

S. C. CARY.

METAL FABRIC.

APPLICATION FILED JUNE 2, 1908.

1,045,122.

Patented Nov. 26, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

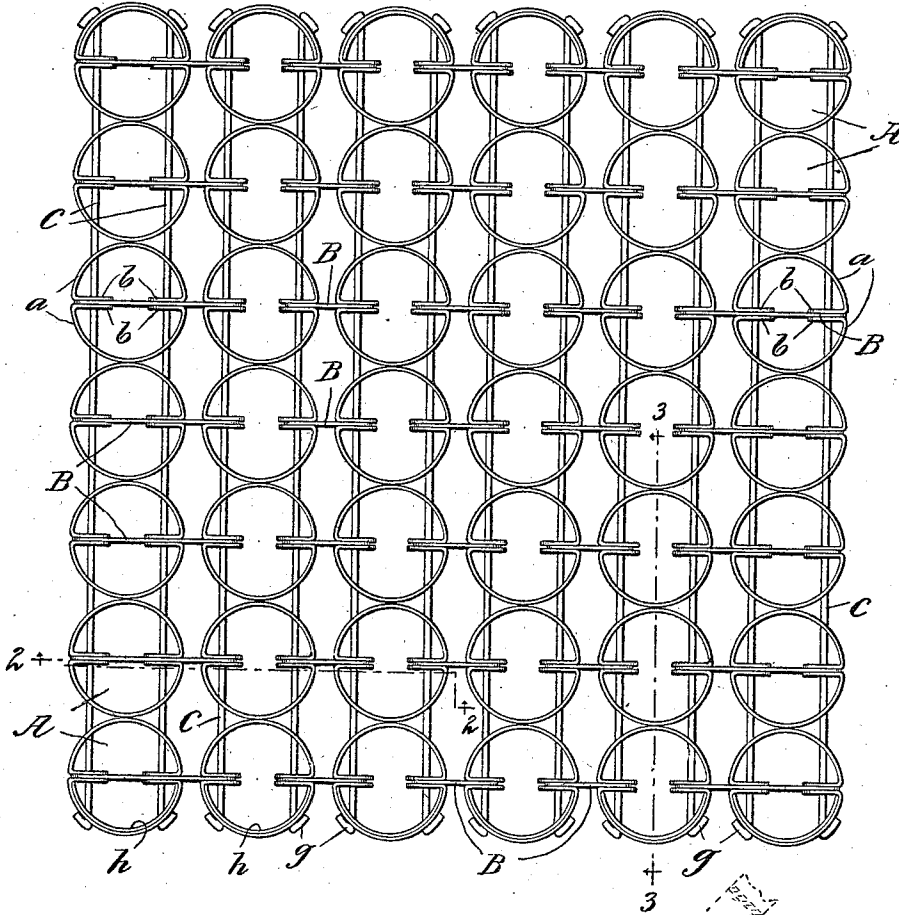


Fig. 2.

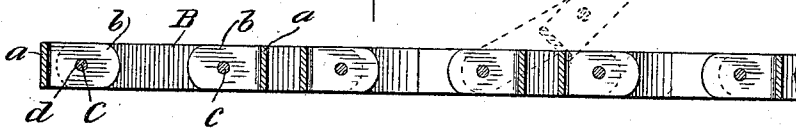
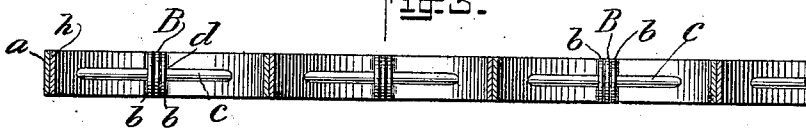


Fig. 3.



