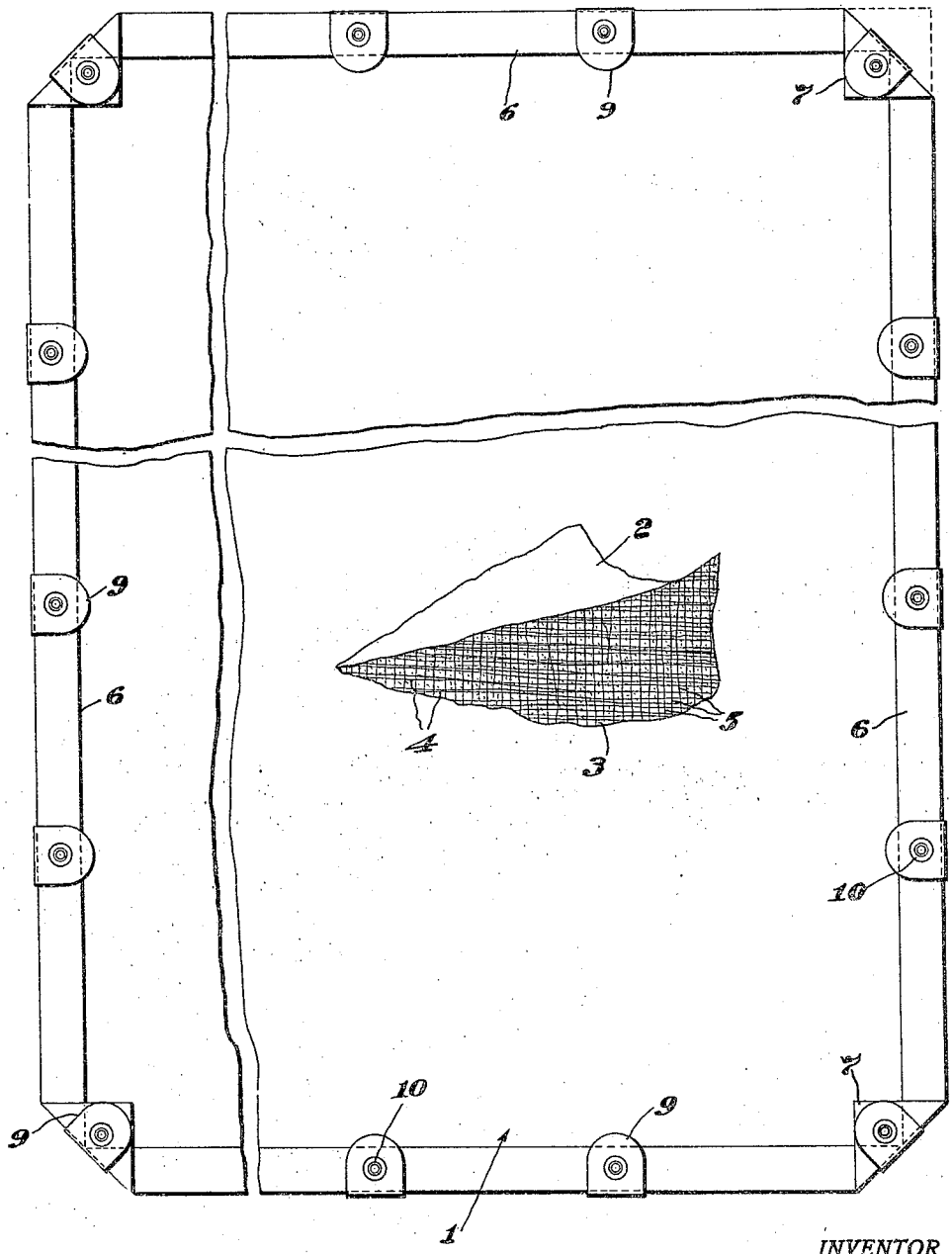
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TARPAULIN

