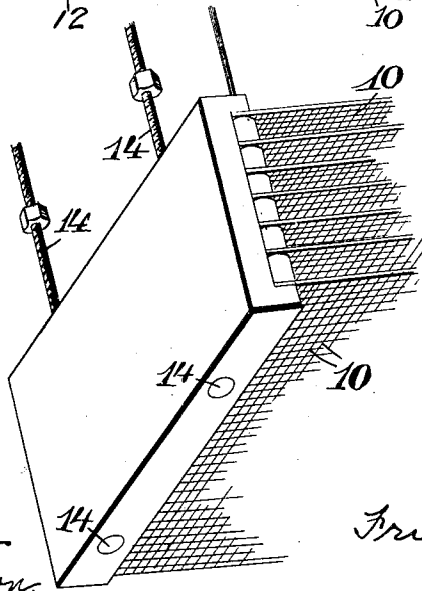
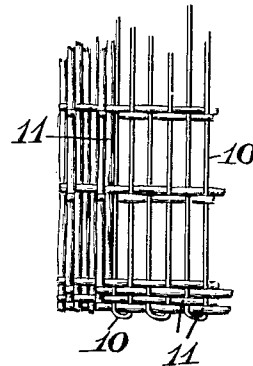
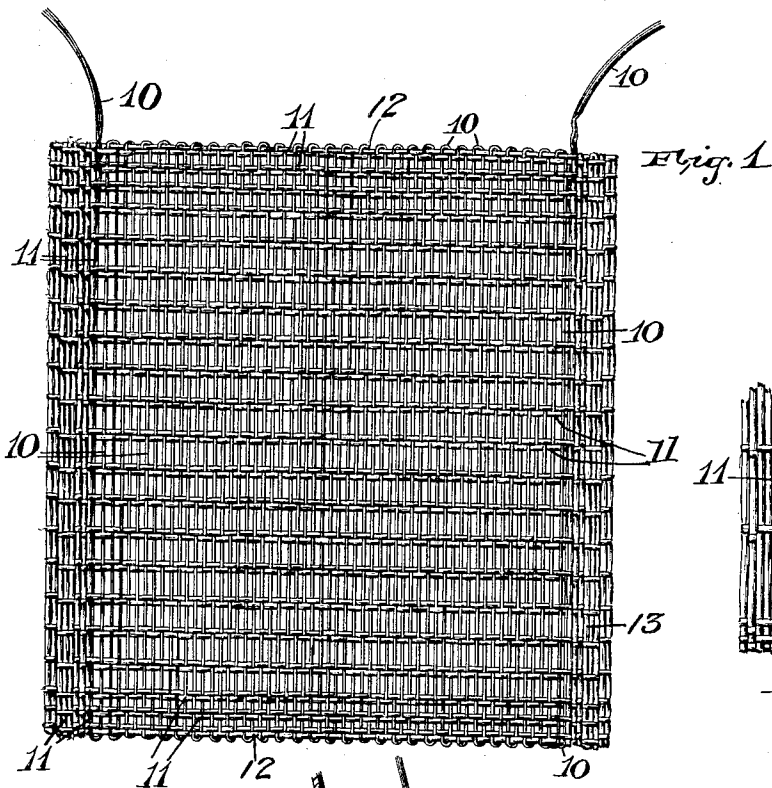


F. SCHNIEWINDT.
RESISTANCE NET.
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1,031,204.

Patented July 2, 1912.



WITNESSES:
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UNITED STATES PATENT OFFICE.

FRIEDRICH SCHNIEWINDT, OF NEUENRADE, GERMANY.

RESISTANCE-NET.

1,031,204.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRIEDRICH SCHNIEWINDT, a subject of the Emperor of Germany, residing at Neuenrade, in the Province of Westphalia, Germany, have invented certain new and useful Improvements in Resistance-Nets; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved resistance net made of woven wire which forms an element to be used in all cases where a resistance is built up, as in the case of motor starters, controllers, regulators, heating devices, etc.

