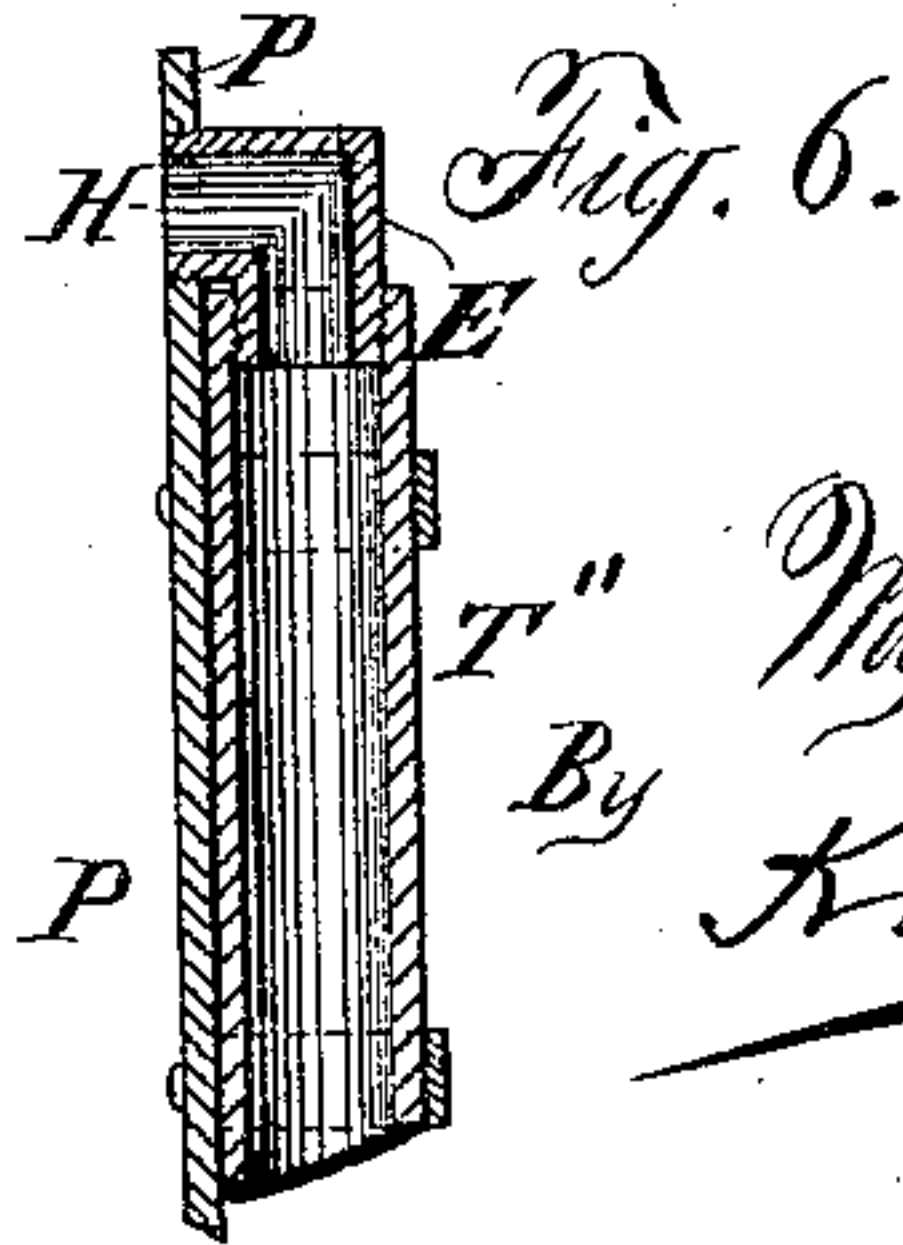
