

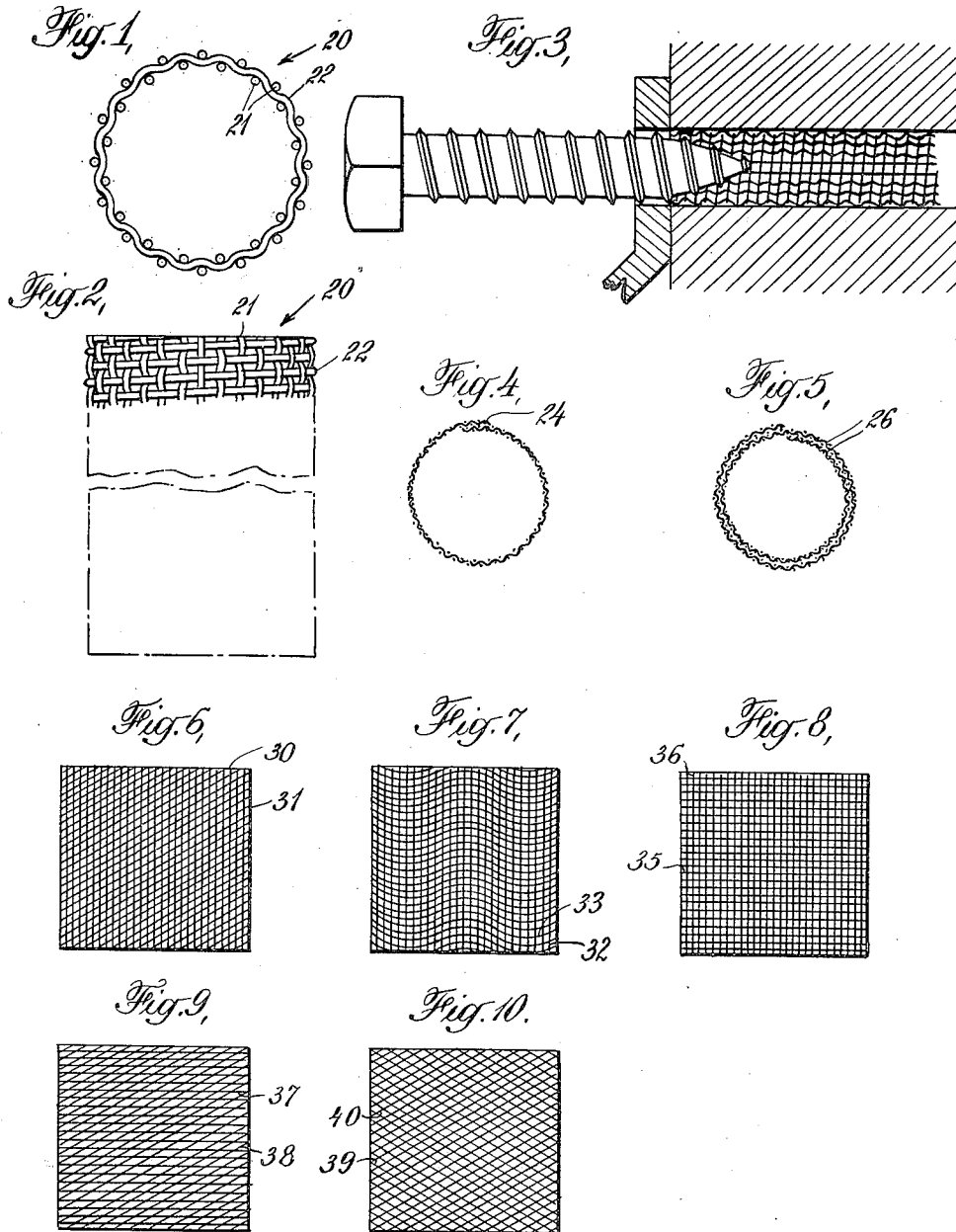
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C. C. TOMKINSON

EXPANSION SHIELD

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EXPANSION SHIELD.

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To all whom it may concern:

Be it known that I, CHARLES C. TOMKINSON, a citizen of the United States, and a resident of Plainfield, county of Union, and State of New Jersey, have invented certain new and useful Improvements in Expansion Shields, of which the following is a specification.

