

April 23, 1929.

A. F. BEMIS

1,709,893

BUILDING UNIT

Filed May 7, 1926

Fig. 1

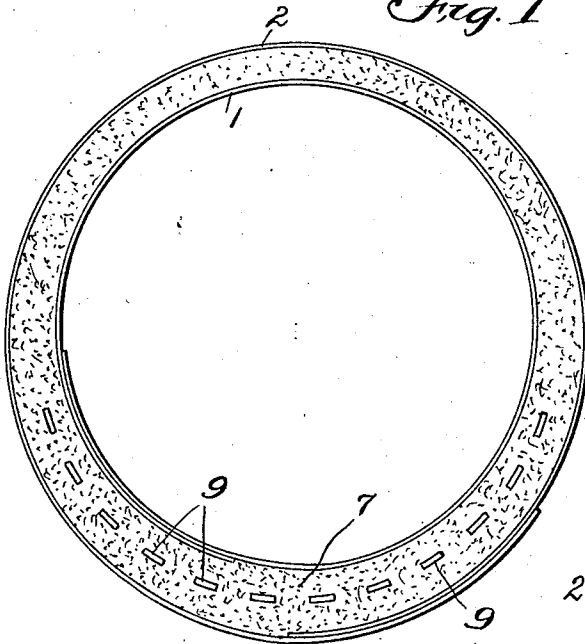


Fig. 2

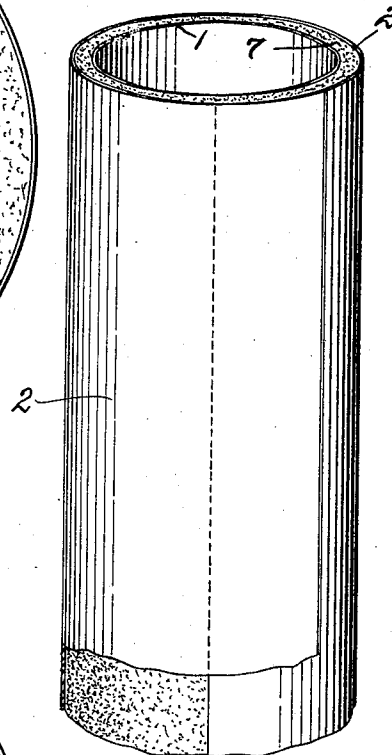
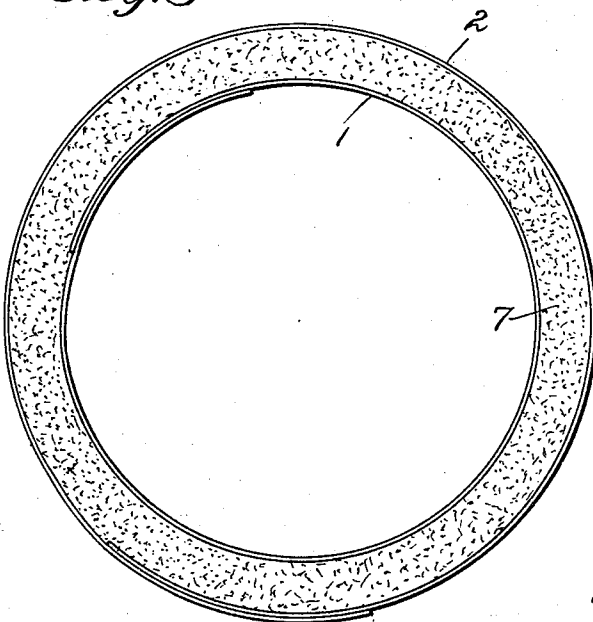


Fig. 3



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UNITED STATES PATENT OFFICE.

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BUILDING UNIT.

Application filed May 7, 1926. Serial No. 107,369.

This invention relates to columnar building units adapted to be used in a variety of ways and combined with other similar units to comprise the basis for floor, wall or roof structures of buildings as described more specifically in the copending applications of Albert F. Bemis No. 33,173, filed September 12, 1925, and Nos. 72,673; 72,677; and 72,678, all filed December 2, 1925.

