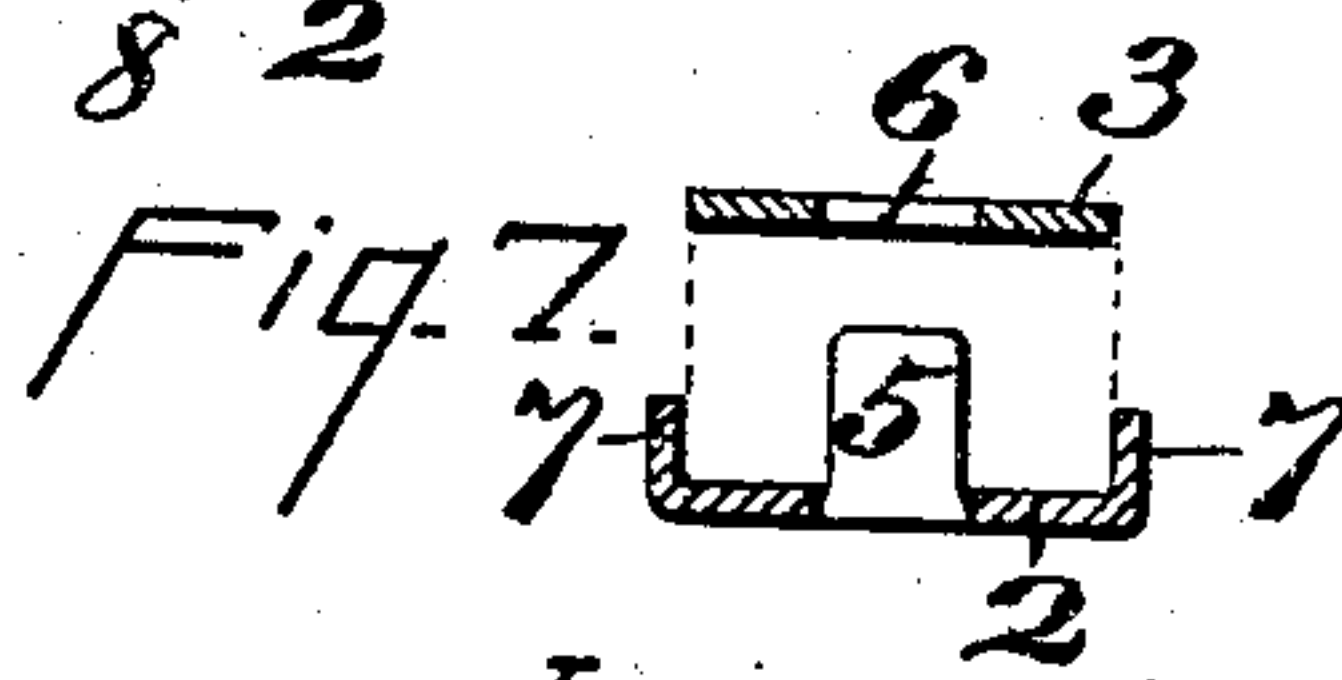
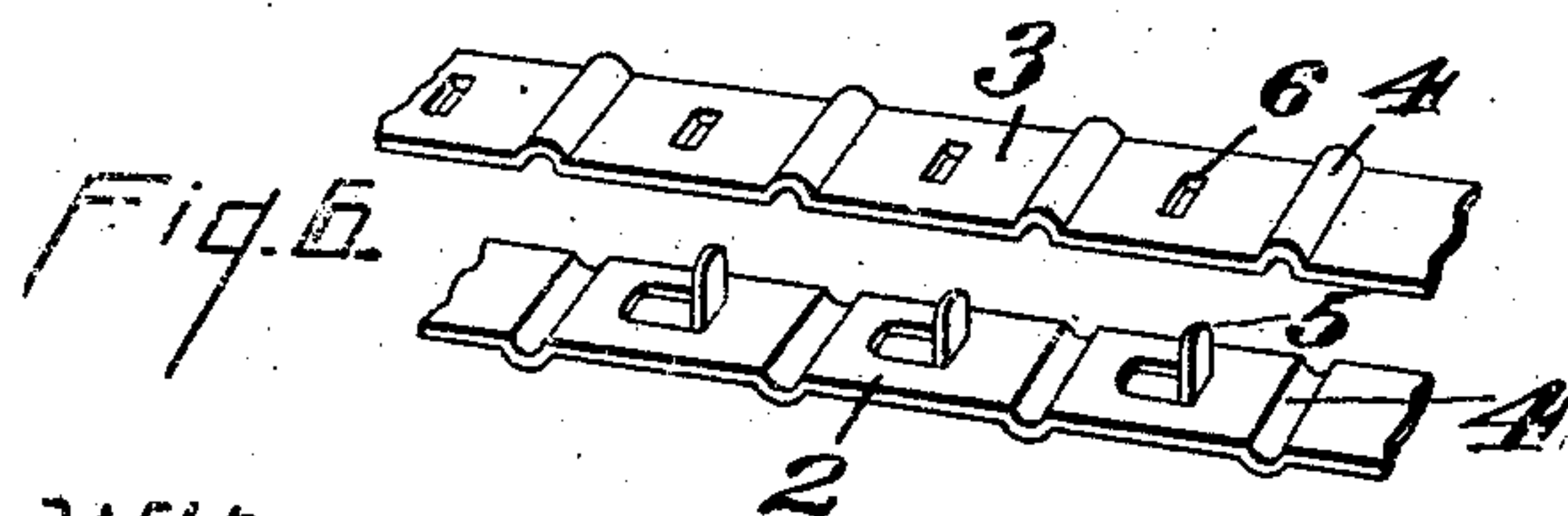
