Dec. 6, 1932. A. C. COMINS 1,889,976

DESIGNING FRAME

Filed Dec. 31, 1929

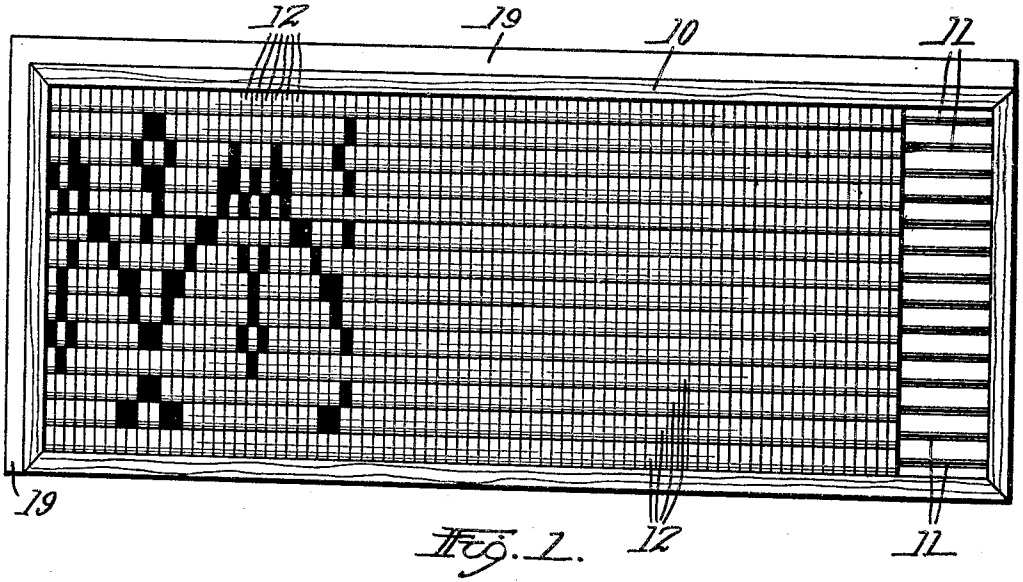


Fig. 1.

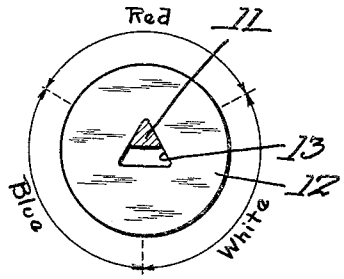


Fig. 2.

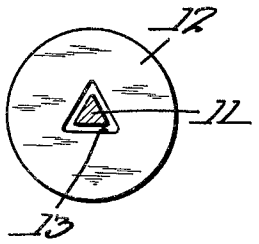


Fig. 3.

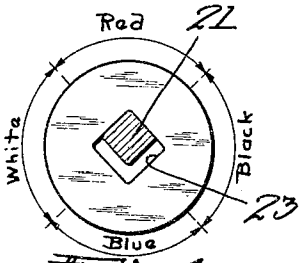


Fig. 4.

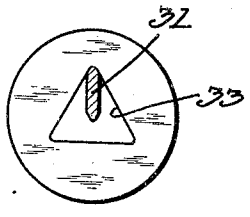


Fig. 5.

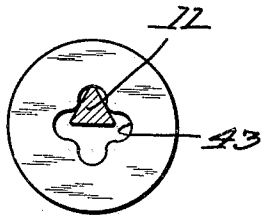


Fig. 6.

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UNITED STATES PATENT OFFICE

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DESIGNING FRAME

Application filed December 31, 1929. Serial No. 417,779.

This invention relates to a mechanical means by which a design can be put in visible form as the designer works and its effect observed.

The principal objects of the invention are to provide a frame for the above mentioned purpose; to provide a series of discs or the like carried by said frame and adapted to be manipulated to show clearly the design as it progresses and keep it in permanent form as long as may be desired in order to take it off on some more permanent medium; to provide said discs or the like in such form as to cooperate with wires or bars across the frame for holding the discs in the position in which they are put and yet permit them to be turned to bring the different parts of their circumference to the front and leave them in a desired position where they will not be likely to be disturbed or get out of place accidentally.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing in which

Fig. 1 is a front view of a designing frame constructed in accordance with this invention with a single figure of a design indicated thereon;

Fig. 2 is a side view of one of the discs showing it mounted on one of the cross wires or bars which is illustrated in section;

Fig. 3 is a similar view showing the disc lifted for the purpose of turning it to a different position, and

Figs. 4, 5 and 6 are views similar to Fig. 2 showing modifications.

