V. FUSSGANGER.

MACHINE FOR PRINTING CARPET YARNS.

APPLICATION FILED MAY 26, 1911.

1,063,252. **Patented June 3, 1913.**

Fig. 1.

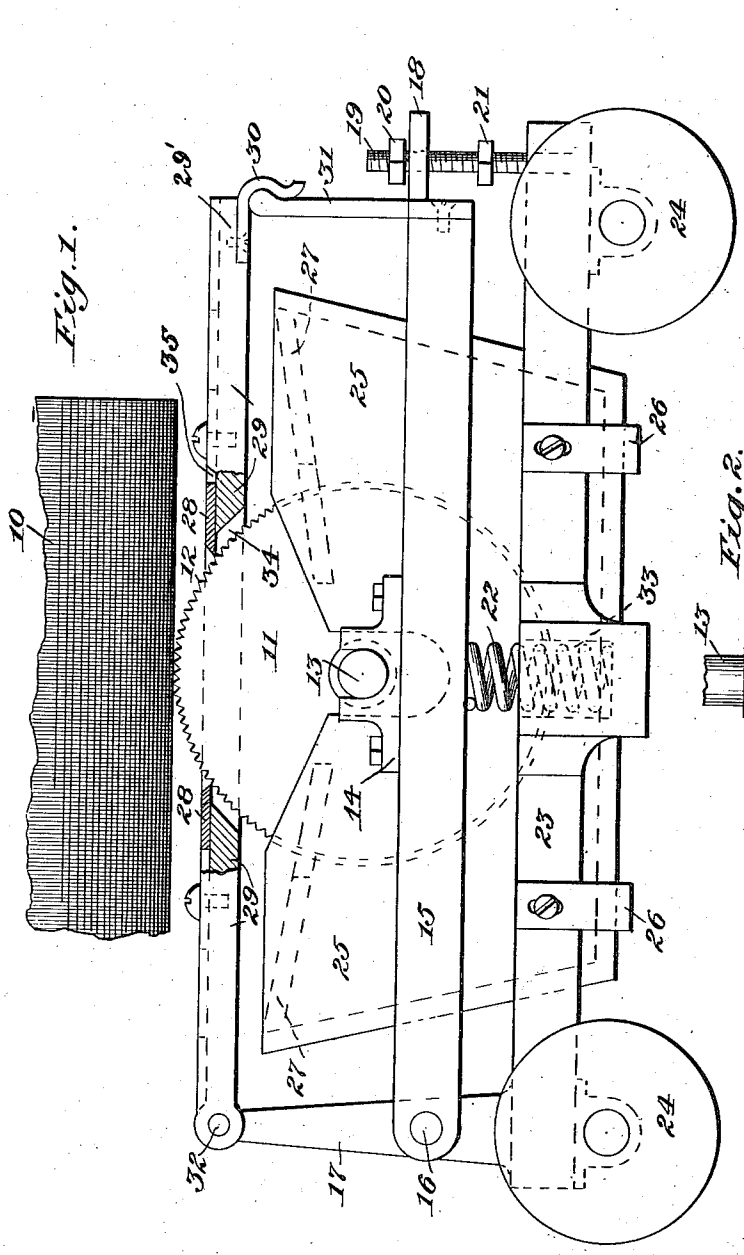


Fig. 3.

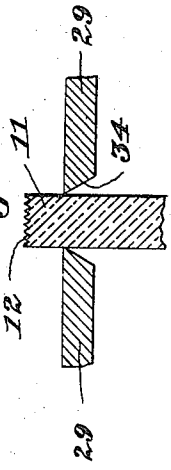
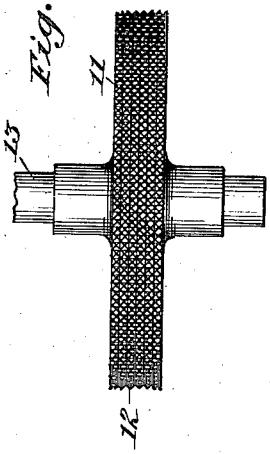


Fig. 2.



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MACHINE FOR PRINTING CARPET-YARNS.

1,063,252. Specification of Letters Patent. Patented June 3, 1913.

Application filed May 26, 1911. Serial No. 629,717.

