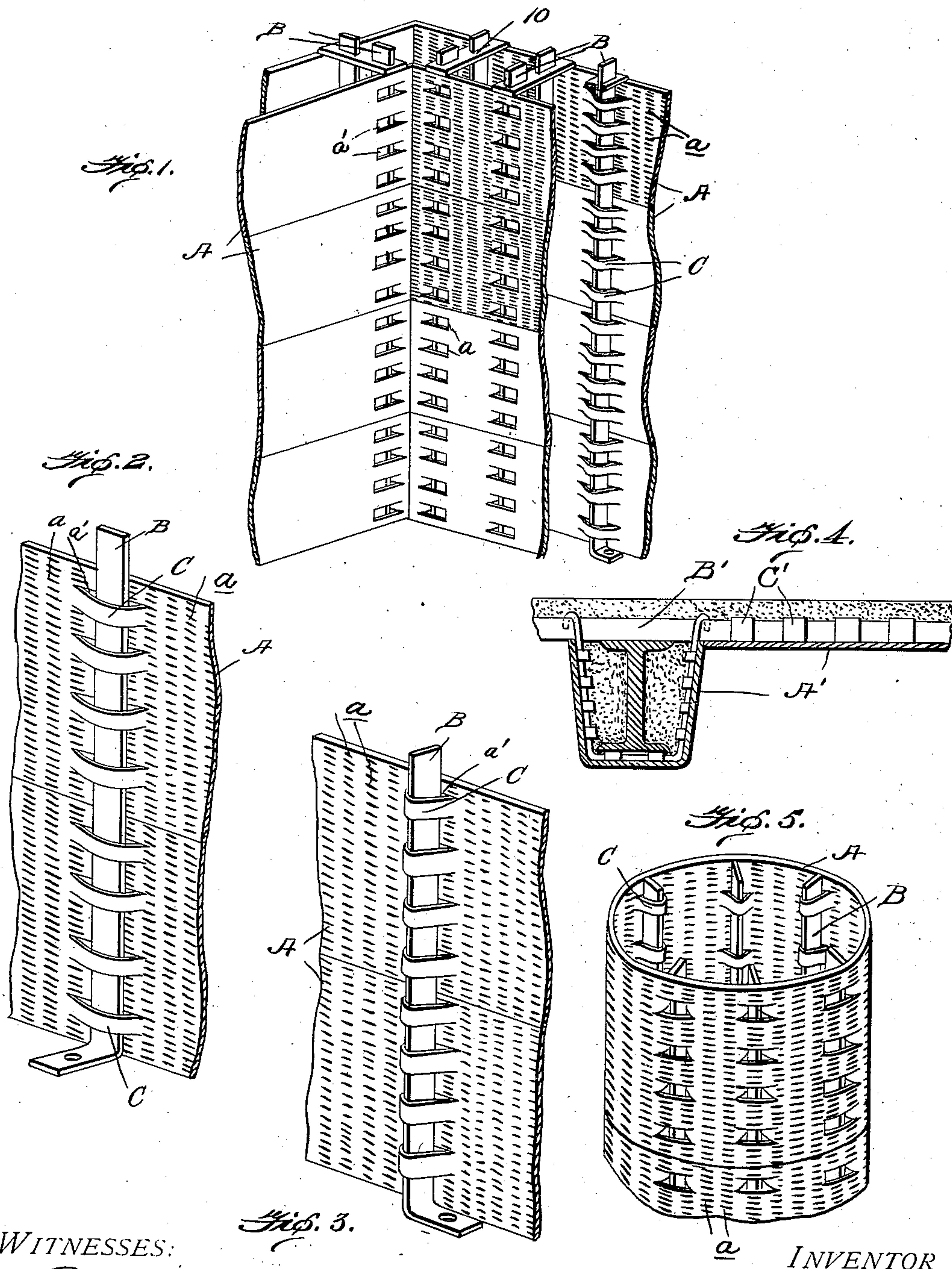


No. 855,694.

PATENTED JUNE 4, 1907.

C. COLLINS.
FIREPROOF BUILDING CONSTRUCTION.
APPLICATION FILED AUG. 20, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CORNELIUS COLLINS, OF NILES, OHIO.

FIREPROOF BUILDING CONSTRUCTION.

No. 855,694.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed August 20, 1906. Serial No. 331,266.

To all whom it may concern:

Be it known that I, CORNELIUS COLLINS, a citizen of the United States, residing at Niles, in the county of Trumbull and State of Ohio, have invented new and useful Improvements in Fireproof Building Construction, of which the following is a specification.

My invention relates to certain new and useful improvements in fireproof building constructions wherein a light and rigid metallic frame work is employed for partitions, furring, ceilings, floors, and other structures; and my invention consists, essentially, in forming the metal lathing or other sheet upon the surface of which concrete, mortar, or other plastic material is spread or placed, with loops adapted to receive the upright metal strips or studding which form the support for the metal lathing or sheet, whereby one of said parts is secured directly to the other part without the employment of additional or supplemental fastening means.

My invention further consists in the arrangement whereby successive sheets of metal lathing or other plates having the aforesaid loops may be placed in position by sliding them over the uprights or studding members so that the latter will interlock with the loops, and then giving said uprights or studding members a quarter turn to set them on edge relative to the lathing or sheets whereby the loops are expanded to impart a tension to the sheets or plates and to eliminate any looseness or slack which may be present therein; at the same time the studding members or uprights are firmly interlocked to the sheets or plates without the aid of tying wires or other fastening devices, and a rigid metallic frame work is formed which is useful in the construction of fireproof partitions, furring, floors, ceilings, etc., and for such purposes as require a reinforce concrete construction.

My invention also consists of the parts and the constructions and combinations of parts which I will hereinafter describe and claim.

