

F. PROUDFOOT.

Heating Drums.

No. 145,237.

Patented Dec. 2, 1873.

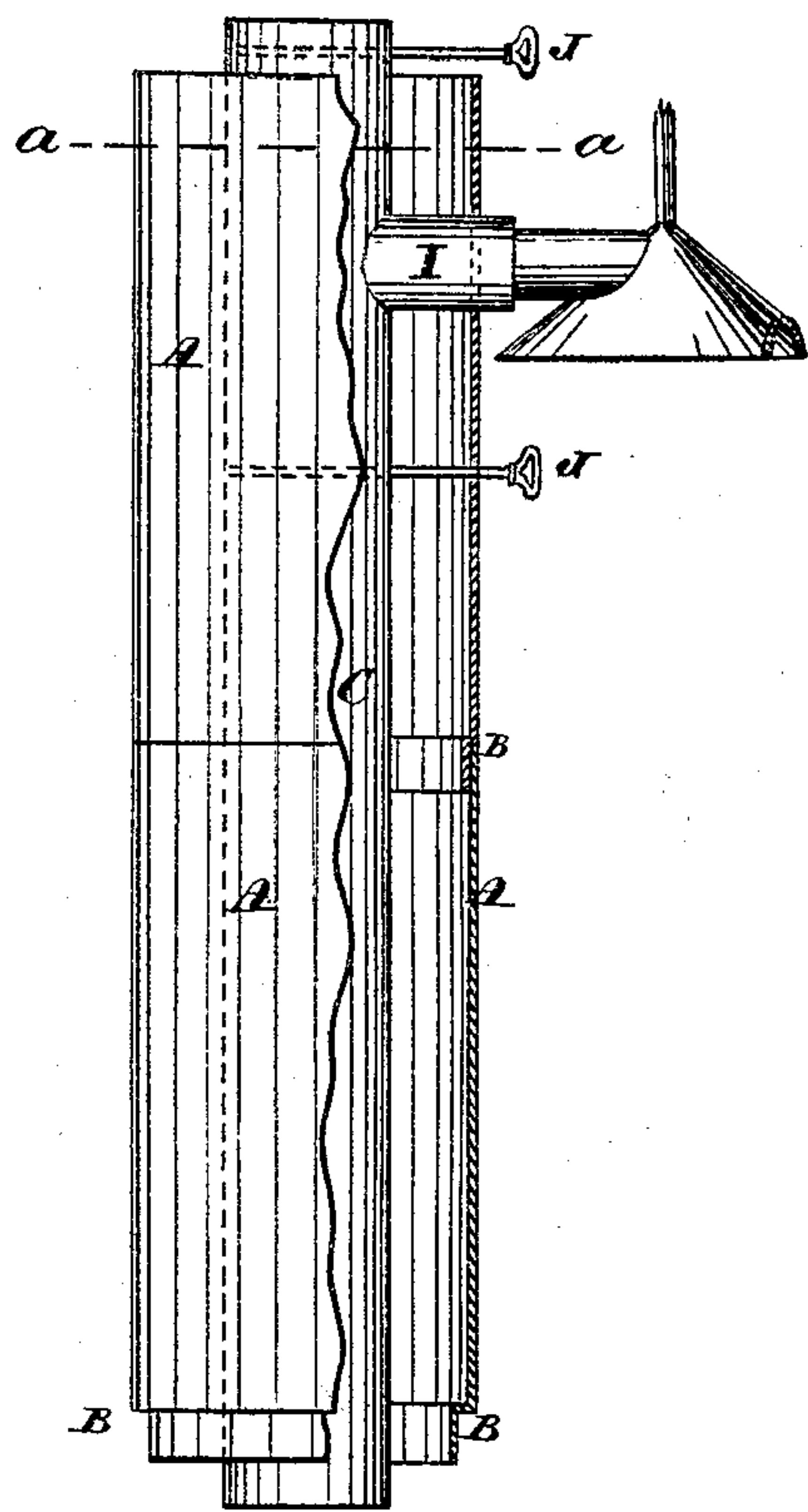


Fig. 1.

