Jan. 14, 1936. J. H. HOLTZAPPLE 2,027,778

WOVEN WIRE SCREEN CLOTH

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Fig.1.

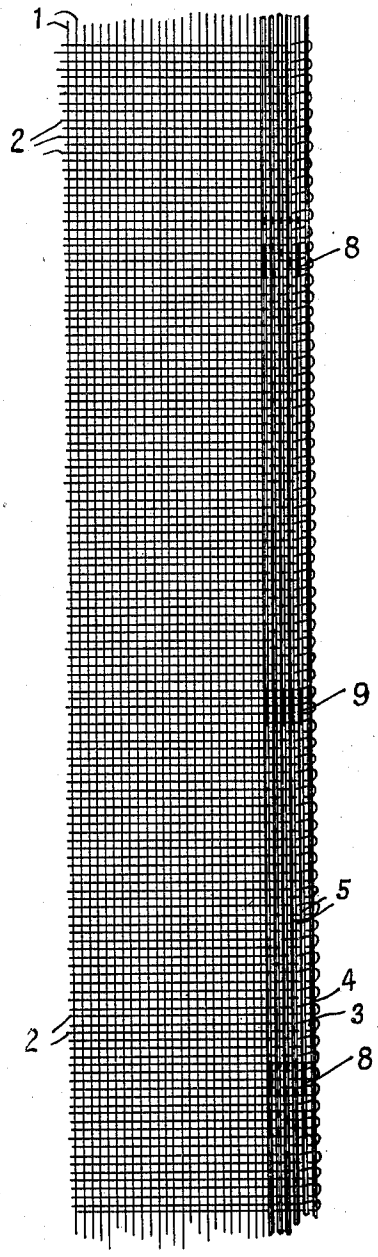


Fig.2.

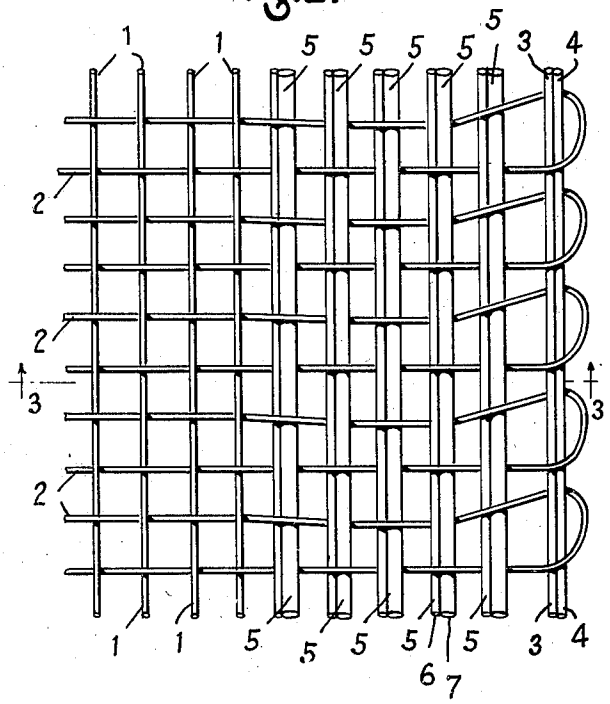
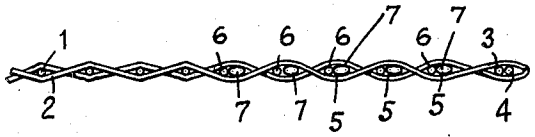


Fig.3.



INVENTOR

John H. Holtzapple

BY

Emery Booth Vanny & Whittemore

ATTORNEY

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WOVEN WIRE SCREEN CLOTH

John H. Holtzapple, York, Pa., assignor to New York Wire Cloth Company, New York, N. Y., a corporation of Delaware

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7 Claims. (Cl. 139—425)

This invention relates to improvements in woven wire screen cloth, the principal object of the invention being to provide a screen cloth of improved construction whereon legible indicia such as indications of lineal measurements may be printed.

