

Feb. 10, 1925.

E. S. BLACK

1,525,532

SCREEN

Filed March 1, 1923

Fig. 1.

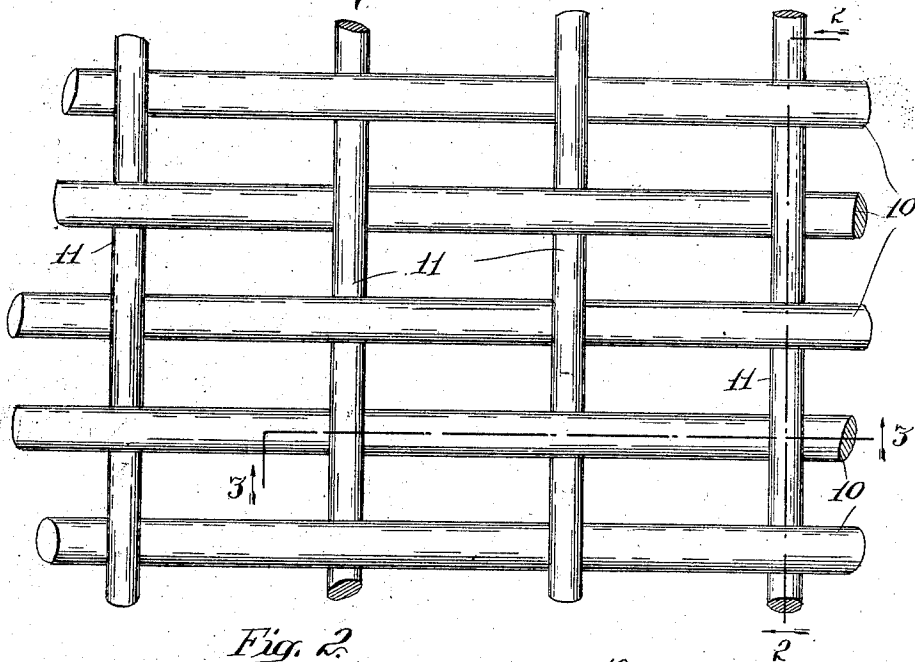


Fig. 2.

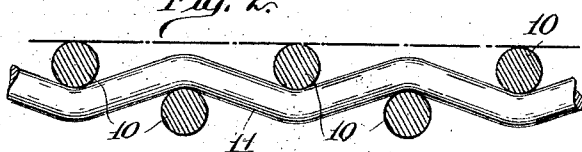


Fig. 3.

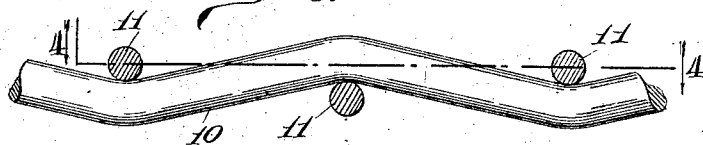
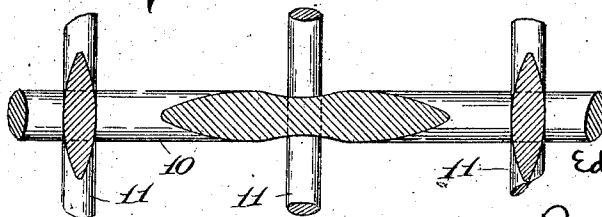


Fig. 4.



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SCREEN.

Application filed March 1, 1923. Serial No. 622,014.

To all whom it may concern:

Be it known that I, EDWARD S. BLACK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Screens, of which the following is a specification.

My invention relates to screens of the type made up of heavy wires interwoven and it is the principal object of my invention to provide a construction by virtue of which heavy, high grade steel wires can be employed successfully for making a screen of comparatively small mesh without cracking the wires.

It is another object of my invention to improve structures of this type in sundry details hereinafter pointed out.

The preferred means by which I have accomplished my several objects is illustrated in the drawing, and is hereinafter specifically described.

That which I believe to be new and desire to cover by the Letters Patent is set forth in the claims.

In the drawing:—

Fig. 1 is a face view of a fragmentary portion of my improved screen.