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Fig. 1



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TARPAULIN

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Fig. 2

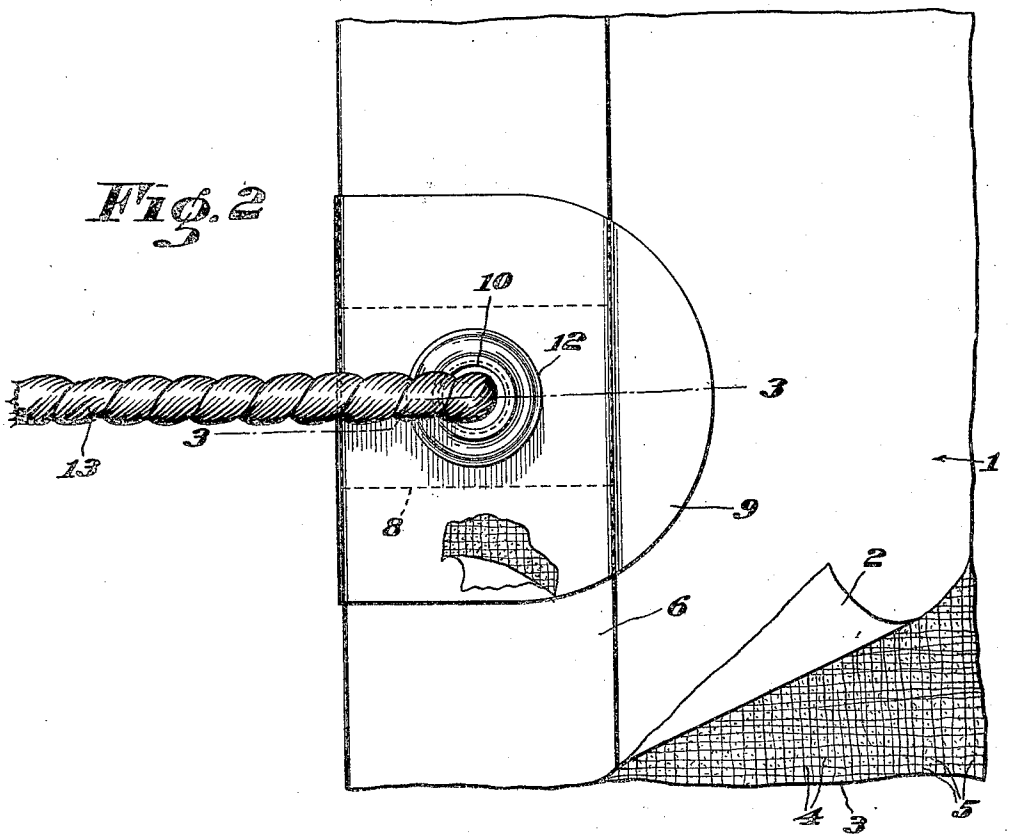
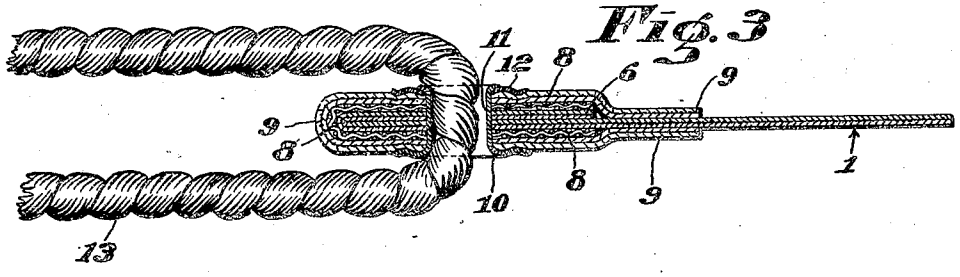


Fig. 3



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UNITED STATES PATENT OFFICE

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TARPAULIN

Application filed January 21, 1931. Serial No. 510,120.

This invention relates to a waterproof covering sheet or tarpaulin formed of reenforced paper.

Tarpaulins are extensively used on land and aboard ships to cover and protect various objects, and as commonly constructed are made of waterproof canvas. They are usually relatively large and are comparatively expensive due to the number of yards of canvas required in their construction.

