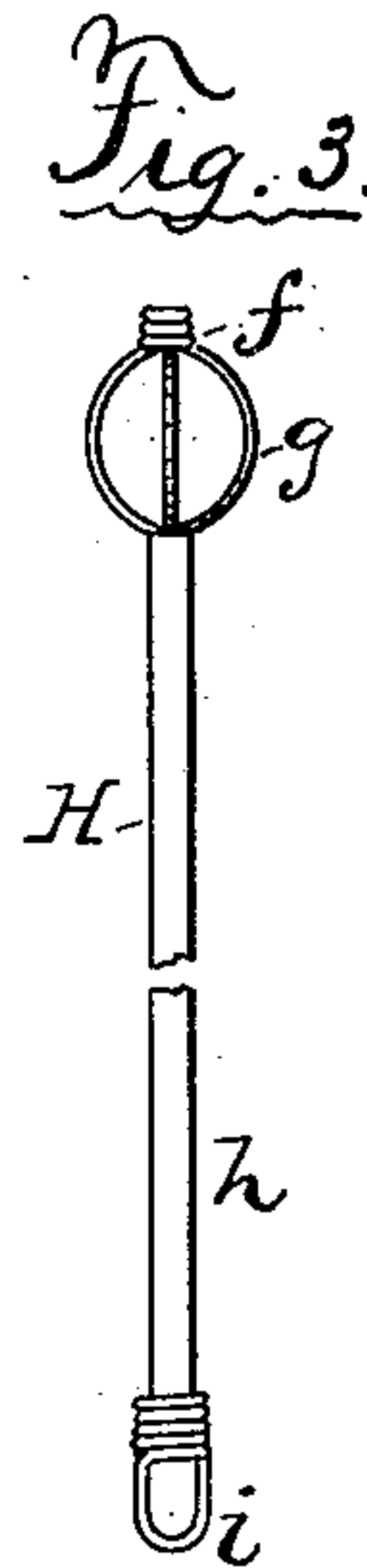
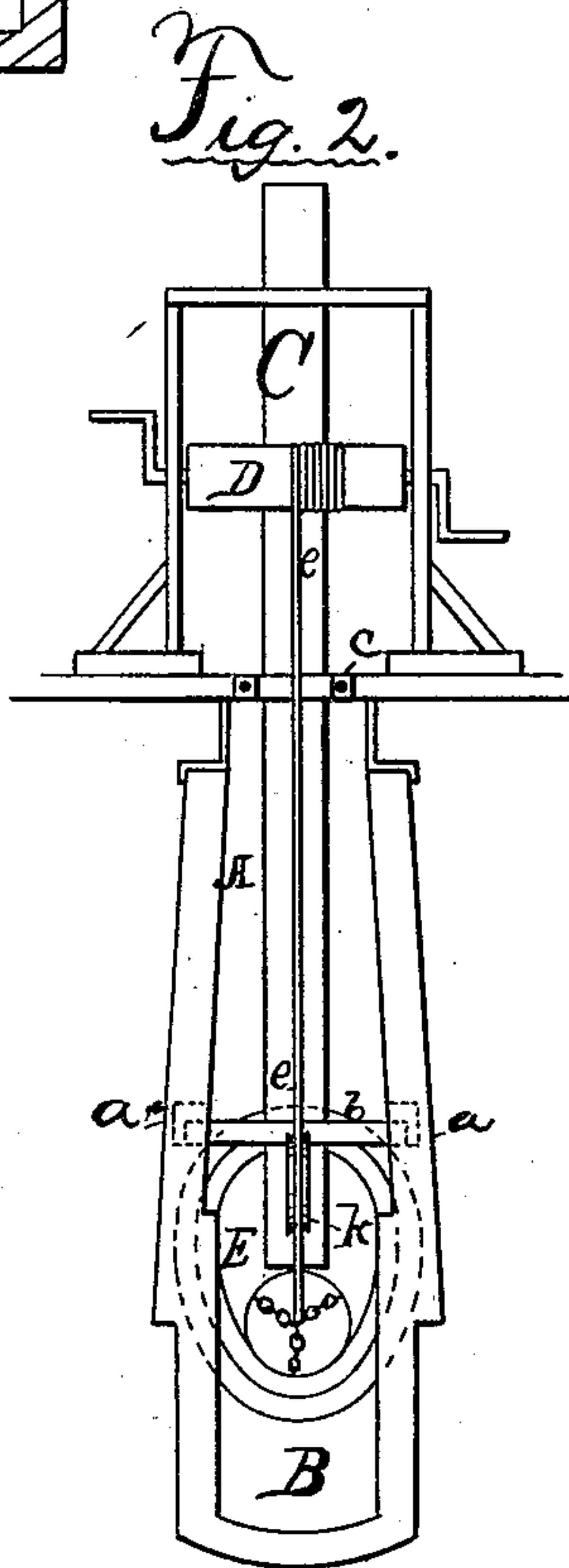