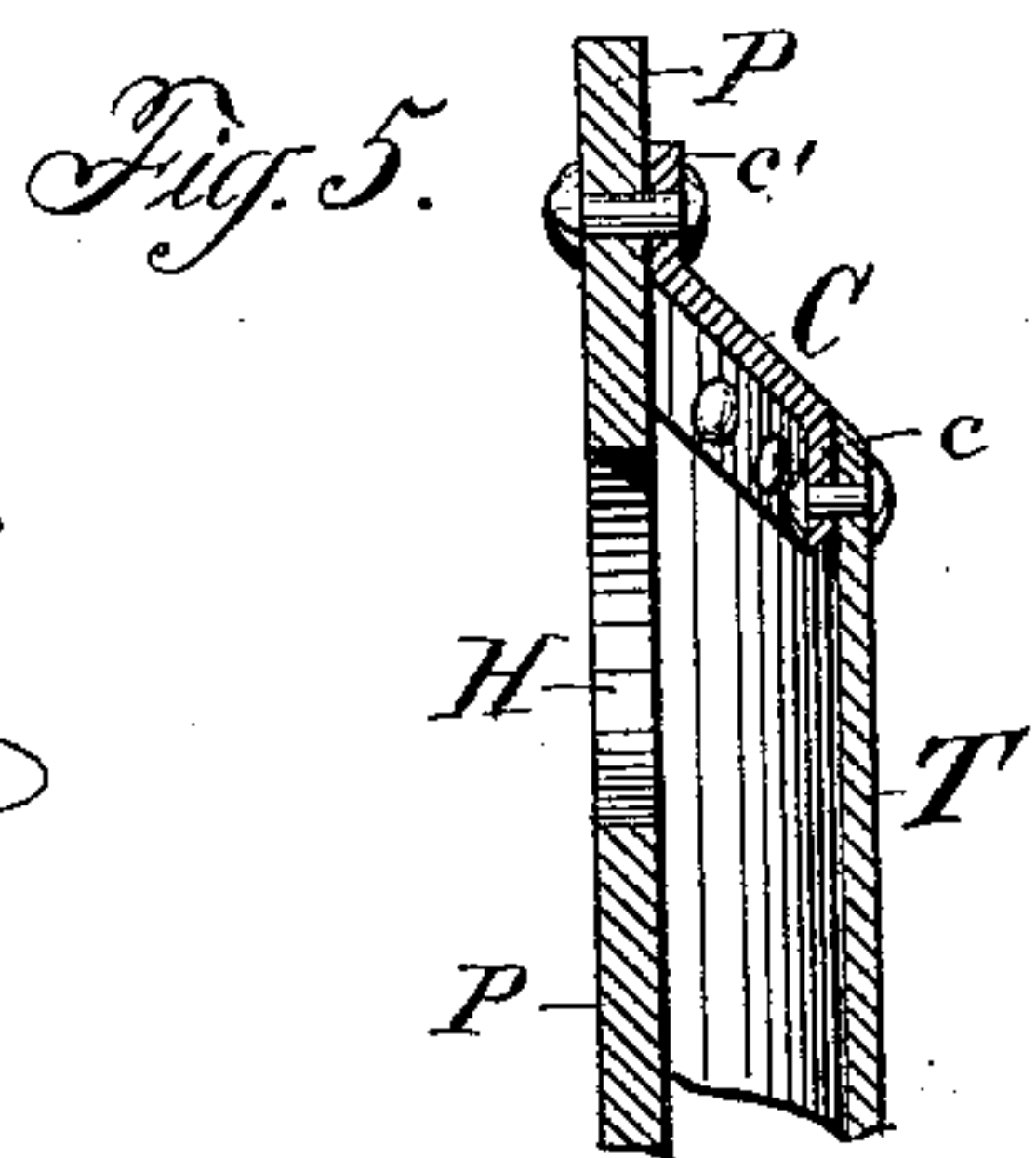
