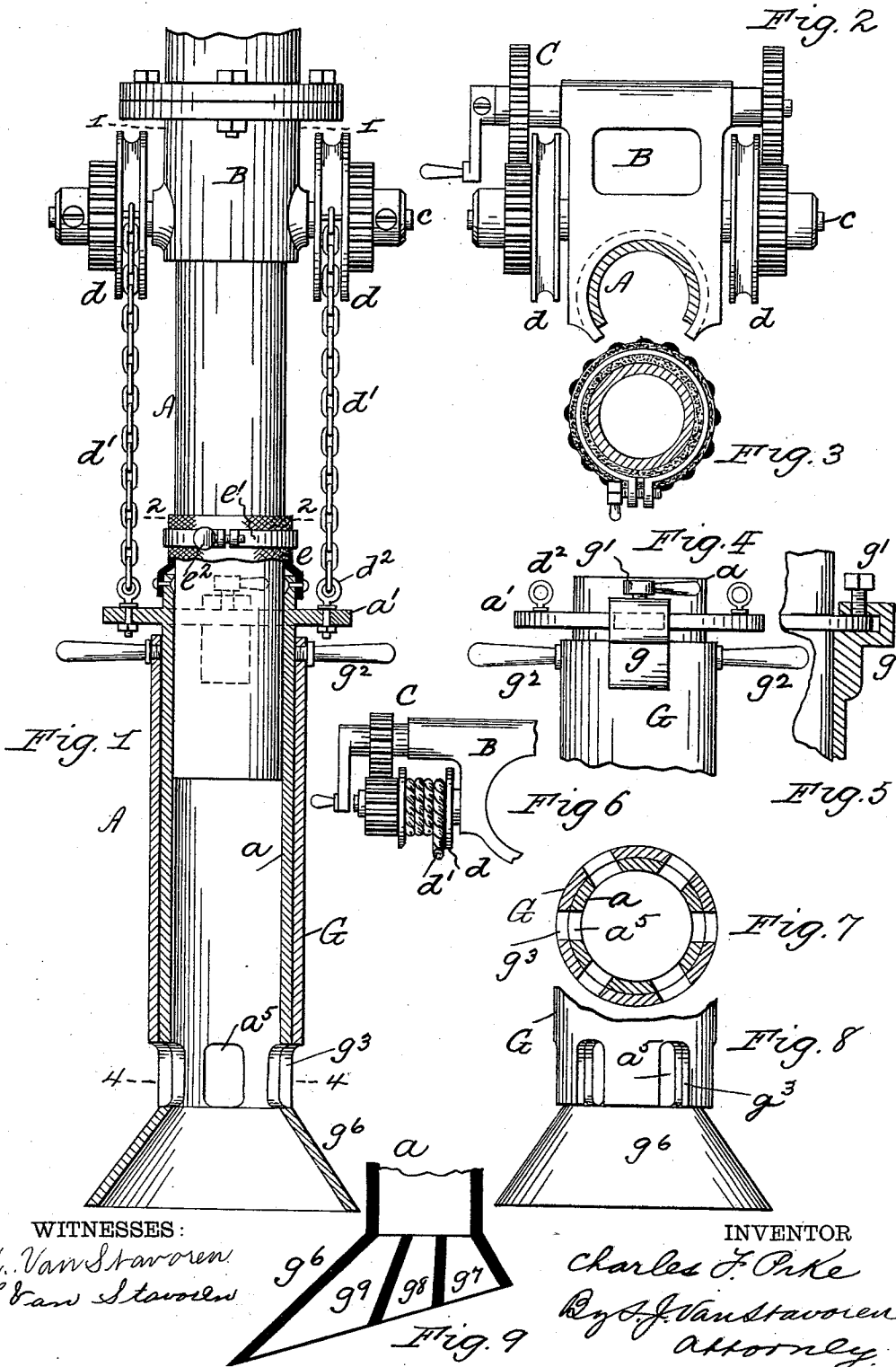


(No Model.)

C. F. PIKE.
SUCTION PIPE FOR SUCTION DEVICES.

No. 528,977.

Patented Nov. 13, 1894.



UNITED STATES PATENT OFFICE.

CHARLES F. PIKE, OF PHILADELPHIA, PENNSYLVANIA.

SUCTION-PIPE FOR SUCTION DEVICES.

SPECIFICATION forming part of Letters Patent No. 528,977, dated November 13, 1894.

Application filed June 10, 1893. Renewed April 17, 1894. Serial No. 507,942. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. PIKE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Suction-Pipes for Suction Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to the suction tubes of suction pumps, siphons or other like devices for raising or discharging the gangue or ore or other solid, fluid or mixed material; and it has for its object to so construct said tube and provide it with actuating mechanism that its lower end is vertically or lengthwise adjustable to and from the material to be discharged, or, adjustable in the same so as to alter the suction power for varying weights or bulks of different materials simultaneously acted upon, and for further regulating the degree of suction without varying the lengthwise position of the suction tube.

My invention accordingly consists of the combinations, constructions and arrangements of parts as hereinafter more fully described in the specification and pointed out in the claims.

