(No Model.)

S. GIESECKE.

HORSE BRUSH.

No. 502,513. Patented Aug. 1, 1893.

Fig. 1

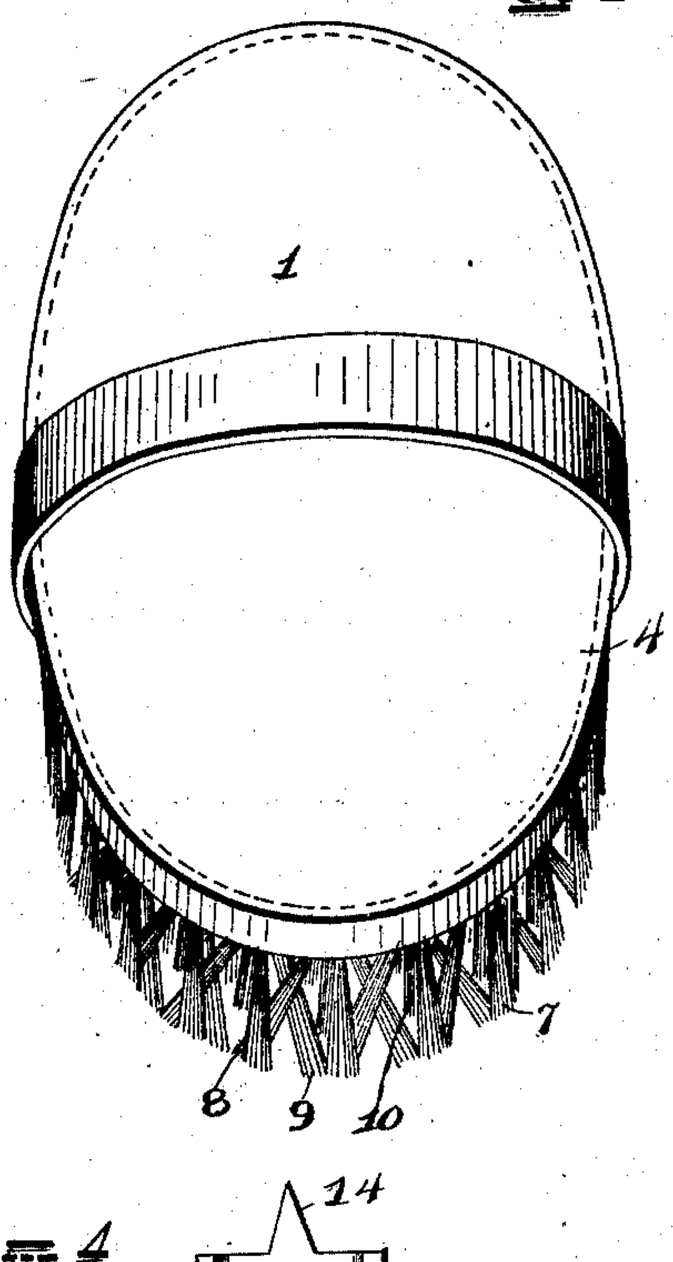


Fig. 2

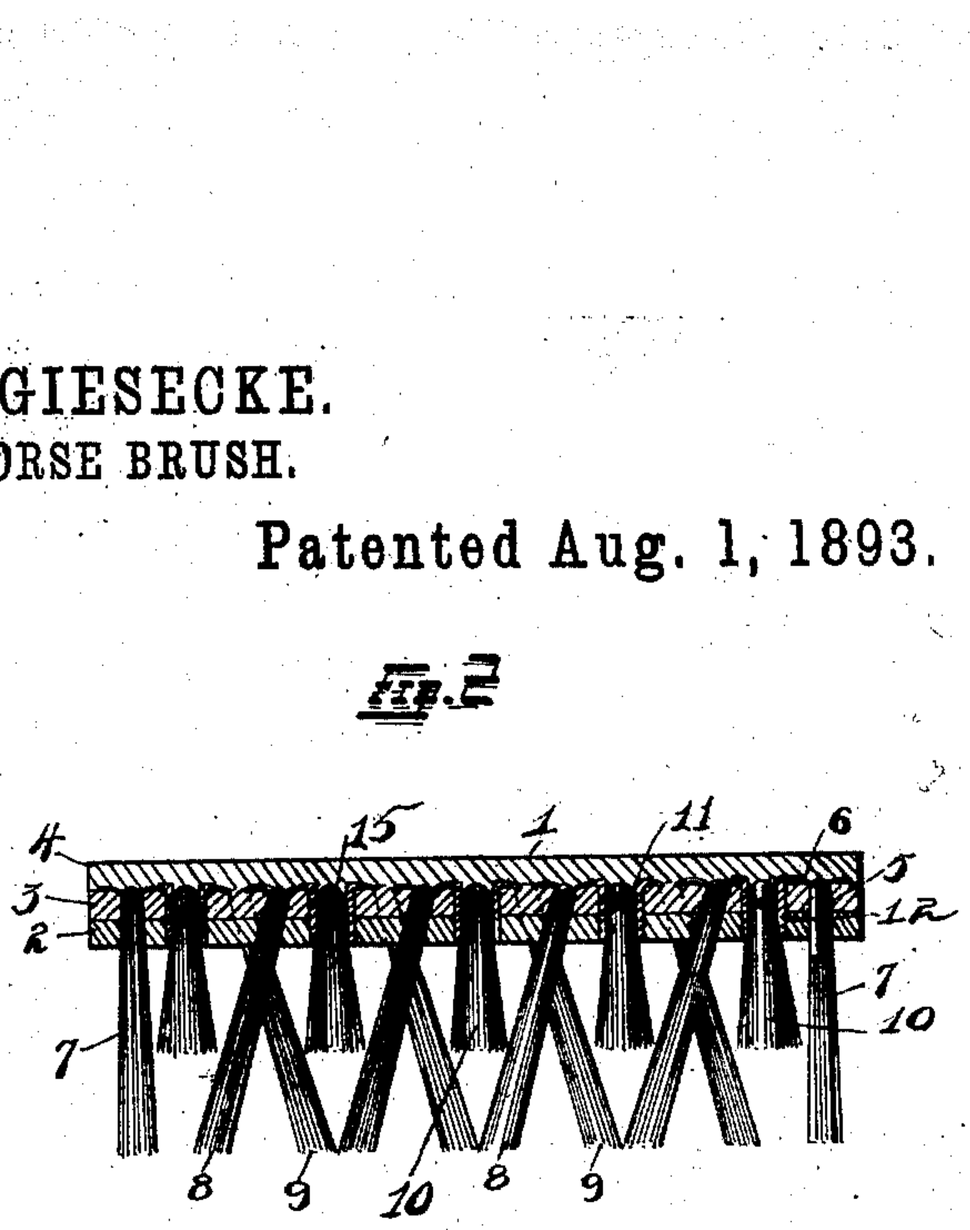


Fig. 3

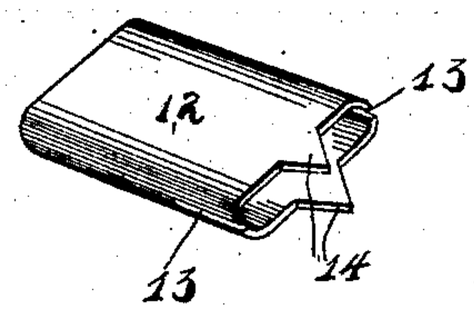


Fig. 4

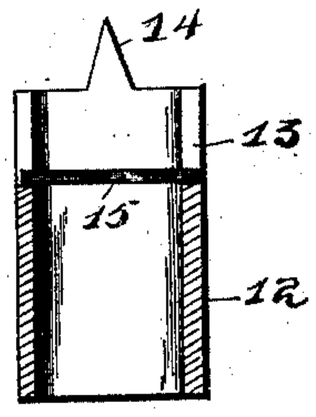


Fig. 5

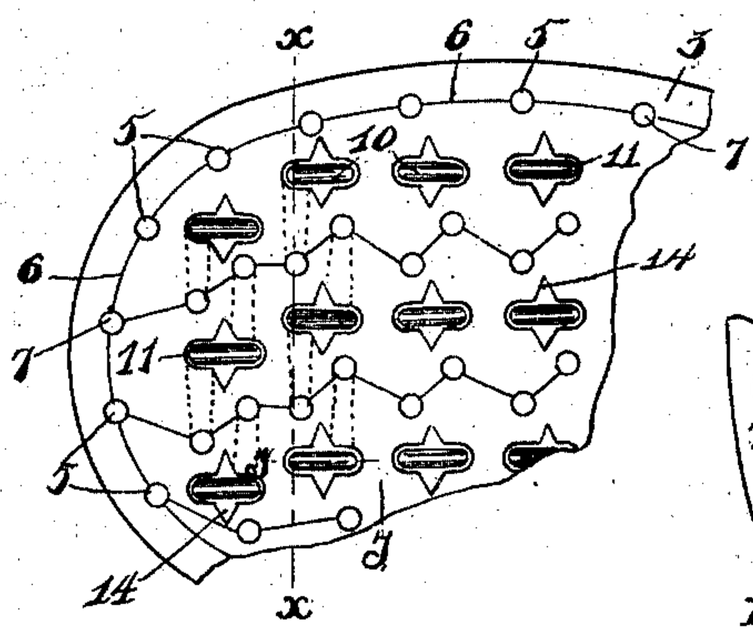


Fig. 6

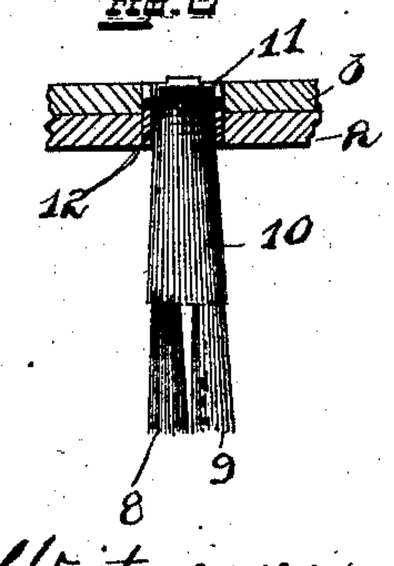
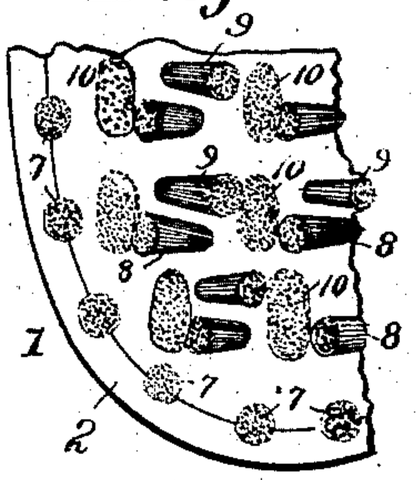


Fig. 7.



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UNITED STATES PATENT OFFICE.

SOPHIA GIESECKE, OF ST. LOUIS, MISSOURI.

HORSE-BRUSH.

SPECIFICATION forming part of Letters Patent No. 502,513, dated August 1, 1893.

Application filed March 6, 1893. Serial No. 464,791. (No model.)

To all whom it may concern:

Be it known that I, SOPHIA GIESECKE, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Horse-Brushes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention consists in an improved horse brush, having tufts of bristles arranged in three distinct rows, two of which have tufts of the same length, arranged to form double rows, and rows of bracing or stiffening tufts having a length much shorter than that of the double rows; said stiffening tufts having such a width as to permit each of them to act as a brace for two of the long tufts of the double rows during use, and one of said stiffening tufts being located between two of said long tufts of each double row thereof; the long tufts on the right of the double rows being directed obliquely to the left, and those on the left of the double rows being directed obliquely to the right, so that the tufts of one of these rows wholly cross those of the other row, and extend over the shorter stiffening tufts.

