

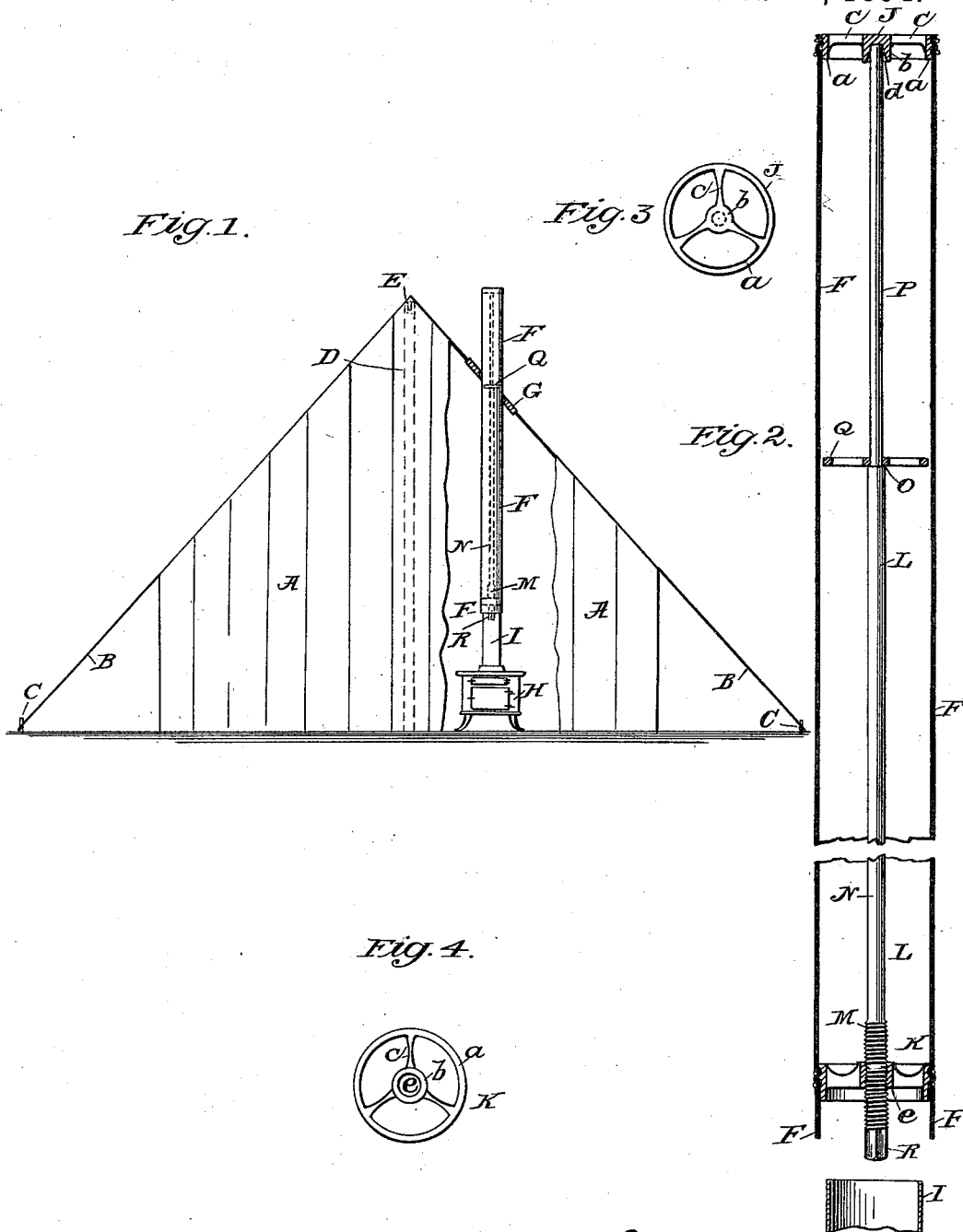
(No Model.)

2 Sheets—Sheet 1.

R. H. MARTIN.
STOVE OR FURNACE PIPE.

No. 513,586.

