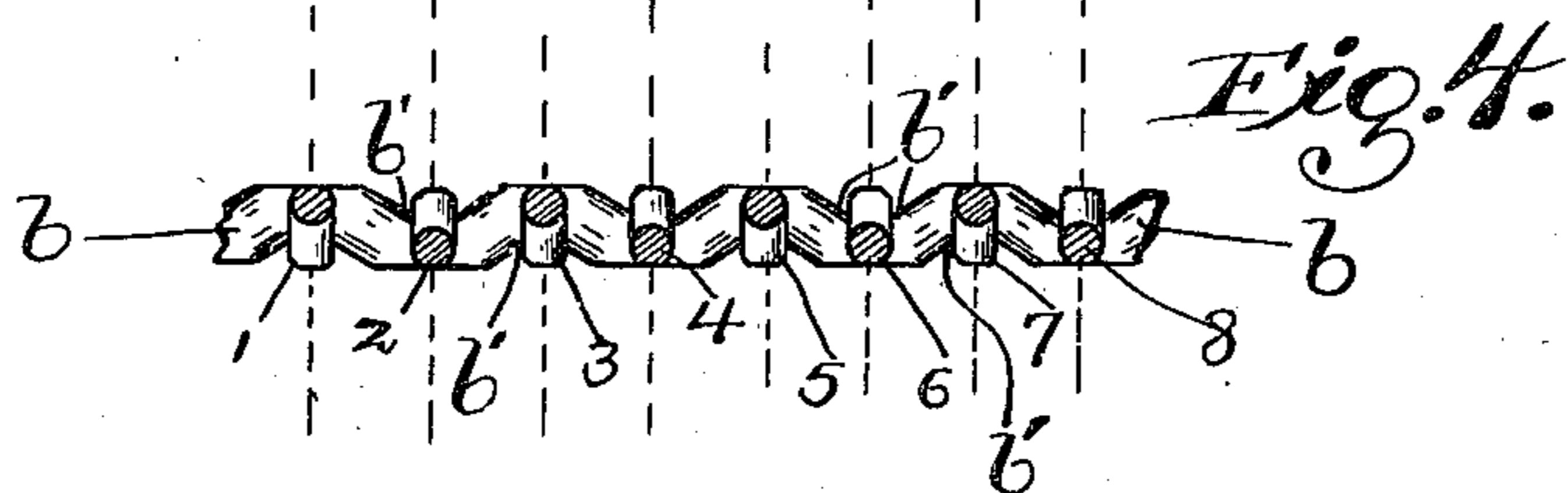
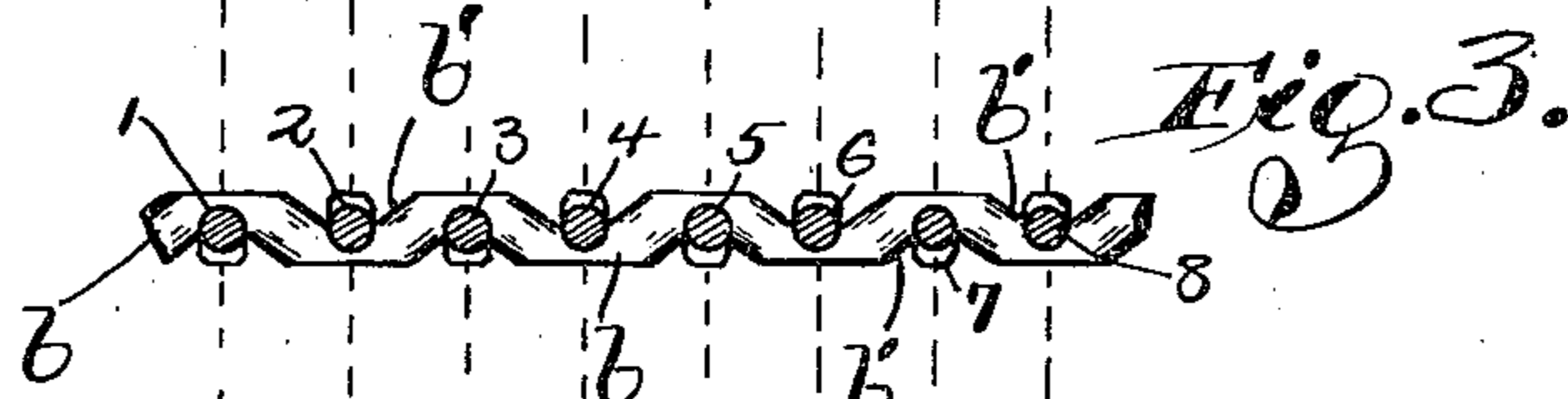