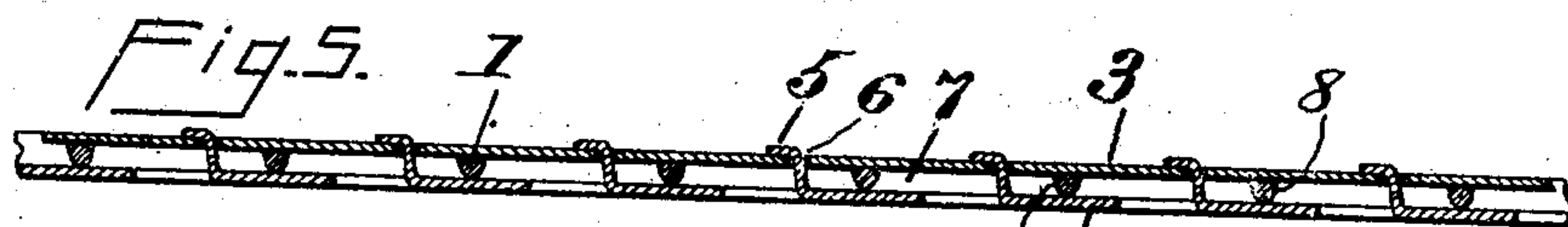
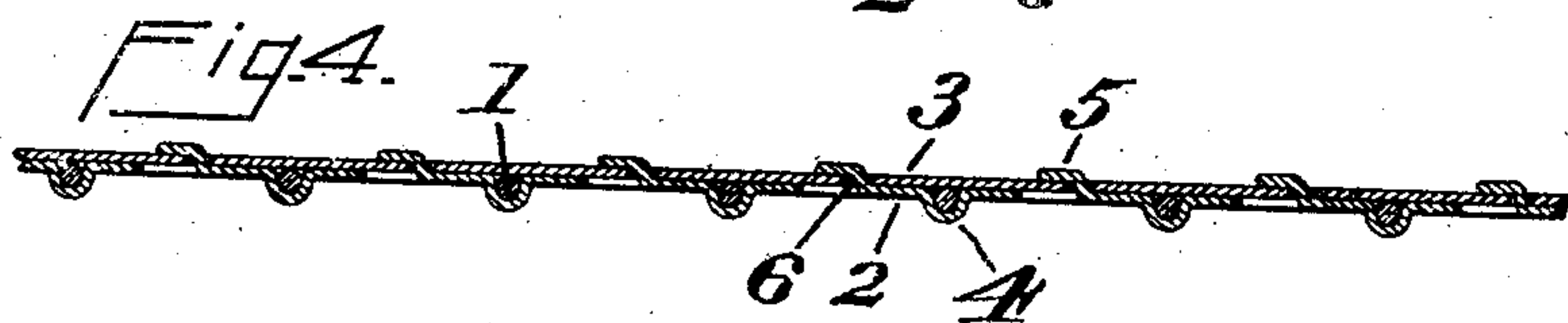
