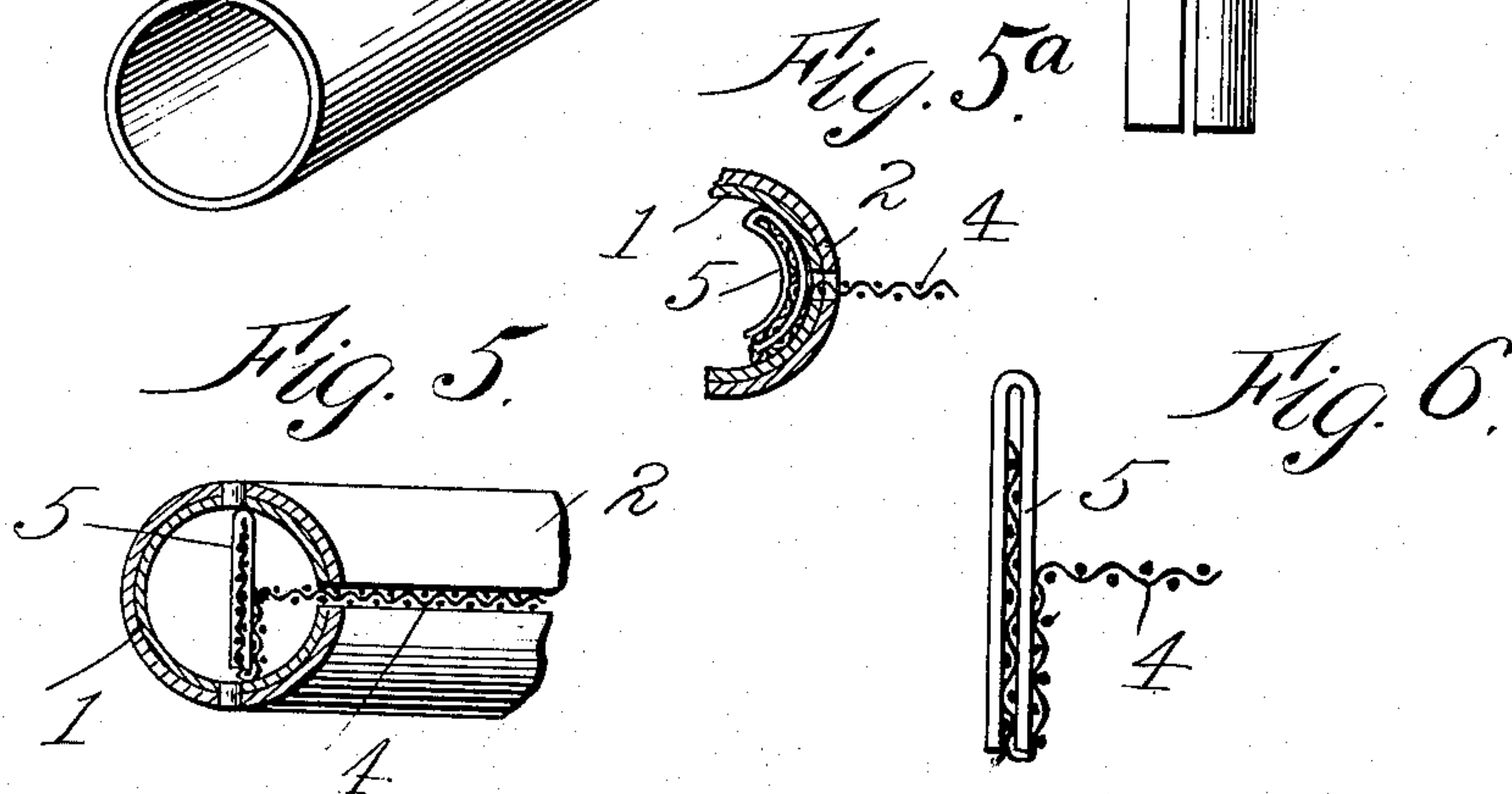