In the accompanying drawings forming part of this specification, Figure 1, is a perspective view of a portion of a partition embodying my invention. Fig. 2, is an enlarged view showing a portion of a lathing sheet and an upright engaging the same. Fig. 3, is a view similar to Fig. 2, but showing the upright turned on edge. Fig. 4, is a detail showing my invention applied to a floor

or ceiling construction. Fig. 5, shows the invention applied to a tubular structure.

The essential object of the present invention is to simplify and thereby cheapen the construction of partitions, furring, ceilings, floors, etc., of fireproof or reinforced concrete structures by dispensing with the necessity of the usual tying wires, clips, lugs and like fastening means which have heretofore been used for securing the metal lathing, or other sheet, to the uprights or studding which forms the frame work of the partition or other structure.

To attain the aforesaid object, I may use either the slitted or expanded sheet commonly used in partition constructions as a support for the mortar or plastic outer covering, and wherein the slits or expanded portions serve to admit the plastic material and allow for the formation of the keys for holding the plastic material on the sheet; or I may use a sheet that is without such slits or expanded portions, which is desirable in some instances, as for ceilings and floors.

In the drawings, I illustrate my improvement in connection with the sheets A which, in this instance, are slitted at *a* in the usual or any suitable manner, the portions between the slits being pressed outwardly to open the slits for the reception of the mortar or plastic material placed on or over the sheet.

In this art as it is practiced to-day, the sheets A are secured to uprights or studding consisting of parallel strips B having little inherent rigidity in themselves but connected to each other to form a light, though rigid, structure capable of supporting the sheets A and mortar or outer plastic covering thereof. Several methods are followed for securing the sheets to the studding or upright strips; for instance, wires are passed through the slits or openings in the sheets A and passed around the uprights or studding and the ends twisted together; separate clips are used to embrace the sheets and uprights; bendable tongues are formed on the uprights or studding and, when the sheet is applied thereto, the tongues are bent over the sheets to secure them. These sheet-attaching means, however, require in every instance of which I am aware, a separate operation and one that takes considerable time to perform, is often difficult of operation.

My improvement contemplates overcoming the difficulties usually attending the tying

or fastening of the sheets to the uprights or studding, by providing the sheets with means which readily interlock directly with the studding or uprights.

5 Whatever the character of metal sheet used, I slit said sheet at suitable points a' and offset the slitted portions to form the relatively long open loops C which are arranged in line on the back surface thereof, so that
10 successive sheets may be slid edgewise over the ends of the uprights or studding until the required height of partition or length of structure is formed; when forming a partition or the like, the uprights or studding is now
15 placed in its proper position, and secured at the bottom and top in any well known or appropriate manner, as by slipping the slotted spacing pieces over the parallel adjacent strips, as at 10 in Fig. 1, and a rigid frame
20 work is produced and the lathing sheets and uprights or studding are interlocked one to the other and without separate fastening means.

In some instances, I may make the strips
25 for the studding relatively thin or flat and they lie flatwise against the lathing sheets when the latter are first slid thereover, as before described; and when the sheets are thus fitted over the uprights or studding, the latter are turned a quarter circle, or at right angles to their first position, so that they stand on edge relative to sheets, as shown in Fig. 3,
30 and then are secured at the upper and lower ends to the floor and ceiling support as before described. In thus turning the uprights from the position flat against the sheets, Fig. 2, to one edgewise relative thereto, the uprights expand or open up the loops making the latter bind tightly against the edges of
40 the uprights or studding; at the same time a tension is applied to the sheet and any looseness or slack therein is taken up whereby the sheet furnishes a rigid support for the outer plastic coating.

45 The same improvement is adapted for floor and ceiling constructions in which case the plates or sheets A' may serve as a centering for concrete, and the bars B' engage the loops C' of said plates, as shown in Fig. 4,
50 whereby when the concrete is applied over the plates and bars the concrete structure becomes reinforced by the presence of said bars.

55 Tubular structures, for columns and the like, may be formed by the same arrangement, as in Fig. 5, without departing from the spirit of my invention.

In whatever form of structure and whatever the character of metal sheet used, it is only necessary to provide said sheet with
60 loops of sufficient size to take in the uprights or bars which form the frame work of the partition, furring, ceiling, floor, etc., so that the said uprights or bars will interlock with the loops and hold the sheets to the uprights
65 without independent fastening means.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is,—

1. The combination with a skeleton frame
70 work composed of parallel bars or strips, of metallic lathing sheets having loops adapted to slip over said bars to thereby secure the sheets directly to the frame work without additional fastening means. 75

2. The combination with the upright members of a skeleton frame work, of lathing sheets having loops by which they may be slipped edgewise over the ends of said member whereby the sheets and members are
80 locked one to the other without supplemental fastening means.

3. The combination with a vertical bar or strip of a metallic sheet having loops fixed to and offset therefrom and extending in the
85 direction of the length of the sheet, said loops adapted to receive said bar or strip and thereby directly secure the sheet to the bar.

4. The combination with a bar or strip, having a greater width than thickness, of a
90 metallic sheet having loops offset from one side, said sheet adapted to be slipped over the end of the bar so that the loops will receive the bars flatwise, and said bar adapted to be turned edgewise relative to the sheet
95 whereby the loops are expanded and a tension put upon intermediate parts of the sheet to eliminate fullness or slack in the sheet.

5. A fireproof building construction including sheets or plates adapted to support a
100 plastic composition, said sheets or plates being placed edgewise together and having loops offset from one of their sides, and supporting bars or strips engaging the loops of the several plates and thereby securing the
105 sheets or plates directly to the bars and without additional fastening means.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CORNELIUS COLLINS.

Witnesses:

C. W. FOWLER,
T. WALTER FOWLER.