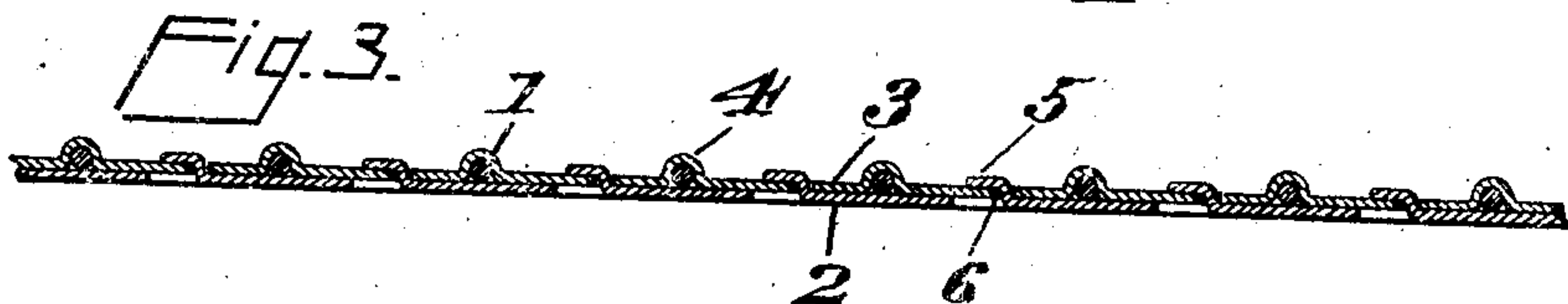
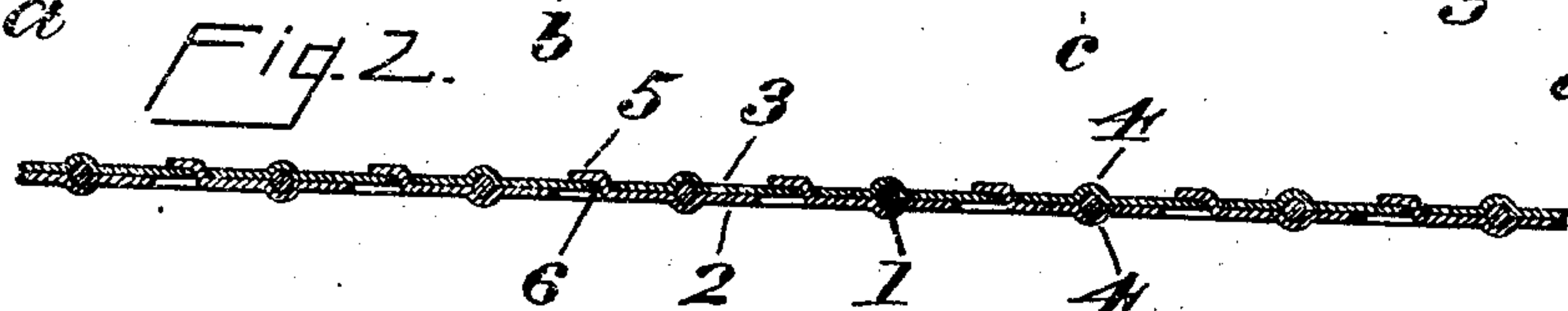
