

(No Model.)

J. E. FENNER.
STOVE PIPE DAMPER.

No. 385,923.

Patented July 10, 1888.

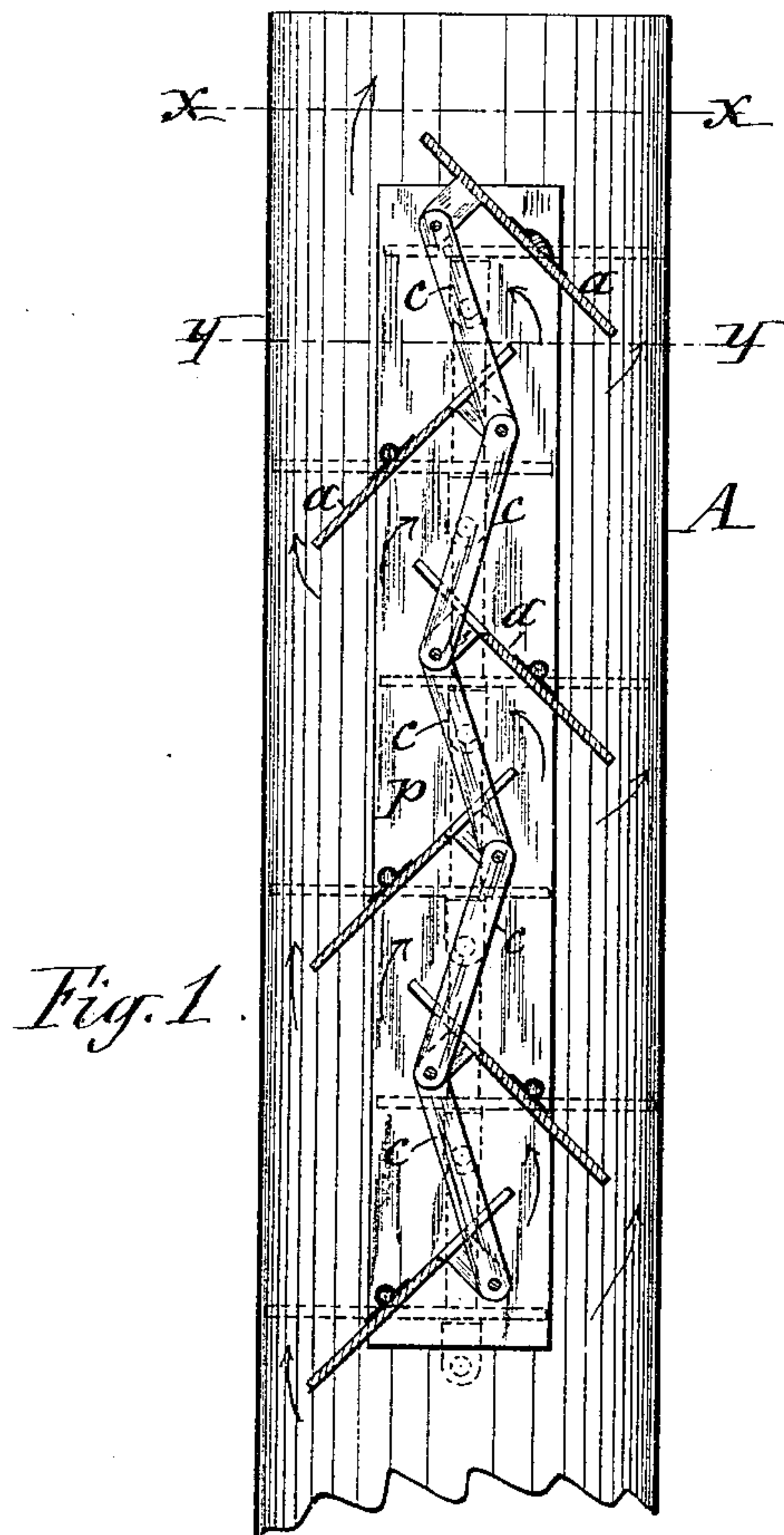


Fig. 1.

