

No. 694,381.

Patented Mar. 4, 1902.

J. B. HINCHMAN.
FIREPROOF FLOORING.

(Application filed Nov. 13, 1900.)

(No Model.)

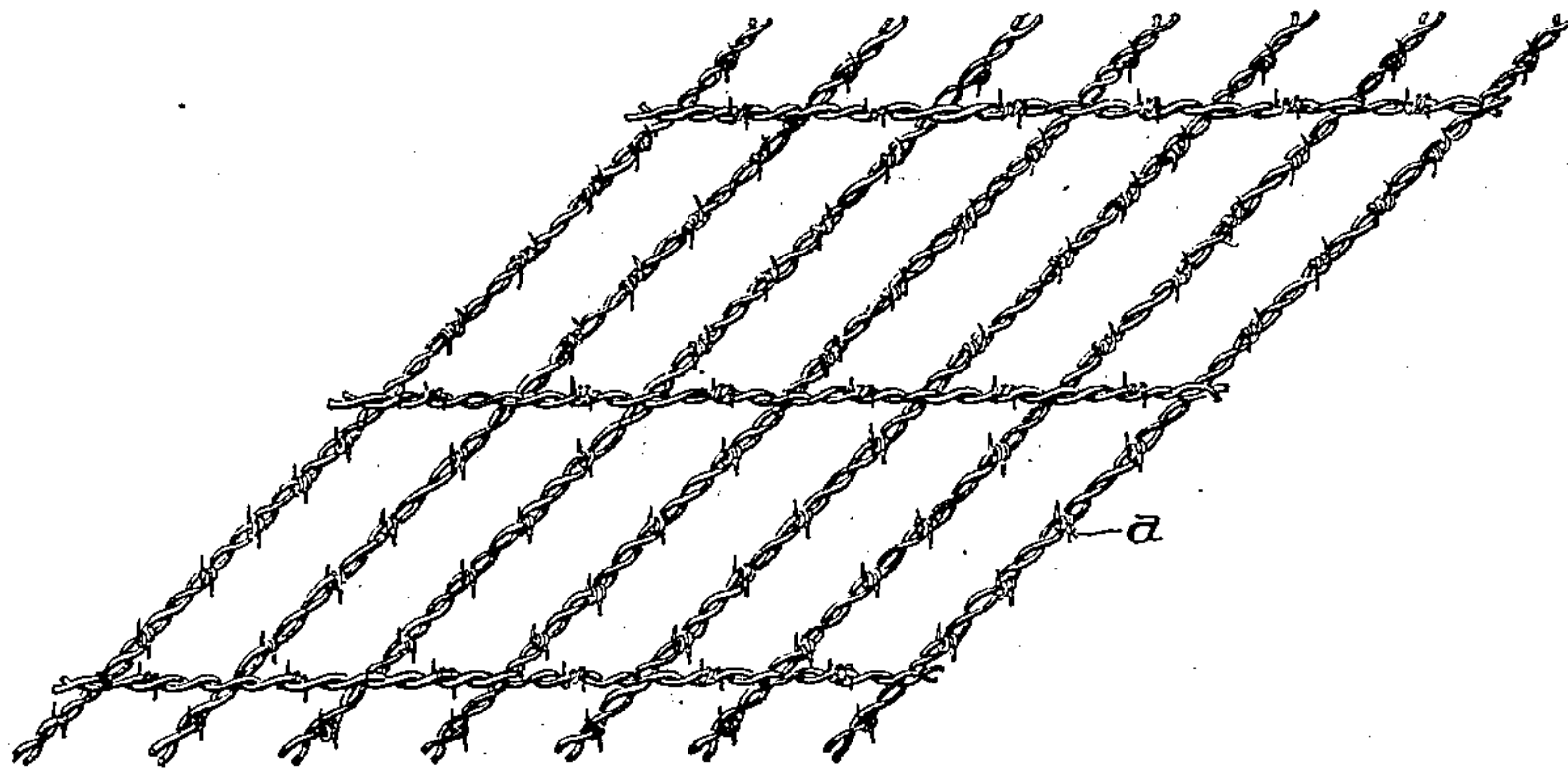


FIG. 1.



FIG. 2.