The herein described resistance net is light and somewhat flexible, it easily adapts itself to "nesting" or installation in parallel, and it has a further advantage in being well adapted for using, in its weave, very thin wires and at the same time not reducing the stability of the net. The invention relates particularly to a wire resistance net which has asbestos or similar strands woven through it to make up the net and to properly hold and space the wire. The dispositions of the warp and weft strands can be regulated according to the duties or office of the element in which they are used, as will be described hereinafter.

The nets are preferably provided with a selvage, making a stiffened edge, into which, on two opposite edges, the resistance wires do not extend so that these selvage edges can be perforated to receive rods on which the successive nets can be nested or assembled. The nets are stiffened by a suitable solution, the solution which I find best adapted for the purpose being "water-glass."

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a face view of a net, and Fig. 2 is a similar view illustrating one kind of modification of the weave. Fig. 3 is a perspective view showing the assembling of several nets.

I use any usual resistance wire 10 which forms part of the weft or cross-strands

when the net is woven, and forms, in the completed net, the resistance element. The warp strands 11 are made of insulating material, preferably asbestos, and are spaced sometimes as shown in Fig. 1 and sometimes as shown in Fig. 2, depending on whether it is desired to have a quickly cooling resistance net or one that cools slowly. The warp strands 11 of asbestos are woven in pairs that are in juxtaposition or very close together so as to form a bite or grip on the wire at two points close together so as to hold the wire more firmly against transverse slipping, this being assisted by the slight embedding of the wire 10 in the asbestos strands whereby they form slight grooves for themselves. This weaving in pairs is advantageous on account of its grouping or assembling the covered points of resistance wire which leaves a great deal of heat radiating surface of the wires exposed and for the same reason allows the wire to cool quickly. The warp strands 11 of asbestos are woven closer together on the edges to form a selvage 12 on the top and bottom edges which stiffens the two opposite edges, as will be evident. In addition to the wire 10 which forms the weft strands I provide weft strands which are made of insulating material, and these are woven into a selvage 13 on each side of the net, which latter selvage stiffens these edges, and not being penetrated by the wires 10, forms a means for permitting the nets to be assembled on rods, and so forth. The nets are woven in one continuous band and are then cut through the selvage 13 and thus made into independent nets. It will be understood that the asbestos strands can be disposed close or wide, according to whether a slowly or quickly cooling net is desired. I have illustrated one way of assembling the nets by passing bolts 14 through the selvage 13 of each net, and they can be clamped in place to any required number. The particular form of net, however, which I desire to cover is the net shown in Fig. 1 in which the warp strands do not come close together in the net, being spaced farther apart than the wire weft strands. This particular weave, as a resistor, is cheap because of the use of asbestos, the asbestos forming a selvage on all four sides of the net. A further advantage of this form is the quicker cooling properties of the net,

due to the ventilation thereof caused by the particular weave.

To stiffen and coat the net on both sides I employ "water-glass" or any other suitable solution which will keep the absorbent strands of the net from absorbing moisture or fumes.

Having thus described my invention, what I claim is:—

1. A resistance net comprising weft strands made of resistance wire, warp strands of insulating material arranged in pairs and separated by spaces between the pairs to expose short lengths of the resistance wire, the warp strands being arranged closer together at the top and bottom edges of the plate to form a stiffening selvage, and weft strands of insulating material forming a selvage on both side edges of the

plate beyond the resistance wire for stiffening the edges.

2. A resistance net comprising warp strands arranged in pairs, the pairs being closer together at the edges to form a selvage, weft strands of insulating material closely woven together, and together with the ends of the warp strands forming side selvage, and weft strands consisting of resistance wire, said resistance wire forming the weft between the weft strands of insulating material.

In testimony, that I claim the foregoing, I have hereunto set my hand this twenty second day of August 1910.

FRIEDRICH SCHNIEWINDT.

Witnesses:

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