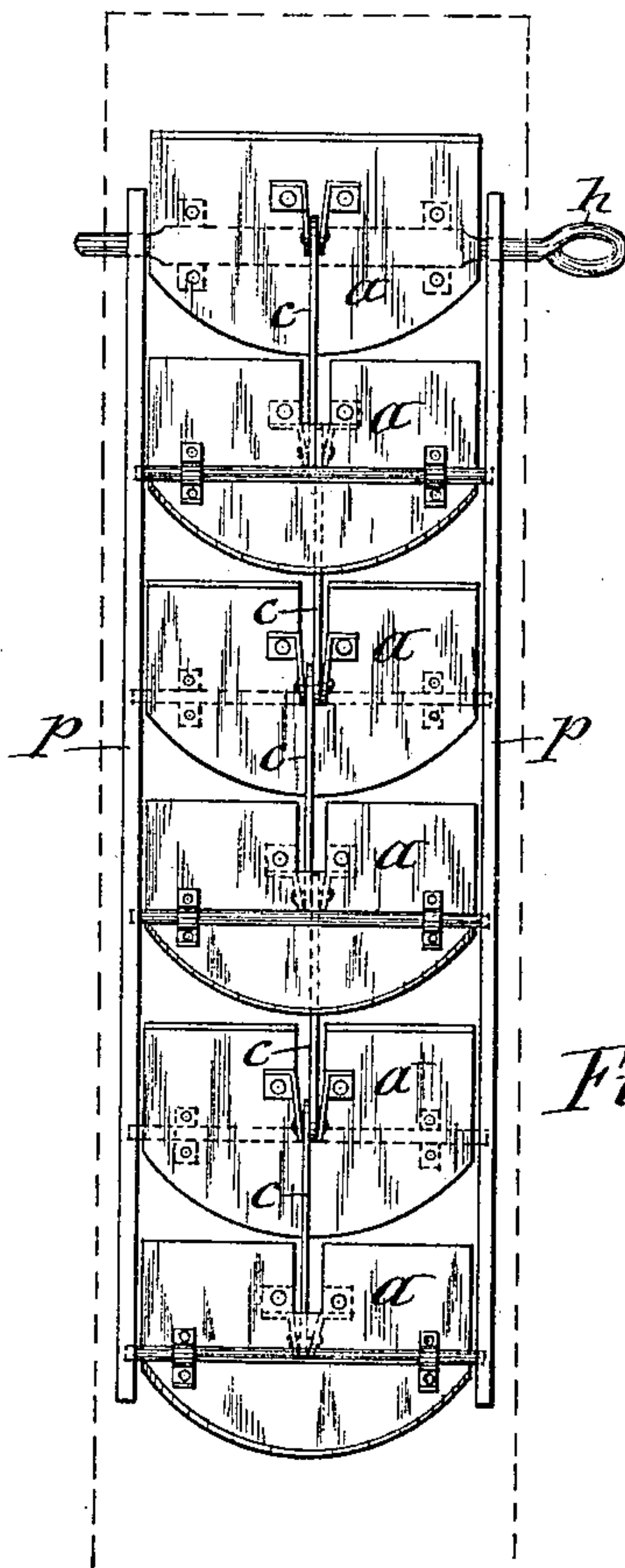


Fig. 2.

