

H. G. OSBORNE.
EXPANSION SHIELD.
APPLICATION FILED JAN. 28, 1910.

1,066,040.

Patented July 1, 1913.

Fig. 1.

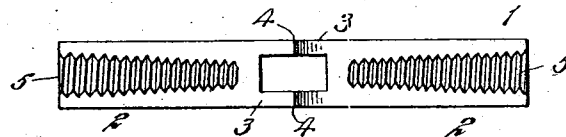


Fig. 2.



Fig. 5.

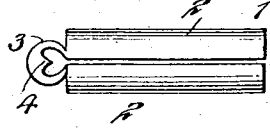


Fig. 3.

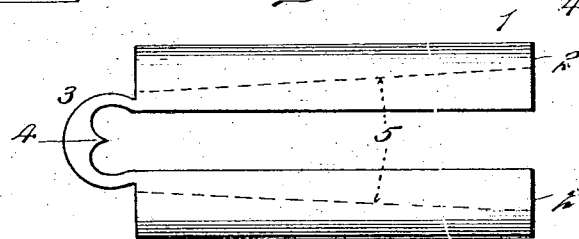
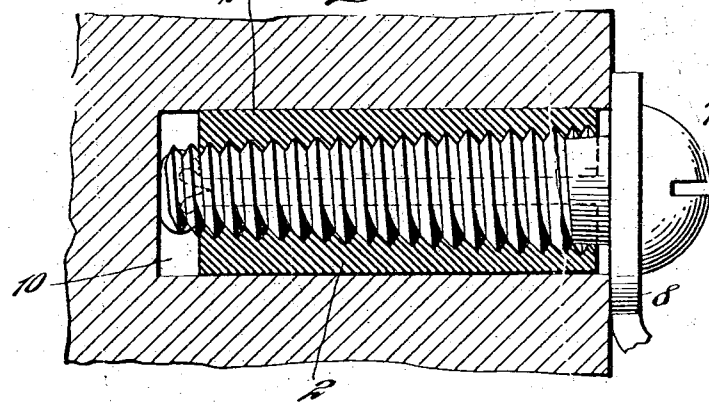


Fig. 6.



Fig. 4.



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HENRY G. OSBORNE, OF BROOKLYN, NEW YORK.

EXPANSION-SHIELD.

1,066,040.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed January 26, 1910. Serial No. 540,129.

To all whom it may concern:

Be it known that I, HENRY G. OSBORNE, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Expansion-Shields, of which the following is a specification.

My invention consists of an expansion shield for anchoring screws or bolts in holes drilled into brick or stone.

The objects are, to provide a one-piece shield which may be expanded throughout its length, and to provide a shield of this description which may be secured in place sufficiently firm before the insertion of the screw to prevent its falling out or turning while the screw is being tightened.

My invention is fully disclosed in the accompanying drawing, in which:

Figure 1 is a plan view of my shield in its initial unfolded form; Fig. 2 is a side view of the same; Fig. 3 is an enlarged side view of the shield in its folded form ready for use; Fig. 4 is a sectional view showing the shield in a slab and holding a screw from which an arm or other part may be suspended; Fig. 5 is a side elevation of the shield ready to be inserted in a hole in a slab, and Fig. 6 shows the same shield after it has been pushed into a hole in a slab and against the base wall or end of the same to flatten the integral links connecting the inner ends of the sides of the shield and spread said ends to bind against the side walls of said hole.

The shield 1 is composed of two semi-cylindrical sections 2, 2 joined at their rear or inner ends by the flexible links 3, 3 which are preferably formed with the wedges 4, 4 to enter the space between the faces of the inner ends of the sections 2 and cause them to separate. The flat faces of the semi-cylindrical sections 2, 2 are recessed at 5, 5 said recesses being tapered and also being spirally recessed to correspond to sections of screw-threads.

In use the shield 1 after being folded to bring the recessed sides of the sections 2 in facing relation is inserted in a hole of proper diameter and forced in until the links 3 contact with the bottom of the hole and force the wedges 4 between the sections 2, 2 to spread the inner ends of said sections apart and force them against the sides of the hole. The shield is thus retained in place. The

insertion and tightening of the screw 7, in the chamber produced by recesses 5, 5, causes a further separation of the sections 2, 2, producing ample expansion of the shield to firmly secure the screw. The screw 7 may be utilized to hold an arm 8 or other part to be secured, as usual. Owing to the taper in recesses 5, 5 the expansion is greatest at the inner end which is desirable.

Holes drilled to receive expansion shields are frequently made too large. My invention permits of using a screw of any size necessary to expand the shield tightly in the hole. This is a very valuable feature in a one-piece shield and is made possible by the parallel expansion attainable with my invention.

In Fig. 4 a slab is indicated having a hole 10 receiving my shield, which will preferably be in one integral piece of lead.

The invention is not in every instance limited to the wedges 4.

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

1. The combination in an expansion shield of the class described of two semi-cylindrical sections taperingly recessed, said recesses being screw threaded, and the said sections being joined together at their inner ends by two flexible links having wedges formed on them adapted to separate the sections when the shield is forced against the bottom of the hole receiving said shield, the two sections being adapted to be further and positively separated by the insertion of the screw in the recesses.

2. The combination in an expansion shield of the class described of two sections taperingly recessed, said sections being joined together at their inner ends by two flexible links having wedges formed on them adapted to separate the sections when the shield is forced against the bottom of the hole receiving said shield, the two sections being adapted to be further and positively separated by the insertion of the screw in the recesses.

3. The combination in an expansion shield of the class described of two sections taperingly recessed, said sections joined by a flexible connection and means for expanding the inner ends of said sections in the hole prior to the insertion of the screw.

4. The combination in an expansion shield of the class described of a plurality of sections taperingly recessed, means for

expanding said sections in the hole prior to the insertion of the screw, the said sections adapted to be further expanded by the insertion of a screw in the recesses.

5 5. The combination in an expansion shield for the purpose specified of a plurality of expansible members adapted to be expanded by a screw and means for expanding the inner end of said shield independent of said screw.

10 6. The combination with an expansion shield adapted to be expanded by a screw of means to expand said shield at the inner end independent of said screw.

15 7. The combination, in an expansion

shield for the purpose specified, of a plurality of sections forming a longitudinal recess, means for expanding the inner ends of said sections in the hole prior to the insertion of a screw, the said sections adapted to be further expanded by the insertion of a screw in the recess.

Signed at New York city, in the county of New York and State of New York, this 25th day of January A. D. 1910.

HENRY G. OSBORNE.

Witnesses:

ARTHUR MARION,
CHAS. C. GILL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."