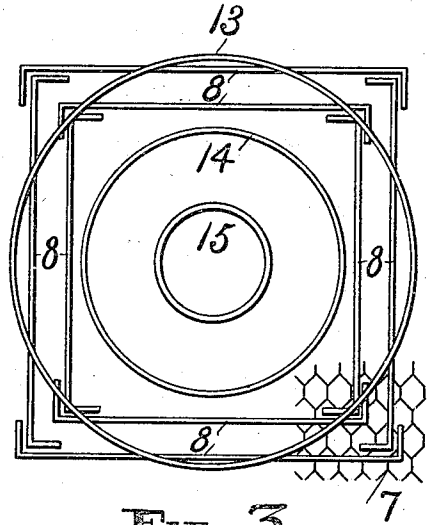
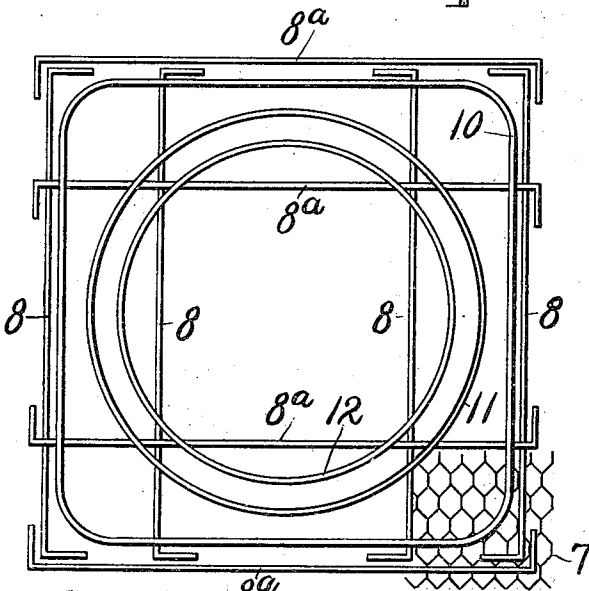
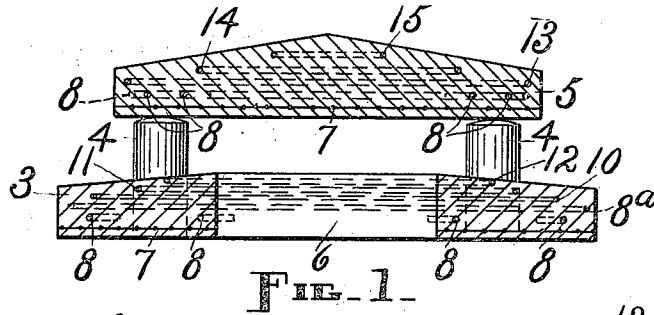


N. LAROCQUE.
CHIMNEY CAP.
APPLICATION FILED OCT. 7, 1909.

961,416.

Patented June 14, 1910.

2 SHEETS—SHEET 1.



WITNESSES: *8a*
A. C. Fairbanks. FIG. 2 -
J. M. Davenport

INVENTOR.
Nacter Larocque,
BY
Webster & Co.,
ATTORNEYS.

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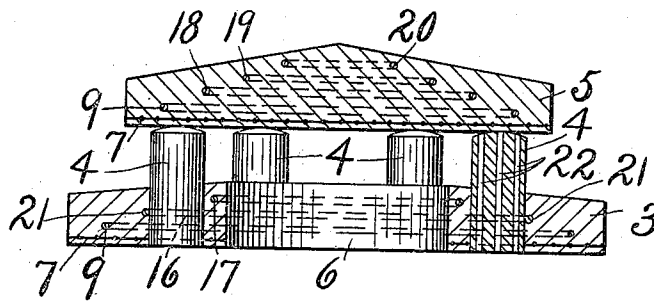


FIG. 4.

