Nov. 8, 1932. W. E. SACKNER 1,886,428

MACHINE FOR STAINING PAPER STRIPS

Filed May 11, 1931

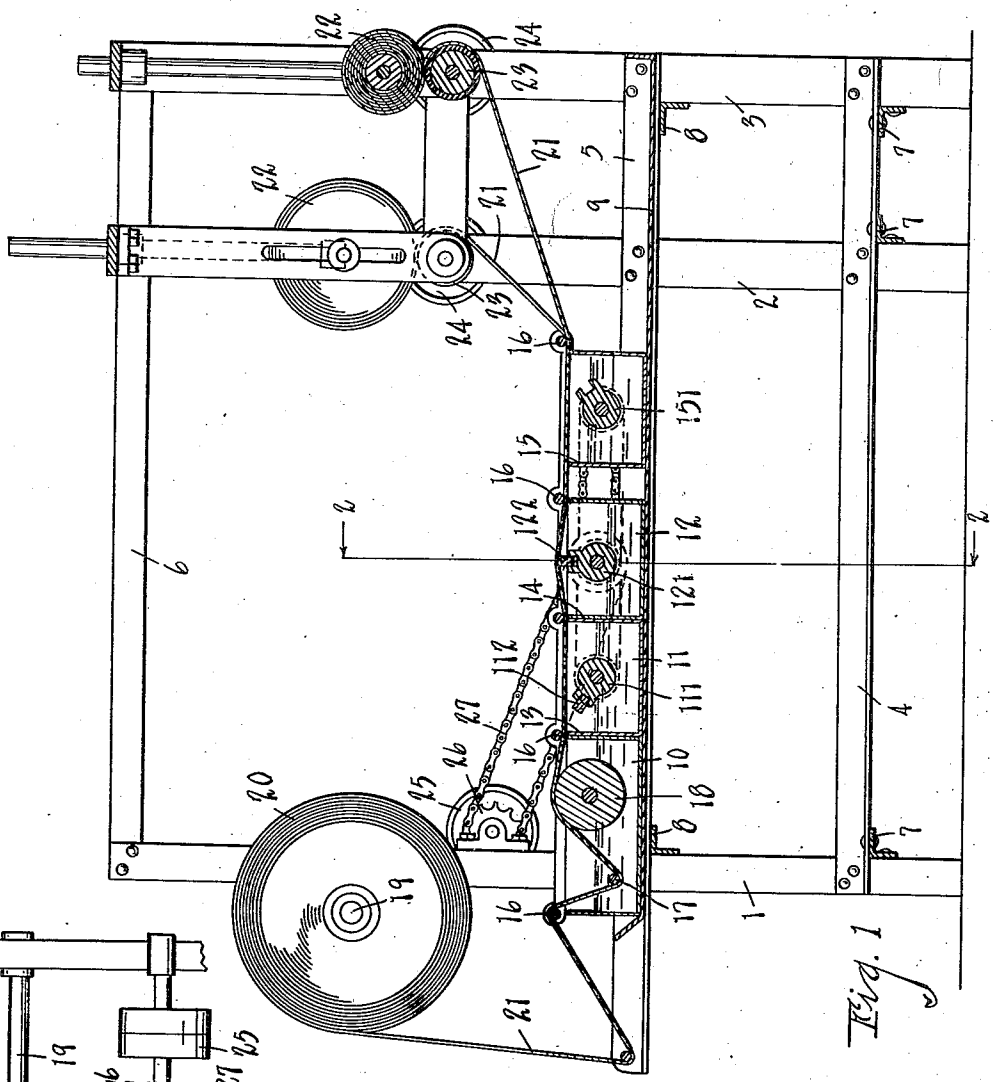


Fig. 1

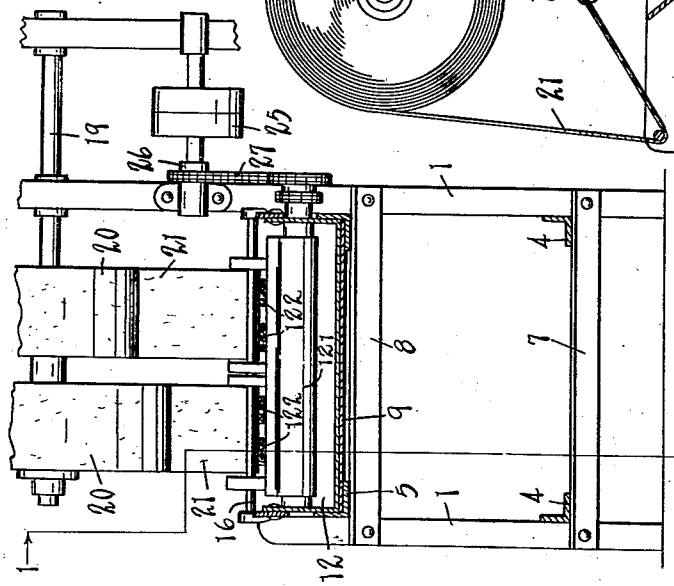


Fig. 2

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UNITED STATES PATENT OFFICE

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MACHINE FOR STAINING PAPER STRIPS

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The object of this invention is to provide a simple and effective machine for staining a paper strip with a variety of colors.