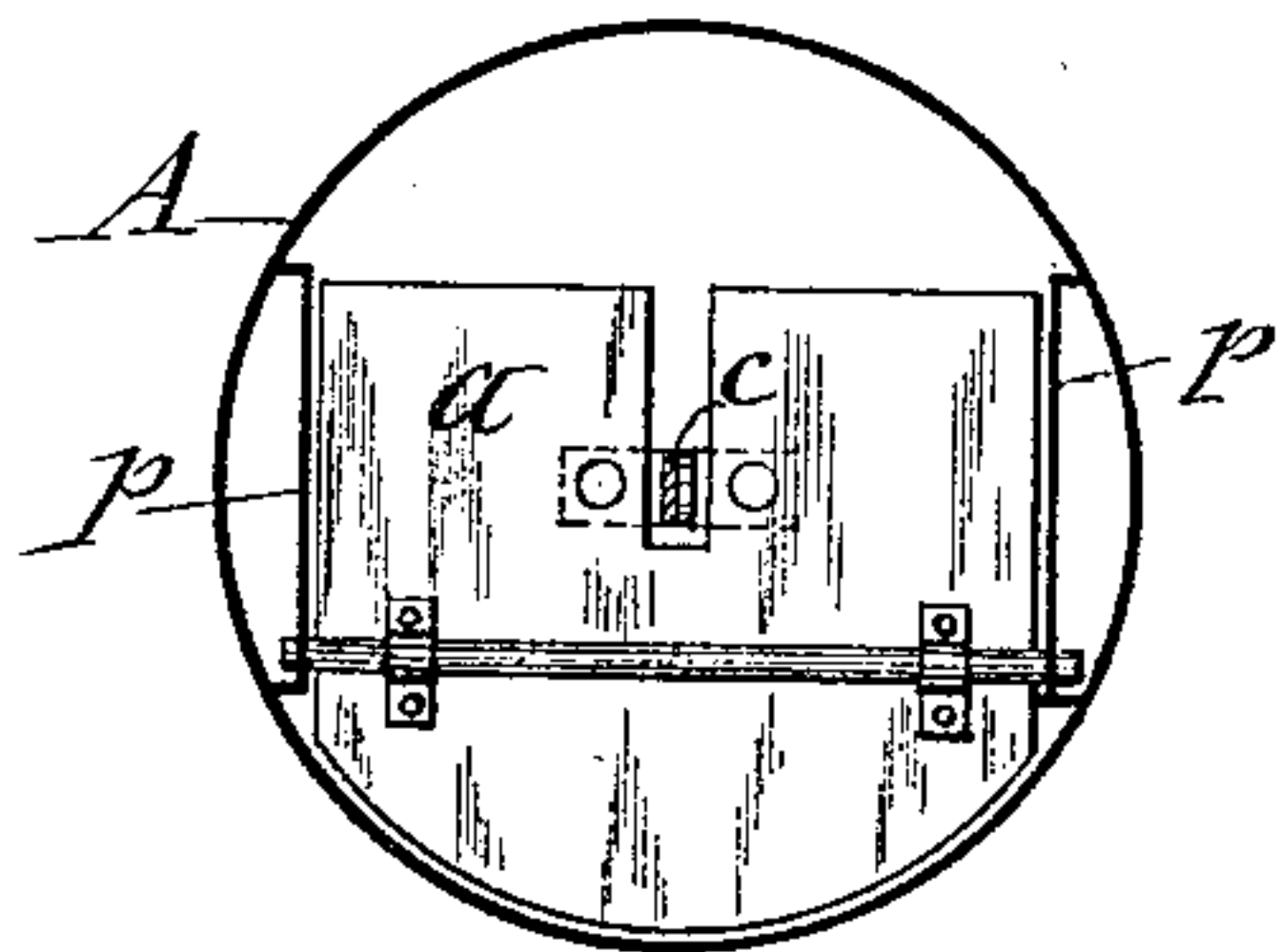


Fig. 4.