Patented Jan. 30, 1894.



WITNESSES:

Edward Rowland.
John C. Lacey

INVENTOR
Robert H. Martin
BY
Phillips Abbott
ATTORNEY

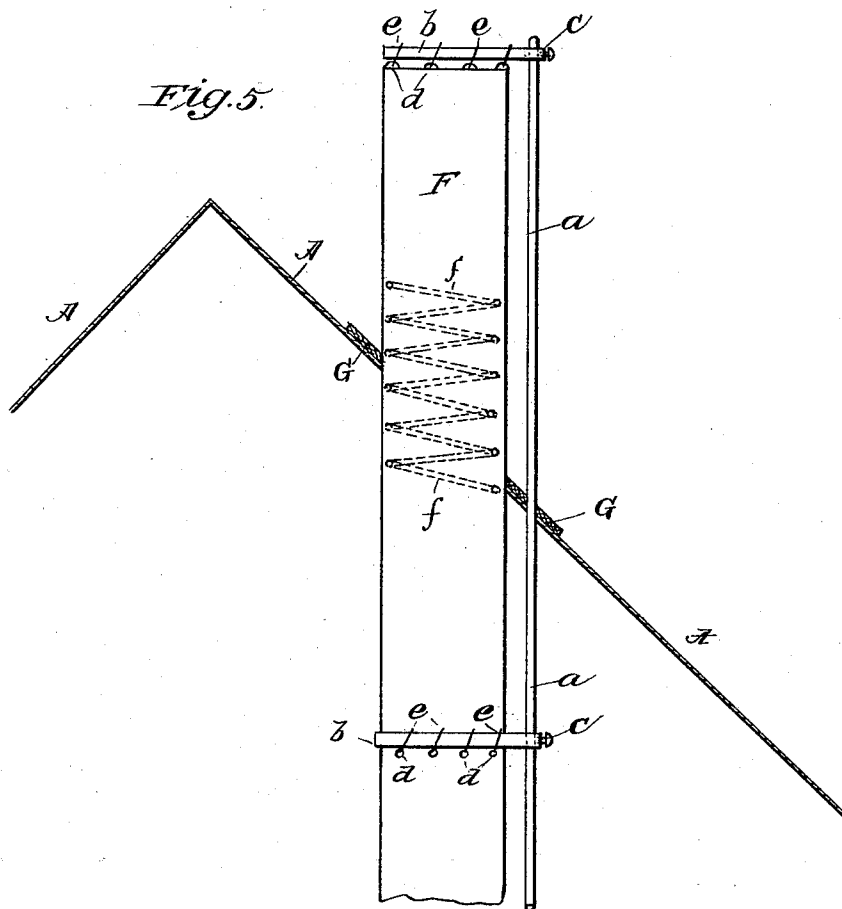
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UNITED STATES PATENT OFFICE.

ROBERT H. MARTIN, OF NEW YORK, N. Y.

STOVE OR FURNACE PIPE.

SPECIFICATION forming part of Letters Patent No. 513,586, dated January 30, 1894.

Application filed July 14, 1893. Serial No. 480,505. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. MARTIN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Stove or Furnace Pipes, of which the following is a specification.

My invention relates to an improvement in stove or furnace pipes for tents and similar structures, which are intended to be taken down, transported and erected at intervals; and it consists in supplying such structures with a flexible stove pipe or smoke stack.

Although I have adapted my invention especially to tents as above stated, I do not limit myself to its use in connection with such structures only, because it may be used on permanent buildings, also aboard ship, &c.

In practicing my invention, I make the stove-pipe of asbestos cloth, and provide it with a supporting rod or rods in conjunction with proper devices whereby the pipe is maintained in a distended or open condition, and also in an erect or standing position. I also provide means so that it may form an integral part of the structure, such as a tent, in order that it may be easily transported with such structure, and I also provide special appliances whereby it may be connected to the stove, or furnace.