To all whom it may concern:

Be it known that I, VICTOR FUSSGÄNGER, Ph. D., chemist, a citizen of the Empire of Germany, residing at Höchst-on-the-Main, Germany, have invented certain new and useful Improvements in Machines for Printing Carpet-Yarns, of which the following is a specification.

Dyed or undyed carpet-yarn has hitherto been printed by means of a narrow roller made of vulcanite which dips into the color-box and prints the color on the carpet-yarn wound on a large drum of about 5 to 16 (or even more) meters in circumference. The large surplus of printing-color thus put on the drum is apparent particularly at the edges of the prints, and renders the prints uneven and blurred, even when the said surplus is distributed by hand, so that the finished carpet presents an unpleasing appearance. This drawback is particularly noticeable in printing with discharge-colors on previously dyed yarn, as some parts which receive less color are incompletely discharged and, in case of colored discharges, show different shades, while the parts which receive an excess of color are over-discharged, so that they show white edges and have weakened fibers. Moreover, the distribution of the surplus color requires much time and experienced workmen, and a large quantity of printing color is wasted thereby. According to my present invention all these disadvantages can be obviated by using instead of the plain vulcanite roller, a metallic disk having its periphery hatched or pitted by engraving. After the disk has taken up the printing color, the excess of the color is removed by scrapers, which are fitted parallel to and on either side of the disk, in such a manner that only so much of the printing color remains on the disk as is necessary to print the yarn well through.

In the accompanying drawing,—Figure 1 is a side elevation of the apparatus; Fig. 2 a plan of the color-disk; and Fig. 3 a transverse vertical central section through the upper part of the color-disk and the scraper-plate.

In Fig. 1, a metallic color-disk 11, having a roughened periphery 12 and a shaft 13, is journaled in bearings 14 mounted on the frame 15. This frame is hinged on the pivot 16 passing through standard 17, and is resiliently supported at points beneath shaft 13 by springs 22, on opposite sides of the color-disk and which press said disk upward, when in operation, in contact with the yarn-drum 10. The frame 15 is limited in its vertical movement by adjusting nuts 20 and 21, on a screw 19, which passes through a slot in the tongue 18 extending from the end of the frame. Standard 17 is rigidly mounted on one end of a carriage 23, having wheels 24. Suspended from the carriage 23 are brackets 26, on which is placed the color-tank 25, receiving the color-disk 11. The carriage 23 is also provided with sockets 33 for the springs 22. At the upper end of standard 17 is a pivot 32, on which is hinged the plate 29. This plate is shown broken away through a narrow longitudinal slot 34, receiving the color-disk. Its end 29′ has a spring clip 30, which engages the upper end of a standard 31, secured to the free end of frame 15. Adjustable scrapers 28 are secured in a longitudinal channel 35, recessed in the top of plate 29, the knife-edges of these scrapers being arranged in proximity to the periphery 12 of the color-disk 11. The periphery of the color-disk is uniformly hatched, pitted, knurled, checkered, or otherwise roughened, to afford a surface that will hold coloring material uniformly distributed in depressions.

In operation, the carriage is shifted transversely beneath the yarn-drum 10 and the color-disk simultaneously rotated, passing through coloring matter in the color-tank 25, whereby the peripheral depressions 12 are filled. The excess coloring material is removed by the scrapers 28. As the color-disk rotates further, its roughened color-holding periphery comes in contact with the yarn or other material on the drum 10 and applies a uniform band of color, without blurring or irregularity of any kind. By adjusting the scrapers, it is possible to regulate the supply of the color and to transfer a larger or smaller quantity to the yarn on the drum, according to the thickness of the yarn to be printed.

The machine offers the great advantages that it does away with the distribution of

the color by hand, that the print is even and uniform, that printing color is saved and that the manufacture is greatly accelerated.

The apparatus can easily be fitted to existing color-boxes and drums of the various systems.

The machine is also particularly adapted for printing discharge colors on carpet-yarn which has been previously dyed, because in this case uniformly- and thoroughly-discharged yarns can be obtained.

Having now described my invention, what I claim is:

1. In an apparatus for printing carpet-yarns, a color-disk having its periphery uniformly hatched, pitted or roughened, and a scraper or scrapers adjacent to said periphery.

2. In an apparatus for printing carpet-yarns, the combination of a yarn-drum, a color-disk bearing on said drum and having its periphery uniformly hatched, pitted or roughened, and a scraper or scrapers adjacent to said periphery.

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

VICTOR FUSSGÄNGER.

Witnesses:

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