WITNESSES

Geo. C. Cherry
W. E. Markmann

INVENTOR

Spencer C. Cary

Griffins BY *Bernhard*
ATTORNEYS

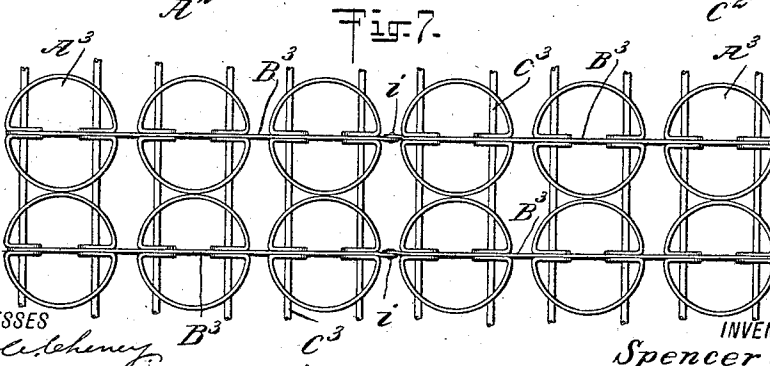
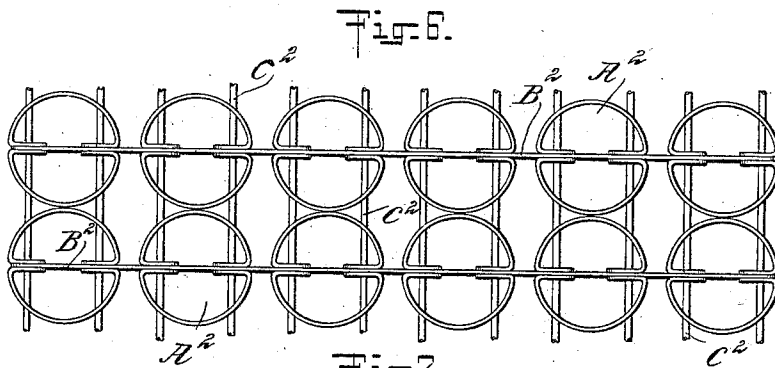
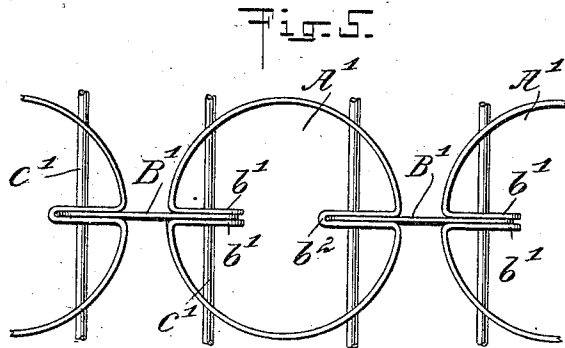
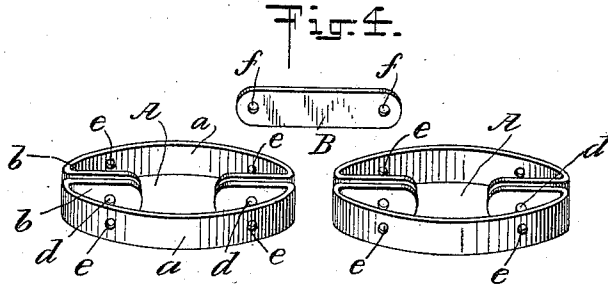
S. C. CARY.
METAL FABRIC.

APPLICATION FILED JUNE 2, 1908.

1,045,122.

Patented Nov. 26, 1912.

2 SHEETS-SHEET 2.



WITNESSES
Geo. Lechman
V. E. Markmann.

INVENTOR
Spencer C. Cary
BY *Griffin* *Bernhard*
ATTORNEYS

UNITED STATES PATENT OFFICE.

SPENCER C. CARY, OF NEW YORK, N. Y.

METAL FABRIC.

1,045,122.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed June 2, 1908. Serial No. 436,299.

