

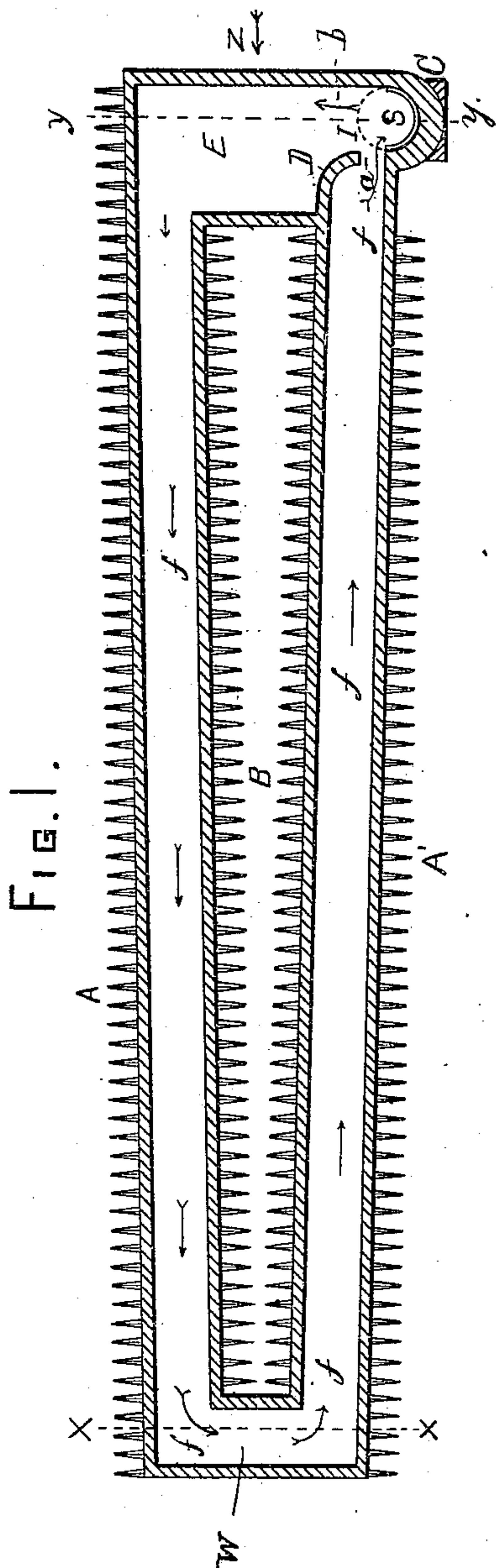
(No Model.)

G. E. DIXON.

## SIPHON PIPE HEATER.

No. 356,456.

Patented Jan. 25, 1887.