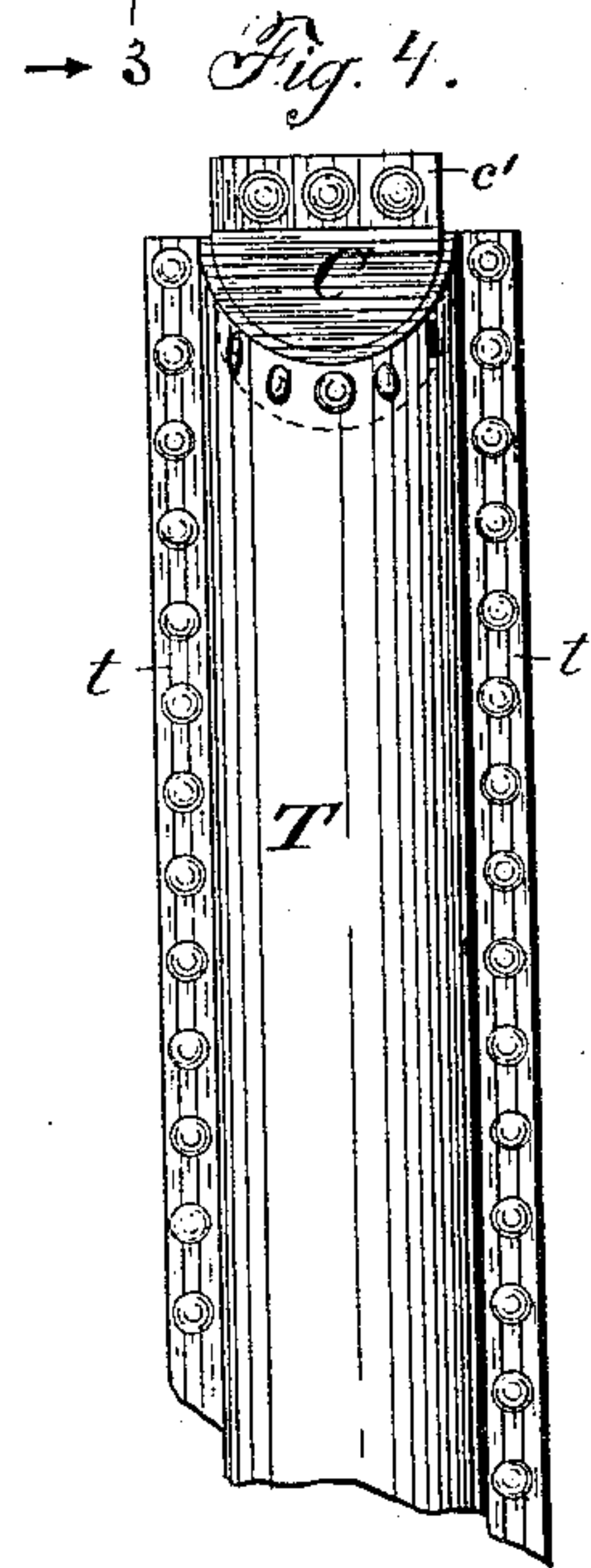
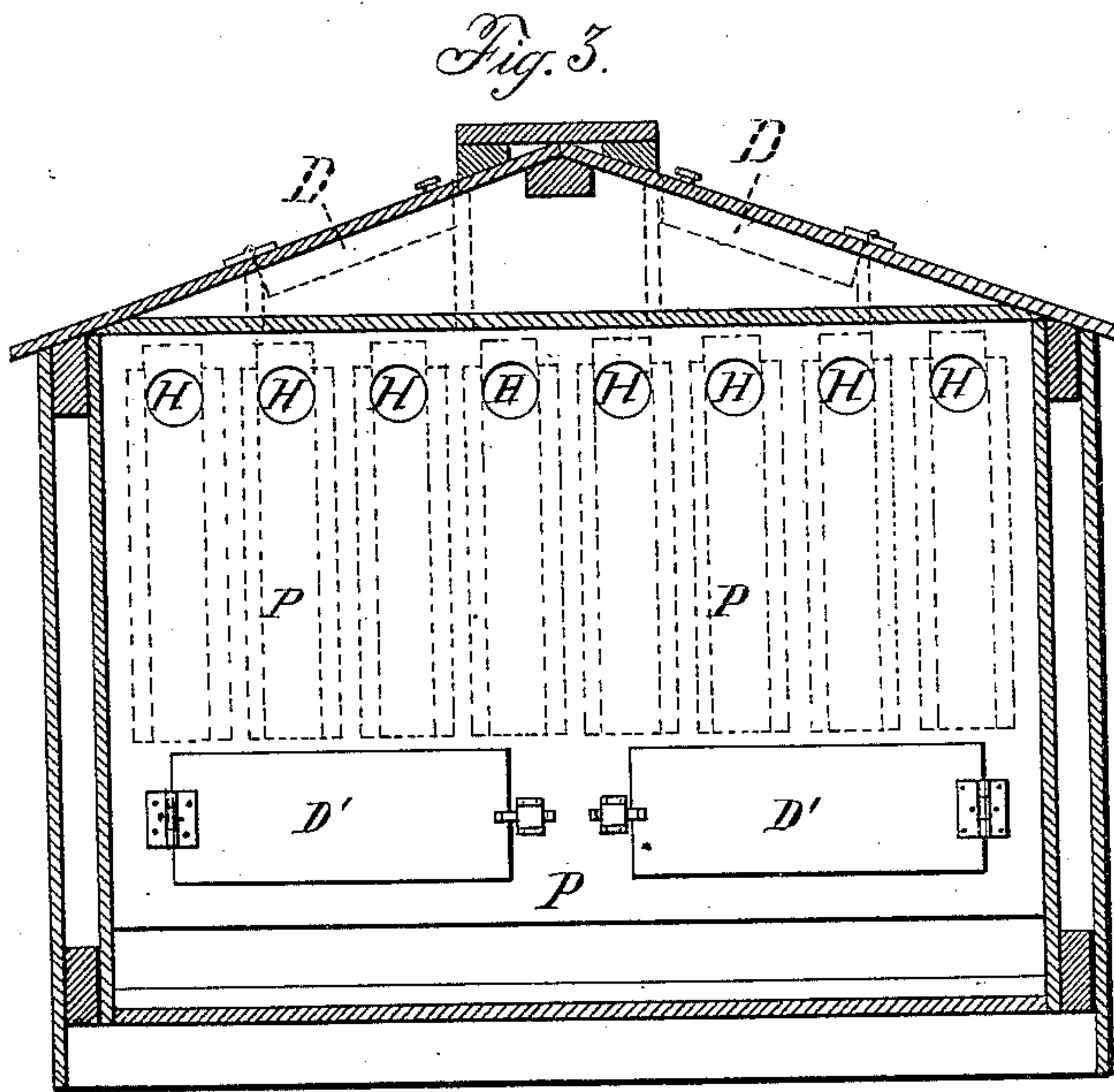