To all whom it may concern:

Be it known that I, SPENCER C. CARY, a citizen of the United States, residing in the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Metal Fabric, of which the following is a specification.

This invention is a metal fabric, particularly adapted for use as floor and door mats, and similar articles, although it will be apparent that it is capable of use for various other purposes.

The fabric, in its preferred form, is flexible, *i. e.*, foldable, and, also, reversible, although in modified forms of the invention the foldable feature may be wholly, or partly, dispensed with. The fabric is composed of a plurality of units connected in rows by links, or equivalent means, the rows being united, preferably, by rods extending through the units and their connecting means transversely of said rows. While the precise contour of the units is not material, I prefer to make them substantially circular in shape, and to provide them with reëntering lugs or members for the purposes of strength and rigidity, which members or lugs serve the function, also, of supporting, in part, the means which connect the rows to form the fabric.

Each unit is composed, preferably, of two complementary members, each being substantially semicircular in shape, and the ends of each being bent inwardly and radially of the outer semicircular portion of the unit, into coöperative relation with corresponding lugs on its complementary member, thereby providing two sets of reëntrant lugs on each unit. In a modified form, the unit is composed of a single member provided with a reëntrant portion performing the function of one pair of the reëntrant lugs described in connection with the unit composed of two members.

In constructing the unit, as described, it will be noted that each unit has eight sup-

porting points, thereby giving it enormous strength and practically precluding it from collapsing or displacement. It will be noted, further, that four of these points of support are interiorly of or within the outer walls of the unit, a construction new to the art.

As the invention is described in detail, it will be observed that it embodies various features of novelty independent of the particular construction of the unit.

When the fabric is made up into a mat, I prefer to reinforce the individual units forming the ends thereof, as this is the portion of the mat particularly susceptible to wear and hard usage. I prefer to apply this reinforcing means to the units individually, and, preferably, within the area of the unit.

Among the many advantages incident to the new metal fabric, aside from sanitary advantages, are economy of manufacture, facility in packing for shipment, strength and durability, readiness of removing a unit or series of units therefrom (in order to accommodate irregularities in the space to which the fabric is to be applied), and its general efficiency and utility for the purposes intended.

Another important feature of the invention is the fact that the fabric may be assembled from the individual units, with such ease and facility that the units may be shipped in bulk to the place of use or sale, and there assembled, at little cost or trouble, thereby saving very materially, both in time and money, in connection with the expense usually attendant upon packing and shipping metal fabrics of customary construction.

The material which I prefer to employ in the construction of the individual units, and their connecting links, is band steel, and, if desired, this may be galvanized or otherwise treated to increase its resistance to moisture, or other conditions of use, though it will be understood that the fabric may be made from any other suitable material. In connection with the matter of

galvanizing, or otherwise coating the material entering into the construction of the fabric, it may be stated that the construction of the fabric is such that the several elements of the fabric may be galvanized, or similarly treated, prior to assembling, since no machining of the parts is required during assembling, or, if preferred, the parts may be assembled and subsequently galvanized.

In the accompanying drawings, I have illustrated practical embodiments of the invention, but the construction shown therein is to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 is a plan view of the preferred form of the fabric; Fig. 2 is a sectional view, enlarged, on line 2—2 in Fig. 1; Fig. 3 is a sectional view, enlarged, on line 3—3 in Fig. 1; Fig. 4 shows the preferred construction of the individual units, and the link employed in connecting them; Fig. 5 shows a modified construction of the unit; Fig. 6 shows a modified construction of fabric wherein the foldable feature is dispensed with; and Fig. 7 shows a further modified construction of mat wherein the foldable feature is only partly dispensed with.

Referring particularly to Figs. 1, 2, 3 and 4, A is the individual unit, B the links connecting them into rows, and C the rods, uniting the rows. The unit, A, is composed of the two complementary members, *a*, substantially semicircular in contour, the ends of each of which are intumed to form reentrant lugs, *b*, which are perforated as shown at *d*. The semicircular portions of the members are also perforated, as shown at *e*, (see Fig. 4) perforations, *d*, and, *e*, being in alinement.

