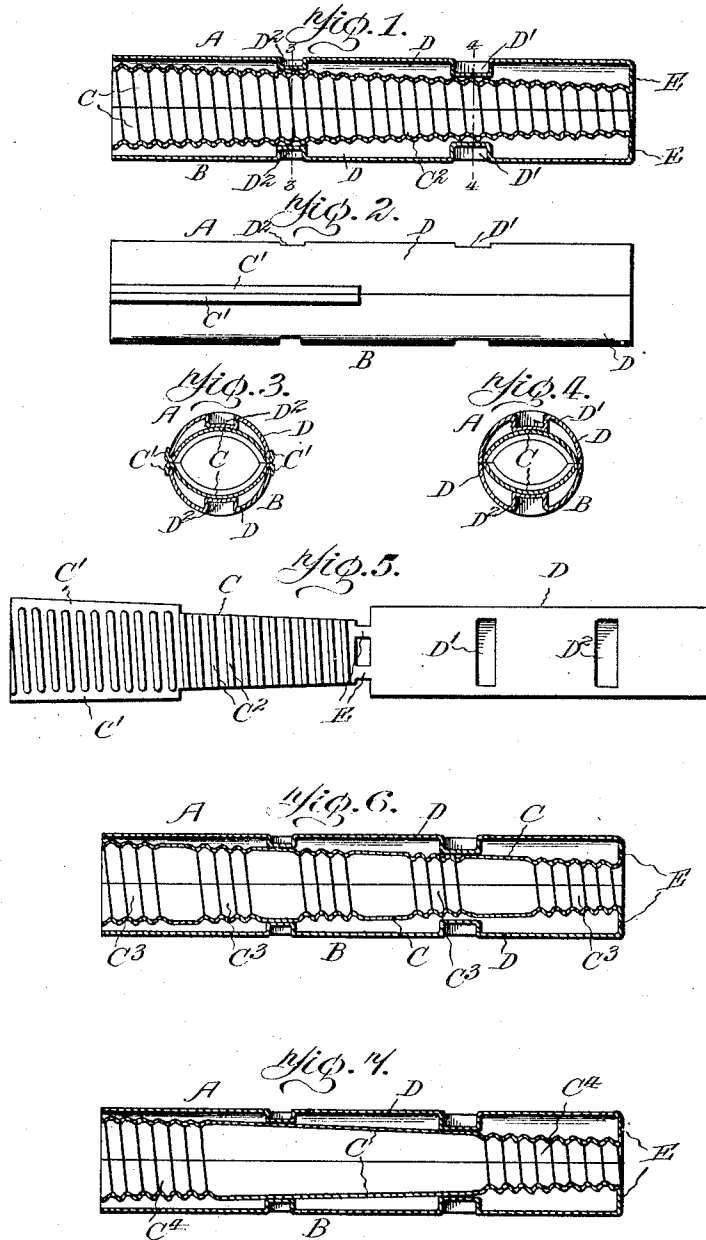


H. B. NEWHALL, JR. & H. W. PLEISTER.
TWO PART EXPANSION SHIELD.
APPLICATION FILED MAR. 12, 1912.

1,062,993.

Patented May 27, 1913.



WITNESSES
H. J. Bosse
Helen Trate.

Henry B. Newhall, Jr.
Henry W. Pleister;
INVENTORS

BY *Myron Klear*
ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY B. NEWHALL, JR., OF PLAINFIELD, AND HENRY W. PLEISTER, OF WESTFIELD,
NEW JERSEY, ASSIGNORS TO HENRY B. NEWHALL, OF PLAINFIELD, NEW JERSEY.

TWO-PART EXPANSION-SHIELD.

1,062,993.

Specification of Letters Patent.

Patented May 27, 1913.

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To all whom it may concern:

Be it known that we, HENRY B. NEWHALL, Jr., and HENRY W. PLEISTER, citizens of the United States, residing, respectively, at Plainfield, in the county of Union, and Westfield, in the county of Union, State of New Jersey, have invented certain new and useful Improvements in Two-Part Expansion-Shields, of which the following is a specification.

Our present invention has to do with expansion shields, the use of which is at present both frequent and well-known, and our object is to enable the production of expansion shields, formed of sheet metal, which will be highly efficient in use and which may be stamped out and pressed to shape in a simple and inexpensive manner.

Our invention consists broadly in a shield formed in two parts which are expansible in diametrically opposite directions by the action of a bolt working therebetween and in this manner is distinguished from our copending application No. 683,256, filed of even date herewith, and which aims to construct the two bolt parts from a single piece of material. Each of these parts comprises an outer section adapted to grip the wall of an opening, and an inner section which is so formed as to constitute an advancing screw to cooperate with the threads of a bolt. The sections are also provided with cooperating means which space and support them in proper relation, and with means which hold them together in such relation, for ready position within an opening in which they are to be expanded.

From a more specific standpoint, our present invention contemplates the provision of a two-part bolt shield of which the parts are in separate pieces which may be temporarily held by any suitable means.

Our invention further contemplates the provision of an inner section for each shield part which may have a continuous thread from end to end, or the thread of which may be interrupted and in spaced series throughout, or even a single thread series at each end, each form having its particular advantages.