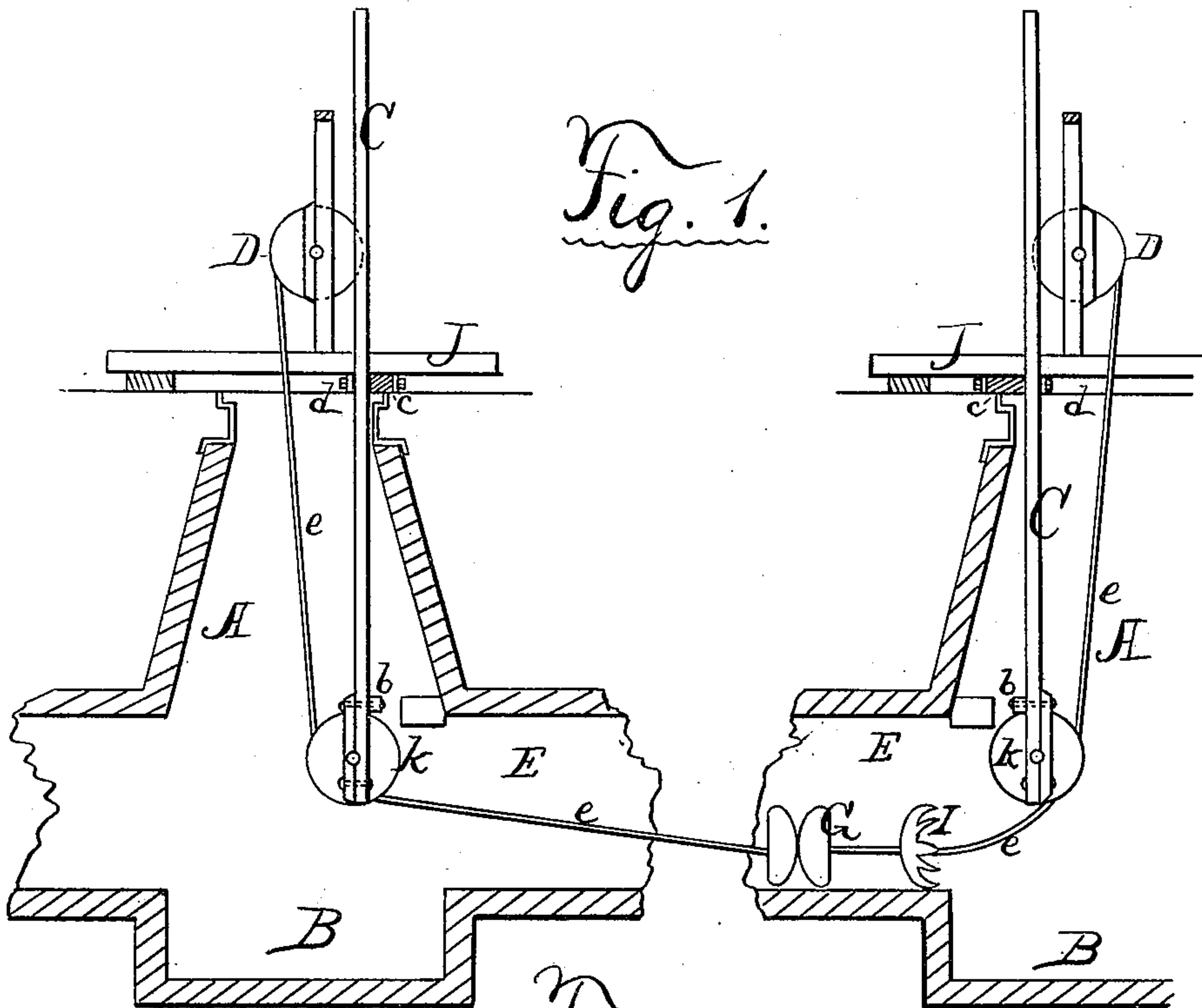