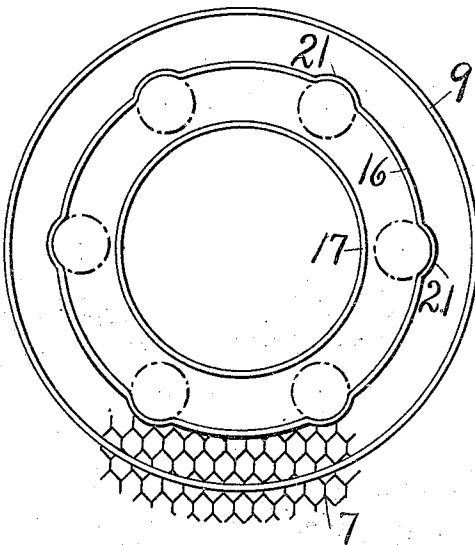


FIG. 5.

WITNESSES:

A. C. Fairbanks
J. M. Davenport

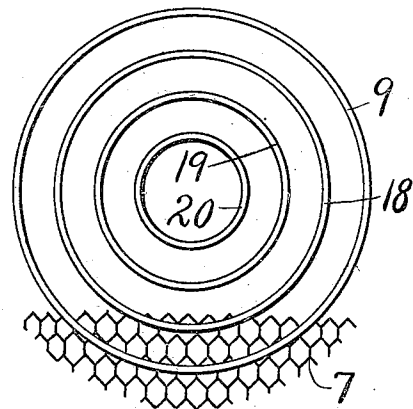


FIG. 6.

INVENTOR.

Nacter Larocque,
BY
Webster & Co.,
ATTORNEYS.

UNITED STATES PATENT OFFICE.

NACTER LAROCQUE, OF FAIRVIEW, MASSACHUSETTS.

CHIMNEY-CAP.

961,416.

Specification of Letters Patent. Patented June 14, 1910.

Application filed October 7, 1909. Serial No. 521,547.

To all whom it may concern:

Be it known that I, NACTER LAROCQUE, a citizen of the United States of America, residing at Fairview, in the county of Hampden and State of Massachusetts, have invented a new and useful Chimney-Cap, of which the following is a specification.

My invention relates to improvements in reinforced concrete or cement chimney caps, and comprises the various novel details of construction and arrangements of parts, as hereinafter set forth.

The objects of my invention are, first, to produce a practically indestructible and fire-proof chimney covering or cap, which is not only strong, durable and efficient, but shapely, easy to apply, and comparatively inexpensive to make; and, second, to provide a covering of this kind that can be used in its entirety or the separate parts of which can be used, the base or top on one chimney and the posts and cover on another chimney in the latter instance.

Other objects will appear in the course of the following description.

I attained these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section through a complete cap which embodies one form of my invention; Fig. 2, a diagrammatic plan of the reinforcing members used in the base of such complete cap, on a larger scale; Fig. 3, a similar view of the reinforcing members used in the cover of such complete cap; Fig. 4, a central vertical section through a round cap for a cylindrical chimney; Fig. 5, a diagrammatic plan of the reinforcing members used in the round base, on the same scale as Figs. 2 and 3, and, Fig. 6, a similar view of the reinforcing members used in the round cover.

Similar figures refer to similar parts throughout the several views.

The improved caps and their parts are designed to be applied to chimneys of any dimensions or areas in plan of their upper end surfaces, whether such surfaces be rectangular, circular or of some other configuration, and whether there be one, two, or more flues in the chimney. While it is true

that I have shown only square and round caps and a single corresponding flue opening in the base of each, it is very evident that some other shape may be adopted and more than one such opening provided for and in any given example, without materially affecting the merits of my invention and without departing from the nature thereof.

In a general way this invention may be said to consist of a perforated base or top and a cover with posts between, all of cement reinforced with coarse wire-netting, and rods or hoops or both, for said base or top and cover, and with rods for said posts. The upper surfaces of both the top and cover are usually beveled substantially as shown, that is, such surface in each case from the outer edge or edges inward inclines upward, and the shape of said top and cover may be rectangular, round, or of some other configuration, as already stated.

A base 3, with posts 4 rising therefrom, and a cover 5 mounted on such posts constitute the complete cap, but said base may be used alone and set directly on a chimney, when it is termed a top, or said posts may be mounted on a chimney and said cover mounted on the posts. The base or top 3 and the cover 5 should be of a shape to correspond with the chimney or chimneys upon which they are to be mounted, and there must be the usual flue opening 6 through said base or top to correspond with the chimney flue. The area of each cover 5 is smaller than that of the base in any given cap. These cap members are all made of cement with reinforcing members of metal embedded therein as described below.