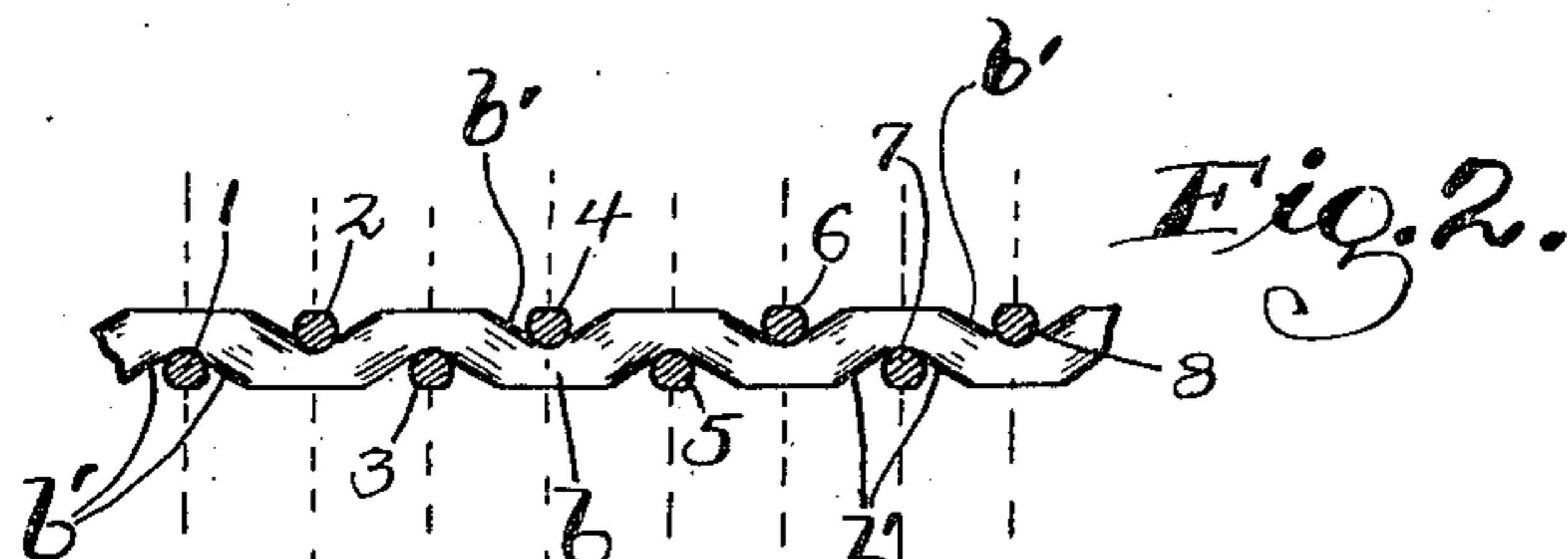
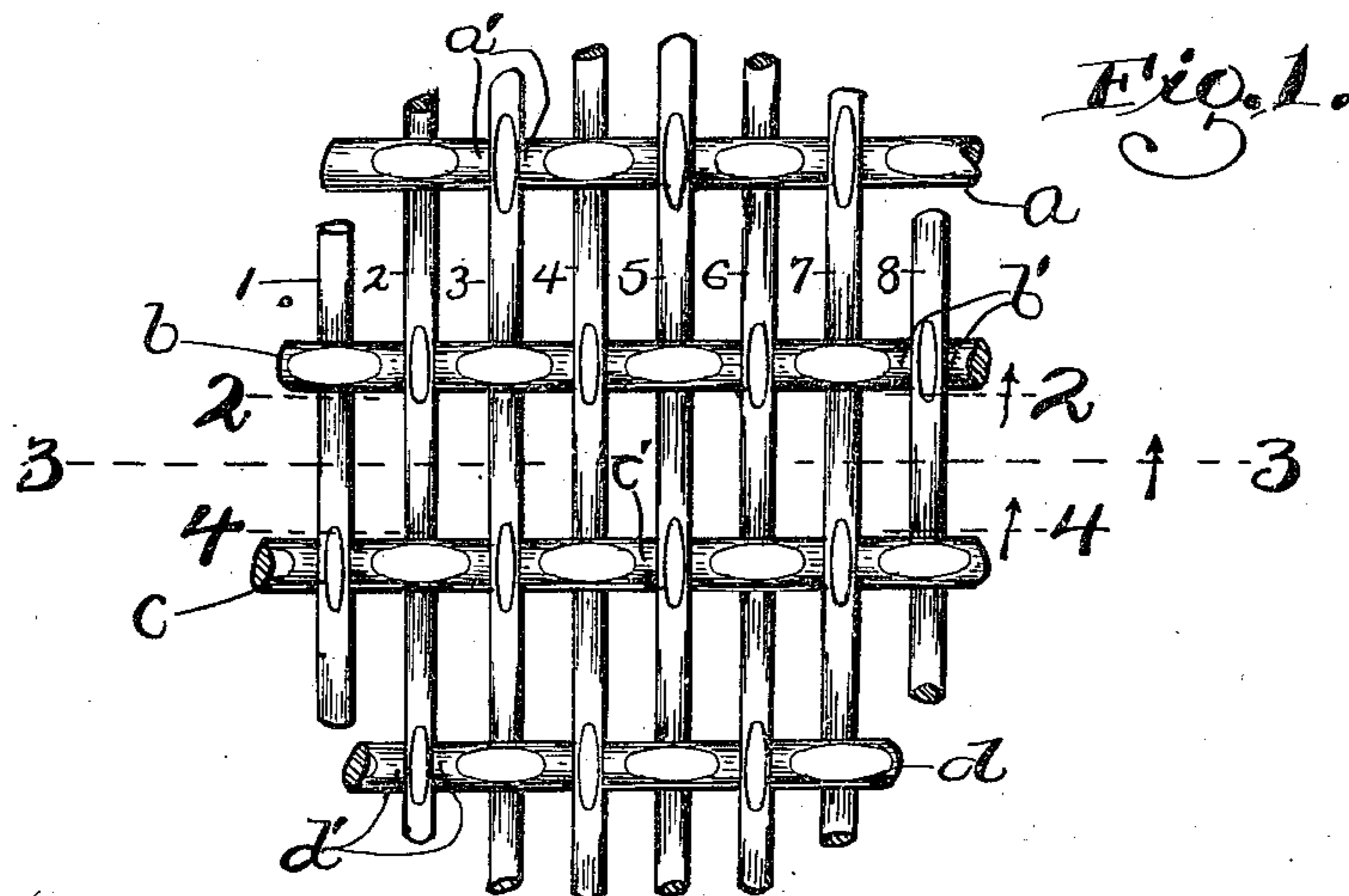