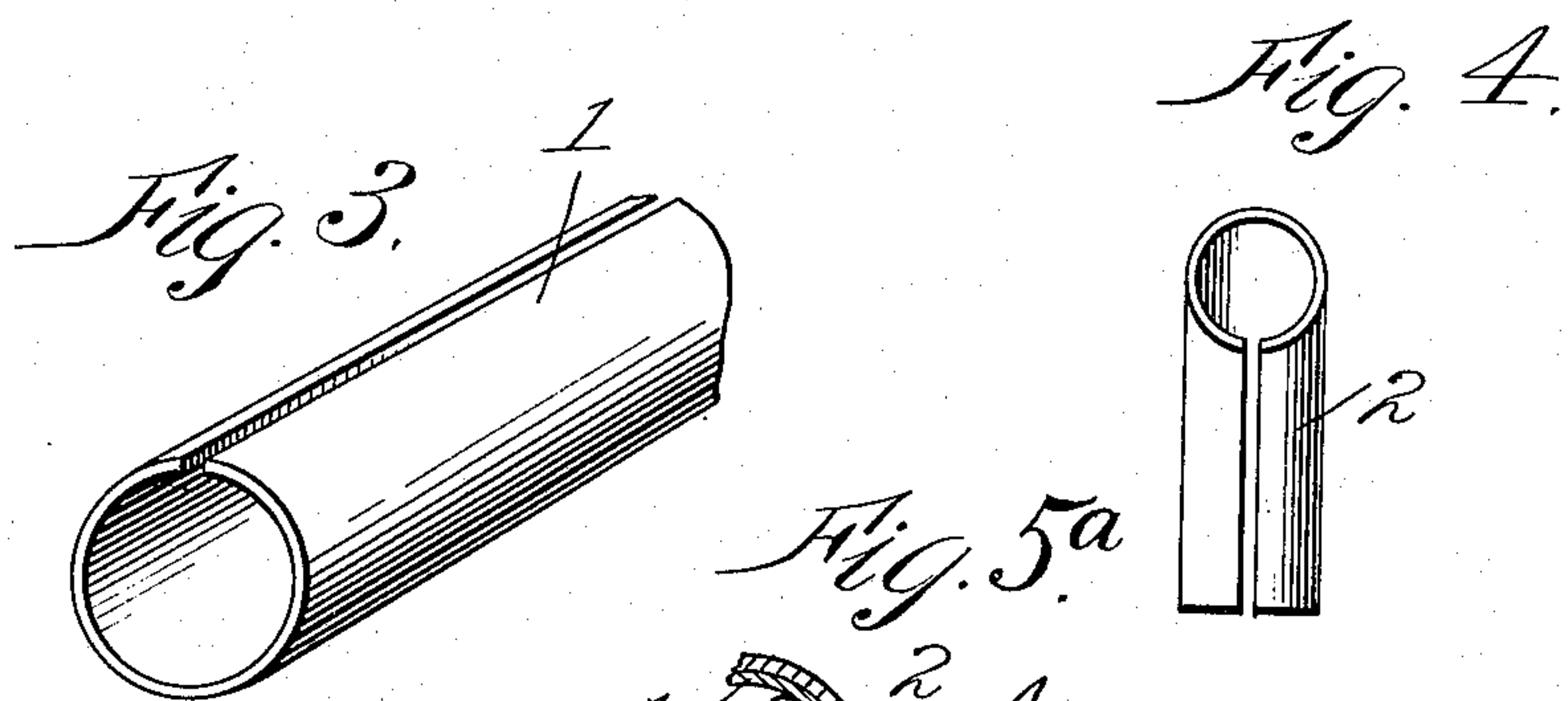