In the accompanying drawing, Figure 1 is a longitudinal section through both parts of a shield commonly known as a "two-part" shield. Fig. 2 is a side elevation thereof. Fig. 3 is a transverse section taken on line

3—3 of Fig. 1. Fig. 4 is a similar view taken on line 4—4 of Fig. 1. Fig. 5 is a plan view of the blank before concaving. Fig. 6 is a view similar to Fig. 1, through a shield having an interrupted thread, and Fig. 7 is another similar view showing another form of interrupted thread.

It is apparent that "one-part" and "two-part" shields each include two parts, so that in referring to one or the other of the shield parts, we desire to be understood as speaking of the parts irrespective of the fact that in one form they are independent, while in the other form they are connected.

Referring now particularly to the figures of the drawing, the shield comprises independent shield parts A and B, each of which in turn, consists of an inner section C and an outer section D. The parts A and B are similarly stamped from sheet metal in the form shown in Fig. 5, the sections C and D being in end-to-end relation in the same plane, and connected by webs E of the same material.

The section C is widened adjacent one end in order to provide projecting side edges C', which need only extend for a portion of its length, and is at the same time formed with a series of transverse corrugations C'', extending throughout its length, the ends of which corrugations terminate short of the side edges C'.

The section D is of a width substantially equal to the greatest width of section C, and is provided with spaced depressions D' and D'', of which the former is substantially deeper than the latter, both of these depressions being rectangular in shape and so disposed that their direction of greatest length is at right angles to the longitudinal axis of the section. Thus it will be apparent that when the sections C and D are folded upon one another in the manner shown in Fig. 1, with the depressions D' and D'' contacting with the outer surface of section C, the latter will, of necessity, assume a position inclined with respect to section D, whereby when the two parts A and B are placed together in use, the two sections D will form a substantially cylindrical outer surface, while the two sections C will form a gradually tapering inner advancing screw. In this manner the two parts of the shield will be gradually forced apart as a bolt is turned inwardly between them.

As will be seen plainly in Figs. 2, 3 and 4, the sections C and D are concaved in such a manner that the curvature of the outer section D is in a greater degree than that of the inner section C, and the side edges C' of the latter are curved inversely with respect to the curvature of its body, so as to extend around portions of the side edges of the section D and thus, with the coopération of the webs E, firmly unite the sections of each of the shield parts.

As before stated, the thread or the transverse corrugations C² may be continuous through the length of the inner sections, as shown in Fig. 1, or it may be interrupted as shown in Figs. 6 and 7, in the former of which the corrugations are shown in spaced series C³ and in the latter of which the corrugations are shown in single series C⁴ arranged at the opposite ends of the inner section.

From the foregoing, it is clear that our construction is fully capable of meeting all requirements, and of performing all the functions of the cast metal shields now in common use, and is susceptible of varied forms, of which we wish to be understood as reserving all such as fall within the terms of the claims.

Having thus fully described our invention, what we claim is:

1. An expansion shield formed of sheet metal and comprising a pair of transversely curved parts, each part including an outer section and an inner section, said sections having means whereby to maintain their proper relation in each part.

2. An expansion shield comprising two parts, each part including an outer transversely curved section, and an inner transversely curved section, the latter having extending side edges inversely curved about the side edges of the outer section.

3. An expansion shield comprising two parts, each of which parts includes an outer transversely curved section and an inner transversely curved section inclined with respect to said outer section, said sections of each part being formed of a single piece of material and provided with means whereby to maintain their proper relation.

4. An expansion shield formed of sheet metal and comprising two transversely curved parts, each of said parts including an outer section and an inner section, bent one upon the other, and having relatively engaging means whereby to maintain their proper relation, the inner sections having transverse corrugations cooperating to form a bolt advancing screw.

5. An expansion shield comprising two parts, each part including an outer trans-

versely curved section and an inner transversely curved section, the former having extended portions projecting in a greater degree adjacent one end than the other, and adapted to contact with the inner section and maintain the same in an inclined position with respect to the outer section.

6. An expansion shield formed of sheet metal and comprising two transversely curved parts, each of said parts including an outer section and an inner section, bent one upon the other, and having relatively engaging means whereby to maintain their proper relation, the inner sections having transverse corrugations arranged in spaced series and adapted to cooperate to form a bolt advancing screw.

7. An expansion shield comprising two parts, each of which parts includes an outer transversely curved section and an inner transversely curved section inclined with respect to said outer section, said sections being formed of a single piece of sheet metal and bent one upon the other.

8. An expansion shield comprising two parts, each of which parts includes an outer transversely curved section, said sections being formed of a single piece of sheet metal, and said inner section having transverse corrugations and extended side edges inversely curved about the side edges of the outer section.

9. An expansion shield comprising two parts, each of which parts includes an outer transversely curved section and an inner transversely curved section inclined with respect to said outer section, said shield parts being formed separate from, and independent of, one another, and the said sections of each part being formed in one piece.

10. An expansion shield formed of sheet metal and comprising a pair of transversely curved parts, each of said parts including an outer section and an inner section, said inner sections being adapted to cooperate to form a bolt advancing screw.

11. An expansion shield formed of sheet metal and comprising a generally cylindrical member consisting of semi-cylindrical parts which are separate from one another and each of which includes an inner section and an outer section, said inner sections being adapted to cooperate to form a bolt advancing screw when the parts of the member are together.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY B. NEWHALL, JR.
HENRY W. PLEISTER.

Witnesses:

C. M. LYONS,
A. M. WILLIAMS.