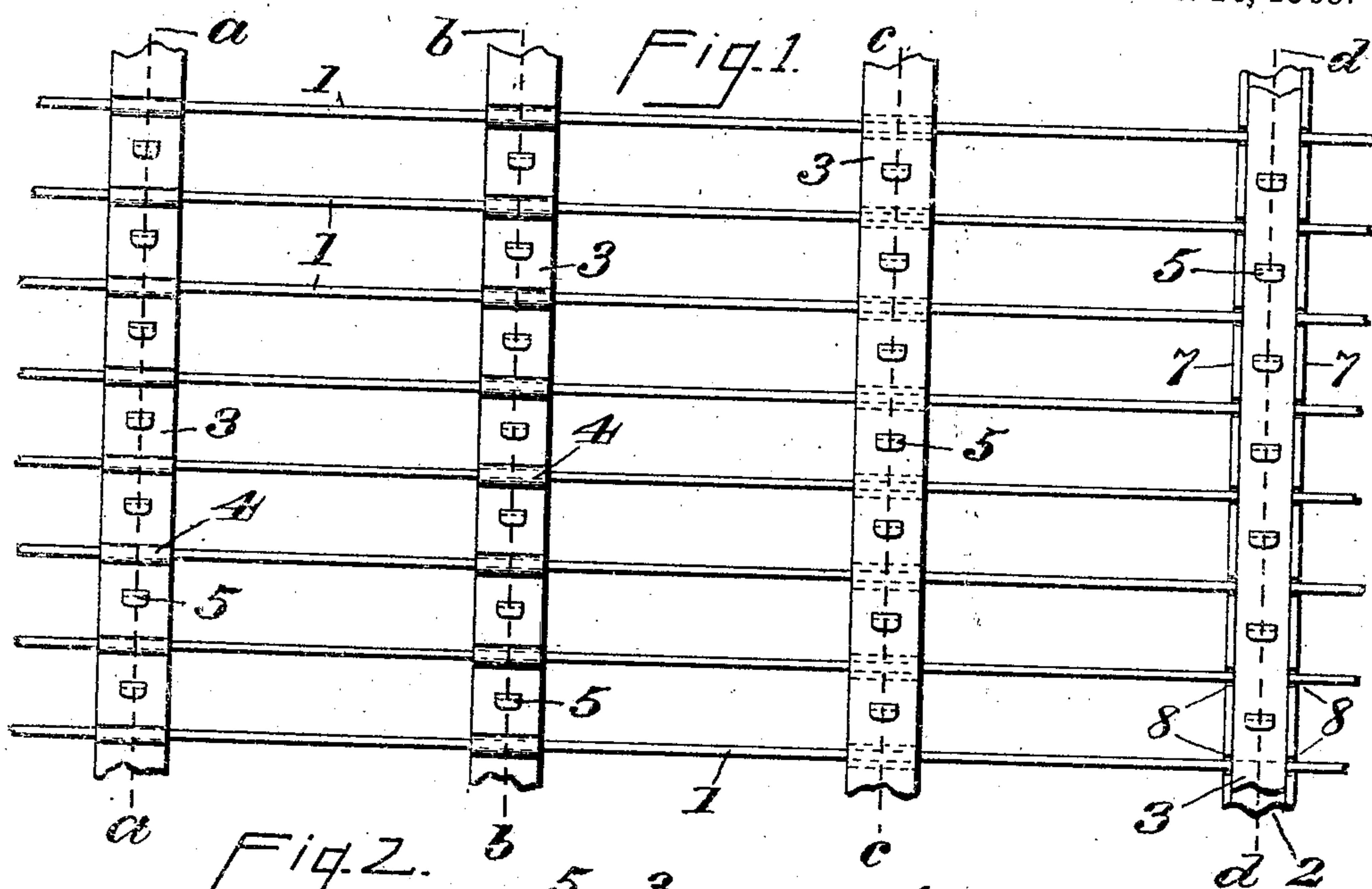
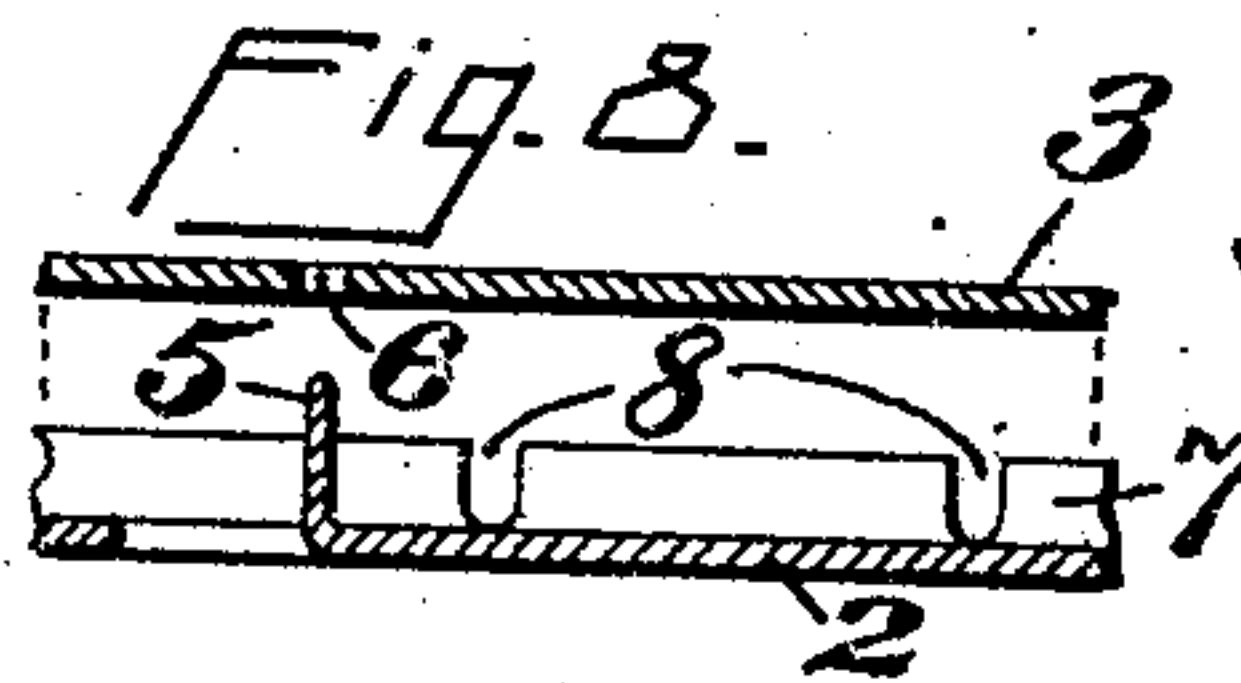