Reference is had to the accompanying drawings, wherein—

Figure 1 is an elevation, partly sectional, of suction tube with extension end and actuating devices embodying my improvements. Fig. 2 is a plan and broken section on line 1—1, Fig. 1. Fig. 3 is a section on line 2—2, Fig. 1; Fig. 4, an elevation showing the junction of suction tube and its extension with coupling devices and appliances for rotating the extension without altering its lengthwise position. Fig. 5 is a vertical section of part of the same, showing more plainly the coupling connection for said parts. Fig. 6, is a broken plan similar to Fig. 2, showing a modified form of actuating devices for raising and lowering the extension of the suction tube. Fig. 7 is a section on line 4—4, Fig. 1. Fig. 8 is an elevation of the lower end of the inlet-tube and its extension, and Fig. 9 is a section of the lower end of the extension as formed

with flaring or inclined edge and division chutes for varying the suction force so that said end will separately, simultaneously discharge materials of different weights or bulks. 55

A represents a suction tube of any suitable or desired form, having suitably and conveniently located thereon a frame or housing B of any suitable configuration carrying a winch or motor C which may be actuated 60 manually or by power as desired. Upon one of the shafts *c* of the motor C are located on opposite sides the chain-rope or other analogous wheels *d d* which carry chains or ropes *d'* the lower ends of which connect with a slide section *a* of tube A having near its upper end a projecting or outer flange *a'* suitably provided with eyes *d²* for connection with chains *d'*. The upper edge of section *a* is inclosed by a flexible or rubber tube section *e* suitably secured at its lower edge to section *a* as shown and its upper part surrounds the tube A and is clamped thereto by a ring *e'* and screw *e²* to make a water tight joint which may at any time be loosened by 75 actuating the screw *e²* to admit of section *a* being moved vertically or lengthwise on tube A by rotation of shaft *c* to wind or unwind the chains *d'*; and when adjusted the screw *e²* is turned to tighten the joint of flexible section *e* with tube A. See more plainly Fig. 3. 80

G represents the lower end section of pipe A which surrounds and is susceptible of rotation on section *a*. It is coupled thereto by means of flanged, recessed, radially arranged 85 arms, or lugs *g* at its upper end, loosely engaging the flange *a'* of section *a*, see more plainly Fig. 5, and one or more of said lugs may be provided with a set screw *g'* for firmly or rigidly holding section G in its adjusted 90 position or to prevent it turning when adjusted. Said section is also provided with turning handles *g²*.

The lower end of section *a* may be of any suitable configuration. In the drawings it is 95 shown bell-form as at *g⁶* and above the same are a series of radially arranged openings *a⁵* which register with corresponding openings *g³* in section G so that by turning the tube section G at any time the registering openings *g³* and *a⁵* may be opened or closed as 100 desired to vary the degree of suction in tube

A for the material to be discharged without varying its length or the lengthwise adjustment of the extension G and *a*.

The end *g*⁶ of the section *a* may be inclined 5 as shown in Fig. 9 and provided with separate succeeding chutes *g*⁷ *g*⁸ *g*⁹ to separately but simultaneously discharge different weights or bulks of material as fully shown and described in another pending application filed 10 by me of an even date herewith.

As the details of my invention may be variously changed I do not confine myself to the same as shown. Thus for instance instead of making the chain wheels *d* of a diameter 15 large enough to raise or lower the sections *a* and G the full length of their movement by a single winding or chain *d*, they may be made in the form of a drum for successive windings as illustrated in Fig. 6.

20 I do not herein broadly claim the suction tube inclined inlet end having a series of chute openings for varying the suction force at said end, as the same forms the part of the subject-matter of a companion application of 25 even date herewith, Serial No. 477,170. In this case such end is specific in combination with a lengthwise moving and rotatable discharge pipe.

What I claim is—

30 1. A suction pipe having a lengthwise adjustable inlet end, actuating devices for making such adjustment, openings in said pipe adjacent to the inlet end and an adjustable slide for said openings for varying the velocity of flow through the inlet end of the suction 35 pipe, substantially as set forth.

2. A suction pipe having a lengthwise adjustable inlet end, one or more openings in

said pipe adjacent to said inlet end, and a shutter or slide for varying the extent of said 40 opening or openings for varying the velocity of flow in the inlet end of the suction pipe, substantially as set forth.

3. A suction pipe having an extensible and rotating inlet end, registering openings in said 45 pipe and inlet end and actuating devices for adjusting said inlet end extensibly and for rotating it, substantially as set forth.

4. In combination with suction tube A, the section *a* having openings *a*⁵, the rotatable section G coupled to section *a* having registered 50 openings *g*⁶, substantially as set forth.

5. In combination with a suction-pipe upper section, a telescoping lower section, means supported on the upper pipe section and in 55 engagement with lower pipe section for lengthwise adjusting the latter, an inlet end at the bottom of the lower pipe section, opening or openings in said lower pipe section adjacent to its inlet end, and an adjustable device lo- 60 cated on said lower pipe section for varying the extent of said openings to change the velocity of flow in the suction pipe inlet end, substantially as set forth.

6. In combination with a lengthwise moving and rotatable suction tube inlet section, a lower flaring or inclined end with a series of chute openings for said section, substantially as set forth.

In testimony whereof I affix my signature in 70 presence of two witnesses.

CHARLES F. PIKE.

Witnesses:

THOS. S. RODGERS,
JAMES T. DAILY.