The invention consists further, in certain improved fastenings for the tufts, as will be hereinafter more fully described.

In the drawings, Figure 1 is a perspective view of a brush embodying my invention, looking toward one end thereof. Fig. 2 is an enlarged detail section, taken on line *x*—*x* of Fig. 5, showing the three rows of tufts. Fig. 3 is a detail view of an improved metallic fastening-ferrule, in perspective, used in carrying out the invention. Fig. 4 is a longitudinal section thereof. Fig. 5 is an enlarged detail plan of the upper side of the brush back, with parts broken away, showing the relative position of the long and short tufts. Fig. 6 is an enlarged detail section, taken on line *y*—*y* of Fig. 5. Fig. 7 is a detail horizontal section, with parts broken away, taken just above the lower ends of the bracing-tufts, showing the upper portion of the bristles.

I desire to state that my invention is an improvement upon the horse brush shown and described in Reissued Letters Patent of the United States granted to Hermann Giesecke June 4, 1878, No. 8,272.

In the brush patented to Hermann Giesecke, on which my invention is, as before stated, an improvement, certain defects have been discovered by me, as the said Hermann Giesecke (since deceased) was my husband, and I was for many years associated with him in the business of making and selling his said brush. In this brush the bristles or tufts, if made sufficiently long to accomplish the work and wear required of them, were not as stiff and inflexible as they should be. In order to overcome the defects in the construction and use of the ordinary brushes, therefore, and especially to achieve a better brushing action, so that the operator can in less time and with less labor accomplish the desired result, I construct my improved brush as will now be fully described.

1 represents the brush-back, which is provided with the usual strap-handle. The back is preferably constructed of three or more separate layers of leather, although said layers may of course be made of wood or other suitable material, there being two main layers 2 and 3, and a finishing-layer 4.

As stated at the beginning of this specification, my brush has long cleaning and brushing tufts, and shorter stiffening tufts.

In securing the several classes of tufts to the back I drill holes or form circular seats 5 in said back, and use the usual wires 6, for securing the outside single row of vertical tufts 7, which are positioned and secured in place as in the ordinary brush, or, I may use the peculiar form of metallic-ferrules for this purpose, which I will presently describe.

8 and 9 represent a double row, as shown; the tufts of bristles 8 of one side of the double row being inclined to the left, and the tufts 9 of the other side of said double row being inclined to the right—that is, diagonally to each other, so that they wholly cross each other at about the center of their length.

The tufts 8 and 9 are shown as wholly crossing at about the middle of their length, and this locates their ends or points in opposite directions to each other, and this arrangement continues throughout the brush, except

that the tufts in double rows, or alternate double rows, may be made to run in any desired direction.

In Fig. 2 (the brush being represented with the points of the bristles downward) the row 8 inclines to the left, while 9 inclines to the right, the two rows crossing in the center, and presenting oppositely-directed points. In this way I prefer to arrange every succeeding row, viz:—so that the diagonal crossing in the middle is brought about, and the points of the tufts in the double rows (no matter which way they run) point reversely.

I will now proceed to describe the location of the short stiffening-tufts 10, in their relation to the long tufts, also their construction, and manner of fastening in the back of the brush. One of said stiffening-tufts 10 is located between two crossing tufts 8 and 9 of the double row. The said tufts 10 have a width much in excess of their thickness, and are placed in the back in oblong seats 11, so that two of the long tufts, which cross each other, extend over the shorter stiffening-tufts, and this arrangement continues throughout the brush. Of course, the oblong seats 11 for the stiffening tufts are so relatively located in the back 1 as to permit of this arrangement.

The stiffening-tufts may be secured in their oblong-seats by the usual wire-fastening, although I have found that such is not as secure a manner of fastening as that which I shall now describe.