912,481.

Patented Feb. 16, 1909.



Witnesses.
Homer Bradford
Norma Keiser



Inventor.
Thomas G. Melish,
by John Elias Jones,
Attorney.

UNITED STATES PATENT OFFICE.

THOMAS G. MELISH, OF CINCINNATI, OHIO, ASSIGNOR TO THE BROMWELL BRUSH & WIRE GOODS COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

WIRE STRUCTURE.

No. 912,481.

Specification of Letters Patent.

Patented Feb. 13, 1909.

Application filed October 19, 1907. Serial No. 398,210.

To all whom it may concern:

Be it known that I, THOMAS G. MELISH, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Wire Structures, of which the following is a specification.

This invention relates to wire structures and more especially to those used in the construction and manufacture of rat-traps, grading-screens for sand and the like, and its object is to provide a strong and durable rib or tie-bar that is adapted to be interlocked with and engaged by mesh-wires in a ready and effective manner, a series of such ribs or tie-bars being used in parallel array along the wire-mesh, transverse to the latter and holding them a suitable distance apart free from any possible lateral play or disengagement at the several intersections.

The invention consists in certain novel features of the construction, combination and arrangement of the several parts of the improved wire-structure, whereby certain important advantages are attained and the device is made simpler, cheaper and otherwise better adapted and more convenient for application and use in rat-trap, sand-screen and similar structures, all as will be herein-after fully set forth.

The novel features of the invention will be carefully defined in the claim.

In the accompanying sheet of drawings illustrating my invention, Figure 1 is a fragmentary plan view of a wire-structure embodying my invention, showing such invention in a number of correlative forms; Fig. 2, a longitudinal section taken along the dotted-line *a, a* of Fig. 1, showing one of the forms of my invention herein, such form being the preferred one, especially for strength and stiffness; Fig. 3, a longitudinal section taken on the dotted-line *b, b* of Fig. 1, showing a modified form; Fig. 4, a longitudinal section taken on the dotted-line *c, c* of Fig. 1, showing another modified form; Fig. 5, a longitudinal section taken on the dotted-line *d, d* of Fig. 1, showing still another modified form; Fig. 6, a fragmentary perspective view showing the two parts of one of the ribs or tie-bars constituting the preferred form of my invention seen in Fig. 2 and seen, also, at the extreme left in Fig. 1, such two parts being shown apart for clearness; Fig. 7, a

transverse section of the rib or tie-bar shown both in Fig. 5 and at the extreme right in Fig. 1, but with the two parts of the said rib shown apart and in position ready to be closed over a mesh-wire, the latter not being shown in this view; and Fig. 8, a fragmentary longitudinal central section of the rib or tie-bar seen in Fig. 7.

In these views, 1 represents the ordinary mesh-wires, which are arranged parallel to each other and are preferably plain or unbent ones, but they are adapted to be bent at the desired points in rat-trap or similar structures and not necessarily bent at the intersections of the cross-ribs or tie-bars such as I use in my structure and which I will now describe. Transverse ribs forming tie or binding bars are provided, to suitably space and firmly hold the mesh-wires in suitable parallel position, duly separated as customary in rat-trap and grading-screen structures. These ribs or tie-bars are of peculiar construction and form the essential feature of my invention herein. They are each composed of a pair of bars or plates formed of narrow strips of sheet-metal, the mesh-wires being held between each pair of said strips.

