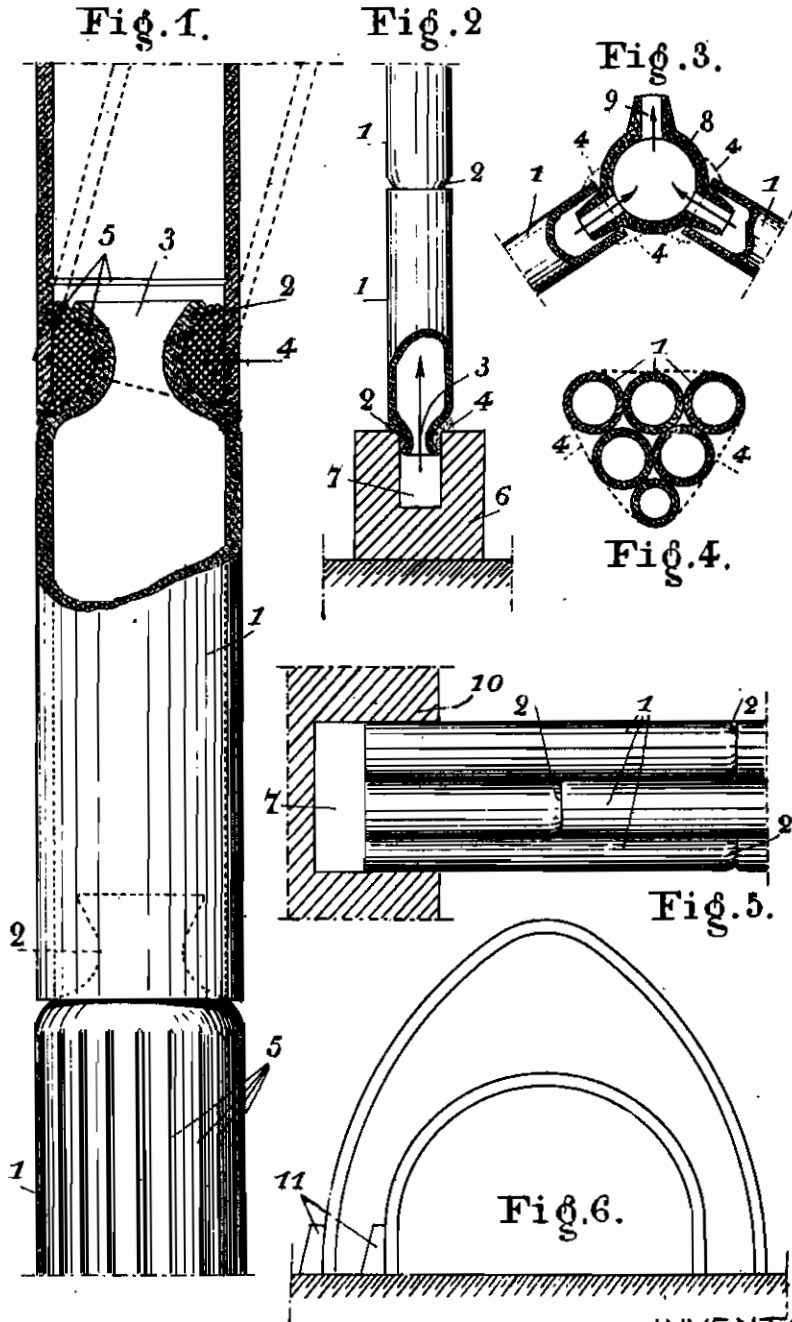


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## TUBULAR ELEMENTS USED IN DWELLING CONSTRUCTIONS AND SIMILAR

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The object of the present invention consists in improvements made to the known tubular elements or materials.

These improvements made to the tubular elements, preferably those made out of stretched clay are essentially structural; They aim only to the extension of the use of tubular elements, rather in light constructions, and more particularly to the effect of radiation of heat or cold by the walls of the houses where they are applied. This they realise, as other uses adapted to their qualities.

These results, considered as new in the art of architectural and industrial construction characterize the new invention.

The modified tubular elements, and some of their chief applications, are shown by the annexed drawings.

From these drawings:

Figure 1 represents, with cut parts, the mounting and assemblage of the modified tubular elements.

Figure 2 shows, at a smaller scale, the basis of a construction making use of the new element.

Figure 3 shows the summit of a construction using the new element.

Figure 4 represents, shown in traversal section, the use of these same tubular elements in the establishment of a beam.

Figure 5 shows a side view of a part of the beam shown on Fig. 4.

Figure 6 shows, respectively and schematically two forms of light constructions, more particularly established with the perfected tubular element.