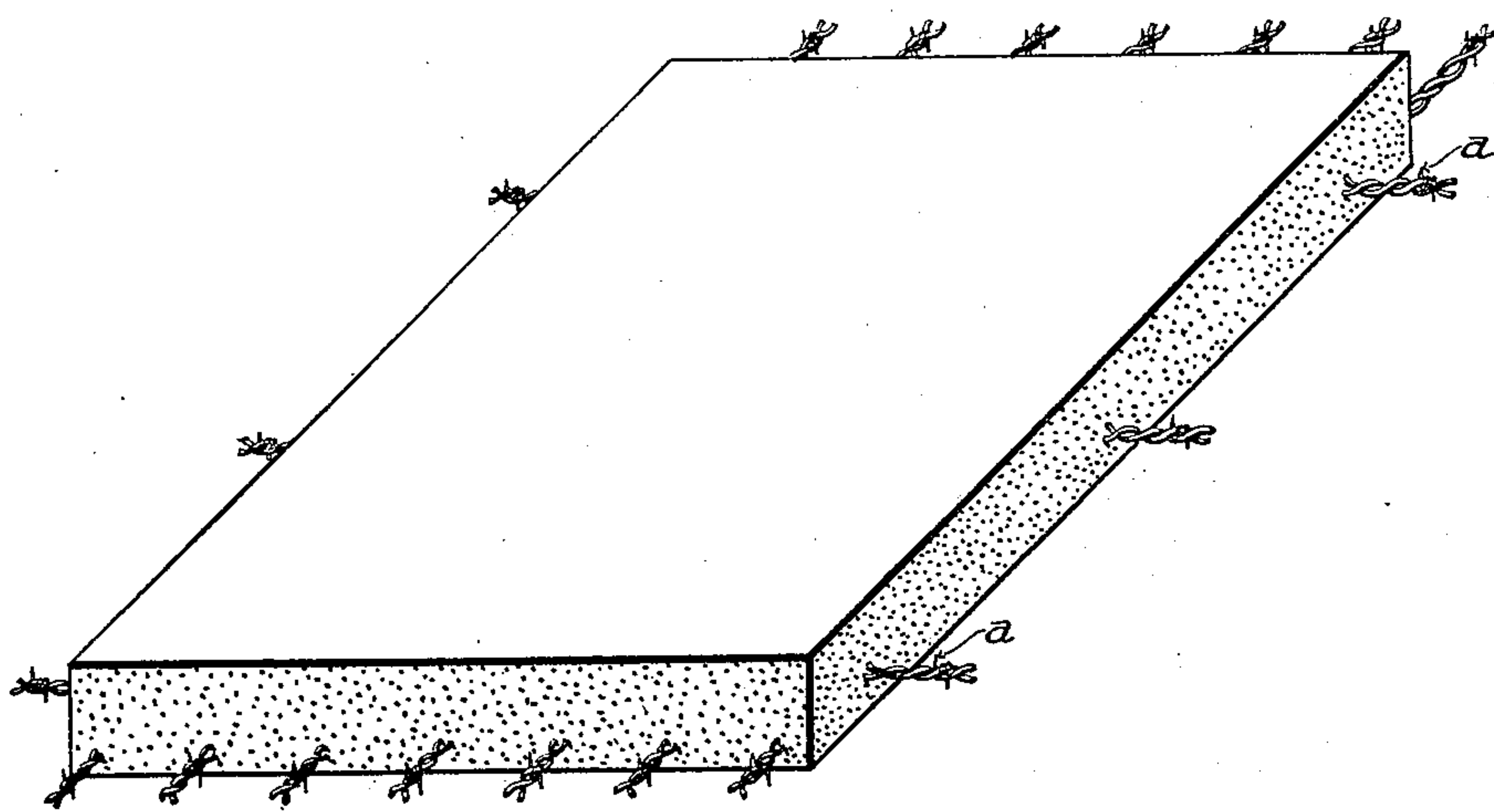


FIG. 3.

WITNESSES:

F. E. Kidder.

J. Robert Wiegner.

James B. Hinchman INVENTOR.

BY

A. S. Hill ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES B. HINCHMAN, OF DENVER, COLORADO.

FIREPROOF FLOORING.

SPECIFICATION forming part of Letters Patent No. 694,381, dated March 4, 1902.

Application filed November 13, 1900. Serial No. 36,424. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. HINCHMAN, a citizen of the United States of America, residing at the city of Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Fireproof Flooring; and I do declare the following to be a full, clear, and exact description of the invention and the method of constructing the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to improvements in fireproof flooring.

The invention is designed to provide, by a simple, economical, and efficient means, a fireproof flooring suitable for fireproof buildings by use of cement, concrete, or other material which from its first and plastic state afterwards becomes solid, in combination with iron, steel, or other metal, therewith providing a simple method for the construction of a floor in which the cement or concrete and the iron or steel are so interlocked one with the other that the materials employed must act in unison and by their combination the full strength of all the materials used is brought into harmonious action, thereby producing the greatest possible carrying power and supporting capacity in proportion to the quantity, weight, and cost of materials employed, as hereinafter fully described, and specified in my claims.