An object of this invention is the provision of a tubular unit of the general character described in the above identified applications, which is adapted to cheap and rapid quantity production out of readily available materials, which will have desirable physical characteristics of considerable inherent rigidity and a moderate degree of structural strength coupled with comparative lightness, as well as being readily adapted to working as by cutting, sawing or the like. A further object of the invention relates to the provision of a unit of this type which may or may not be used to receive reinforcing elements embedded therein without substantially altering its physical characteristics, thereby being more widely adaptable to various requirements. Further objects of the invention will be apparent to those skilled in the art upon a reading of the subjoined description and claims in conjunction with the accompanying drawings wherein:

Fig. 1 is a top plan view of one form of the invention;

Fig. 2 is a perspective view of the unit comprising the subject matter of the invention with part of the outer wall broken away; and

Fig. 3 is a view similar to Fig. 1 of another form of the invention.

In order to provide hollow building units which are adapted to cheap quantity production, it is desirable to provide means whereby light cementitious material may be readily formed into a tubular member. With this end in view I prefer to provide internal and external shells of paper or similar material, preferably of a fibrous sheet composition such as chip board or straw broad bound with any of a variety of cementitious materials, such as plaster, which may or may not contain fibrous or other aggregate, or asbestos, or other fireproof paper or cloth, preferably stiffened by a suitable impregnating compound, or fine wire cloth, or various combi-

nations of paper, cloth and wire may also be used for the fibrous coverings of tubular shells which define the inner and outer faces of the units. Hereafter the material used for the shells may be referred to for purposes of convenience as paper.

Paper shells indicated respectively by the numerals 1 and 2 are preferably prepared from a single layer of paper. A long sheet of paper may have one of its longitudinal margins coated with an adhesive substance such as glue and may be bent over into adhesive engagement with the opposite longitudinal margin to form each of these tubes. Suitable spacing blocks, bits of plaster, or similar cementitious material may be interposed between the inner and outer shells to hold them in proper relative position. When the shells are so located in relation to each other, they are ready to receive a cementitious filler which preferably consists of light material such as gypsum plaster, with or without the addition of wood fibre, asbestos or other aggregate, oxychloride or magnesium, magnesium oxide or any one of a variety of hydraulic cements with or without aggregate. It may thus be evident that upon hardening or setting of the cementitious material a light and inexpensive unit may be provided which has received a degree of the tensile strength provided by the paper or fibrous shells and the compressive strength and rigidity of form provided by the hardened cementitious material.

In order to suit many installations the paper cylinders 1 and 2 may be eccentrically arranged, as indicated in Fig. 1, whereby the wall of cementitious material 7 may be substantially thicker at one side of the unit than at the other, such a feature being particularly desirable in installations such as floors or roofs. In many other cases, as ordinarily in walls, the cylinders may be concentrically arranged in relation to each other to provide a substantially uniform plaster wall 7 as shown in Fig. 3. In certain cases it may be desirable to apply reinforcing elements at one side or symmetrically arranged in the cementitious material 7. For example, as indicated in Fig. 1, a number of light metal strips 9 are embedded in the thicker portions of the plaster 7. In other cases it may be desirable to provide a substantially cylindrical portion formed of rods, strips and

hoops or merely of meshed wire. At times it may be desirable to make the outer tubes of a non-circular form, as for example elliptical in cross section.

5 While obviously tubular building units of the character herein described may be manufactured in a variety of ways, a preferred method of manufacture is more fully described in the companion application No. 10 122,592 of Charles L. Norton filed on July 15, 1926.

I claim:

1. A columnar building unit comprising a pair of eccentrically disposed tubes of flexible fibrous material and a filler of cementitious material disposed therebetween, where-

by the disposition of the section of material in the columnar unit is unsymmetrical.

2. A columnar building unit comprising a pair of eccentrically disposed paper tubes of 20 different diameters and spaces between the tubes, a filler of cementitious material disposed in said space whereby the material is unsymmetrically disposed in the unit, longitudinally reinforcing elements located in the 25 portion of said space which is of the greater thickness whereby the unit is adapted to withstand greater stress in one direction than in other transverse directions.

Signed by me at Boston, Massachusetts, 30 this 4th day of May, 1926.

ALBERT F. BEMIS.