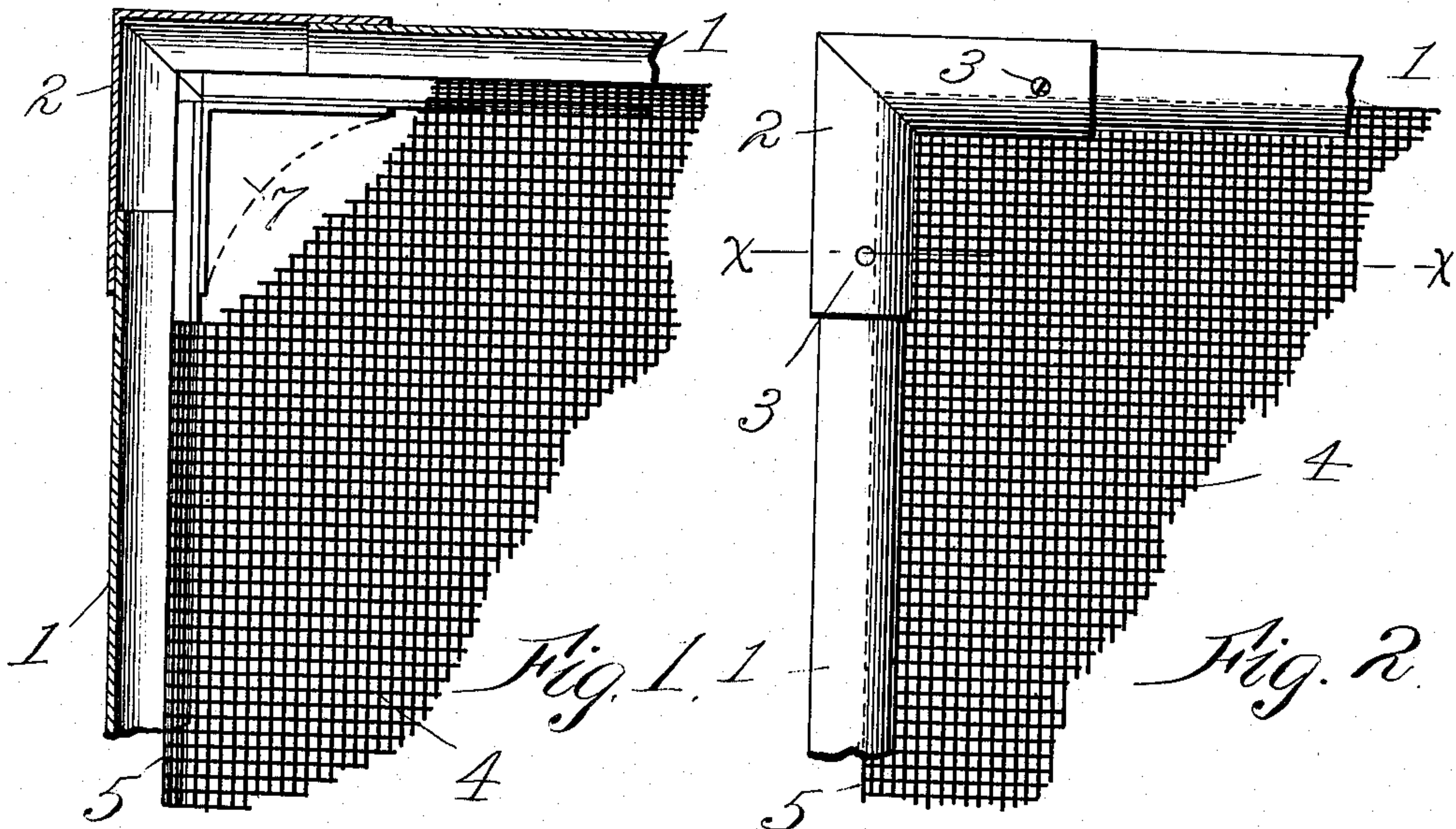