The links, B, positioned between the lugs, *b*, on the members of units, A, are provided with perforations, *f*, in alinement with perforations, *d*, and, *e*, whereby when the rods C, are passed through the several said perforations or openings, the links, B, connect or lock the units, A, into rows and, also, unite the rows, thereby forming the complete fabric.

When the rods, C, have been positioned, as described, their ends may be up set, or bent into lapping relation with the exterior walls of the end units through which they pass, as shown at, *g*, for the purpose of securing the rods in place. The rods, C, passing as they do through the individual units, very materially reinforce them against bending.

When the fabric is made up as a mat, or similar article, it is preferred to reinforce the outer member of the row of units on the respective ends or sides of the mat, as shown at *h*, (see Figs. 1 and 3) the parts, *h*, being

concentric with the said units and provided with perforations alining with the perforations in the unit whereby they are secured in position by the rods, C.

It will be observed that the units in the two outer rows of the fabric, running at right angles to the rows having reinforced units, have their links, B, extending diametrically through them, in plan view, thereby imparting increased strength and rigidity to the units provided with said links.

It will be noted, particularly in Figs. 1 and 2, that the fabric is foldable along the lines of, and on the rods, with the exception of the two outer rods on each side of the fabric, thereby enabling the fabric to be folded or reeled very compactly.

In the construction shown in Fig. 5, the individual units, A', are made integral, the ends of each unit extending inwardly to form lugs, *b'*, similar to lugs, *b*, in units, A. The unit has one pair of lugs, only, the other pair of lugs, described in connection with unit, A, being replaced by the reentrant member, *b*², which performs the function of said corresponding lugs. The construction shown in Fig. 5 has the links, B', and rods, C', all assembled in the same way as hereinbefore described in connection with Figs. 1 to 4.

In the embodiment shown in Fig. 6 the individual units, A², of the fabric may be constructed as shown either in Figs. 4 or 5, the essential difference of construction in this fabric, over those previously described, residing in the utilization of a continuous bar or member, B², for connecting the units in rows, in lieu of the links B and B', employed in the embodiments of the invention shown in Figs. 1 to 5. The rods, C², are similar to rods C and C', previously described, and aside from the bars, B², the fabric is assembled in the same way. This form of construction is particularly adapted for short lengths of fabric, such as small mats, or for purposes wherein a rigid fabric is desired, *e. g.*, in grille work.

In Fig. 7, I have illustrated a further embodiment of the invention, residing, merely, in the provision of two continuous bars, B³, B³, for connecting the units of each row, the inner ends of said bars being off-set so as to remain in substantial alinement and yet provide a pivotal connection as shown at, *z*, whereby the fabric is capable of a single fold. Otherwise, the units, A³, and rods, C³, are the same as in the prior described constructions.

It will be observed that the construction of the fabric is such that individual units, or a plurality thereof, or one or more rows of units, on either side or end, may be readily removed, and the remaining units locked

in position with very little work. This is a valuable feature of the invention since the fabric may be readily fitted to any desired shape of space.

5 It will be noted, further, that the fabric is so constructed, that, when used, the ends receive a glancing blow from the foot, thus relieving the strain incident to a full faced direct blow.

10 It will be manifest that changes may be made in the specific construction described, such as the substitution of equivalents, without departing from the spirit or substance of the invention. It will be manifest, more-
15 over, that instead of using the rods, C, to unite the rows of units, I can use short pins or rivets to connect each pair of lugs and their intervening link.

20 Having thus fully described the invention, what I claim as new, and desire to secure by Letters Patent is:

1. A metal fabric composed of a plurality of units each consisting of two complementary members separate from each other and
25 each of which members has two in-turned lugs coöperating with corresponding lugs on the other member, means for connecting said units into rows, and means separate from each other for uniting the rows.