The present invention therefore relates to a modified tarpaulin or covering sheet formed of waterproof reenforced paper that is strong enough to withstand the forces to which the covering sheet is likely to be subjected, and to the construction whereby the marginal edges of the sheet may be tied down with anchoring ropes without tearing the paper.

When tarpaulins are employed to protect objects from the weather it is necessary to secure the tarpaulins firmly in place to prevent them from being pulled loose or carried away by the wind, and an important feature of the present invention therefore resides in the construction for securing grommets or eyelets to the marginal portion of the paper sheet so that they may be subjected to strong pulling forces without tearing the paper.

While different forms of waterproof reenforced paper may be used in constructing tarpaulins in accordance with the present invention, it is important that the reenforcing elements of the paper be capable of withstanding the strong strains to which the covering sheet is likely to be subjected without tearing the paper. It is found that very good results are secured by employing a two ply paper having the sheets of paper united by a waterproof adhesive such as black asphaltum and reenforced with unspun fibres of long staple secured between the sheets by the adhesive and which are capable of withstanding the strong pull of the anchoring ropes.

A more specific feature of the invention resides in means for reenforcing the sheet of paper in the area of the grommet, and in covering means for excluding rain and moisture at this point. The above and other features of the invention will be hereinafter described in connection with the accompanying drawings which illustrate one good practical form of the invention.

In the drawings:—

Fig. 1 is a plan view of a tarpaulin constructed of reenforced waterproof paper in accordance with the present invention.

Fig. 2 on an enlarged scale is a plan view of a portion of the tarpaulin of Fig. 1 showing the construction of a grommet; and

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2.

The covering sheet or tarpaulin of the present invention is illustrated in the drawings as formed of a multiply reenforced paper comprising the upper sheet of paper 2 and a similar lower sheet of paper 3. These sheets of paper are secured together by a waterproof adhesive, such as black asphaltum, and the paper is preferably reenforced both longitudinally and transversely by layers 4 and 5 of straightened unspun fibres, such as sisal which are relatively strong and will not stretch or elongate appreciably under tension. While other forms of reenforced waterproof paper might be used in carrying out the features of the present invention the reenforced paper shown and described is particularly well adapted for the present use because the asphaltum serves to firmly unite the sheets of paper 2 and 3 to render the composite sheet waterproof, and serves also to firmly secure the reenforcing fibres to the sheets of paper so that the tension or pull exerted upon the paper will be taken up by the fibres to prevent the paper from tearing.

It will be understood that the tarpaulin of the present invention may be given any desired size by securing two or more sheets of reenforced waterproof paper together.

The strength of the edge portions of the tarpaulin of reenforced paper is preferably increased by folding a marginal edge portion 6 thereof back upon the paper as shown in the drawings and by securing this marginal edge portion 6 to the face of the sheet by a waterproof adhesive such as black asphaltum. The corners of the covering sheet are also preferably folded inwardly as at 7 to in-

crease the strength of the sheet at this point.

It is important that the covering sheet or tarpaulin of the present invention be provided with means whereby it may be readily tied or anchored in place over the object to be protected and this is accomplished in accordance with the present invention by providing the desired number of grommets or metal eyelts along the marginal edges of the covering sheet and at the four corners. Since these grommets are likely to be subjected to a strong pull under the action of the anchoring means it is important that they be secured to the paper in such a manner that they will not be likely to tear the same. To this end in the embodiment of the invention illustrated reenforcing material is provided adjacent each grommet to distribute the strain over a substantial area of the paper. Such reenforcing material may be formed of a strip 8 of textile material folded about the edge portion of the tarpaulin as shown and firmly secured to the opposite faces of the covering sheet, preferably by a waterproof adhesive.

It is desirable to exclude moisture from the textile material 8 and this may be accomplished by covering the same with a patch 9 preferably formed of reenforced waterproof paper similar to the sheet 1. This patch should be considerably larger than the reenforcing sheet 8 as shown and is preferably folded about the edge portion of the sheet 1 and is adhesively secured to the opposite faces of the sheet through the employment of a waterproof adhesive.