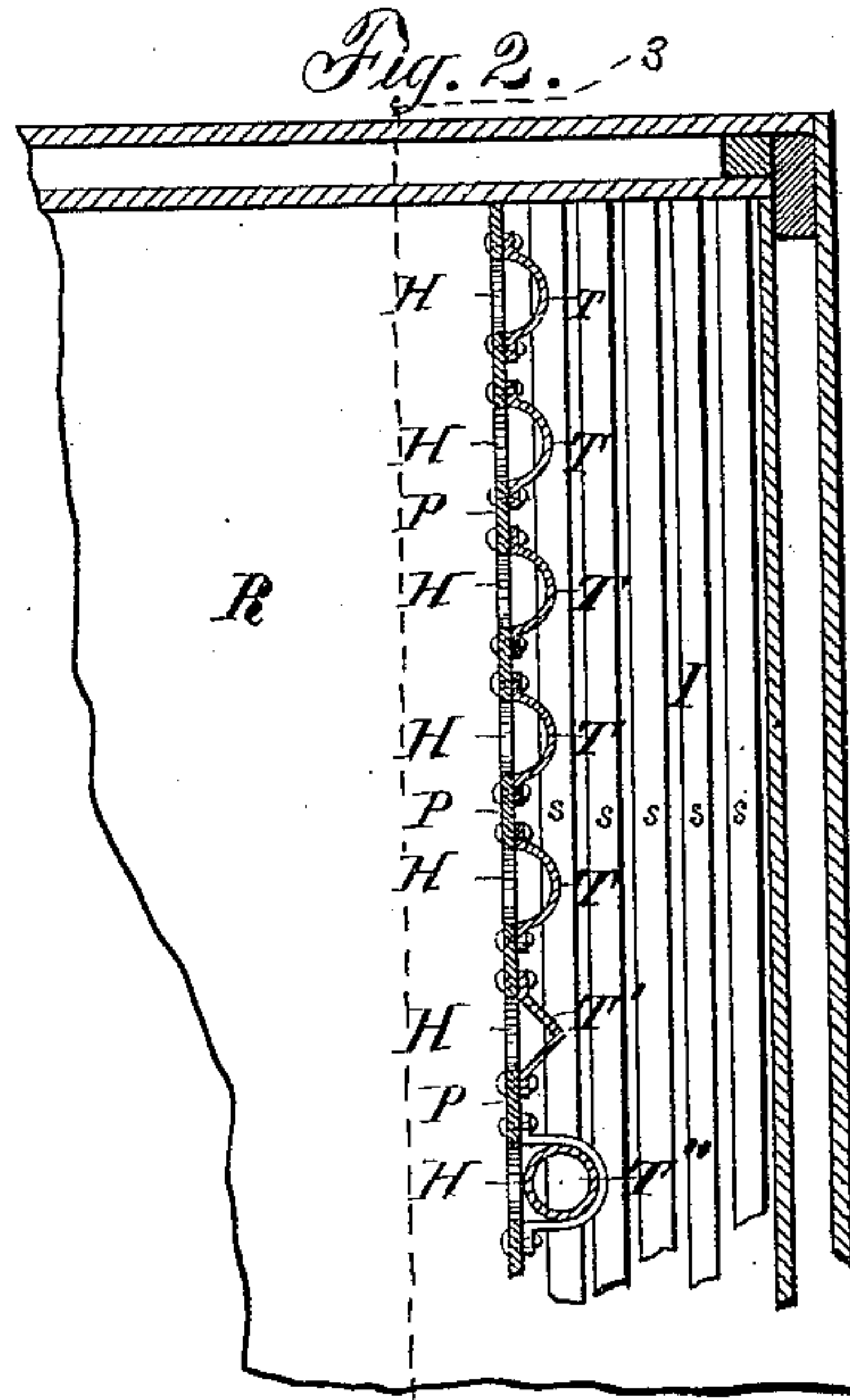