The tubular element I shown on Fig. 1 and following is made preferably out of stretched clay; it admits of a bell-mouthed collar 2 in its upper part, as principal modification.

Orifice 3 of this collar now allows communication between each one of the elements I, while the collar of the tubular elements known of the described element is closed, either by manufacture, or at mounting, or by an ergot or plug. This disposition of a stopped collar forbids the use of these tubular elements for radiation.

By his exterior shape, the same collar 2 allows the constitution of a cavity who may receive the material 4 of fixation and will thus form, by an illustrated comparison, rather exact, nevertheless, a "bamboo knot" who will permit giving to the elements I inclined positions, able to be solidly maintained, as the one shown in dotted lines on Fig. 1, and whose uses are numerous.

In order to increase still more the adhesion of the material or of the plaster of fixation who may cover the elements I, these now have hooking grooves 5.

These grooves may have different profiles and directions, always appropriated to their destination.

In the example shown on Fig. 2, collar 2 penetrates into socle 6, which is preferably made of masonry, in which is essentially reserved a duct 7, in which aperture 3 opens. This duct 7 is joined, according to the season, to a source of heat, such as a well, and it is thus that each one of the tubular elements I communicates with the others by the orifice 3, thus forming radiating surfaces.

The hot or cold fluids get out by the ridge elements 8, shown on Fig. 3, and whose superior orifice 9 may be obturated or recovered by a half-round tile (not shown on the drawings) who maintains the air in the elements, thus creating a natural atmosphere and impeding rain from entering the elements I. Nevertheless, if this should happen, the water would go out normally by duct 7.

It is to be considered that the shape of the collar 2 and the reduced diameter of orifice 3 occasion an acceleration with turbulence of the natural draught established between base conduct 7 and ridge orifice 9.

This intense circulation of heat or coolness is to the greater advantage of the conditioning effects.

These same elements may be used with all their qualities in the establishment of tubular beams, preferably in ceramics, shown in Figs. 4 and 5, where we see again in the walls 10 the conduct 7, permitting the heating or the refrigeration of the ceilings and of the floors formed by this disposition of the beams, as of the walls, partitions and partition walls.

The examples of construction shown schematically in Fig. 6 with abutments or without, are those on which tubular elements generally apply themselves.

But these examples are not limiting, as it is comprehensible that with such elements, orientable in all directions, while staying water- and steam-tight, these may be used, not only in the construction of dwelling houses, but still to build bridges and similars, tunnels, silos, as well as atmospheric condensers, filters and underground canalizations for protection of electric cables and wires, gas condensers or similar. They can equally be used as drainages or ventilation elements

used in agriculture, and, lastly, in all places where it is useful to have protected conducts or very resistant hollow surfaces susceptible of being heated or refrigerated.

By the results obtained, considered as new, a progress estimated important in the art of construction is realized, as these elements, made out of a poor material, such as clay, permit constructing rapidly, without changing its shape, and with a minimum of cost, not only hutments, but walls and floors with thermic radiations, bridges, tunnels, heating apparatus, etc., in which no elements susceptible of being limited, as iron or wood enter. Thus, the construction of shelters presenting all hygienic conditions and comfort will be able to go on without stopping and so receive those who now have none, because of actual events.

It is comprehensible that the shapes, the dimensions and the mounting disposition may change without altering in any way the general idea of the invention which has just been described, nor its industrial result which is to obtain with tubular elements walls of every shape and all applications assuring both resistance and insulation.

#### *Summary*

Improvements to tubular elements used in dwelling and other constructions, characterized by:

1° A tubular element in stretched clay having a collar bell-mouthed towards the outside, and perforated by an orifice equally bell-mouthed, but towards the inside.

2° This collar having externally hooking grooves for the adhesive materials.

3° A tubular element having at one end a collar for orientation mentioned in paragraph 1. This tubular element having preferably exterior longitudinal grooves and exterior circular grooves. Both to facilitate the hooking on of the material uniting these elements.

4° A base- or support-element, preferably masonry, with an interior conduct into which opens the orifice of the collar mentioned at Paragraph 1.

5° A ridge element into which opens the tubular element. This element having an opening for exhaust of hot or cold fluids circulating inside the surfaces constituted by the assemblage of the tubular elements identical to the one mentioned paragraph 2.

6° The combination and the cooperation of the elements above mentioned and described to obtain, firstly, constructions with radiating and bearing walls; and, further, water and steam-tight conducts for protection, even underground, drainages used in agriculture, and, generally, all applications where the claimed tubular element may be used or applied.

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