Embedded, first, in the cement of each base or top 3, and also in the cement of each cover 5, near the bottom, is a piece of coarse wire-netting 7, cut out for the opening 6 in every base or top, and embedded, next above the netting in each of the rectangular members shown in the first view, is a plurality of hook-ended rods 8, and, next above said netting in each of the round members shown in Fig 4, a hoop 9. Above the rods 8, in the cement of the rectangular base 3, are more hook-ended rods 8^a, and above

these hoops 10, 11 and 12 arranged at different levels in the order named from below upward; above the rods 8, in the cement of the rectangular cover 5, are three hoops 13, 14 and 15 at different levels in the order named from below upward; above the hoop 9, in the cement of the round base, are two hoops 16 and 17, the latter being above the former and that above the said hoop 9; and above the hoop 9, in the cement of the round cover, are three hoops 18, 19 and 20 at different levels in the order named from below upward.

In the present instance there are four rods 8, all parallel with each other, and the same number of rods 8^a, all parallel with each other but at right-angles to said rods 8. Two of the rods 8 are adjacent to the corresponding edges of the rectangular base 3, so also are two of the rods 8^a, while the other four hook-ended rods 8 and 8^a are adjacent to the edges of the opening 6. The hoop 12 is large enough to clear the corners of the opening 6, in the aforesaid base, the hoop 11 is a little larger, and the hoop 10 still larger and having flattened sides. See Figs. 1 and 2.

As shown in Figs. 1 and 3, there are eight rods 8 arranged in two squares on the same level, and the hoops 13, 14 and 15, which are on different levels as already noted, are of different diameters, the hoop 13 being the largest and the hoop 15, which is adjacent to the apex of the cover 5, being the smallest.

In the round base 3, the hoop 17 is large enough to clear the opening 6, and the hoop 16 has a diameter greater than that of said hoop 17 and less than that of the hoop 9, as shown in Figs. 4 and 5. The posts 4 extend down into the base 3, in a complete cap, as will presently be explained, hence it is sometimes necessary to make offsets or bends 21 in the hoop 16 to enable said hoop to clear said posts. The offsets or bends 21 add strength to the construction since the hoop 16 then assists in holding the posts 4 more rigidly in place, and is of greater assistance for this purpose than if it merely encircled the ring of posts without partially embracing each as it now does with one of its bends.

The hoop 20 is adjacent to the apex of the round cover 5, then below that is the hoop 19 of larger diameter, next below is the hoop 18 of still larger diameter, and finally the largest hoop 9 immediately above the wire-netting 7, as clearly disclosed in Figs. 4 and 6.

The pieces of wire-netting 7 are generally rectangular in the rectangular base and cover, and those in the round base and cover are generally round.

The number and arrangement of the various rods and hoops may vary to some considerable extent, and this must necessarily be the case when the size and shape of the caps and their parts are changed to meet different requirements.

By incorporating in the cement members 3 and 5 the wire-netting and the several rods and hoops or the hoops alone, in the manner hereinbefore explained, I produce in every instance a structure which possesses all of the characteristics required in a chimney top, cover, or complete cap, the netting affording the best kind of reinforcement at the bottom of each of such members, and the rods and hoops or the latter alone affording the necessary intermediate and top or crown reinforcement for said members. These reinforcing elements are constructed with a view especially to holding the cement together and preventing it from bulging at any point or cracking and breaking. The hoops are particularly useful and so, too, are the hook-ended rods, because they serve as binders as well as offering resistance to torsional strain or sheering force.

Fine wire-mesh has been used in chimney cap construction, but is inadequate not to say undesirable for the reason that it is liable to produce a line of cleavage, as it were, in the cement along which a crack or break is likely to occur, and so proves to be a source of weakness rather than of strength. The coarse wire-netting is entirely free from this disadvantage, as will be readily seen, and constitutes a binder which is altogether satisfactory.