When the invention is employed upon structures other than tents, certain parts of my improvements will not be employed.

In the drawings hereof, Figure 1, illustrates an end view of an ordinary army tent, a portion of it being broken away to show the stove in the interior of the tent. Fig. 2, is an enlarged sectional view of the stove-pipe. Fig. 3, is a plan view of the distending ring at the top of the stove-pipe. Fig. 4, is a plan view of the distending ring at the base of the stove-pipe. Fig. 5 is a vertical sectional view of modifications.

A is the tent. B are the stay ropes fastened to stakes C. D and E are the frame which support the tent. All these parts are as usual.

F is the stove-pipe. It is made of asbestos cloth, preferably a closely woven and firm variety.

G is a disk of heavy asbestos cloth, which is stitched at its edges to the canvas of the

tent. This disk may be a foot or more in diameter. The stove-pipe passes through it. The stove-pipe may be a half foot in diameter, more or less.

H is the stove.

I is a section of ordinary iron stove-pipe, preferably of such length as that during transportation, it may be placed inside of the stove.

In order to sustain the flexible asbestos pipe in a vertical position and with requisite rigidity, I attach to the interior of the upper end of the same, a ring or spider J. (See Figs. 2 and 3.) This spider has preferably a number of grooves made upon its periphery, so that the asbestos stove-pipe may be firmly bound by wire or otherwise to the spider. The spider is composed of an exterior ring or band *a* and a recessed hub *b* and a few arms or spokes *c*, which have very little thickness or width horizontally, but considerable vertically, so that they have the necessary strength, but do not materially, in fact practically not at all interfere with the draft. The hub *b* on the under side is recessed as at *d*. At the bottom of the stovepipe there is a similar spider K, composed of a rim, a hub *b* and spokes or webs *c*, which are or may be, in all respects, the same as those of the spider J, with the exception that the interior of the hub is threaded as at *e*.

L is a rod of steel or iron, so tempered as to be stiff and rigid and it may well be made of gas or like pipe, because, being tubular, it will be rigid, yet light, and also if the pipe is of different diameters, they may be easily made into a rod of the desired length, by screwing smaller sections into larger ones. That is to say, the lower short section of the pipe marked M (see Fig. 2) is somewhat large, and is threaded on its outside to coincide with the threads *e* in the hub of the spider K. Above it there is a section of smaller pipe marked N, which extends upwardly to about the place where the canvas disk G is secured to the tent as at O. Above that proceeds a still smaller section P, the upper end of which engages in the socket *d* in the under side of the upper spider. On the shoulder O rests a disk Q which is somewhat smaller than the interior diameter of the stove-pipe, say about a quarter of an inch smaller, and the hole through its center is somewhat larger than

the section of the rod marked P, so that the rod, when withdrawn from the stove-pipe may be easily pulled through this washer or disk Q, and it being smaller than the interior of the stove-pipe, can be readily shaken, or may by its own weight drop to one end or the other of the pipe and rest upon either the spider J or the spider K, as the case may be, but cannot escape from the interior of the pipe. The lower end of the enlarged threaded section M of the rod is squared, as at R, so that it may be turned by any suitable wrench. The canvas of the stove-pipe F, projects three or more inches below the lower spider K, so that it will lap on the section of the metallic stove-pipe I, and make a sufficiently good joint to prevent smoking.