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APPLICATION FILED DEC. 8, 1908.

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Patented Aug. 31, 1909.
2 SHEETS—SHEET 1.



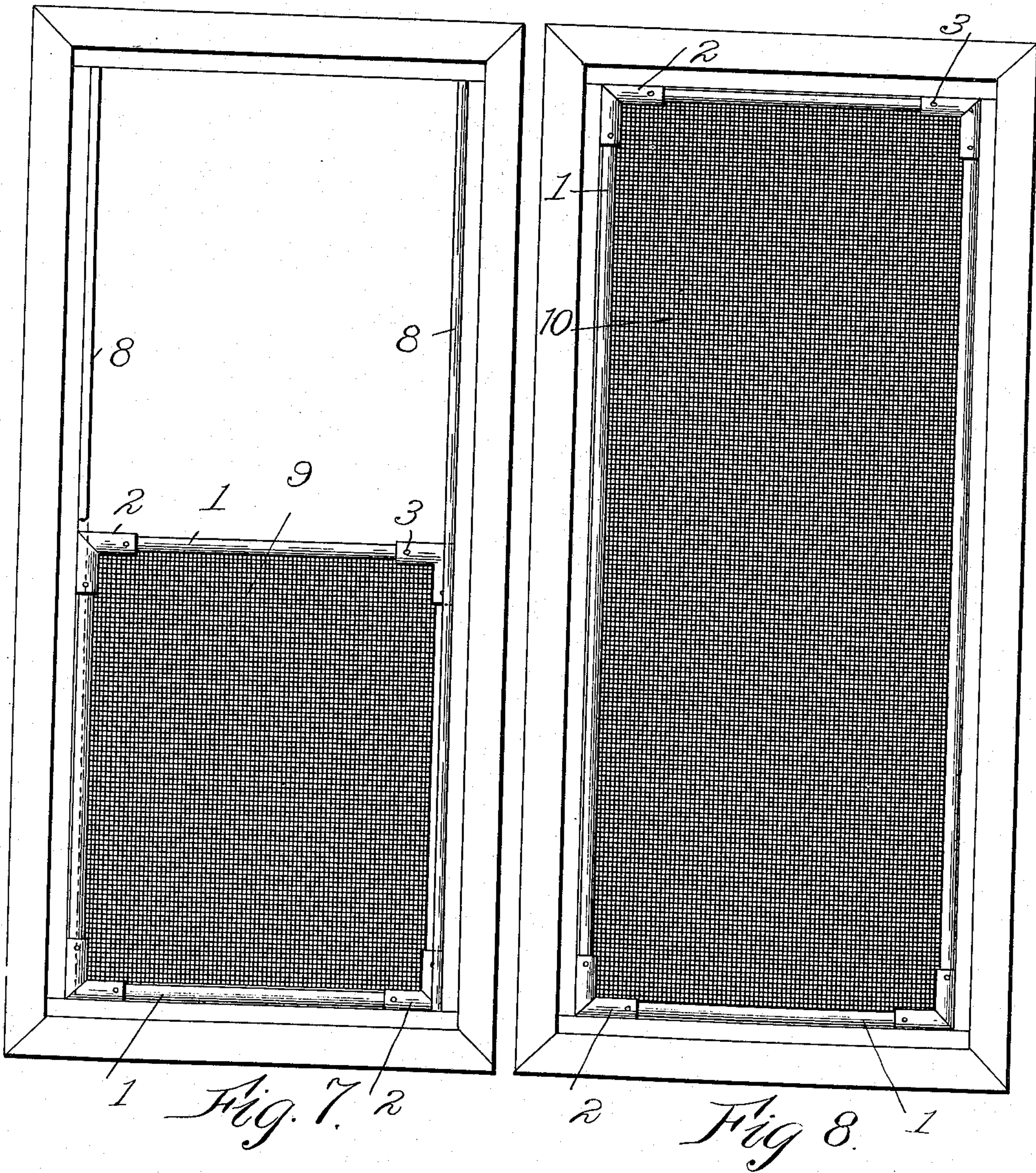
Witnesses:
H. Alfred Jauke
H. H. Wright

Inventors
William S. Welch & James D. Mumford
By their Attorneys
J. M. & W. B. D.

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Witnesses:
H. Alfred Faulk
H. H. Knight

William S. Welch and James D. Mumford
Inventors
By their Attorneys
[Signature]

UNITED STATES PATENT OFFICE.

WILLIAM S. WELCH AND JAMES D. MUMFORD, OF WESTFIELD, NEW JERSEY.

WIRE SCREEN FOR WINDOWS AND THE LIKE.

932,731.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed December 8, 1908. Serial No. 466,483.

To all whom it may concern:

Be it known that we, WILLIAM S. WELCH and JAMES D. MUMFORD, citizens of the United States, residing in Westfield, county of Union, State of New Jersey, have invented certain new and useful Improvements in Wire Screens for Windows and the Like, of which the following is a full and clear specification, illustrated by the accompanying drawings, and the novel features of which are pointed out in the annexed claims.

The invention relates in particular to the kind of wire screens for windows, doors or porches which have a metal frame, preferably made out of metal tubing, which are well-known in the art.

The novel features of our improved screen are that the frame which holds the wire netting stretched is as narrow as possible, so that an unappreciable amount of window or door space is covered by the frame itself, and that the fraying of the netting is prevented owing to its being held by the frame throughout the whole length of each side uniformly stretched at every point by the binding which holds the thread-ends together. Moreover, another advantage of our structure is that the grip of the frame on the netting does in no way injure the latter, so that in case, for instance, the screen should be of a very large size to make it cumbersome to handle, the corners and ends may be removed in case screws are used for holding the frame together and the screen can be thus easily rolled up, stored during the winter, and assembled again without thereby injuring the edges of the netting. It is also obvious that, owing to the small amount of metal required for our screen, the latter may be made extremely light.