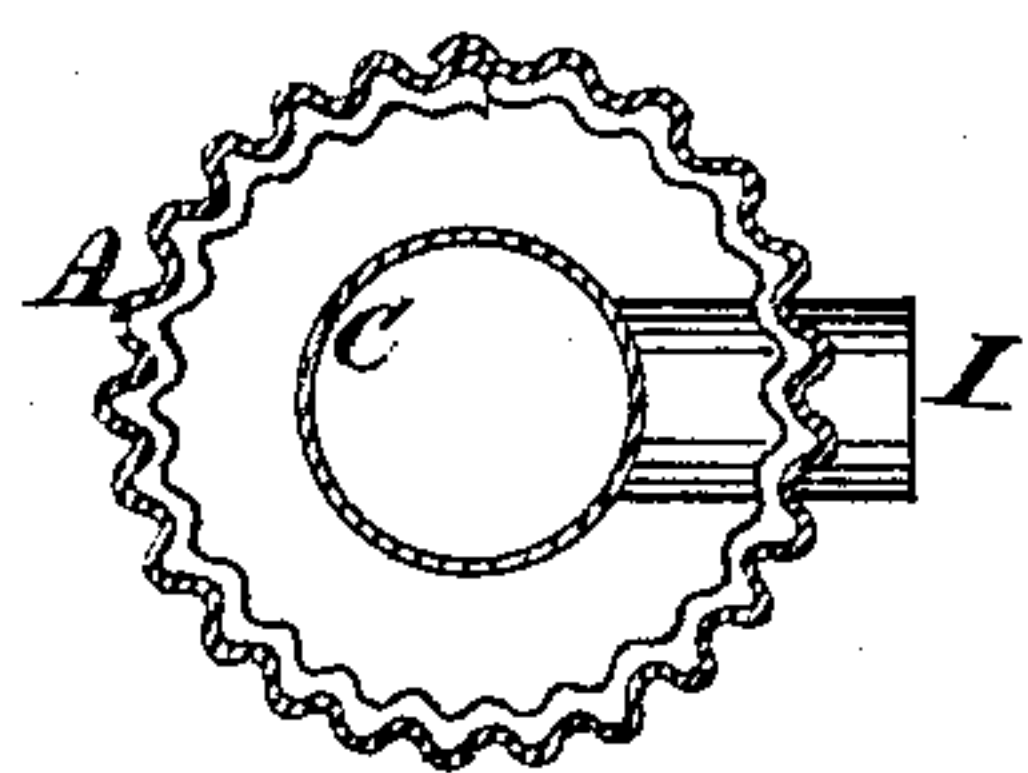


Fig. 2.

John Grist, Junr.
Frank Newby

Witnesses.