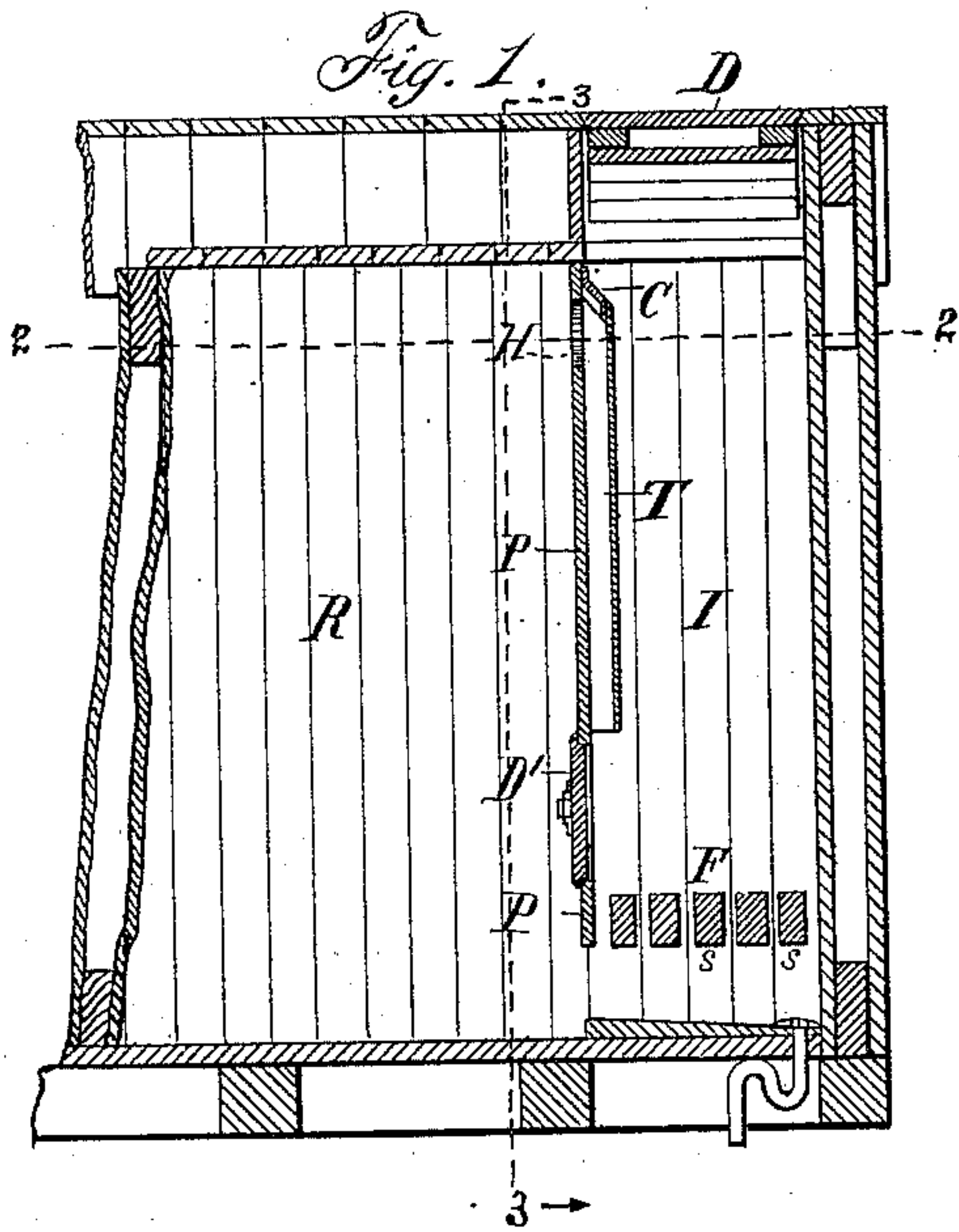


