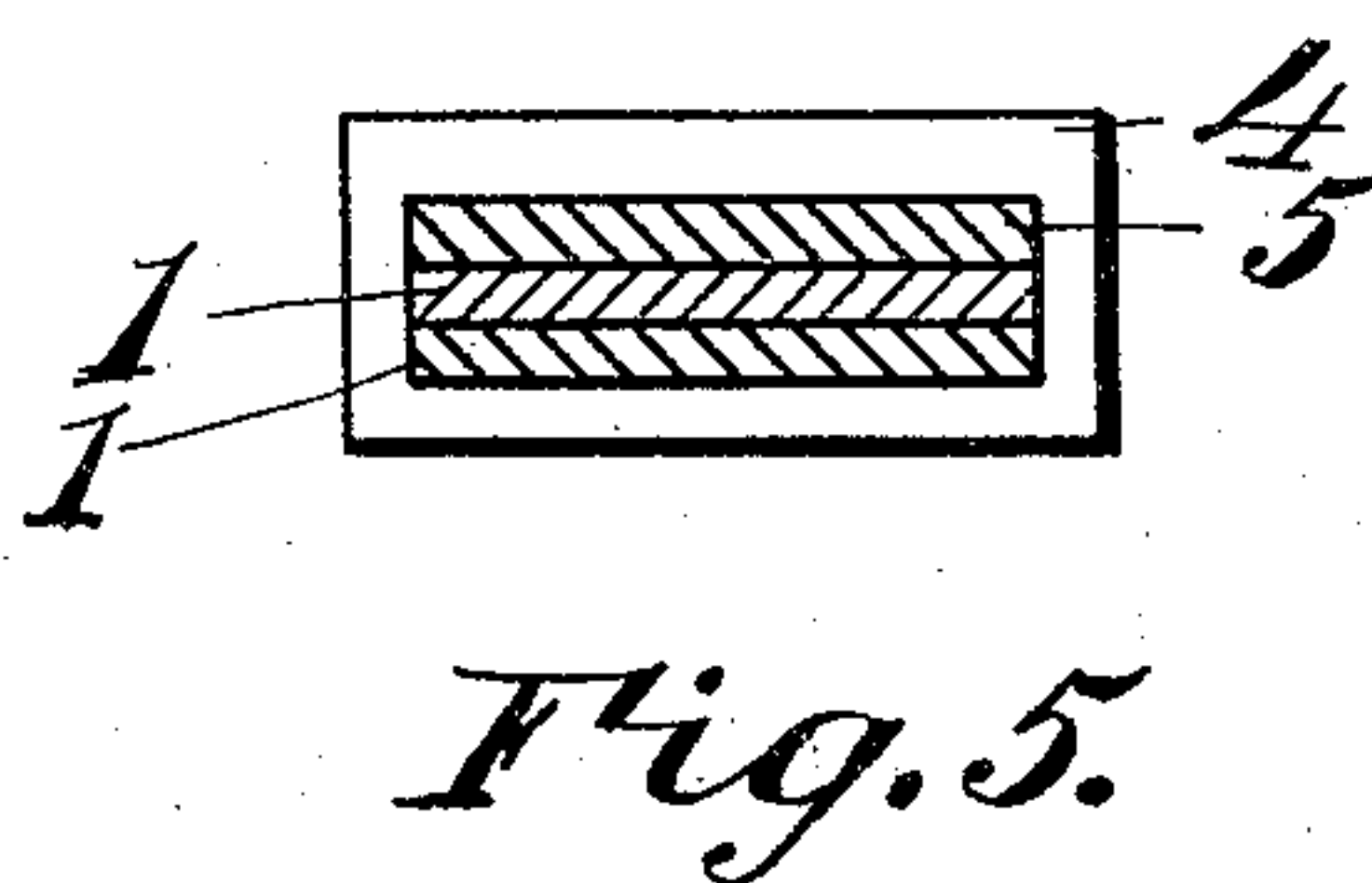
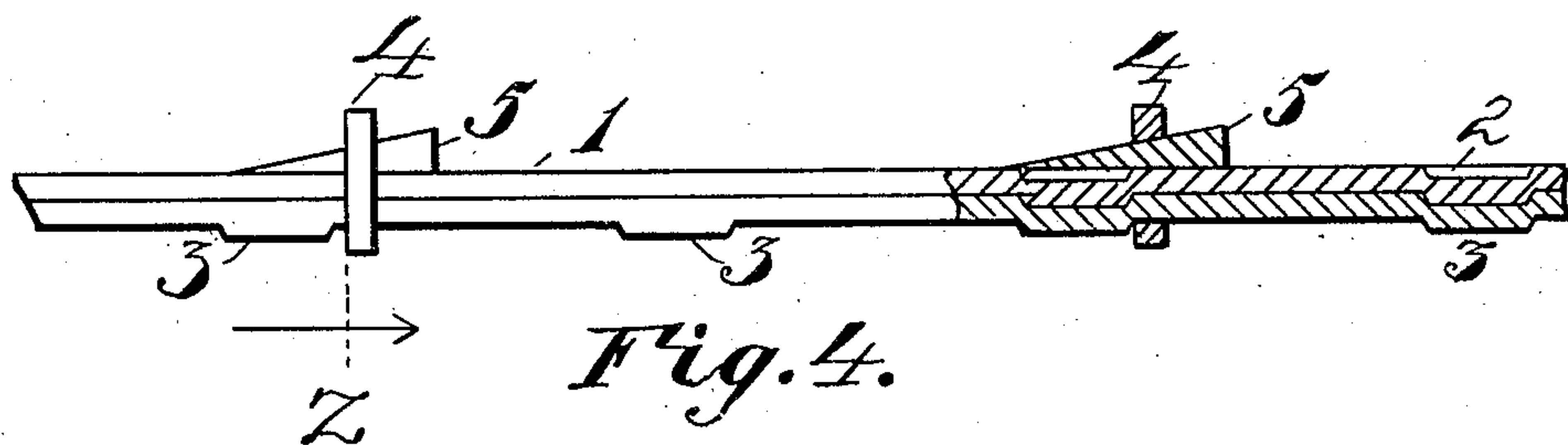