Woven wire screen cloth is initially sold and distributed in rolls, usually 100 feet in length, and thereafter cut into shorter lengths for retail sales. The advantages of having a measuring device permanently associated with such a roll of screen cloth have long been recognized and many expedients have been resorted to in order to provide a measuring device. It would obviously be desirable to apply directly to the screen cloth along an edge thereof, suitable marks or numerals to indicate the desired length of screen cloth which is to be cut from the roll, as well as the length remaining in the roll, and the length to be cut to fit a frame, but the open mesh and relatively fine strands making up the warp and weft of the screen cloth do not provide a satisfactory background for legible markings of lineal measurements. To accomplish this result it has heretofore been proposed to associate with woven wire fabrics a printed tape of paper or other material, to stitch a yarn along the edge of the fabric and to indent this yarn at regular intervals, or to apply heavy paint along the edge of the fabric and to let the paint extend into the body of the fabric at regular intervals, but each of these and other expedients which have been resorted to, are subject to objection for one reason or another.

The present invention, in contradistinction to these several expedients which have heretofore been adopted, provides for the printing directly upon the screen cloth and with suitable quick-drying ink or ink-like material, of any one of a variety of indicia which may be found most suitable and useful.

The accompanying drawing shows a preferred embodiment of the invention and therein

Figure 1 is a plan view of screen cloth embodying the invention;

Figure 2 is an enlarged plan view of a part of Figure 1; and

Figure 3 is an enlarged cross section of line 3—3 of Figure 2.

The screen cloth illustrated in the drawing is made up for the most part by the weaving of the usual warp wires 1, and weft wires 2. The selvedge edge of the fabric is formed in the usual manner by returning the weft wires around the marginal warp wires 3 and 4.

Adjacent one or both selvedge edges a printing band is formed by the insertion of specially designed warp elements 5, each of which, in the illustrative embodiment of the invention, is separated from the others by weft crossings and is considerably wider in the plane of the fabric than the diameter of any normal warp or weft wire. These ribbon-like warp elements may advantageously comprise a flattened wire 6, as more clearly shown in Figures 2 and 3, together with a round wire 7, and may be woven into the fabric as a single warp element.

As illustrated, there are five of these warp elements 5, but there may be more or less depending upon the width of the printing band which it is desired to provide, and the mesh or count of the screen cloth itself.

As an example of a desirable construction embodying the invention, it may be assumed that the screen cloth herein illustrated is woven from a wire .011 inch in diameter, and is of 16 mesh. In such case the element 6 may be a wire of larger diameter, which prior to weaving has been passed through rolls or dies to give it a somewhat elliptical form in cross section, so that the long axis of a cross section is approximately .021 inch and the short axis is approximately .006 inch. It will be observed that the thickness of the finished flattened wire 6, which is approximately .006 inch, is less than the diameter of the wire used in the illustrated case for warp and weft wires. Preferably the diameter of the wire 7, which is laid alongside the flattened wire 6, is also less than the diameter of the normal warp and weft wire, and in this particular instance wire 7 has a diameter of .009 inch.

It will be noted that the thickness of each wire in the warp element 5 is less than the diameter of the normal warp and weft wires in the body of the fabric. This smaller dimension is preferable because in placing the elements 5 closer together, the crimp on these wires becomes more pronounced on account of the constricted space they occupy. Therefore, to eliminate the thickening of the cloth along the edge, it is advantageous to decrease this dimension to such a point that when the warp elements 5 are crimped in their constricted space, the distance from the top to the bottom of the crimped wire is the same or preferably slightly less than the thickness of the body of the cloth. The formation of the printing band is thus accomplished without increasing the thickness of the fabric along the edge and the described construction also provides a uniform tension, uniformly distributed throughout

the fabric so that there is no distortion of the wires with resulting puckering of the finished fabric and consequent difficulty in stretching it into screen frames.

It will be observed that the printing band provided as above described affords a background for printing in that it presents for any given unit of area, substantially more surface for the reception and retention of the printing medium than does the normal surface of the screen cloth. Each one of the warp elements **5** is from two to three times as wide as the normal warp wire **1**, and, inasmuch as the distance between centers of these warp elements **5** is the same as the distance between centers of the warp wire **1**, the open spaces between the former are very much less than the open spaces throughout the fabric.