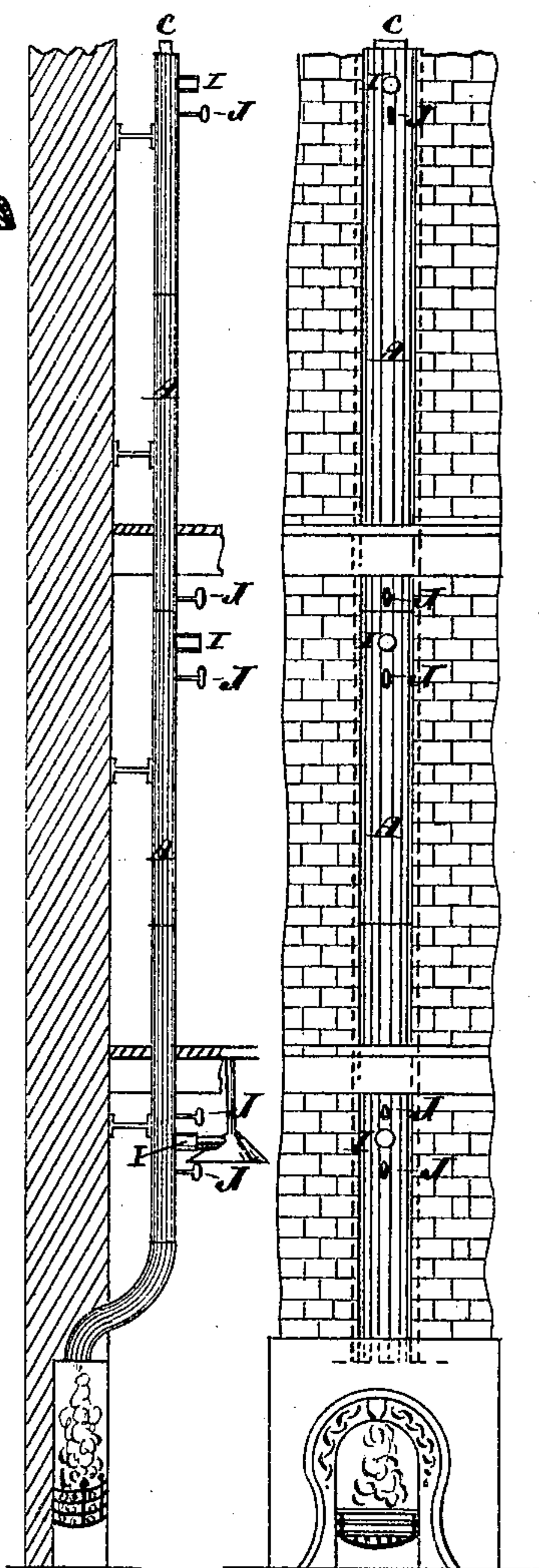


Fig. 3.

Fig. 4.

Frederick Proudfoot,

Inventor.

by his attorney
Henry Grist.

UNITED STATES PATENT OFFICE.

FREDERICK PROUDFOOT, OF TORONTO, CANADA.

IMPROVEMENT IN HEATING-DRUMS.

Specification forming part of Letters Patent No. **145,237**, dated December 2, 1873; application filed June 5, 1873.

To all whom it may concern:

Be it known that I, FREDERICK PROUDFOOT, of the city of Toronto, Province of Ontario, Canada, have invented certain Improvements in Smoke-Pipes for Stoves and Fire-Grates, of which the following is a specification:

My invention consists in the combination of a corrugated smoke-pipe, a core-tube or inner air-chamber provided with branch tubes and dampers, and a funnel or cone shaped cap, in the manner and for the purpose hereinafter particularly described.

Figure 1 is an elevation of two cylinders of my corrugated smoke-pipe, part being broken away to show the inner core-tube. Fig. 2 is a section of the same on the line *a a*. Fig. 3 is a side elevation, showing the application of the first and second parts of my invention to a fireplace the chimney of which has been previously constructed. Fig. 4 is a vertical section, showing the application of the same to a grate inserted in a partition-wall.

A A are the sections of the smoke-pipe, of sheet metal, terra-cotta, or other material, having the surface corrugated longitudinally. Near one end of each section is formed, by swaging or stamping, an annular ring or shoulder, *B*, to receive the edge of the adjoining cylinder when the sections are telescoped together. In thus forming a smoke-pipe with corrugations, a greater heating-surface is obtained without increasing the rotundity of the shaft. *C* is an inner core-tube, formed of cylinders of sheet metal or terra-cotta, or any other suitable material, telescoping together, placed within the corrugated pipe *A*, and which tube *C* is closed at the lower end. Between the pipe *A* and tube *C* is formed, by the arrangement of the latter centrally therein, an annular space to allow free passage of smoke. By means of the tube *C*, the heat and products of combustion are pressed against the corrugated pipe *A*, and cause it to throw off a greater degree of heat. *I* are branch pipes connecting with the tube *C*, and entering any

desired apartment, or communicating with the air outside of the building to obtain an inlet supply of cold air, to be heated and emitted into an apartment. The core-tube *C* is provided with dampers *J* at suitable localities to check the draft therein, and drive out heated air into the apartment to be warmed, through the branch pipes *I*.

When it is required to ventilate an apartment, the upper dampers in the core-tube are opened to allow foul air from an apartment to pass through the tubes to the outer atmosphere.

To the core-tube *C* may be connected the tube of a funnel-shaped cap or cone, suspended from a ceiling for the purpose of collecting large quantities of foul air, or steam from a cooking-stove, and delivering the same outside the building by means of the said core-tube and draft created therein.

Fig. 3 shows an application of my improved smoke-pipe and ventilating-shaft to an open fire place or grate, wherein the corrugated pipe is connected to the throat of the chimney, and carried up through the floors and roof of the building, thus disseminating heat into the apartment through which the smoke-pipe passes.

Fig. 4 shows the application of my invention to grates inserted in a partition-wall, the smoke-pipe passing upward in such wall.

The corrugations of the smoke-pipe are formed by stamping the plates between corrugated dies of suitable construction.

I claim as my invention—

The combination of the corrugated smoke-pipe *A*, the core-tube or inner air-chamber *C*, provided with branch-tubes *I* and dampers *J*, and the funnel or cone shaped cap, as shown and described, for the purpose specified.

FREDERICK PROUDFOOT.

Witnesses:

G. BECK,
WM. DOUGLAS,
FREDERICK WRIGHT.