The operation of the device is as follows: When the tent is spread upon the ground prior to erecting it, the rod L is introduced through the lower spider K and care is taken that the small end of the rod passes through the disk Q. Thereupon the rod, carrying the washer Q, which engages with the shoulder O, is shoved through the stove-pipe, until the upper end of the rod enters the socket d in the upper spider. By the time the rod has been thus far introduced into the pipe, the threads on the larger section M of the rod will have engaged with the threads e in the hub of the lower spider K. I prefer to make the threads both in the hub and in the rod quite coarse, and of not very tight engagement, so that the rod can be easily turned by the hand until the pipe has been practically stretched, and then a turn or two with a wrench or other suitable tool will give it a tensely distended condition, and it will of course be tubular in form, and the disk Q, coming to about the point where the asbestos disk is sewed to the tent, the pipe cannot tip over because it is fastened to the metallic section of the stove-pipe at its lower end, and any deflection from the vertical line will be arrested by the impingement of the disk Q against the inside of the pipe, adjacent to the stiff and practically rigid asbestos disk G, and in this manner, the pipe will be maintained permanently in a vertical and distended condition. I prefer to provide suitable clips or other fastening devices, whereby the metallic section I, will be clamped to the body of the stove when in use. Such devices are already well-known and do not require description. During transportation the staying rod L is removed by a simple reversal of the acts necessary to insert it and then the central disk Q, either drops by its own weight or is positively moved to one end or the other of the stove-pipe, where it rests upon either the spider J or K, as the case may be. This central disk is very thin vertically, as are also the spiders. They need not be more than half an inch thick, and the disk Q not more than one quarter of an inch thick. Thereupon the stove-pipe is simply folded in zigzag fashion, and laid flat upon the canvas of the tent, the spiders and disk

Q also lying flatwise. The cloth of the stove-pipe will readily bend to permit this to be done without injury. Thereupon the tent, stove-pipe and all are folded over and over and made up into a bundle for transportation.

It will be evident to those who are familiar with this art, that various modifications may be made in the details of construction of my invention and yet its essentials be employed. Particularly the devices which support the stove-pipe may be on the outside instead of on the inside of it, and may be of wood, if preferred, and rings or metallic spirals may be used instead of the spiders, either on the inside or outside of the pipe; also the spiders, rings or disks which distend the pipe may be rigidly attached to the staying-rod, if preferred. These modifications are illustrated in Fig. 5. In it, the tent is lettered A, the attaching piece G, and the pipe F, the same as before, but instead of the central rod and spiders, I show in this figure, an exterior rod a, which may, if preferred, be made of wood and rings b, which are attached to the rod by means of bolt and nut. c, d are rings or eyes, sewed to the stove pipe and e are wires of asbestos cord, which pass over the rings b, and are laced through the eyes d, so as to hold the pipe distended and against the rings. f is a spiral of very resilient wire, which distends the pipe where it passes through the attaching piece G, if any such means is necessary, which will not ordinarily be the case. It will be seen that the pole or rod a passes through the attaching piece near the pipe. In fact, a number of other modifications may be made. I therefore do not limit myself to the details shown.

Some of the advantages arising from my invention are the following: The advantages of flexibility, compactness, non-corrosive character, and lightness, are obvious; beyond these are the following: greater strength than in any other pipe known to me; cannot be injured by moisture, acids, knocks, indentations or other rough usage. The pipe is capable of exterior decoration; it can be more easily repaired under all circumstances or conditions than any other stove or furnace pipe, and the pipe can be made continuous from end to end without separate joints.

I claim—

1. A stove-pipe made of non-inflammable cloth and a ring or spider attached to the pipe, and a staying rod adapted to pass through the pipe and engage with the rings or spiders, substantially as set forth.
2. A stove-pipe made of non-inflammable cloth attached to the structure by an interposed non-inflammable piece of material, a ring or spider at or near each end of the stove-pipe, and a distending rod, which engages with them, to put the pipe under tension, substantially as set forth.
3. A stove-pipe made of non-inflammable cloth, a ring or spider at or near each end of

the stove-pipe and a distending rod, adapted to engage with them, and a disk or plate which engages with the rod and is supported by it on the interior of the pipe between the
5 rings or spiders, substantially as set forth.

4. A stove-pipe made of asbestos cloth, having a distending ring, spider or similar device at or near each end and a distending rod which engages with the spiders, substan-
10 tially as set forth.

5. A stove-pipe made of flexible asbestos cloth and a rigid rod supplied with devices to distend the pipe, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 13th day of 15 July, A. D. 1893.

ROBERT H. MARTIN.

Witnesses:

PHILLIPS ABBOTT,
JOHN E. LACEY.