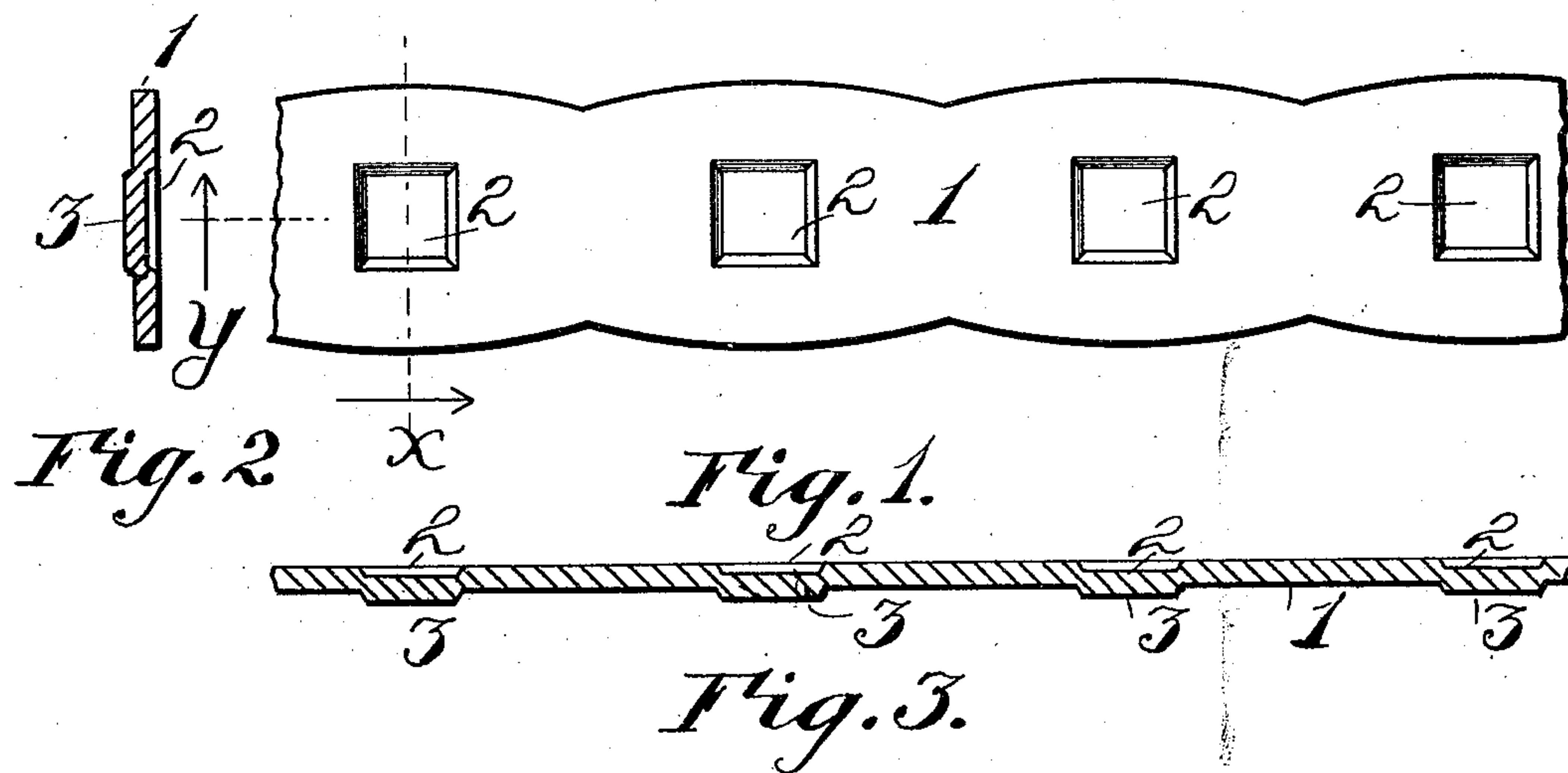