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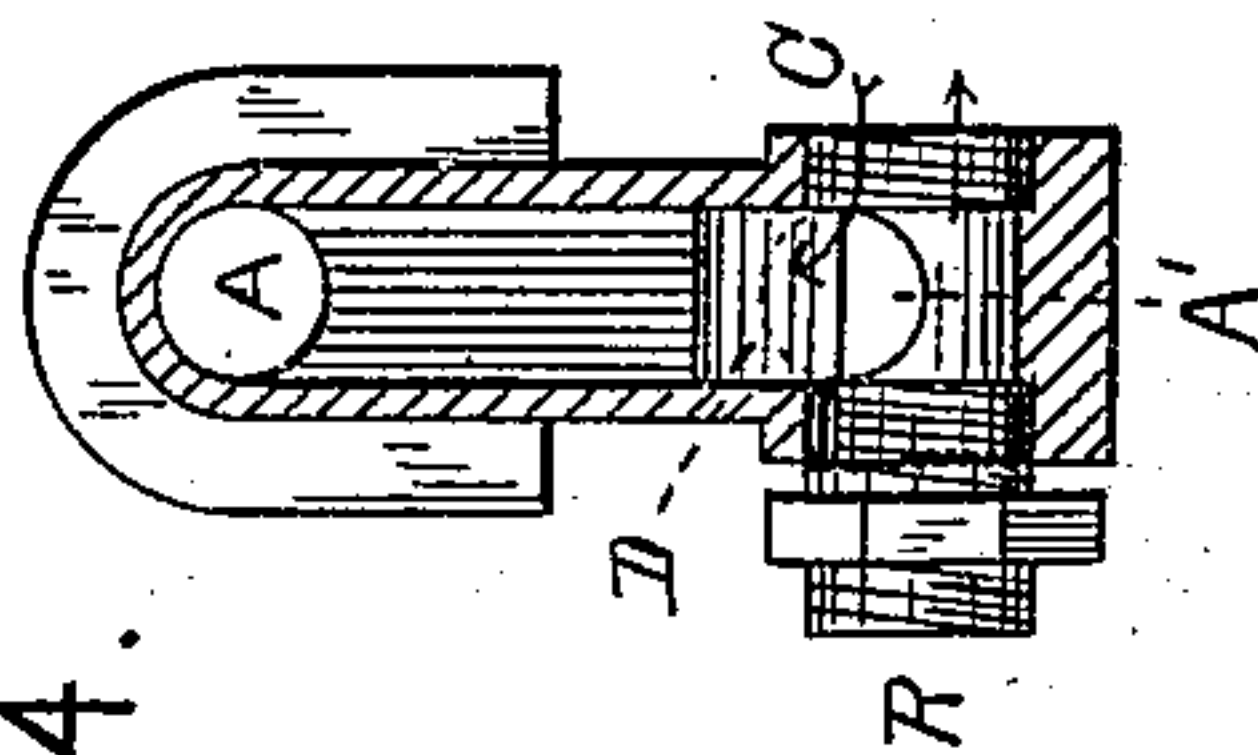
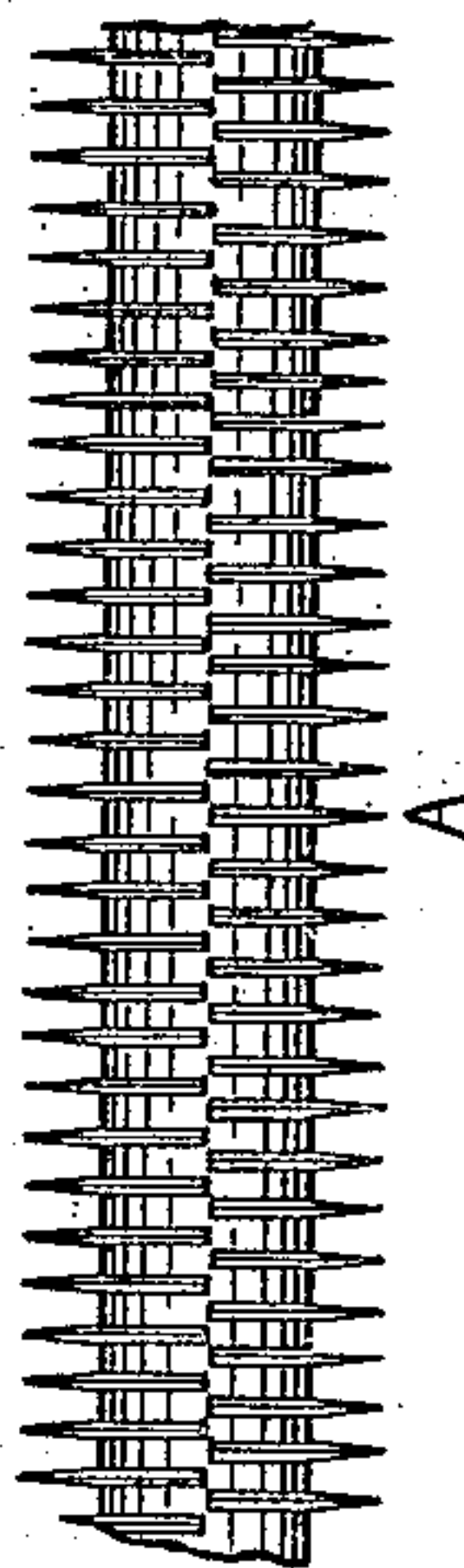
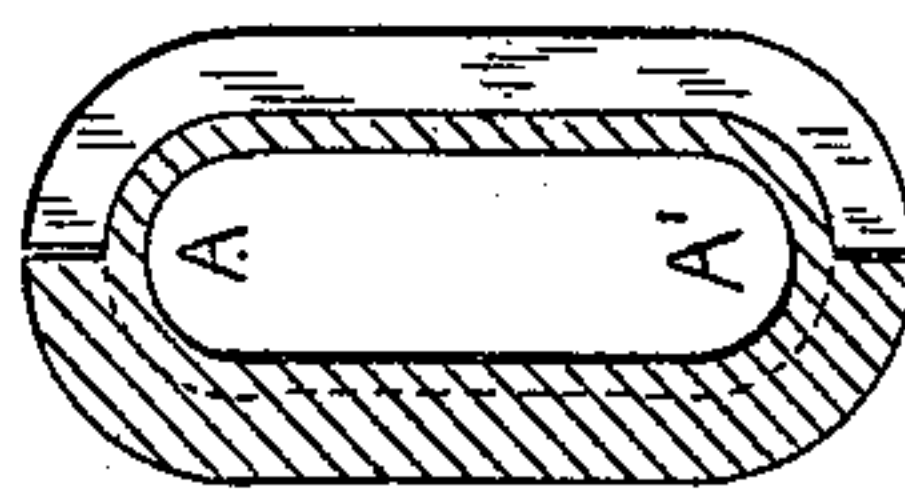