(No Model.)

M. A. GARRETT.  
REFRIGERATOR CAR.

No. 437,107.

Patented Sept. 23, 1890.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

MYERS A. GARRETT, OF CHICAGO, ILLINOIS.

## REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 437,107, dated September 23, 1890.

Application filed September 2, 1889. Serial No. 322,674. (No model.)

*To all whom it may concern:*

Be it known that I, MYERS A. GARRETT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Refrigerator-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of one end of a refrigerator-car embodying the invention. Fig. 2 is a horizontal section thereof on the line 2 2, Fig. 1. Fig. 3 is a vertical transverse section thereof on the line 3 3, Figs. 1 and 2. Figs. 4 and 5 are views showing in detail some of the parts hereinafter more particularly described. Fig. 6 is a section showing a modification.

The invention consists in certain features of novelty, which are particularly pointed out in the claims hereinafter.

The interior of the car is divided by a partition P into a cooling or refrigerating chamber R and an ice-chamber I. Access to the former is had through doors arranged in the customary manner, and access to the latter for supplying ice thereto is had through an opening formed through the roof and provided with a door D.

The floor F of the ice-chamber may be formed in any desired manner so that it will support the ice while permitting the free passage of air and the uninterrupted escape of the water which drips from the ice. This drip-water is caught in a suitable drip-pan arranged beneath the floor of the ice-chamber, and is carried off through a drip-pipe having a goose-neck or other trap for preventing the admission of hot air to the interior of the car. The floor F of the ice-chamber is situated some distance above the floor of the car, and the partition P extends downward, preferably, only to the floor F, so that there shall be unobstructed communication between the lower partitions of the two chambers R and I.

A number of holes H are formed through the partition P near its top and communicate directly with the upper part of the refrigerating-chamber for drawing off therefrom the warmer air.

So far I have described nothing new, all of these features being already known and used in refrigerators of various constructions.

One serious objection to a refrigerator having only the above-mentioned parts is that when the door D is opened for the purpose of supplying chamber I with ice, hot air from the outside rushes into the ice-chamber and thence into the refrigerating-chamber through openings H. This is highly objectionable. I am aware that various means have been employed for overcoming the objection; but these means have themselves been open to many objections, and to overcome these latter is an object of the present invention.

According to the preferred form of the invention, opposite each one of the holes H a half-round tube T is secured, with its open side against the inner surface of the sheet-iron partition P, by means of rivets passing through flanges t, projecting from opposite sides of said tube. The tubes terminate at their upper ends slightly above the holes H and at their lower ends somewhat above the floor of the ice-chamber I. Their lower ends are open and in direct communication with the interior of the ice-chamber, while their upper ends are closed by caps C, which fit within them, and are there secured by rivets passing through flanges c, projecting downward from their undersides. The upper ends of the tubes are beveled and the caps are of corresponding shape, so that the tubes present inclined surfaces toward the opening through which the ice is introduced. From the upper edge of each of the caps C projects a second flange c', which is riveted to the partition P for still further strengthening the structure.