Reference is hereby made to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a perspective view showing the iron in position for the reception of the cement or concrete. Fig. 2 is a longitudinal section of an iron cable consisting of two strands, showing the projecting barbs A twisted in and made firm in place. Fig. 3 is a perspective view showing the iron cable and barbs embedded in the concrete or cement. Similar letters refer to similar parts throughout the several views.

My invention is intended to combine iron or steel with concrete or cement, so as to secure the greatest tensile strength.

The crushing strength or resistance to weight of concrete or cement, according to

authorities, is on an average from twenty to twenty-five times greater than the tensile strength.

My invention consists of an iron or steel rope or cable composed of two or more strands twisted together, as in Fig. 2, provided with iron or steel barbs or lugs A, projecting at right angles from said rope or cable in two or more directions at short intervals. These barbs A are woven or twisted into the iron or steel rope or cable, so as to hold them firmly and securely in place, as shown in Fig. 2, or they can be united or joined in firm union to the rope or cable, thereby forming an integral part thereof.

The object of this invention is to have the iron so interlocked with the concrete or cement that the two materials shall be so combined one with the other that the iron or steel rope or cable cannot give or stretch because of its interlock with the cement or concrete; and this result is obtained by the barbs or lugs A.

The rope or cable without the barbs or lugs A, extending through the concrete would be held as firmly as a twisted bar of iron, because of the thread or spiral groove around which the concrete will settle; but the extra advantage in this invention is the barbs or lugs A, which extend or project into the body of the concrete in which they are embedded, thereby making an interlock absolutely firm and immovable. This causes the two materials (the iron and concrete) to act in perfect unison, and by virtue of the barbs or lugs A interlocking with the cement or concrete the greatest tensile strength is obtained.

A further advantage in my invention resides in the arrangement of the strands of wire, which are secured in their respective positions with relation to one another solely by the plastic material after the same is in a hardened state. Thus the cost of manufacture is greatly decreased without in the least impairing the efficiency of the flooring.

In the practice of my invention I arrange longitudinal separate strands of barb-wire in parallel relation to one another with a space between the strands. A second series of separate transverse lengths or strands of wire are arranged upon the longitudinal strands or lengths with a space between themselves.

The outer of these transverse strands are arranged in proximity to the ends of the longitudinal strands and may vary in number. These two series of strands are not secured together in any manner whatever, they being secured in their relative positions solely by means of the plastic material. I am aware that prior to my invention flat bars of metal arranged in a like manner as the strands have been employed; but these bars have many disadvantages. First, they increase the cost; second, they materially and unnecessarily add to the static pressure of the plastic material, thus increasing the weight upon the supporting pillars or walls, and, further, such bars must be secured together, which latter is entirely eliminated in my invention.

By means of the interlocking of the barbs or lugs A in the concrete at short intervals the strength of the cable is very much increased for the reason that the strain is distributed in equal proportions along the full length of the cable, and thereby evenly divided throughout the whole structure, thus preventing the pressure or weight from being located at any one point in the floor.

The equally-distributed tensile strength of the entire cable and the established and firm union of the iron and cement which is obtained by means of the projection of the barbs or lugs A into the cement, thereby making an interlock between the iron and concrete, gives the concrete or cement a maximum resistance and develops the greatest carrying capacity of the united materials.

Having described my invention, I claim

as new and desire to secure by Letters Patent—

1. In a fireproof flooring, a series of suitably-spaced separate longitudinal strands of barbed wire arranged in parallel relation to one another, a series of suitably-spaced strands arranged transverse to said longitudinal strands and supported on their upper faces, the outer of the transverse strands being located adjacent to the ends of said longitudinal strands, and a composite filling of cement entirely surrounding all of said above-named strands and securing said strands in their relative positions to one another, substantially as described.

2. In a fireproof flooring, a series of suitably-spaced separate longitudinal lengths of wire arranged in parallel relation, each length comprising two members spirally wound together throughout their entire length, suitably-spaced barbs carried by each length extending above and below the same, a series of separate and suitably-spaced transverse strands arranged in parallel relation upon the upper face of the longitudinal strands and being supported thereby, and a composite filling of cement entirely surrounding all of the above-named strands and securing said strands in their relative positions, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES B. HINCHMAN.

Witnesses:

CALVIN BOYER,
EDWIN W. HINCHMAN.