Moreover, the above described construction secures the desired result without thickening the screen cloth along the edge which, as will readily be appreciated, would interfere with the formation of a compact roll and with the assembly of the screen cloth into screen frames or the like.

In addition to the formation of the printing band, the herein described construction provides strengthening and reinforcement to the edge of the screen cloth.

Again referring to the drawing and particularly to Figure 1, suitable indicia indicating lineal measurements are shown by way of illustration, along the printing band. If it is desired to indicate footage on any roll, numerals as indicated at **8**, may be applied to the printing band by any suitable printing device, and if it is desired to divide each foot of screen cloth into smaller units, marks such as the rectangular blocks **9** may be applied between the footage markings. Any other desired information may be printed along this printing band at any desired intervals.

It is to be understood that the invention may be variously modified and embodied within the scope of the subjoined claims.

I claim as my invention:

1. Woven wire screen cloth consisting throughout substantially its entire extent of conventional and similar warp and weft elements and provided along at least one selvage edge thereof with a printing band comprising a plurality of closely spaced special warp elements each consisting of a flattened wire and a round wire laid in contact with each other and together presenting a surface substantially wider than the diameter of any of said conventional warp and weft elements, and adapted to receive and to afford a background for suitable indicia printed upon said printing band.

2. Woven wire screen cloth consisting throughout substantially its entire extent of conventional warp and weft elements and provided along at least one selvage edge with a printing band comprising a plurality of special warp elements positioned along and adjacent to said edge, each special warp element comprising a pair of wires including a substantially round wire having a diameter approximately one-fifth less than the diameter of said conventional elements, and a flattened wire having a width nearly twice and a thickness about one-half of the diameter of said conventional elements, the said two wires being laid together as a single warp element and together presenting a surface substantially wider in the plane of the cloth than any of said conventional elements, and said plurality of special warp elements together forming the printing band adapted to receive and to afford a background for suitable indicia printed thereon.

3. Woven wire screen cloth consisting throughout its entire extent of warp and weft elements woven in the conventional manner and provided along at least one selvage edge with a printing band comprising a plurality of special warp elements positioned along and adjacent said edge and separated from each other by weft crossings, each special warp element being wider in the plane of the screen cloth than each of said conventional elements, and said plurality of special warp elements together forming the printing band adapted to receive and afford a background for suitable indicia printed thereon.

4. Woven wire screen cloth consisting throughout its entire extent of conventional warp and weft elements woven in the conventional manner and provided along at least one selvage edge with a printing band comprising a plurality of special warp elements positioned along and adjacent said edge and separated from each other by weft crossings, each special element including a strand of different cross-sectional area from the cross-sectional area of said conventional elements, and said plurality of special warp elements together forming the printing band adapted to receive and form a background for suitable indicia printed thereon.

5. Woven wire screen cloth consisting throughout substantially its entire extent of conventional and similar warp and weft elements and provided along at least one selvage edge with a printing band comprising a plurality of special warp elements positioned along and adjacent said edge, each special warp element comprising a plurality of strands of different cross-sectional area from the cross-sectional area of said conventional elements, and said plurality of special warp elements together forming a printing band adapted to receive and afford a background for suitable indicia printed thereon.

6. Woven wire screen cloth consisting throughout substantially its entire extent of conventional and similar warp and weft elements and provided along at least one selvage edge with a printing band comprising a plurality of special warp elements positioned along and adjacent said edge, each special warp element being wider in the plane of the screen cloth, and of less thickness transversely thereof than each of said conventional warp elements, and said plurality of special warp elements together forming a printing band adapted to receive and to afford a background for suitable indicia printed thereon.

7. Woven wire screen cloth consisting throughout substantially its entire extent of conventional and similar warp and weft elements and provided along at least one selvage edge with a printing band comprising a plurality of special warp elements positioned along and adjacent to said edge, each special warp element consisting of a plurality of wires of less thickness transversely of the cloth than said conventional elements, but together presenting a surface substantially wider in the plane of the cloth than any of said conventional elements, and said plurality of special warp elements together forming a printing band adapted to receive and afford a background for suitable indicia printed thereon.

JOHN H. HOLTZAPPLE.