This invention relates to bolt or screw anchors and particularly to devices for anchoring a bolt or screw in walls of brick, stone or cementitious material not adapted to directly receive a threaded element.

The invention has for its object to provide a device of the class described that is simple in construction, can be economically manufactured and, furthermore, a device that will form an effective anchorage.

Further objects of the invention will appear from the following specification taken in connection with the drawings, which form a part of this application, and in which—

Fig. 1 is an end elevation of an expansion shield constructed in accordance with the invention.

Fig. 2 is a side elevation of the structure shown in Fig. 1.

Fig. 3 is a sectional elevation showing the shield positioned in a wall opening and a screw mounted in position to be threaded into the shield.

Fig. 4 is an end elevation of another form of shield constructed in accordance with the invention.

Fig. 5 is an end elevation illustrating still another embodiment of the invention.

Figs. 6, 7, 8, 9 and 10 are elevational views showing other forms of mesh that may be used.

The invention briefly described consists of a tubular expansion shield formed of woven material such as fiber or wire. The shield may be woven in one piece or may consist of a blank of woven material rolled into a cylinder with the ends overlapping. The mesh of the fabric may have any desired form such as longitudinal and transverse strands or diagonal and longitudinal strands or spiral strands or other modifications. The interstices in the mesh are preferably filled with a filler such as paint or white lead since this material tends to retain the shield in unexpanded position so that it can be readily positioned in the wall opening.

First referring to the form of the in-

vention shown in Figs. 1, 2 and 3, the shield consists of an elongated tubular member 20 of woven fabric such as wire mesh. In this form of the invention the tubular member is seamless and has longitudinally extending strands 21 and spiral strands 22.

The seamless tubular member is particularly advantageous since this form of shield can be elongated prior to its insertion in the hole or wall opening, thus reducing its diameter and facilitating the insertion. After insertion longitudinal compression of the shield will expand it.

In Fig. 4 the ends of the blank are overlapped as shown at 24 and in Fig. 5 the shield is formed by a plurality of overlapping layers of fabric as shown at 26.

In Fig. 6 the fabric has longitudinally extending strands 30 and diagonally extending strands 31.

In Fig. 7 the fabric has longitudinal strands 32 and transverse or circumferentially extending strands 33. The strands 33 are undulating in formation as clearly illustrated in Fig. 7.

The fabric shown in Fig. 8 has longitudinal strands 35 and circular strands 36 substantially at right angles to the longitudinal strands.

In Fig. 9 there are shown circular or circumferential strands 37 and diagonal strands 38.

In Fig. 10 both sets of strands 39 and 40 are diagonally disposed.

In shields of the character described and particularly where the shield is formed by overlapping or folding a blank into a cylinder, it has been found desirable to fill the interstices with a filler such as white lead or paint. This filler tends to retain the mesh shield in unexpanded position so that it can be readily positioned in the wall opening and also forms a cushioning substance which will fill the threads of the screw and also fill the pits and depressions in the wall opening.

The shield or tubular member is preferably substantially the same in diameter as the diameter of the screw or threaded element which is to be used and which it has to anchor in the wall opening.

From the foregoing description it will be understood that the shield can be made by weaving a seamless tubular member or braiding the strands into a cylinder or by

rolling a blank into the form of a cylinder. blank of woven wire mesh rolled into a tubu- 15
Furthermore, any desired mesh may be used. lar member with the edges overlapping.

What I claim is:

1. An expansion shield comprising a 5 tubular member formed of woven material, said tubular member having a filler in its interstices.
2. An expansion shield comprising a 10 tubular expansible member having interstices filled with a filler.
3. An expansion shield formed from a blank of woven material rolled into a tubular member with the edges overlapping.
4. An expansion shield formed from a blank of woven wire mesh rolled into a tubular member with the edges overlapping.
5. An expansion shield formed from a blank of woven material rolled into a tubular member.
6. An expansion shield formed from a 20 blank of woven wire mesh rolled into a tubular member.

In witness whereof, I have hereunto set my hand this 5th day of April, 1923.

CHARLES C. TOMKINSON.

Witness:

I. B. MOORE.