

(No Model.)

H. A. WHEELER.
STEAM CONDENSER.

No. 548,105.

Patented Oct. 15, 1895.

Fig. I.

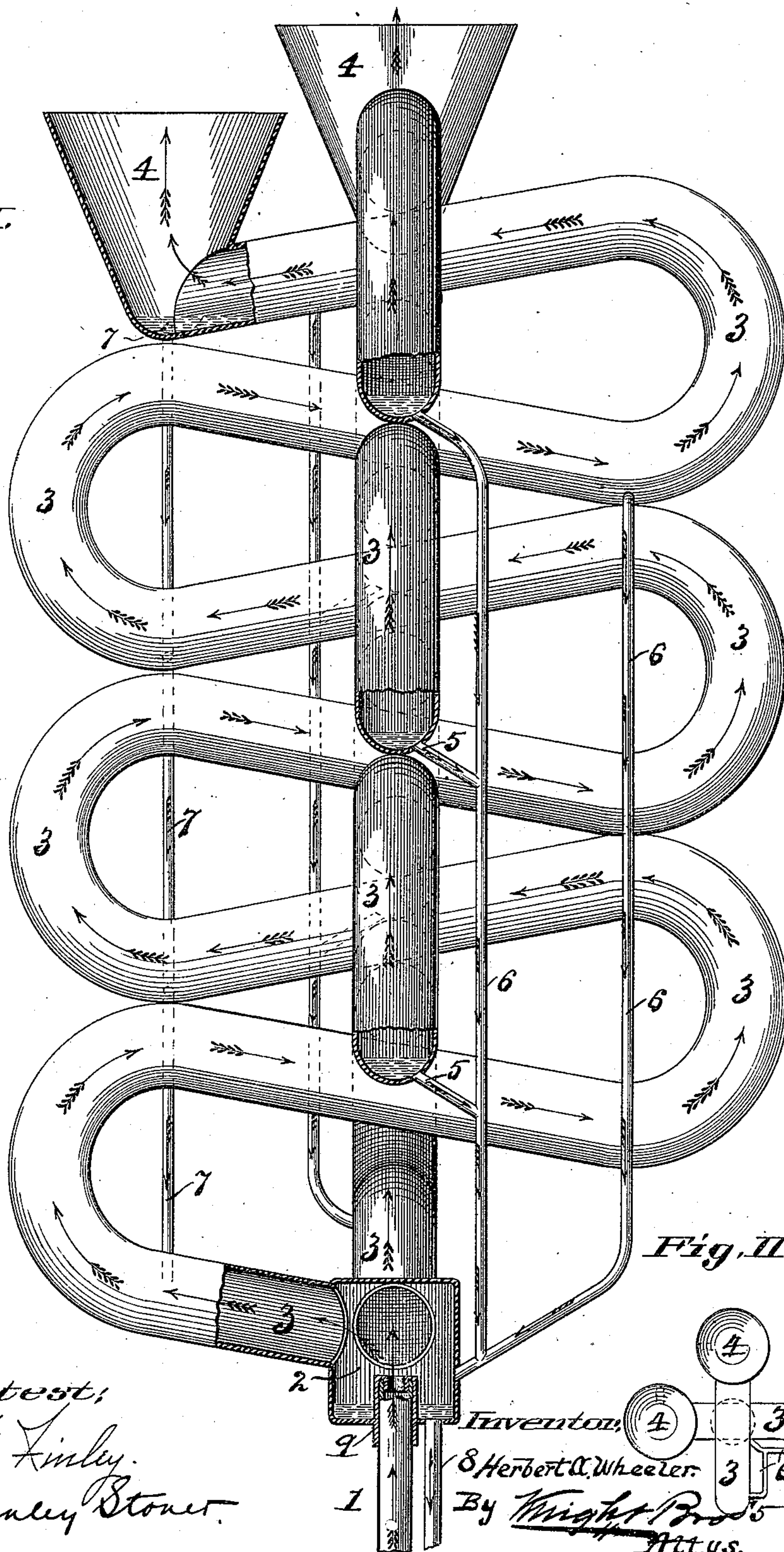


Fig. II.