For convenience, I will designate 2 as the lower or base-plate and 3 as the upper or clamping-plate of each pair of plates or strips forming the several ribs or tie-bars of my structure. These numerals, 2 and 3, are employed in connection with each of the plates or strips forming the ribs seen in Fig. 1 and the following four views. A series of crimps 4 is made in the several plates 2 and 3, of Fig. 2, such crimps being disposed outwardly and registering when the strips are brought together to form receptacles for the mesh-wires 1.

5 indicates each one of a series of tongues or prongs made in the lower or base-plate 2, alternating with the transverse crimps 4, and 6 indicates each one of a series of transverse slots provided in the upper plate or strip 3, alternating with the crimps 4, in that strip, all as best seen in Fig. 6. When the two plates 2 and 3 are brought together for closing over a series of transversely-disposed mesh-wires 1, the crimps 4 coincide or register to form said receptacles for the mesh-wires and the tongues or prongs 5 register with and pass through the respective slots 6, with the outer ends of said projections clenched or bent down on the outer face of

the strip 3 so as to firmly unite the two strips 2 and 3 together over the series of mesh-wires.

Each of the first five views of the sheet of drawings shows the manner in which the tongues or prongs 5 are clenched and the two parts of each of the ribs or tie-bars secured together with the mesh-wires held between each pair of strips.

I prefer the construction seen to the extreme left in Fig. 1 and, also, shown in Fig. 2 for a structure requiring great rigidity or stiffness and strength, the mesh-wires being completely inclosed in the receptacles formed by the respective registering crimps in both plates forming the ribs or tie-bars. All lateral movement or displacement of the mesh-wires in the crimp-receptacles of Fig. 2 is obviated and especially when the strips of sheet-metal are wide ones whereby a longer bearing is provided for the mesh-wires in the tie-bars.

In Fig. 3 I have shown crimps 4 in the upper plate 3 only, the lower plate 2 having no crimps therein, thus providing a receptacle for the several mesh-wires in said upper plate or strip only. The crimps in this form must necessarily be deeper than those in each plate of the form seen in Fig. 2, so that the lower plate or strip 2 can be clamped contiguous to the upper plate and to the mesh-wires 1 in the fastening of the two plates or strips 2 and 3 over the said mesh-wires.

In Fig. 4 I have shown the same deep crimps seen in Fig. 3, but these crimps are made in the lower plate 2 instead of in the upper one, and the effect is practically the same as in the form seen in said Fig. 3.

In Fig. 5 I have shown a rib or tie-bar structure that is extremely stiff and strong as a result of making the lower plate or strip 2 a channeled one, with upturned side edges or flanges 7, 7, such flanges being provided with vertical notches 8, the latter as best seen in Fig. 8. The notches 8 form receptacles for the mesh-wires and take the place of the crimps 4 seen in Fig. 4. The upper strip 3 is a plane one in this form, the same as that seen in Fig. 4 and the strips 2 and 3 have the prong and slot formations, 5 and 6, respectively, the same as in the previous

views of the drawing, and said prongs are clenched in a like manner. In Fig. 8, however, I have shown that it is not necessary to alternate the notches or seats 8 with the prong and slot formations, such prong and slot formations being capable of arrangement a greater distance apart along the several ribs or tie-bars if desired, especially if a very strong and rigid wire-structure is not required. The upper plate 3 in the form seen in Fig. 3 is of the same width as the space between the flanges 7, 7 of the lower strip 2, so that said upper plate can be brought within the said flanges 7, 7 and clamped firmly down upon and in contact with the mesh-wires, such clamping action being best seen in said Fig. 5.

It is obvious that instead of making elongated openings or slots in the top plate or strip 3 and the broad tongues or projections in the bottom strip 2 of each rib or tie-bar, small circular openings could be made in said upper strip 3 and narrow pins or tongues to correspond to such small openings could be made in the lower strip 2 and a like locking result be effected, except that it would not be quite so strong.

I claim:—

As a new article of manufacture, a wire-structure comprising suitably spaced mesh-wires and a series of intersecting double strips of sheet-metal, such mesh-wires being held at suitable intervals apart between said double strips, one of the strips having a series of suitably spaced transverse slots and the other strip having a series of correspondingly spaced integral tongues adapted to register with and engage said slots and clenched on the outer face of the strip containing the slots for uniting the strips and clamping them firmly over and in suitable engagement with the mesh-wires, and a series of transverse seats or depressions made in one or both of said double-strip members and intervening the respective slots and tongues thereof.

THOMAS G. MELISH.

Witnesses:

JOHN ELIAS JONES,
NORMA KEISER.