Each grommet or metal eyelet 10 preferably passes through the reenforcing sheet 1, folded marginal portion 6, the textile material 8, and also through the outer waterproofing patch 9, as best shown in Fig. 3 and is secured in place by spreading the inner end portion of the tubular shank 11 of the grommet outwardly over the disc 12 in a well known manner and as will be apparent from Fig. 3.

It will be seen from the construction just described that the reenforcing elements 6, 8, and 9 all serve to distribute the pull exerted upon the grommet 10 over a substantial area of the sheet 1 of reenforced paper, and it will also be seen that since the grommet passes through the layers 4 and 5 of reenforcing fibres the pull exerted upon the grommet will be imparted directly to these reenforcing elements to relieve the paper sheets 2 and 3 from rupturing strains. The grommets disposed at the corners of the tarpaulin extend through the reenforcing elements above mentioned and also through the inwardly folded corner portion 7 to further increase the strength of the construction at these corners.

The anchoring means for the tarpaulin such as ropes 13 may be passed through the grommets as shown in Figs. 2 and 3 and may exert a strong pull upon the grommets without rupturing the reenforced waterproof paper of which the tarpaulin of the present invention is constructed.

It will be apparent from the foregoing that the reenforced paper tarpaulin or covering sheet of the present invention may be employed for various purposes where a relatively large waterproof covering is desired and that the same is sufficiently strong and durable to withstand repeated use without tearing. It will also be seen that the cost of such reenforced paper tarpaulin is only a fraction of the cost of a tarpaulin formed of canvas.

What is claimed is:—

1. A tarpaulin formed of waterproof reenforced paper and provided along its edges with anchoring eyelets, each comprising a strip of textile material folded about the edge of the paper and adhesively secured to the paper, a covering of waterproof paper secured over the textile material to exclude moisture therefrom, and a grommet secured through said reenforced paper, textile material and paper covering.

2. A tarpaulin formed of reenforced waterproof paper and provided along its edges with anchoring eyelets, each including a strengthening piece of fabric adhesively secured to the area of the reenforced paper adjacent the anchoring eyelet, a moisture excluding covering of waterproof paper for the fabric and a grommet secured through said reenforced paper, fabric and covering.

3. A tarpaulin formed of reenforced waterproof paper having its marginal edges folded back upon the paper, strengthening strips of textile fabric secured over the folded portion of the paper, a covering of waterproof paper secured over the textile fabric to exclude moisture therefrom, and grommets provided at spaced intervals along the marginal portion of the paper and inserted through the two thicknesses of the folded reenforced paper, the textile material and said covering.

4. A tarpaulin formed of reenforced multiply paper, comprising two sheets of paper secured together by a waterproof adhesive and reenforced by straightened unspun fibres embedded in the adhesive between the sheets and the marginal edges of the multiply paper being folded back and adhesively secured to the face of the paper, strengthening strips of textile fabric adhesively secured over the folded portions of the paper, a moisture excluding and strain distributing patch of greater area than the textile strip secured by a waterproof adhesive to the paper over each of said strip and formed of reenforced waterproof paper, and grommets provided along the edges of the multiply sheet and each secured through a folded marginal portion, textile strip and patch.

5. A tarpaulin formed of reenforced

multiply paper, comprising two sheets of paper secured together by a waterproof adhesive and reenforced by fibres embedded in the adhesive between the sheets and the marginal edges of the multiply paper being folded back and secured to the face of the paper with a waterproof adhesive that will exclude moisture from under the fold, strengthening strips of textile fabric secured over the folded portions of the paper, a covering of waterproof paper secured over said strips to exclude moisture therefrom, and grommets provided along the edges of the multiply sheet and each secured through a folded marginal portion, textile strip and covering.

In testimony whereof, I have signed my name to this specification.

LESTER N. WEBER.