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HERBERT A. WHEELER, OF ST. LOUIS, MISSOURI.

STEAM-CONDENSER.

SPECIFICATION forming part of Letters Patent No. 548,105, dated October 15, 1895.

Application filed March 4, 1895. Serial No. 540,399. (No model.)

To all whom it may concern:

Be it known that I, HERBERT A. WHEELER, residing at the city of St. Louis, State of Missouri, have invented a new and useful Improvement in Steam-Condensers, of which the following is a full, clear, and exact description.

My invention relates to an improved device to facilitate the condensation of steam.

The said device consists of an apparatus in which the steam is directed through one or more pipes or passages which are in contact with the external air for the purpose of keeping the temperature reduced; and the device possesses novelty of construction hereinafter specifically pointed out and claimed.

Referring to the drawings, Figure I illustrates a side elevation of my invention, showing an end view of one of the curved passages for the steam and a side view of another of such passages. Fig. II illustrates a top view of the device.

The same numbers designate the same parts in each of the two figures.

1 is the pipe through which the steam is introduced.

2 is a box or chamber into which the pipe 1 projects a short distance.

3 are tubular passages, one or more in number, leading from the box 2, and through which the steam passes in the direction shown by the double-winged arrows.

4 are conical or other shaped ends to the said passages 3.

5 are small tubes for conducting off the water, situated at the bottom of each down-dip of the passages 3.

6 are discharge-pipes in communication with tubes 5. 7 are also discharge-pipes leading from the base of the conical-shaped ends 4. The pipes 5, 6, and 7 all lead to the box 2.

8 is another discharge-pipe situated at the bottom of the box 2 and through which the condensed steam is drained.

9 is the connection or joint between the pipe 1 and the box 2, said joint consisting of a sleeve secured to the bottom of box 2, said sleeve extending around, over, and down into the projecting end of the pipe 1.

The operation of the device is as follows: Steam enters through the pipe 1 and passes through the pipe 2 and thence into the tubu-

lar passage 3. An essential feature of my invention is in the arrangement of these tubular passages 3, by which the water is drained off in the direction in which the steam passes. This is accomplished by slanting the passages out of the horizontal, so that the water, in seeking its level, runs to the place of the deepest depression, which is situated just before the abrupt upcurve of said passage. The tube is then recurved back upon itself in the same vertical plane, slanting downwardly, as shown in the drawings. At the points of deepest depression the water-drains are located, said drains being in communication with the main discharge-pipe 8. As the water flows down the long slanting portions of the passages 3 it passes in the direction taken by the steam, and consequently instead of preventing its escape it serves to aid it.

While I have shown in the drawings the device furnished with two passages leading from the box 2 at right angles with each other, it is evident that any desired number may be used, and, also, while I have shown the passage as curved back and forth within the same vertical plane I do not limit myself to this curved construction, as it is evident that the passage may be jointed at any angle.

I prefer to construct the device of sheet-copper, it being the best conductor of heat; but any other suitable material may be used.

My invention gives the greatest possible exposure of the passages containing the steam and allows the free circulation of air for contact with said passage-walls, thereby keeping the temperature reduced to a minimum. The pipes may be corrugated to prevent bursting in freezing weather.

I claim as my invention—

1. In a steam condenser, the combination of continuous steam passages, curved back and forth in the same vertical plane, the end of the loop formed by said curves nearest the exit being lower than the end nearest the entrance, and drain pipes in communication with the places of greatest depression of said loops, substantially as described.

2. In an improved steam condenser, the combination of a steam pipe, a box attached thereto, curved passages leading from said box, said passages being bent back and forth

in the same vertical plane, and a means for draining water from the depressions in said passages, substantially as described.

3. In an improved steam condenser, the
5 combination of a steam pipe, a box attached thereto, passages leading from said box, said passages being bent back and forth in the same vertical plane, a means for draining

water from the depressions in said passages, and an inverted cone attached to the exit 10 ends of said passages, substantially as described.

HERBERT A. WHEELER.

In presence of—

W. FINLEY,
STANLEY STONER.