

W. W. DUNGAN.

Smoke Stack.

No. 91,103.

Patented June 8, 1869.

Fig. 1,

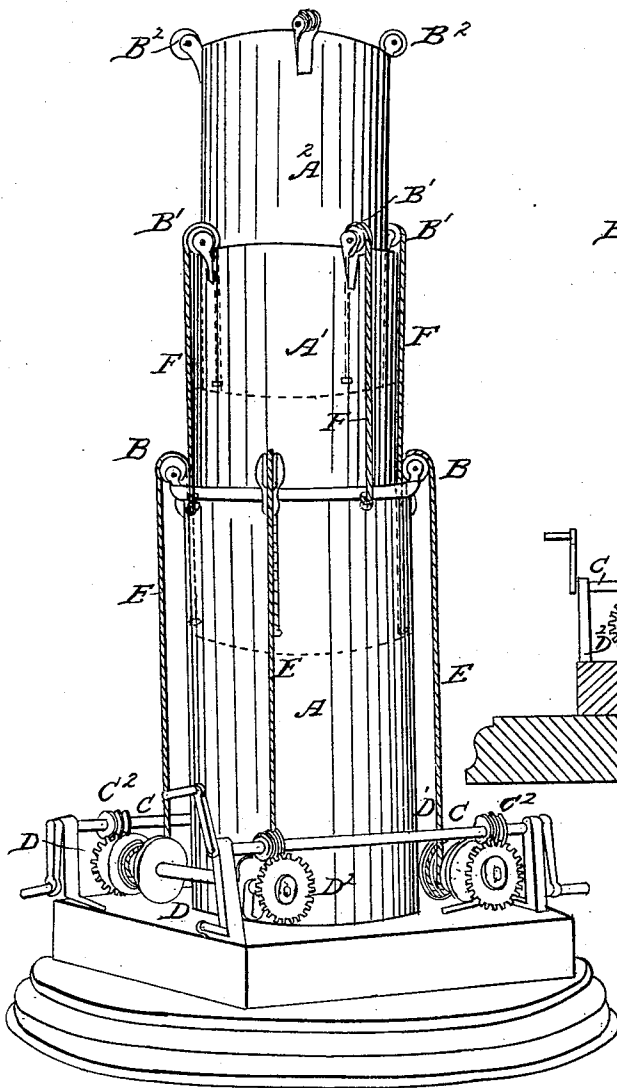
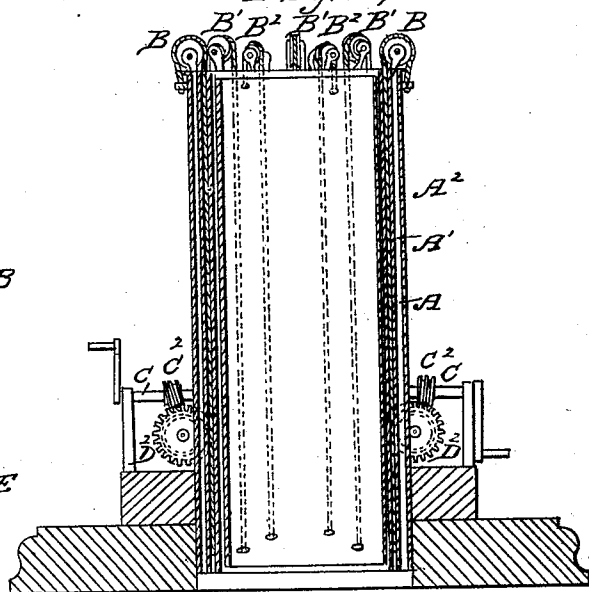


Fig. 2,



WITNESSES:

Blair & Co.
A. Ruppert

INVENTOR:

W. W. Dungan
PER *D. P. Mowry & Co.*
Attorneys.

United States Patent Office.

W. W. DUNGAN, OF BALTIMORE, MARYLAND, ASSIGNOR TO MARY D. DUNGAN, OF SAME PLACE.

Letters Patent No. 91,103, dated June 8, 1869.

IMPROVEMENT IN STEAM-GENERATOR SMOKE-STACKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, W. W. DUNGAN, of Baltimore, in the county of Baltimore, and State of Maryland, have invented a new and useful Improvement in Smoke-Pipes, or Smoke-Chimneys for Steam-Generators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view, partly in perspective, and partly in elevation, of my improved telescopic pipe, and

Figure 2 is a vertical sectional elevation of the different sections of the pipe, and the sheaves over which the ropes or chains run, for raising said sections.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to that class of pipes known as telescopic smoke-pipes, or chimneys; and

It consists in the combination and arrangement of its parts, as will be more fully explained hereinafter.

A, in the drawings, represents the lower, and outer cylinder, or section of the pipe, which is to rest upon, and be secured to the steam-generator or any other device to which it may be desirable to attach it.

This cylinder, or section is to be of any diameter and length required to adapt it to the purpose to which it is to be applied, it being necessary to vary the diameter to suit the varying capacities of the generator, or furnace to which it is to be applied, or in connection with which it is to be used.

To the upper end of this section, there is to be attached, by means of suitable brackets, a series of sheaves, or rollers, B B, over which ropes or chains are to pass, for a purpose to be hereinafter explained.