30 2. A metal fabric composed of a plurality of units each consisting of two complementary members and each of which members has two in-turned lugs coöperating with corresponding lugs on the other member, means
35 coöperating with said reëtrant lugs for pivotally connecting said units into rows and rods separate from the connecting means and extending within the units for uniting the rows.

40 3. A metal fabric composed of a plurality of units having reëtrant lugs, links intermediate the units for connecting them into rows, and means coöperating with said links
45 and extending within the units for uniting the rows.

4. A metal fabric composed of units each of which has two pairs of reëtrant lugs, said lugs being connected in rows, and rods
50 passing through the units and extending within the interior spaces of said units for uniting the rows.

5. A metal fabric composed of units having two complementary members each of which has two reëtrant lugs, provided with
55 openings, links provided with openings, positioned between the lugs of adjoining units and serving to unite them into rows, and rods extending through the perforations in said links and units for uniting the rows.

60 6. A metal fabric composed of a plurality of units having in-turned lugs and connected in rows, and pivoted means, separate from the means for connecting the units into

rows, extending at right angles to the line of direction of the rows for securing said
65 rows together and affording means for folding the fabric.

7. In a metal fabric, a unit provided with two pairs of reëtrant lugs which form points of support positioned interiorly of
70 the unit, and links pivotally secured within the inner contour of the unit to said supports.

8. In a metal fabric, a unit provided with two pairs of diametrically opposed supports
75 positioned within the inner contour of the unit, and links pivotally attached within the inner contour of the unit to said supports.

9. In a metal fabric, a plurality of units each of which is provided with two pairs
80 of reëtering supports, and means attached to said supports within the unit for connecting said units into a row.

10. In a metal fabric, a plurality of units provided with reëtering supports, and links
85 positioned between and secured to said supports within the units for connecting the units into a row.

11. A unit for use in a metal fabric consisting of two complementary members each
90 of which is provided with supporting members interiorly of the inner contour of the unit for supporting one end of a link for the purpose of connecting said unit to an adjoining unit, and a link supported by and
95 coöperating with said means.

12. A unit for use in a metal fabric consisting of two complementary members each of which is provided with two lugs positioned within the inner contour of the unit
100 and coöperating with corresponding lugs on its complementary member, and means pivotally attached to, and supported by, said lugs for connecting the unit with an adjacent unit.

13. A unit for use in a metal fabric substantially circular in shape, and provided with reëtering members having free ends and which provide a plurality of points of support within the unit for means which
110 is adapted to connect said unit with an adjacent unit, and unit connecting means pivotally secured within the inner contour of the unit to said members.

14. A metal fabric composed of units
115 and having two ends thereof reinforced by reinforcing devices disconnected from each other and applied to the individual units.

15. A metal fabric composed of units and having two ends thereof reinforced by rein-
120 forcing devices applied to the individual units, and positioned within said units.

16. A metal fabric composed of rows of individual units connected by links, rods extending loosely through said units for unit-
125 ing the rows and forming bearings upon

which the fabric may be folded and means for reinforcing the ends of said fabric.

17. A metal fabric composed of rows of individual units connected by links, rods
5 extending loosely through said units for uniting the rows and forming bearings upon which the fabric may be folded and means positioned within the units for reinforcing the ends of said fabric.

10 18. A metal fabric composed of rows of individual units connected by links, rods extending loosely through said units for uniting the rows and forming bearings upon which the fabric may be folded and means

for reinforcing the ends and sides of said 15 fabric, said reinforcing means extending within the individual mats.

19. In a metal fabric, a plurality of individual units spaced apart, each of which units has reëntering members and links con- 20 necting said units into a row.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SPENCER C. CARY.

Witnesses:

M. C. POWELL,

V. E. MARKMANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."