Objects pertaining to details of the machine will appear from the description to follow.

A preferred embodiment of the machine is illustrated in the accompanying drawing, in which:

Fig. 1 is an elevation view partially in section on the line corresponding to line 1—1 of Fig. 2.

Fig. 2 is a detail sectional view on line 2—2 of Fig. 1, portions being broken away.

The parts will be identified by their numerals of reference.

The frame of the machine is made up of uprights 1, 2 and 3. These are connected by base rails 4, support rails 5 and top brace rails 6. These are connected together by proper cross bars 7 and 8. On the support rails 5 I place a tray 9 separated into compartments 10, 11 and 12 by partitions 13 and 14. A series of separate trays 15 might be used instead. Cross guide rods 16 are at the tops of the trays. A cross guide rod 17 is in the bottom of the fore part of the compartment 10 in which is also supported a carrying roller 18 which is left idle to be driven by the passage of the paper strip over it.

In the compartments 11 and 12 I dispose revolving shafts with cams 111, 121 and 151 respectively. These are provided on one side with projecting felts 112, 122, the felt being omitted from the cam 151. Carried by the upright 1 is a cross spindle 19 on which the supply rolls 20 of paper strip 21 are disposed. The paper strip 21 is threaded through the baths over the first cross guide 16, beneath the cross guide 17, over the roller 18, and under the cross guide 16 in proximity to each compartment or tray.

The strips 21 pass to the re-wind rolls 22, 22 in each instance carried by the uprights 2 and 3. These are driven by the usual friction roller means 23, driven by pulleys 24. The shafts of the rollers 111, 121 and 151 are provided with sprocket wheels and are driven from pulley 25 which is provided with a sprocket wheel 26 over which is disposed sprocket chain 27.

Water is placed in the compartment 10 for dampening the paper, and stains of the required color are placed in the compartments 11 and 12. The paper, it will be seen, is thus passed through the water 17 to thoroughly wet the same, and is then passed over the succeeding compartments, as many being provided as are required, and the revolving cams bring the wet felts against the surface of the paper, moving contrary to the direction in which the paper is carried. These felts are divided into sections as seen in Fig. 2, and they apply the color more or less in stripes. These colors may be applied in overlapping relation, as green and yellow stripes, which, when they overlap, give a second color of green, thus making it very simple to secure a great variety of colors and shading. It is possible to apply the color in stripes or strips, thus promoting the variegation which is so desirable in a paper strip of this kind.

I have described my invention in a very simple form. I desire to state that it can be varied. I have shown the same in position to handle a plurality of rolls, but a single roll could, of course, be handled, or a much larger number, to meet the requirements.

I have shown the paper as being re-wound, but of course it can be otherwise stored or could be passed by proper steps direct to a spinning machine.

I believe the method of treatment of the paper strip is novel and I also desire to claim it.

I desire to claim my invention in the specific form illustrated and also broadly as pointed out in the appended claims.

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

1. In a machine for making multi-colored paper strips, the combination of a suitable frame, tray tanks having suitable succeeding compartments, a guide and roll for submerging the tape to dampen the same, a revolving cam in each succeeding compartment having projecting felts, connections to drive the same to apply the color solution at intervals, a sup-

porting spindle for the supply roll, a re-wind roll having means for driving the same at constant speed, and driving means for the said cams so that they act on the paper strip as it passes.

2. In a machine for making multi-colored paper strips, the combination of a suitable frame, tray tanks having suitable succeeding compartments, a guide and roll for submerging the tape to dampen the same, a revolving cam in each succeeding compartment having projecting felts, connections to drive the same to apply the color solution at intervals, a supporting spindle for the supply roll, means to advance the strip, and driving means for the said cams so that they act on the paper strip as it passes.

3. In a machine for making multi-colored paper strips, the combination of a suitable frame, tray tanks having suitable succeeding compartments, a guide and roll for submerging the tape to dampen the same, means in each succeeding compartment having projecting felts to apply the color solution at intervals, a supporting spindle for the supply roll, means to advance the strip, and driving means for the said cams so that they act on the paper strip as it passes.

In witness whereof I have hereunto set my hand.

WADE E. SACKNER.