It is obvious that the caps C might as well fit outside as inside the tubes, the shape of said caps might be altered, screws or other fasteners employed instead of rivets, and other changes of similar nature made without departing from the invention. For example, the tubes T are spoken of as being "half-round." I desire to have it understood that it is by no means essential that they be constructed on a true circle, or even curved. They may be angular in cross-section, as shown at T' in Fig. 2, or most any other desired shape. The expression "half-round tubes" is employed



in this specification in a very broad sense, and is intended to include all tubes of whatever shape in cross-section that are open at one side, said open side being closed and the  
 5 tube completed by the partition P, when the parts are secured together, as described. Half-round tubes of the form shown in the drawings when secured against the partition  
 10 in the manner described are capable of sustaining very heavy pressure without being mashed or flattened. The tubes are braced and strengthened by the partition, and in turn the partition is braced and strengthened by the tubes; but so far as this mutual bracing of  
 15 the partition and tubes is concerned the invention is not confined to half-round tubes. Round tubes may be employed with good results, as shown in Figs. 2 and 6.

An elbow E is screwed at one end into the  
 20 opening H, (or into a screw-threaded bushing secured to the partition and surrounding the opening,) and into or onto its other end is screwed the upper end of a round tube T'', which extends downward within the ice-  
 25 chamber (as already described with reference to the half-round tubes) and is firmly secured against the inner surface of the partition by a number of metallic straps or cleats.

Below the tubes T two openings are formed  
 30 through the partition P and provided with doors D', so that access may be had to the lower portion of the ice-chamber for cleaning it or for removing the ice remaining in it after the car is unloaded.

I am aware that it has been proposed to  
 35 place inside the ice-chamber tubes which communicate at their upper ends directly with the upper part of the refrigerating-chamber, and which communicate at their lower ends  
 40 directly with the lower part of the refrigerating-chamber in such a manner that the circulating air never comes in direct contact with the ice. Such an arrangement is not the equivalent of my invention. It is not  
 45 the purpose of the tubes T to prevent the circulating air from coming in contact with the ice, but simply to prevent hot air from rushing through the holes H into the refrigerating-chamber when the filling-opening of the ice-  
 50 chamber is open. The direct contact of the circulating air with the ice is desirable, as the air is thereby purified.

Having thus described my invention, the following is what I claim as new therein, and  
 55 desire to secure by Letters Patent:

1. The combination, with the ice-chamber having a filling-aperture and the refrigerat-  
 ing-chamber, said chambers being situated

side by side, the upper part of the former hav-  
 ing no direct communication with the latter, 60  
 of an air-passage connecting the upper part of the refrigerating-chamber and the lower part of the ice-chamber, the lower part of the ice-chamber being in communication with the  
 65 lower part of the refrigerating-chamber, sub-  
 stantially as set forth.

2. In a refrigerator-car, the combination, with the refrigerating-chamber and the ice-  
 chamber having a filling-aperture, said cham-  
 bers being separated by a partition having 70  
 near the top a series of holes, of a series of tubes situated inside of the ice-chamber, at top communicating through said holes direct-  
 ly with the upper part of the refrigerating-  
 chamber and at bottom terminating above 75  
 the floor of the ice-chamber and in direct communication with the interior thereof, said  
 chambers having no direct communication  
 with each other at top, substantially as set  
 forth. 80

3. In a refrigerator-car, the combination, with the refrigerating-chamber and the ice-  
 chamber having a filling-aperture at top, said  
 chambers being separated by a partition hav-  
 ing near the top a series of holes, of a series 85  
 of tubes situated within the ice-chamber, at top communicating through said holes di-  
 rectly with the upper part of the refrigerat-  
 ing-chamber, extending downward within the  
 ice-chamber, firmly secured to the inner sur- 90  
 face of the partition and terminating at their lower ends above the floor of said ice-cham-  
 ber and in direct communication with the in-  
 terior thereof, said chambers having no direct  
 communication with each other at top, sub- 95  
 stantially as set forth.

4. In a refrigerator-car, the combination of the refrigerating-chamber and the ice-cham-  
 ber having a filling-opening at top, separated  
 by a partition P from the refrigerating-cham- 100  
 ber, said partition having near the top holes H, communicating with the refrigerating-cham-  
 ber, and near the bottom an opening afford-  
 ing access to the lower part of the ice-cham-  
 ber, the door D', closing said opening, and the 105  
 half-round tubes T, secured against the inner side of said partition, communicating at top  
 with said holes H and at bottom terminat-  
 ing above the door D' and in direct communi-  
 cation with the interior of the ice-chamber, 110  
 substantially as set forth.

MYERS A. GARRETT.

Witnesses:

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 L. M. HOPKINS.