Fig. 2 is a cross-section taken on line 2—2 of Fig. 1.

Fig. 3 is a cross-section taken on line 3—3 of Fig. 1; and

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 3.

Referring to the several figures of the drawing, in which corresponding parts are indicated by the same reference characters: 10 indicates the several warp wires, and 11 indicates the several weft wires, being interwoven with a mesh of an inch and a half by a half inch. The warp wires 10 in the construction shown are three-eighths of an inch in diameter, and the weft wires are a quarter of an inch in diameter. Both of these wires are of manganese steel, and care must accordingly be taken to prevent a too sharp crimping of the wires if they are to be protected against cracking at the points of bending.

I have found that by making an oblong mesh, as illustrated, with the larger wires running lengthwise, I can crimp both wires the necessary amount, as indicated in Figs. 2 and 3, without danger of injuring the wires in the process. As is shown in Fig. 2,

in the construction shown, each of the wires 10 is at the point of the bend offset with respect to the directly opposite portions of the adjacent wires 10, by a distance equal to the diameter of the wire. In like manner, as shown in Fig. 3, each of the wires 11 is at the point of the bend offset with respect to the directly opposite portions of the adjacent wires 11 by a distance equal to the diameter of such wires 11.

While for some purposes a mesh measuring only a half inch each way might be better than the oblong mesh, as illustrated in Fig. 1, I have found that for many classes of work the oblong mesh is entirely satisfactory. As is shown by the dotted lines in Fig. 2, the warp wires 10 extend an eighth of an inch above the weft wires 11,—that is to say, an eighth of an inch beyond the weft wires at each face of the screen,—wherefore the greater part of the contact of the stock passing over the screen is upon the heavier wires. As the screen becomes worn in use, the contact is shifted more and more to the smaller wires, but as is shown in Fig. 4, even when the larger wires are two-thirds worn through, the contact faces of the larger wires are still very much larger than those of the smaller wires, as is shown by the sectioned portions in said figure.

By my expedient as above described, in lieu of a screen formed of heavy wires with a substantially square mesh of small dimensions, I am enabled to provide a screen which is not weakened by the process of manufacture. By substituting the smaller weft wires in place of large, and by increasing materially the distance between the weft wires, as above explained, I have been enabled to provide a screen which is substantially as strong lengthwise, which will wear substantially the same length of time, and which for many classes of work is substantially as effective with its oblong mesh as would be the case if it were possible to provide the smaller mesh.

So far as I am aware, I am the first in the art to provide a working screen comprising warp wires of a larger size than that of the weft wires, with the larger wires extending above the weft wires, so as to bear the brunt of the load and the wear, and I am therefore claiming this feature broadly.

While I prefer to employ the arrange-

ment as illustrated in the drawings, it will be understood that I do not wish to be limited to the precise details, except as hereinafter specifically claimed, inasmuch as it is evident that changes might be made without departing from the spirit of my invention.

I claim:

1. A screen comprising warp wires and weft wires of a different size, with the larger wires extending beyond the smaller wires at one face of the screen.

2. A screen comprising warp wires and weft wires of a different size, with the larger wires crimped at a smaller angle than the smaller wires, but offset by a greater distance.

3. A screen comprising warp wires and weft wires of a different size, with the smaller wires at a greater distance apart than the larger wires, the larger wires being extended beyond the smaller wires on one face of the screen.

4. A screen comprising warp wires and

weft wires of a different size, with each of the wires of each set offset at the point of bending with respect to the opposite portions of the adjacent wires extending in the same direction by a distance equal to the diameter of the wire, whereby the larger wire extends beyond the smaller wire at each face of the screen.

5. A screen comprising warp wires and weft wires of a smaller size than that of the warp wires, with the several wires crimped so that the warp wires extend beyond the weft wires at one face of the screen.

6. A screen comprising warp wires and weft wires of a smaller size than that of the warp wires, with the weft wires at a considerably greater distance apart than the warp wires, and with the angle through which the warp wires are deflected at the point of the bend smaller than that through which the weft wires are deflected.

EDWARD S. BLACK.