T. DARK.  
 Device for Cleaning out Street Sewer Pipes and Sewers

No. 231,015.

Patented Aug. 10, 1880.



*Witnesses:*  
 T. H. Parsons.  
 J. R. Drake

Thomas Dark,  
 Inventor  
 by J. R. Drake,  
 atty

# UNITED STATES PATENT OFFICE.

THOMAS DARK, OF BUFFALO, NEW YORK.

DEVICE FOR CLEANING OUT STREET SEWER-PIPES AND SEWERS.

SPECIFICATION forming part of Letters Patent No. 231,015, dated August 10, 1880.

Application filed December 6, 1879.

*To all whom it may concern:*

Be it known that I, THOMAS DARK, of Buffalo, in the county of Erie and State of New York, have made certain Improvements in  
5 Devices for Cleaning Out Street Sewer-Pipes and Sewers, of which the following is a specification.

The object of this invention is to prevent having to break open the streets and into the  
10 sewer-pipes to clean the latter out when they get clogged, as is now the case; and the invention consists in making a cup-shaped plow with blunt teeth at its open end and a double cup-shaped scraper with the closed ends fast-  
15 ened to each other, and both the scraper and plow having their open ends curved inward, so as to escape the sewer-joints, and both being placed on a chain in a sewer and actuated by means of windlasses placed at either man-  
20 trap, to be more particularly described hereinafter.

In the drawings, Figure 1 is a longitudinal section divided in the middle, showing the sewer with man-holes and the catch-basins, &c.  
25 Fig. 2 is a vertical section through sewer, man-hole, and catch-basin; Fig. 3, a detail view of the piercer or conducting-rod.

A A are sections of the man-holes, to be constructed about one hundred and fifty feet apart  
30 in the street, with openings from the level of the street therein, and each to have a catch-basin, B, immediately under it, being a depression made to catch the passing sediment or any thick and heavy matter which will, to  
35 a certain extent, fall therein, so as to greatly simplify cleaning the sewers and aid in preventing their clogging and keeping them clean. These basins will be about six feet long by the width of the sewers at the springing of the  
40 arches below the bottom of the sewers. These can be cleaned out periodically by being dipped up in buckets or otherwise, and drawn up the man-holes to the street and carted away.

About a foot above the level of the spring-  
45 ing of the arch of the sewer, holes *a a* are made in the brick-work for the purpose of putting in and drawing out a cross-timber, *b*, which is connected to the main leg or shaft *C* to steady it, but which can be drawn out of the holes *a*  
50 *a* by one hole being made longer than the other. This leg *C* is suspended vertically in

the man-hole A, being clamped at the street level by a metal strap or plate, *c*, to one of the  
sills, *d*, of the windlass - platform J by bolts, which hold the leg at any height desired and  
55 keep it from rising when there is a strain upon it, and to accommodate it to the different depths of sewers. In the bottom of each leg is arranged a sheave-wheel, *k*.

D D are two windlasses set in their proper  
60 frames immediately over the openings to the man-holes, the top of the legs C C coming behind the windlass. A chain, *e*, runs over each windlass, down the man-holes, and over the sheave-wheels *k k* in the bottom of each leg,  
65 and on through the sewer E, making a connection from one windlass to the other through the one hundred and fifty feet of sewer and up the two man-holes. Attached to this chain is, first, a peculiarly-shaped plow, I, (see Fig. 1,) 70  
with projecting rounded teeth, which plow through the mass of sediment, &c., that clogs the pipe. Behind this, attached through the center, on the chain *e*, is a scraper, G, formed somewhat in the shape of two hollow cups set  
75 back to back, but in this case are made in one, and the cup edges curved inward somewhat, the same as the points of the plow I, the object being to prevent them from catching in the joints of the sewer. This forms a double  
80 scraper that works both ways, cleaning out the sediment in the sewer and dropping it into the catch-basins at each end under the man-holes.