In textile plants the present practice is to design a fabric by the use of pencil and paper. The risers and fallers are indicated on the paper by the crosses and dots. The designer knows the order of the fallers and risers that he wants, and when he sets them down he may find that too many fallers come together, leaving a thread exposed too far in the fabric. Then he has to rub out this line and start over again. This results in the waste of a good deal of time even in designing a simple figure. This invention is intended to avoid the tedious process of designing the fabric in this way and furthermore the appearance of the design is made more clear.

In this case a rectangular frame 10 is made and provided with a series of longitudinal round or noncircular wires or bars 11. On these wires or bars are placed discs 12, the circumferences of which are divided into two or more equal portions colored different colors or having different, easily distinguishable characteristics. These discs are provided with central perforations 13 and are strung on the wires or bars 11 permanently. The perforations 13 are large enough so that the discs can be turned thereon to a different portion, that is, the longest dimension of the wire is not greater than the shortest diameter of the perforation. Both the perforations and bars are provided with an apex at the top from which the disc can hang down as shown in Fig. 2 and avoid danger of accidental rotation of the disc around the bar. When it is desired to rotate the disc a part of a revolution the disc is raised as shown in Fig. 3 and turned.

If it is assumed that the form shown in Figs. 2 and 3 is to be used, the discs can all be colored in three colors, for example, red, white and blue. The red can be used to indicate the riser, and the blue the faller and the white can represent some extra thread to be used at the time. If it is known that a third one is not going to be used, it can be omitted from the disc and only two employed, either in the same relationship as shown in Fig. 2 or each one extending around a semi-circumference.

Now in designing, the red and blue areas are brought to the top to form the figure as shown in Fig. 1. In this case the blackened spaces indicate red and the white ones blue. If a mistake is made it is very easy to turn the discs to correct it.

This involves a material economy as the designing can be accomplished in a minimum length of time. Changes can be effected very easily. The whole frame can be covered by these discs or a large part of it and the design on the fabric usually will take up only part of it as indicated in Fig. 1, this part representing one figure.

In the form shown in Figs. 2 and 3 the bars 11 and the perforations 13 are triangular. This, of course, is suitable when the discs are to have three colors.

In the form shown in Fig. 4 the bar 21 and perforations 23 are square, making it suitable for four colors.

In the form shown in Fig. 5 the bar 31 has two apexes only and as shown, the perforation 33 is again triangular but it could be some other shape and this disc would be suitable where the disc is to be divided into three or two colors. Another arrangement is shown in Fig. 6 in which the bar 11 is used and the perforation 43 is of a more complicated shape having practically the same advantages as in Fig. 4. Many different shapes of bars and perforations can be employed, including cylindrical wires. I have shown a slate or black board 19 on which notes can be made. This is fixed to one or more edges of the frame.

The invention can be employed for making, and analyzing, designs for textile fabrics and various other purposes. It affords a particularly accurate picture of the design, so that its effect can be studied before reproducing.

Although I have illustrated and described only a few forms of the invention I am aware of the fact that other modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited in this respect but what I do claim is:—

1. In a designing frame, the combination with a wire of non-circular cross-section, of a series of discs mounted on said wire, each disc having a non-circular hole therethrough larger than the wire, whereby the discs will be supported by the wire and will have no tendency to turn thereon but can be turned when desired without moving them along the wires, each disc having its edge divided into areas, each area of a different color and as many areas as there are sides to the wire, whereby the disc can be turned on the wire to bring any desired colors to the front and form part of a design.

2. As an article of manufacture, a designing frame comprising a surrounding frame work, a series of wires, polygonal in cross section, arranged horizontally on the frame, each with an angle at the top and discs strung on said wires, each disc having a similar polygonal opening therethrough large enough to permit turning of the disc on the wire, each disc normally hanging down from the angle of the wire, each disc being divided into a plurality of areas around the circumference, each of these areas being colored a different color, whereby the disc is easily turned on the wire to form part of any desired design but is not likely to become turned thereon accidentally.

3. As an article of manufacture, a textile designing frame comprising a surrounding frame work, a series of wires, triangular in cross section, arranged horizontally on the frame and discs strung on said wires and filling the whole space in the frame, each disc having a triangular opening therethrough large enough to permit turning of the disc on its wire, the wires having each an angle at the top, whereby the discs will normally hang down from the upper angular edge of the respective wire, each of said discs being divided into three areas around the circumference, each of these areas being colored a different color, two of said colors representing the ordinary riser and faller and the third representing a special thread employed.

4. In a textile designing frame, the combination of a stationary support, and a series of circular discs on said support each having a non-circular hole therethrough larger than the support, whereby the discs will be supported by the support and will have no tendency to turn thereon, each disc having its edge divided into areas of contrasting colors, whereby the discs when crowded on the support can be turned on the support while the discs are kept in the same position along the support to bring any of said areas to the front and thus form a design.

In testimony whereof I have hereunto affixed my signature.

ARTHUR C. COMINS.