No. 828,550.

PATENTED AUG. 14, 1906.

C. T. INMAN & H. A. ROBINSON.
CEMENT AND CONCRETE BINDER.

APPLICATION FILED JUNE 26, 1905.



Witnesses:
Louis Uptinger.
Glenora Fort.

Inventors,
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Atty.

UNITED STATES PATENT OFFICE.

CHARLES T. INMAN AND HENRY A. ROBINSON, OF AKRON, OHIO.

CEMENT AND CONCRETE BINDER.

No. 828,550.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed June 26, 1905. Serial No. 267,034.

To all whom it may concern:

Be it known that we, CHARLES T. INMAN and HENRY A. ROBINSON, citizens of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Cement and Concrete Binders, of which the following is a specification.

This invention relates to mechanical means to be incorporated in cement, concrete, or analogous bodies during their construction for the purpose of strengthening them.

The object of this invention is to provide a suitable mechanical device for strengthening cement, concrete, or analogous bodies which may be readily incorporated therein during their construction.

The invention aims in providing a device of this class suitable for the before-mentioned purpose, to construct the device in continuous lengths, so that sections of the required length thereof may be obtained therefrom, and to provide the device with means for effectually engaging with the material in which the device is incorporated, so as to strengthen the structure thereof, and, further, to so construct the device that short sections thereof may be fixedly locked together and form when thus locked an integral article of approximately equal strength with sections wherein no joints exist.

The invention further contemplates in so forming the device that the means employed for engaging the material of the body in which the device is incorporated may also constitute a portion of the means for locking the sections of the device together.

With the foregoing and other objects in view the invention consists of the novel construction, combination, and arrangement of parts constituting the device to be hereinafter referred to and illustrated in the accompanying drawings, which form a part of this specification, in which is shown the preferred embodiment of the invention; but it is to be understood that changes, variations, and modifications can be resorted to which might better subserve the purpose of this invention.

The device is illustrated in the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures.

In the drawings, Figure 1 represents a plan view of one face of this device. Fig. 2 is a section of Fig. 1 at the line X. Fig. 3 is a section of Fig. 1 at the line Y. Fig. 4 repre-

sents a pair of the devices shown in Fig. 1 and the means whereby they are locked together, and Fig. 5 is a section of Fig. 4 at the line Z.

