No. 888,124. PATENTED MAY 19, 1908.

A. SHEDLOCK.

METAL WOOL.

APPLICATION FILED JAN. 13, 1906. RENEWED OCT. 5, 1907.

Fig. 1.

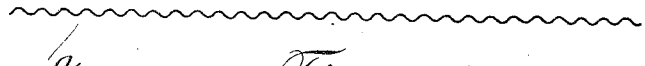


Fig. 2.



Fig. 3.

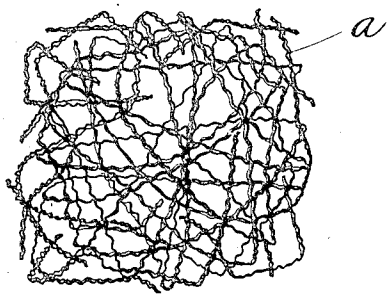
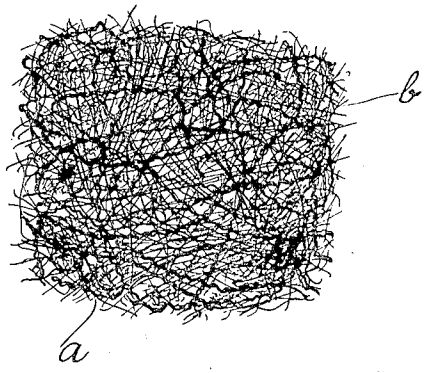


Fig. 4.



WITNESSES:

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METAL WOOL.

No. 888,124. Specification of Letters Patent. Patented May 19, 1908.

Application filed January 13, 1906, Serial No. 295,854. Renewed October 5, 1907. Serial No. 396,021.

To all whom it may concern:

Be it known that I, ALFRED SHEDLOCK, a citizen of the United States, residing in Jersey City, county of Hudson, State of New Jersey, have invented an Improved Metal Wool, of which the following is a specification.

The product constituting the subject matter of this invention is metal wool composed of an assemblage of more or less intertwined or interlaced, or aggregated crimped filaments produced in a manner in which fibers of metal wool have not heretofore been made and which have, as metal wool filaments, characteristics never before known. The grain of the metal of which they are composed is parallel, or substantially so, with the lengths of the filaments; and is in substantially the same condition as when the metal is in the form of rolled thin sheets. The fibers are produced by severing a rolled thin sheet of metal in lines parallel, or substantially so, with the grain of the metal. The thickness of the filaments is the same as the thickness of the metal sheet from which they are cut, their width is determined by the spaces between the parallel cuts, and they are crimped or transversely corrugated. When a rolled thin sheet of metal is divided into a plurality of filaments by cuts parallel, or substantially so, with the grain of the metal the grain is not materially disturbed. Crimping of the filaments adds to their elasticity and does not impair their character. The advantages of a metal wool of this character are: that it does not crumble or break, each filament retaining the characteristics of the metal in the original sheet, although the metal is somewhat hardened by the shearing and crimping operations and the filaments have, therefore, the elastic or resilient qualities of the sheet from which they are cut, such qualities being slightly emphasized by the operations to which the metal is subjected. Filaments of this character may be readily distinguished under a glass, or even by the naked eye, from metal wool filaments heretofore produced by planing or turning operations.

Metal wool such as I have described is primarily intended for applying lubricant to car axle journals, cotton waste or other absorbent or capillary material being mixed with it.

In the accompanying drawing: Figures 1 and 2 show a crimped metal filament of the character described; Fig. 3 indicates a mass of such filaments mixed or intertwined and forming a mass of what is known as metal wool; and Fig. 4 shows such metal wool mixed with cotton waste.

The crimped or transversely corrugated filament *a* formed as above described is characterized by the fact that the grain of the metal, from which it is cut, is undisturbed; and the filament, therefore, possesses the elasticity, non-brittleness and "life" of the metal in sheet form. In practice, I have formed such filaments from rolled thin sheets of steel.

In Fig. 4, *a* indicates the metal wool and *b* cotton waste mixed therewith.

In practice, I have made this metal wool from metal sheets of from three to nine one-thousandths of an inch thickness, the filaments being cut to a width of about twenty one-thousandths of an inch.

The thickness and width of the metal filaments are determined, respectively, by the stock used and the cut: and may be such as to adapt the material to desired uses. I have above given dimensions of filaments produced by me. They may, however, be made of materially smaller dimensions if desired.

The filaments are formed by passing a sheet of metal between opposed gangs of rotary circular cutters. The rotary circular cutters of the two gangs are spaced by circular washers respectively of the same thickness as the immediately opposite cutter of the other gang, and are so arranged that the cutters in one gang enter the spaces between cutters in the other sufficiently to insure that contiguous edges of the cutters shall coöperate to sever the sheet by rolling shearing cuts. Each cut therefore forms the contiguous edges of parallel filaments, there being as many filaments as there are cutters in the two gangs. A machine for so cutting sheet metal into filaments is disclosed in my application filed December 31, 1906, Serial No. 350,240. The metal sheet being thus divided (without waste) into parallel filaments by parallel shearing cuts, the opposite cut sides of each filament are identical in kind and physical condition, the fiber of the sheet metal being substantially undisturbed; and the other opposite sides have the smoothness or flatness of the sheet from which they are cut. When metal filaments are made by planing or turning, the thrust of the cutting tool tears and displaces the fibers of the

metal in a way that does not occur in the production of the metal wool herein claimed. The crimping may be effected by corrugated rolls between which the filaments pass as they leave the cutters. Except for the crimping the wool herein described is disclosed and claimed in my application No. 295,853, filed January 15, 1906.

I claim

A metal wool composed of transversely crimped filaments each having two opposite faces of the character of rolled sheet metal, and two opposite cut faces identical in kind with respect to the fibers of the metal, the filaments respectively being characterized by the fact that the grain of the metal is parallel, or substantially so, with the length of the filaments and substantially in the condition in which such grain exists in rolled thin sheets of the metal.

In testimony whereof, I have hereunto subscribed my name.

ALFRED SHEDLOCK.

Witnesses:

L. F. BROWNING,

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