In the accompanying drawings, Figure 1 shows a corner of a screen with the frame in longitudinal section. Fig. 2 shows the same view with the frame in full view. Figs. 3 and 4 show portions of the frame tubing and the corner pieces, respectively. Fig. 5 is a sectional view of the frame on the line $x-x$ in Fig. 2 seen in the direction of the arrow showing the form of the binding when the tube has been slipped over. Fig. 5^a shows the same view with the binding drawn tight toward the wall of the tube when the screen has been stretched after assembling. Fig. 6 is a detail view of the edge-binding of the netting. Fig. 7 shows the screen arranged slidingly in the window to cover

only one sash and Fig. 8 shows a fixed screen for covering the whole window.

The frame, as illustrated in Figs. 1 and 2, consists of split tubing 1 (part of which is illustrated in Fig. 3), which is held together at the corners of the frame by corner pieces 2, which are also split as indicated in Fig. 4. The corner pieces may be fixed to the tubing either by screws or rivets 3. The netting 4 is held in split tubing 1, into which it extends through the slit of the tubing by means of a head or binding 5, which is illustrated in detail in Fig. 6. This binding 5 extends along each side of the netting and may be formed in any suitable manner at the edges of the fabric the entire length and extends through the slit of the corner piece at each end as indicated in Fig. 2 in dotted lines.

The preferred form of the binding as illustrated in Fig. 6 comprises a metal strip 5 folded to hold the edge of the fabric 4 between it, which fabric is then bent as illustrated in Fig. 6 and thoroughly pressed together with the binding strip 5. Thereafter the whole edge may be soldered if necessary, so that this whole binding, with the fabric between it, will form a strong T shaped edge which will prevent any fraying of the fabric and holds the wire firmly in the tubing. Over this binding 5 the split tubes 1 are slipped on the four sides of the screen and then the corner pieces 2 attached, whereafter the screen is stretched on all four sides and the screws or rivets 3 are put in, which hold the corner pieces fixed to the tubing 1, as explained above. The binding 5 assuming in tubing 1 the position shown in Fig. 5^a in detail after the screen has been properly stretched, it will be seen that the fabric is held throughout the whole length of each side by the tubing at every point, so that it cannot form any wrinkles or waves as is the case in many other wire screens of known kind in which the fabric is held by the frame only at the points where rivets or nails are driven through the frame and through the fabric. It will thus be further seen that by removing screws 3 and pulling the corner pieces 2 from tubing 1, the screen may be easily disassembled without injuring the fabric in any way.

In order to reinforce the frame—in case of a porch screen—the corner pieces 2 may be provided with webs 7, as indicated by dotted lines in Fig. 1. To hold a sliding

screen, as illustrated in Fig. 7, in the sash frame I may employ a piece of half-tubing 8, screwed to either side of the window in which the screen 9 may slide. The use of half-tubing for this purpose is well-known in the art. The screen 10, illustrated in Fig. 8, covering the whole window, may be fastened in any suitable manner to the window frame.

Both in Figs. 7 and 8 it will be noted that, owing to my improved manner of fastening the screen fabric to the frame, the latter may be made narrow enough so that it will be hardly noticed on the window and when the entire window is screened on the outside it fits between the blind and sash and does not interfere with the use of either.

What we claim is:

A screen for windows or the like, having a tubular frame consisting of split tubing and fabric having an independent binding on each edge adapted to be slid into said tubing without protruding through the slits thereof, and of suitable size to hold said fabric attached to said tubing throughout the whole length of the binding.

2. A screen for windows or the like, having a tubular frame consisting of split tubing and fabric having an independent binding on each edge partially formed of the fabric itself and partially of binding material, and adapted to be slid into said tubing without protruding through the slits thereof, and of suitable size to hold said fabric at-

tached to said tubing throughout the whole length of the binding.

3. A screen for windows or the like, having a tubular frame consisting of split tubing and fabric having an independent binding on each edge adapted to be slid into said tubing without protruding through the slits thereof, and of suitable size to hold said fabric attached to said tubing throughout the whole length of the binding, said binding comprising a folded metal strip for clamping the edge of the fabric between it, and folded and suitably held together with the fabric to form an enlargement with the surface of the latter.

4. A screen for windows or the like, having a tubular frame consisting of split tubing and fabric having an independent binding on each edge adapted to be slid into said tubing without protruding through the slits thereof, and of suitable size to hold said fabric attached to said tubing throughout the whole length of the binding, said binding comprising a folded metal strip for clamping the edge of the fabric between it, and folded and suitably held together with the fabric to form a T with the surface of the latter.

WILLIAM S. WELCH.
JAMES D. MUMFORD.

Witnesses:

HERBERT H. KNIGHT,
H. ALFRED JANKE.