In the drawings, 1 represents a continuous strip of metal, the width of which is preferably greater than the thickness thereof. This strip 1 may be of any material best suited for the purpose to which it is to be applied; but ordinary steel will be found best for this purpose. At regularly-recurring intervals along the transverse center of the strip are a series of depressions or indentations 2, and on the obverse side of this strip are corresponding projections 3. In forming this strip 1 the depressions 2 are preferably formed exactly opposite to the projections 3 on the opposite side of the strip; but these projections may be formed at other points, if desired. We prefer in constructing this strip 1 to form it by rolling, although short sections thereof may be made by suitable dies. The configuration of the depressions 2 and projections 3 may be altered, and instead of being rectilinear the outlines may be formed upon curvilinear lines, and the beveled portions of these parts may be curved instead of being formed in straight lines. In forming this strip 1 we prefer to form the sides thereof as shown in Fig. 1, wherein they are illustrated as being formed in a succession of shallow flutes; but these sides may be serrated or indented or formed upon sinuous lines or in any other manner which will afford to the material which will surround these strips 1 an effectual grasp or engagement therewith. In placing these strips 1 in position a layer of material of which the body to be strengthened is composed is placed in the bottom of the mold or form box, which is used for forming the body, and these strips are placed longitudinally thereof on one of their narrower edges, and the balance of the material is then placed around these strips until the complete formation of the body is obtained. In placing this material around the strips 1 any well-known means of tamping the material may be employed which will cause the material of which the body is composed to enter the indentations 2 and lock therein, as well as to closely engage the projections 3.

If for any reason it is desired to use two short sections, this may be readily done, and the means and manner of accomplishing it are illustrated in Figs. 4 and 5.

It will be noted with reference to the drawings that the depressions 2 and projections 3 are of uniform size, and hence when one strip is superimposed on the other the projections 3 will enter the respective depressions 2 of the abutting strip.

In order to maintain the two strips thus placed together in perfect engagement with one another, we employ clamps consisting of a hollow frame 4, having an opening there-through of sufficient width and breadth to readily pass over the united strips 1, and when these frames 4 are in the proper position with respect to the two strips wedges 5 are forced into the remaining portion of the opening in the frame 4, which is not occupied by the contacting strips 1. By driving these wedges tightly into position the two strips are firmly united together, and the material which composes the body in which the strips are incorporated will prevent the wedges 5 from being displaced at any time.

It will be stated that in uniting the two short sections of these strips 1 together the amount of lap of one over the end of the other will vary with the requirements of the case, and the number of clamps 4 employed will depend entirely upon the amount of strain to which the entire structure is to be subjected.

It will be seen from the foregoing description that in using this device the strips 1 afford at all times an effectual binder or strengthening device for the material in which they are incorporated, both from the fact that their edges are formed upon lines which will permit the material to obtain an effectual grasp thereon, and, further, the depressions 2 and projections 3 also enable the material to secure a firm hold which will prevent any movement of the device in the material in which it is embedded.

It will be further apparent that when necessary short sections may be employed and firmly united together with approximately the same amount of efficiency as that of a single jointless strip, thereby furnishing a relatively cheap, efficient, durable, and perfect binder for purposes of this character.

What we claim, and desire to secure by Letters Patent, is—

1. A device of the class described compris-

ing a strip of material formed in a continuous length, provided in one face at a point removed from the side edges thereof with a series of depressions of the same contour and on its reverse side with a series of projections corresponding in contour to the depressions of the opposite face whereby when one strip is connected to another strip the projections of one strip will interlock with the depressions of the other strip.

2. A device of the class described comprising a strip of material formed in a continuous length, provided in one face at a point removed from the side edges thereof with a series of depressions and on its reverse side with a series of projections corresponding in contour to the depressions of the opposite face, and said strip having its side edges formed upon lines other than straight.

3. A device of the class described comprising a strip of material formed in a continuous length with a series of regularly-recurring depressions on one face at a point removed from the side edges of the strip and having on its reverse face a series of projections conforming in contour to said depressions whereby when one strip is connected to another strip, the projections of one strip will interlock with the depressions of the other strip, the side edges of said strip being formed upon lines out of parallelism with the longitudinal central line of the device.

4. The combination of two strips of material, each provided along its longitudinal central portion on one face at a point removed from the side edges of the strip with a series of regularly-recurring depressions and on its reverse face with a series of projections corresponding in contour to said depressions, said projections of one strip snugly fitting the depressions of the other strip, and means to lock said strips together when one of said strips is in contact with the other.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CHARLES T. INMAN.
HENRY A. ROBINSON.

Witnesses:

C. E. HUMPHREY,
GLENARA FOX.