12 indicates an improved fastening-ferrule for oblong seats. It is preferably stamped out of sheet-metal, in a single piece, but may be cast with the necessary patterns. It is oblong in cross-section, so as to loosely fit the seats in the back. One of its ends is square, and devoid of openings or projections while its opposite end is provided with inwardly-extending slots 13 and locking-projections 14. One of the slots 13 is formed in each edge of the ferrule 12, so that there is a slot in its opposite narrow edges, and so that there are opposite slots. These opposite slots extend from the end of the ferrule inward to a point near to the center of the length thereof. There is a locking-projection 14 formed upon or integral with each wide edge of the ferrule, on same end that the slots 13 are formed in, so that there will be opposite locking-projections on said end. The normal position of these projections 14, before they are placed in the brush, is that shown in Figs. 3 and 4, wherein they are illustrated projecting in alignment with the sides of the ferrule. They have a free outer end, which is preferably pointed, for the purpose hereinafter mentioned.

In fastening the short tufts 10 in the brush-back, I first double a suitable number of bristles intermediate of their length (as is usual), then insert the butt end of the tuft thus formed into the squared end of the ferrule 12 until said butt nears the opposite end of said ferrule, or passes beyond it. Then I insert a cross-pin 15 in the slot 13 on one side of the ferrule, between the doubled-portions of said tuft, and locate it in the opposite slot of the ferrule, so that said tuft will be locked in the ferrule against pulling out in one direction. (See Figs. 2 and 4.) This operation should be performed while the locking-projections 14 are in the position shown in Fig. 4. Then I insert the ferrule containing the tuft in one of the oblong-seats 11 of the brush-back, from the inner-side, and push it to the proper position, which is with the end of the ferrule about flush with the faces of the two layers 2 and 3 of said back, before the finishing-layer is put on. Then the projections 14 are to be turned down onto and forced into the outer surface of the layer 3, as indicated in Fig. 2, in which position they lock the ferrule and its tuft securely in position. After this operation, the brush is finished by putting on the handle and the finishing-layer 4, in the usual manner.

I have found that the short tufts are held very securely in the manner above described, also that the operations of securing the tufts in the ferrules, and the ferrules in the back, may be performed very rapidly, as a large number of these parts may be fitted up, and kept in stock, and be secured in the backs whenever required.

The operation is as follows: When thus constructed every double row of long bristles becomes, when used, a brusher and a polisher—that is, while one side or part of the double row is acting to brush off dirt, &c., the next or other side of the double row smooths over, in whatever direction the brush may be moving. This manner of arranging the tufts of brush-material causes one side of the double row to penetrate the hair, as the points are in advance of the butts, while the row in reverse position serves to polish what has been raised by the penetrating tufts. The inclined forward standing position of the tufts, in action, adds greater resistance to the flexure thereof, and facilitates greatly the brushing action. The stiffening-tufts have a length much less than that of the brushing and cleaning tufts, and hence do not act to brush under normal conditions of operation. But, should the operator desire to cause them to act in cleaning or brushing, he can do so by exerting sufficient pressure and physical strength. Further than this, the short tufts will act to clean and brush should the longer tufts become worn, during long use, without the exertion of extra strength or pressure. The stiffening-tufts, by reason of their peculiar width and location, each act as a brace for two adjacent longer tufts, during action.

What I claim is—

The improved horse-brush, having tufts of brush-material arranged in three separate rows, two of which have tufts of the same

length arranged to form double rows, of inclined tufts which cross each other rows of bracing tufts having a less length than that of said double rows, each of said bracing tufts being constructed wide to act as a brace for two crossing tufts of said double rows, and the long tufts on the right of the double rows being directed obliquely to the left, and those on the left of the double rows being directed obliquely to the right, so that the tufts of one of these rows wholly cross those of the other row, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

SOPHIA GIESECKE.

Witnesses:
HERBERT S. ROBINSON,
JNO. C. HIGDON.