M. P. REYNOLDS.
WOVEN WIRE FABRIC FOR SCREENS.
APPLICATION FILED MAY 27, 1907.

966,599.

Patented Aug. 9, 1910.



WITNESSES:
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UNITED STATES PATENT OFFICE.

MORLEY P. REYNOLDS, OF CLEVELAND, OHIO, ASSIGNOR TO THE W. S. TYLER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

WOVEN-WIRE FABRIC FOR SCREENS.

966,599.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed May 27, 1907. Serial No. 375,941.

To all whom it may concern:

Be it known that I, MORLEY P. REYNOLDS, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Woven-Wire Fabrics for Screens; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to new and useful improvements in metallic fabric particularly adapted for screening purposes.

The object of my invention is to produce a metallic slot screen which will have a comparatively smooth plane surface, and will be constructed to withstand abrasion of particles coming in contact with the same, as well as one with greater discharging surface or air space than other screens heretofore produced, thus making it possible to pass a relatively larger tonnage of particles through the same.

My invention consists in the matter substantially as hereinafter claimed.

I shall now describe my invention so that others skilled in the art to which it appertains may manufacture and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a view of a wire fabric embodying my invention. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 1.

Like symbols of reference indicate like parts in each of the several figures.

In the drawing, 1, 2, 3, 4, 5, 6, 7, and 8, represent the warp wires, which are preferably circular in cross-section, and *a*, *b*, *c*, and *d*, represent the chute or weft wires, which may be either circular or rectangular in cross-section and are shown as being considerably larger in cross-sectional area than the warp wires. The chute or weft wires are also made of a softer metal than the warp wires.