Holes will be left in the side walls of the  
85 man-holes at each end, making a recess for a board to set in, forming a seat for a man to clean out the catch-basin with buckets, which will be drawn up the man-holes to the street,  
90 as before stated.

The operation of the device is as follows:  
When it is found that a street-sewer is clogged, I build a catch-basin beneath the man-hole; or  
if there is no man-hole I make one. These  
are left permanently. I then place two wind- 95  
lasses in their frames over the street-opening to two man-holes, which will usually be one hundred and fifty feet apart. Then I place in the man-holes the legs C C, one in each, and run the chain *e* through the sewer with the plow 100  
or scraper attached, or both, according to the state of the sediment. The chain is passed



around the sheave-wheels *k k* and the two ends around the windlass-drums. Then the windlass is worked either by man, steam, or other power, drawing the scraper and plow through and bringing with them the mud, &c., in the sewer, dropping it into the catch-basin. As soon as the plow, &c., come through to one man-hole the windlass at the other end is worked, drawing the plow, &c., back. This is kept up, working one end and then the other, drawing the scraper, &c., back and forth till the sewer is perfectly cleared out. A man sits on a board placed across the man-hole, as before described, to clean out of the catch-basins the sediment, &c., that is scraped or falls therein, which is drawn up in buckets or otherwise to the street.

When a sewer is completely clogged so that a chain cannot be pushed through, I employ a device to first penetrate the mass, as shown in Fig. 3, being a conducting-rod or piercer, *H*, having a head composed of a point, *f*, followed by a number of wires or rods bent into an oval form, *g*, so as to clear the implement from the joints of the sewer. This clearing-point is united to a handle, *h*, made of gas-pipe. This is forced into the sewer by being attached to the chain *e* by the hook *i* on the handle and reversing the position of the leg and sheave *k*. As it works its way in, taking the chain with it, length after length of gas-pipe (for a handle) is screwed on until it reaches the opening into the next man-hole; then the plow and scraper are fastened on, the piercer taken off, and the plowing and scraping go on, as before described.

There are great advantages connected with this device. The present way of cleaning out long lengths of sewer-pipe is simply to break open the street, no matter how new or expensive the pavement, and then break into the sewer and clean it out so far as they can reach, then break more holes in street and sewer, and so on, and when the holes are filled up and the pavement replaced the street never looks as before, but unsightly ridges or breaks in the pavement are always observable. A great deal of time and trouble are thus expended, and the pipe is never properly cleaned.

By having, as I propose, a series of man-holes at proper distances, and a permanent catch-basin under each one, a portion of the sediment, &c., passing through sewers will be caught, so that a man can go round periodically and clean them out. If the pipe becomes clogged, then I put my apparatus in operation, and in a short space of time the sewer is as clean as when first put down. It is quickly and cheaply done, a few men can manage it, and when the device is withdrawn and the man-hole covers put on no trace of the work can be seen, and no damage is done to street or sewer, and the sewer is uniformly cleaned throughout.

I claim—

1. The herein-described double-acting sewer-cleaning device having the two windlasses, situated one at either of two man-traps and connected by a chain passing through the sewer, upon which is placed the plowing or loosening and cleaning apparatus, consisting of the plow *I*, cup-shaped, and having the inwardly-curved teeth, followed by the double cup-shaped scraper *G*, having inwardly-curved mouths, and arranged back to back in order that the sediment may be drawn either way by reversing the action of the windlasses, substantially as set forth.

2. The improved sewer-cleaner having the upright stem or leg *C*, bearing the pulley or sheave wheel *k* and windlass *D*, arranged in the man-trap of a sewer, chain *e*, bearing the double cup-shaped scraper *G* and toothed plow *I*, and a like arrangement of upright leg, pulley, and windlass in another man-hole, substantially as described, and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOMAS DARK.

Witnesses:

J. R. DRAKE,  
T. H. PARSONS.