Fig. 4.



3. 5. 1



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WITNESSES:

A. G. Morey.  
to S. Brown.

**INVENTOR.**

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# UNITED STATES PATENT OFFICE.

GEORGE E. DIXON, OF CHICAGO, ILLINOIS.

## SIPHON-PIPE HEATER.

SPECIFICATION forming part of Letters Patent No. 356,456, dated January 25, 1887.

Application filed October 17, 1885. Serial No. 180,183. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. DIXON, a subject of the Queen of Great Britain, and a citizen of England, and a resident of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Siphon Pipe Heaters, of which the following is a specification, reference being had to the accompanying drawings, illustrating the invention, in which—

Figure 1 is a vertical longitudinal section of a heater embodying my improvements; Fig. 2, a vertical transverse section thereof on line *x*, Fig. 1; Fig. 3, a plan view of a portion of the upper part of the pipe shown at Fig. 1; Fig. 4, a sectional elevation taken on line *y*, Fig. 1, looking in direction of dart *z*.

This invention relates to an improvement in horizontal steam-pipe heaters; and its nature consists in an inlet steam-pipe, which is so formed in a downwardly-projecting coupling-head that the lower half of said pipe will lie below the inside of the lower tube of the heating-pipe, and in a deflecting-plate which is an elongation of and projects out from the upper portion of the lower tube of the heating-pipe, and is curved downward to form a small passage for the return of dead-steam and water of condensation to the first-mentioned steam-supply pipe, and to form a larger passage for steam to enter the chamber above the pipe. By this means of construction one-half of the periphery of the steam-pipe is open at the top thereof, whereby the steam is not obstructed in its passage to the chamber above. Ordinary nipples, which connect the sections of the heater, form round steam-passages from one steam-chamber to the other; hence there is a continuous trough extending transversely through the several heads of the heating-pipes, and each pipe takes steam independently of the other pipes, but all the pipes return the water of condensation into the bottom of the steam-supply pipe, in which it returns to the boiler.

It is proper to state that the heater in ques-

tion is known as an "indirect radiator"—that is, the heat from it is to be conducted by pipes to where it is desired, in contradistinction to a radiator which is placed where the heat is required.

A A' represent the upper and lower tubes to the heating-pipe; B, the space between them, and E is what I term a "steam-chamber."

S represents a semicircular trough, which is formed in the head C of each single heating-pipe. Other single heating-pipes, by hollow nipples R, are connected to form a stack or gate of any desired size. Only one nipple is shown; but as they are all to be of one pattern the illustration is sufficient.

D is the curved deflecting-plate, which directs the steam into the chamber above, as indicated by dart *b*, and permits dead-steam and water of condensation to enter the trough S through the opening *a*. This construction in practice gives to the heating-pipes a circulating current, as indicated by darts *f*, and is such that any one of the pipes can be replaced by removing the nipples therefrom and making a nipple-connection with a new pipe; or one or more pipes can be wholly removed from the stack and the remaining pipes connected to form a complete heater.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

An improvement in siphon-pipe heaters, consisting of one or more sections of horizontal pipes, A A', which have end communications, E W, and the pipe A', having formed therein a transverse trough, S, lying below the bottom thereof, and the upper portion of said pipe being provided with a deflecting-plate, D, which extends down to form a small communication with the trough S, and a large communication between the trough and chamber E, as and for the purpose specified.

GEORGE E. DIXON.

Witnesses:

A. G. MOREY.

G. L. CHAPIN.