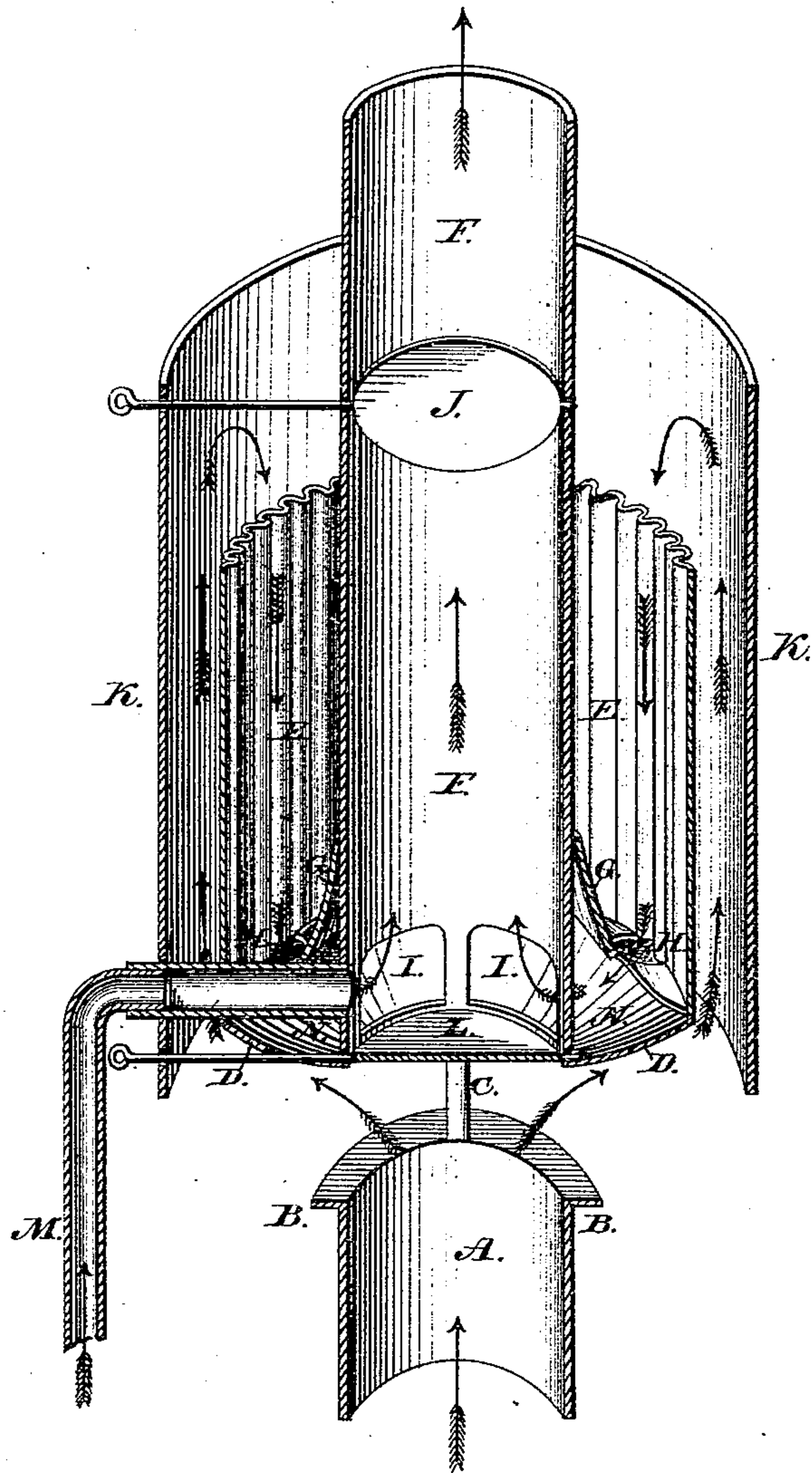


## Stove Pipe Drum.

No. 165,517.

Patented July 13, 1875.



*Attest:*

Hiram Hinebaugh.  
Theodore T. B. Knapp.

*Inventor:*

Benjamin F. Stockford  
per Isaac S. Toll  
Attorney.

# UNITED STATES PATENT OFFICE.

BENJAMIN F. STOCKFORD, OF STURGIS, MICHIGAN, ASSIGNOR OF ONE-HALF HIS RIGHT TO T. FRANKLIN THORNTON, OF SAME PLACE.

## IMPROVEMENT IN STOVE-PIPE DRUMS.

Specification forming part of Letters Patent No. **165,517**, dated July 13, 1875; application filed April 3, 1875.

*To all whom it may concern:*

Be it known that I, BENJAMIN F. STOCKFORD, of Sturgis, in the county of St. Joseph and State of Michigan, have invented a Drum-Heating Attachment for Stove-Pipes, of which the following is a specification:

My invention consists in the combination of an exterior closed jacket, a corrugated cylinder, and a smoke or flue pipe, concentrically placed one within the other, with heating-space between them, with an annular chamber at the lower end of the drum into which the gases enter through openings, and out of which they pass through other openings into the smoke-flue, as will be explained.

The drawing represents a vertical central section through the drum-heating attachment for stove-pipes.

A represents a section of the lower portion of an ordinary vertical or main pipe, into which the products of combustion pass from the furnace below. To the top of this pipe, and upon a flange, B, surrounding it, are secured standards C, by which the pipe is attached to the convex seat D of an interior corrugated cylinder, E. An upper and longer section of a main pipe, F, with an outer conical base, G, slotted at its lowermost part, (the slots being designated at H,) is seated within the corrugated chamber E. The lower part of the pipe F and the base G form an additional chamber, N, into which the products of combustion enter from the interior of the corrugated cylinder. From thence they pass through perforations, designated at I, at the bottom of the pipe F, upward and outward through a valve, J, at the top of the drum K. At the bottom of the convex seat D, and closing the entrance at the lower end of the pipe F, a valve, L, is situated. This valve being closed, the products of combustion pass from the furnace below, through the pipe A, into the spaces between the flange B and

standards C, and are deflected from the seat D upward into the area between the envelope K and the exterior of the corrugated chamber E, thence into the space between the inner portion of the said chamber E and the pipe F, thence through the slots at H, into the interior additional chamber N, and thence through the perforations I, upward and outward, the valve J being open.

At M a tube is represented for the introduction of cold air, which is admitted at the base of, and into, the chamber N, at which point it is most effective to promote the draft when desired, and to assist in the inflammation of the grosser particles of the products of combustion.

By the several spaces thus shown for the passage and radiation of heated air, with the large area afforded by the corrugations of chamber E, great economy of heat is obtained, while the convex bottom D and the conical base G, in addition to their other offices, add to the strength and durability of the apparatus.

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

In combination with the stove-pipe A and with the jacket K, corrugated cylinder E and smoke-flue F, concentrically placed one within the other, and each inclosing flue or heating space, the annular space N at the bottom of the drum, and common to the spaces inclosed by the corrugated cylinder and the smoke-flue, by means of the inlet and exit openings H I, and the valve L, for turning the products of combustion through the drum, as shown by the arrows, and as described and represented.

BENJAMIN F. STOCKFORD.

Witnesses:

T. FRANKLIN THORNTON,  
WALLACE E. RUNDELL.