In forming my improved fabric the warp and the weft wires are preferably so woven together, as illustrated in the drawing, as to

produce a fabric having an oblong mesh. The fabric thus woven is then pressed or rolled in order to bring the surfaces of the warp wires and the weft wires, where they cross one another, into substantially the same plane. During this pressing or rolling operation, as the chute wires are of softer metal than the warp wires, the chute wires will be bent or pressed by the pressure of the warp wires, where they cross the chute wires, so as to form seats, as at *a'*, *b'*, *c'*, and *d'*, in which seats the warp wires lie. The surface of the fabric where the wires cross one another will then be in substantially the same plane, but neither the warp wires nor the chute wires will be flattened to any great extent, and each of the warp wires will maintain the crimped or undulating form, which was imparted to it during the weaving operation. Therefore the portion of each warp wire between any pair of chute wires will be inclined in the opposite direction to the adjoining portion of each warp wire at each side thereof. To illustrate, assuming that the screen is lying in a horizontal position, and taking for consideration the portions of the wires 2 and 3 lying between the chute wires *a* and *b*;—it will be seen that where the wires 2 and 3 cross the chute wire *a* the wire 2 is underneath the chute wire *a* and the wire 3 is above the same. The wire 2 then inclines upwardly and passes over the chute wire *b* while the wire 3 inclines downwardly and passes underneath the chute wire *b*, so that where the wires 2 and 3 cross the wire *a* the wire 3 is above the wire 2, while the central portions of said wires 2 and 3 between said chute wires *a* and *b* are in the same horizontal plane. Now if the distance between the said portions of the wires 2 and 3 at their central points between the wires *a* and *b* and the distance between them where they cross either of the chute wires *a* or *b* be measured, it will be found that said wires 2 and 3 are farther apart where they cross the chute wires *a* and *b* than they are at their said central points, and although the difference is comparatively slight it can be positively observed. In this way I produce a metallic wire fabric in which each mesh or opening has a greater capacity at its ends than at its center, and in actual use I have found this to be a most valuable feature, as

screens constructed of such a fabric do not become clogged and are free from other objections common to ordinary screens.

Another advantage of my invention lies in this that by reason of the pressing or rolling operation to which the woven fabric is subjected and of the fact that the chute or weft wires are of softer metal than the warp wires the two sets of wires are firmly interlocked with each other at their intersections, and any tendency of the chute wires to move relatively to each other is practically eliminated, and a screening fabric is produced in which the meshes will remain uniform in shape and size and will not vary in these particulars as frequently occurs in the case of screening fabrics heretofore in common use. Also by forming the chute wires of softer metal than the warp wires the fabric will better withstand vibration and the chute wires the extreme bending to which they are subjected in the crimping over and under the hard warp wires. Hard chute wires crimped and compacted or pressed or rolled in the manner described would crystallize and be very liable to break easily owing to their lack of ductility. It will be understood, of course, that the difference in the hardness between the chute and the warp wires will naturally depend upon the service to which the screening fabric is to be put. In some screens the difference will be quite marked; in others not so great. The chute wires are also preferably made larger than the warp wires for the purpose of strengthening the screen, as there are fewer chute wires than warp wires and also being softer than the warp wires they are more liable to wear and abrasion and hence should be larger to withstand the wear equally with the warp wires. In the oblong mesh screen it is necessary to have the weft wires inter-

locked with the warp wires to positively maintain such wires in their proper spaced relation with each other.

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I claim:—

1. A metallic pressed or rolled fabric for a screen, comprising warp wires and weft wires, the weft wires being larger and being formed of softer metal than the warp wires and the warp wires being pressed into the weft wires and thereby interlocked therewith. 50

2. A metallic pressed or rolled fabric for a screen, comprising warp wires and weft wires, the weft wires being formed of softer metal than the warp wires and the warp wires being pressed into the weft wires and thereby interlocked therewith. 55

3. A metallic unitary structure for a screen, comprising a pressed or rolled fabric embodying warp wires and weft wires, the weft wires being softer and spaced farther apart than the warp wires so as to produce an oblong mesh in the screen and the warp wires being pressed into the weft wires and thereby interlocked therewith. 60

4. A metallic unitary structure for a screen comprising a pressed or rolled fabric embodying warp wires and weft wires, the weft wires being larger and of softer metal and spaced farther apart than the warp wires so as to produce an oblong mesh in the screen and the warp wires being pressed into the weft wires and thereby interlocked therewith. 65

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses. 75

MORLEY P. REYNOLDS.

Witnesses:

VICTOR C. LYNCH,
B. C. BROWN.