I prefer to make the posts 4 of cement reinforced with one or more vertical rods 22, as shown in Fig. 4. These reinforced cement columns preferably have crowning top surfaces, as illustrated, better rests for the cover being thus afforded and the danger of chipping off the edges of said columns avoided. Posts of this type for each cap are first made and then usually molded into the base or top 3, that is to say, the lower terminals of such posts are molded into the base or top, and they must be long enough to extend above said base or top a sufficient distance to support the cover 5 on their upper ends at the proper height above the base or top. Posts which are to be placed directly on a chimney, with a cover on their crowning ends, are shorter than the posts that are partially embedded in a base. Owing to the great weight of the cover, no means to fasten the same to the posts need be provided, and for the same reason it is not required that the posts be fastened to the chimney when said posts are mounted directly thereon. The rods 22 in the posts increase the stress resistance of said posts.

The posts may be incased in metallic tubular jackets, or, in other words, said posts are made by filling iron tubes with cement and molding therein the rods 22. The top of this post is generally flat. The application of the jacketed post is practically the same as that described in connection with the unjacketed posts.

The cover 5 has a less area than the base 3, in any given cap, both for the sake of appearance and for the purpose of providing a better draft.

It is understood, of course, that the reinforcing members are molded in the cement in the usual manner.

It will be observed that none of the reinforcing members is in contact with any other of said members, which is believed to be a very important feature, because where such members are in contact, unless they are bolted or riveted together, an element of weakness is thereby introduced into the structure, due to the loose joints thus formed in the cement. Furthermore, by employing reinforcing members that are out of contact with each other, said members can consist of much lighter material than would be possible if it were necessary to bolt or otherwise unite or join them; thus I am able to use small round rods and hoops, in cross-section, which are comparatively cheap, and these are what I prefer to use.

The pitch of the various top and bottom cement members may vary to a greater or less extent, and there may be other variations and modifications in addition to those hereinbefore particularly mentioned.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture, a perforated cement chimney base or top made thicker in the middle than at the outer edges and having molded therein adjacent to the bottom thereof a piece of wire-netting and above this a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said hoops may be accommodated to the variation in thickness of said base or top.

2. As an improved article of manufacture, a perforated cement chimney base or top made thicker in the middle than at the outer edges and having molded therein adjacent to the bottom thereof a piece of wire-netting, above this a plurality of hook-ended rods out of contact with each other, and above said rods a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said hoops may be accommodated to the variation in thickness of said base or top.

3. As an improved article of manufacture, a cement chimney cover made thicker in the middle than at the edges and having molded therein adjacent to the bottom thereof a piece of wire-netting and above this a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said hoops may be accommodated to the variation in thickness of said cover.

4. As an improved article of manufacture, a cement chimney cover made thicker in the middle than at the edges and having molded therein adjacent to the bottom thereof a piece of wire-netting, above this a plurality of hook-ended rods out of contact with each other, and above said rods a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said hoops may be accommodated to the variation in thickness of said cover.

5. The combination, in a chimney cap, of a perforated cement base made thicker in the middle than at their outer edges and having molded therein adjacent to the bottom thereof a piece of wire-netting and above this a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said hoops may be accommodated to the variation in thickness of said base, a cement cover also made thicker in the middle than at the edges and having molded therein adjacent to the bottom thereof a piece of wire-netting and above this a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said last-mentioned hoops may be accommodated to the variation in thickness of said cover, and posts capable of supporting said cover from said base.

6. The combination, in a chimney cap, of a perforated cement base made thicker in the middle than at the outer edges and having molded therein adjacent to the bottom thereof a piece of wire-netting, above this a plurality of hook-ended rods out of contact with each other, and above said rods a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less than that inclosed by the hoop below in order that said hoops may be accommodated to the variation in thickness of said base; a cement cover also made thicker in the middle than at the edges and having molded therein adjacent to the bottom thereof a piece of wire-netting, above this a plurality of hook-ended rods out of contact with each other, and above said rods a plurality of hoops arranged at different levels, the area inclosed by each higher hoop being less

than that inclosed by the hoop below in order that said last-mentioned hoops may be accommodated to the variation in thickness of said cover; and posts capable of supporting said cover from said base.

5 7. The combination, in a chimney cap, with a perforated cement base reinforced with wire-netting, hook-ended rods and hoops, and posts set bodily in said base and extending

above the top thereof, such posts having convex tops of a cement cover also reinforced with wire-netting, hook-ended rods and hoops, said cover being adapted to rest on the aforesaid convex tops of said posts.

NACTER LAROCQUE.

Witnesses:

F. A. CUTTER,

A. C. FAIRBANKS.