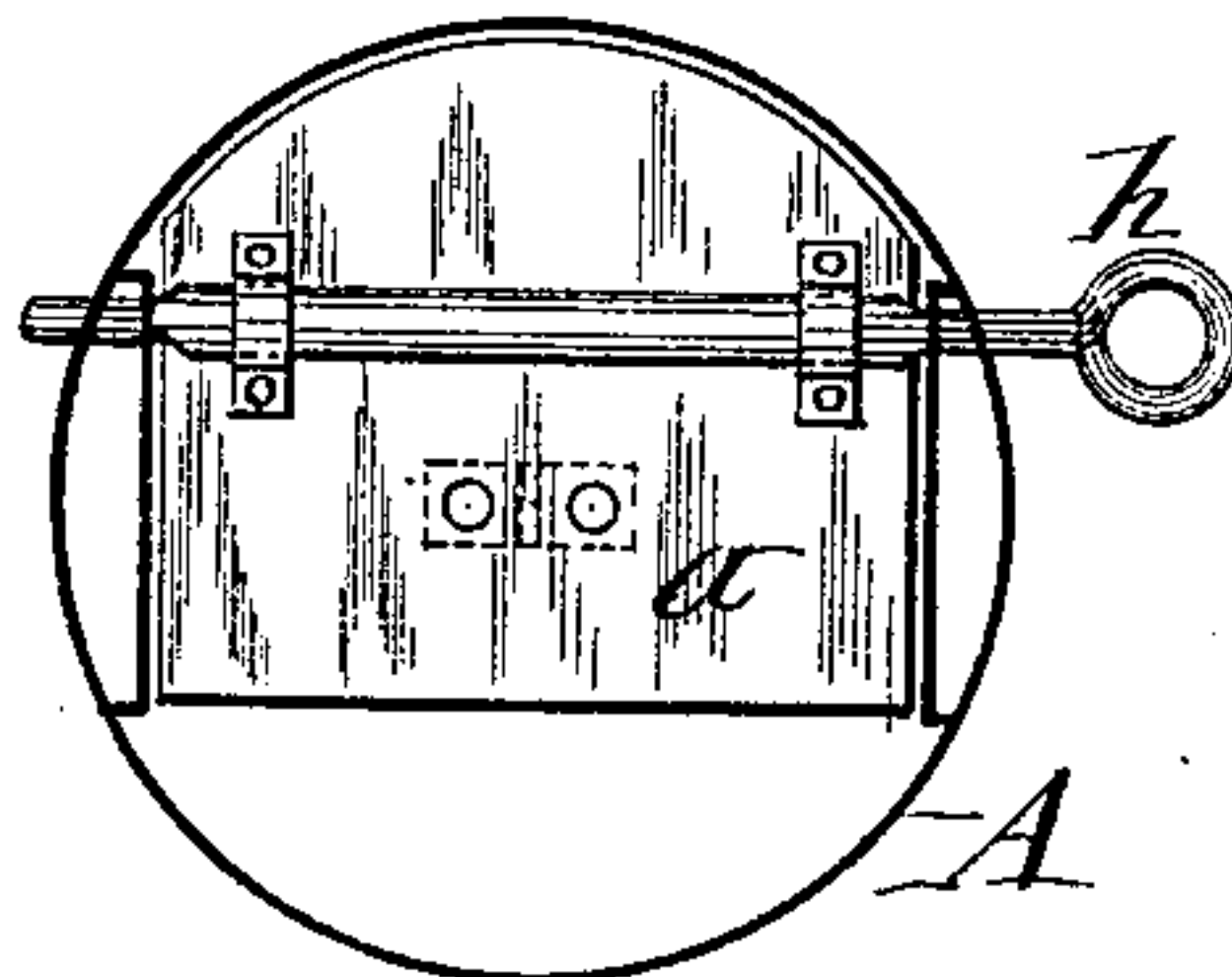


Fig. 3.

WITNESSES:

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JAMES E. FENNER, OF DELPHI, NEW YORK, ASSIGNOR OF ONE-HALF TO
HENRY G. DIXON, OF SAME PLACE.

STOVE-PIPE DAMPER.

SPECIFICATION forming part of Letters Patent No. 385,923, dated July 10, 1888.

Application filed February 17, 1888. Serial No. 264,424. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. FENNER, of Delphi, in the county of Onondaga, in the State of New York, have invented new and
5 useful Improvements in Stove-Pipe Dampers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists, essentially, in the
10 combination and arrangement of a plurality of diaphragms pivoted horizontally across the interior of the stove-pipe at intervals of its length, and couplings connecting the alternate diaphragms at one side of the axis thereof,
15 and connecting the intermediate diaphragms at opposite sides of the axis thereof, so that in turning the said diaphragms they become tilted successively in opposite directions from each other, and form a sinuous passage for the
20 products of combustion, which causes the latter to be retarded in said passage, and at the same time to more effectually impinge the sides of the stove-pipe, and thus prevent the escape of the heat through the exit-pipe, pro-
25 duce a greater radiation of the heat from the stove, and consequently effect a great saving of fuel.

The invention is fully illustrated in the annexed drawings, in which—

30 Figure 1 is a longitudinal section of a stove-pipe equipped with my improved damper. Fig. 2 is a detached side view of the damper taken in a plane at right angles to that of Fig. 1; and Figs. 3 and 4 are transverse sections
35 respectively on lines *x x* and *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a joint or section of a stove-pipe to which my improved damper is at-
40 tached. This damper consists of a plurality of plates or diaphragms, *a a a*, pivoted across the interior of the said pipe-section at proper intervals of the length thereof, and coupled together so as to turn conjointly, said couplings
45 consisting of links or metallic straps *c c c*, which connect the alternate diaphragms *a a* at one side of the axis thereof, and connect the intermediate diaphragms at the opposite side of the axis thereof, and thus by turning the
50 said diaphragms on their axis they are tilted successively in opposite directions from each other, and thereby form a serpentine or sinu-

ous passage for the products of combustion, as indicated by arrows in Fig. 1 of the drawings, the said passage being most tortuous 55 when the diaphragms are at right angles to the axis of the pipe section, as indicated by dotted lines in Fig. 1 of the drawings, inas- much as the diaphragms reach alternately from opposite sides of the interior of the pipe- 60 section part way across the same.

By turning the diaphragms so as to stand parallel with the axis of the pipe, straight and direct passages are formed longitudinally through the pipe, and thus the necessary draft 65 can be obtained when first starting the fire in the stove. The shaft of one of the diaphragms is extended through the side of the pipe-section and formed or provided with a suitable handle, *h*, by which to turn the diaphragms. 70

In order to facilitate the attachment of the described damper to the pipe A, I provide a separate frame, consisting chiefly of two parallel plates, *p p*, to which the diaphragms are pivoted, said plates being adapted to enter 75 into the pipe-section A and lie closely against the sides thereof, and are sustained therein by the handle *h*, extending through a hole in the side of the pipe-section.

What I claim as my invention is— 80

The combination, with the stove-pipe section A, of the plates *p p*, secured lengthwise and respectively at opposite sides of the interior of said pipe-section, disconnected from each other to leave a single passage in the pipe- 85 section, a series of diaphragms, *a a*, pivoted independently of each other to the said plates at intervals of their lengths, couplings *c c*, connecting the alternate diaphragms at one side of the axis thereof and connecting the in- 90 termediate diaphragm at the opposite side of the axis thereof, and the adjusting-rod *h*, attached to one of said diaphragms, substantially as described and shown.

In testimony whereof I have hereunto signed 95 my name, in the presence of two witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 13th day of February, 1888.

JAMES E. FENNER. [L. s.]

Witnesses:

C. L. BENDIXON,
A. AVERY HOWLETT.