A¹ represents another cylinder, or section of the pipe, which is to be of such a diameter as to nearly fill the outer section, or cylinder, but permit it to move freely therein. To the lower outer edge of this section, there is to be a flange secured, so that as this section is elevated to its full extent, it shall come in contact with a similar flange, or projection formed upon the inner surface of the outer section, A, for the purpose of preventing the escape of smoke or gas at this point. This flange also serves the purpose of always retaining the section A¹ in a central position within the section A, and of preventing the escape of the gases around it when it is in any intermediate position between its extremes of movement in either direction. This section is to be provided with sheaves, or rollers upon its upper end, the same as those described as being upon section A.

A² represents a third section, which is to be constructed, in all respects, the same as section A¹, except that its diameter is to be such as to permit it to move freely within such section, and be supplied with a similar flange upon its lower end.

I have shown and described three sections of pipe, but it is apparent that there may be employed any desired number more than one, and that their length may be such as to give the required altitude to the inner one when raised to its full height.

B B represent the sheaves, or pulleys, which are to be attached to the lower outer section, for the ropes or chains to pass over, as above described, B¹ B¹ representing those upon the section A¹, and B² B², those upon section A².

C C represent shafts, which are to be mounted in bearings, which are to be secured to the generator or to the base of the pipe, or section A.

These shafts are to be arranged as shown in fig. 1, and are to be provided with two worms, or screws near their ends, for the purpose of acting upon the worm or gear-wheel D². Outside of the bearings in which these shafts rest, cranks are to be secured, which are to be used in giving motion to the shafts, for raising and lowering the sections A¹ A² of the pipe.

C² C² represent the worms, or screws above referred to as being secured to the shafts C C¹. The pitch of the thread upon these worms is such that they will mesh into the teeth in the wheels D².

D D represent shafts, which are to be placed in suitable bearings, which are to be secured to the base of the pipe. These shafts are arranged at right angles to the shafts C C¹, and are to be supplied, upon their ends, with worm or gear-wheels, which receive their motion from the worms C² C² upon such shafts.

Inside of the bearings of these shafts, or at such a point thereon as will bring them nearly in a vertical line with the sheaves, or pulleys upon the pipe A, there is to be secured to each of these shafts a drum, having, upon its ends, flanges, to prevent the running off of the rope or chain which is to be wound around them, and, upon their peripheries, a groove, in the form of a screw, to receive and guide the rope or chain while being wound upon them. To or near one end of these drums, an eye-bolt is secured, which receives and holds the ends of the ropes or chains which are used in extending or elevating the movable sections of the pipes.

E E represent ropes or chains, one end of which is to be secured to the eye-bolt in the drums above described, the other end being secured to the lower end of section A¹ of the pipe. In carrying these ropes from the drums to the section of the pipe to which they are to be attached, they are to be caused to pass over, and rest in a groove formed in the sheaves B B, as clearly shown in fig. 1 of the drawings.

F F represent another series of ropes or chains, the outer ends of which are to be secured to the upper end of the outer section, A, of the pipe, from which point they are to extend to and over the sheaves B¹ B¹ upon the upper end of section A¹ of the pipes, and

from thence to the lower end of section A², where they are to be secured. When more than three sections are used, ropes are to be secured to the top of section A¹, and pass over sheaves, or pulleys upon the top of section A², and thence to the bottom of the section which may be placed therein, the arrangement being, in all respects, the same as above described, with reference to sections A and A¹.

The operation of my improved pipe is as follows:

The parts having been constructed as above described, and placed in the position shown in fig. 2, the cranks upon the shafts C O¹ are to be turned in the direction necessary to cause the extension of the pipe, which movement will, through the agency of the worm upon such shafts and the worm or gear-wheels D² D², cause the drums, to which the ropes or chains are secured, to be rotated, and such ropes or chains to be wound around them, thus causing the sections A¹ A² to be extended.

Some of the advantages due to a pipe constructed according to my improved plan may be thus stated:

It is peculiarly adapted for steamboats upon rivers or other places where bridges are to be passed, as at such times it may be lowered entirely out of the way of such bridges, and immediately raised again, so as to cause the required draught for the consumption of the fuel in the furnace.

In sea-going steamers, it sometimes becomes necessary to stop the engine, because of a derangement of some of its parts, at which times the vessel has to depend upon her sails for propelling-power. When

such a circumstance occurs, the large pipes, necessary upon such steamers, rising, as they do, so far above the decks of the vessel, present large areas of surface to the action of the wind, and thus render the control of the vessel more difficult. By my improved pipe, this very serious difficulty may be overcome at such times, as the pipes may be lowered nearly to the line of the deck of the vessel.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. A smoke-pipe, consisting of sections, arranged to slide one within the other, said sections being provided with sheaves, or pulleys, for operating the same, substantially as shown and described.

2. The arrangement of the pulleys, or sheaves B B and ropes or chains E E and F F, whereby to raise the sections A¹ and A² of the pipe, substantially as shown and described.

3. The arrangement of the shafts D D with their drums, for the reception of the ropes or chains, and the ropes or chains F F, with reference to the stationary section, A, of the pipe, substantially as shown and described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

W. W. DUNGAN.

Witnesses:

JOHN S. HOLLINGSHEAD,

JOHN S. HOLLINGSHEAD, Jr.