Sept. 27, 1949. A. I. SARK 2,482,941

MULTICOLOR PRINTING

Filed April 28, 1948

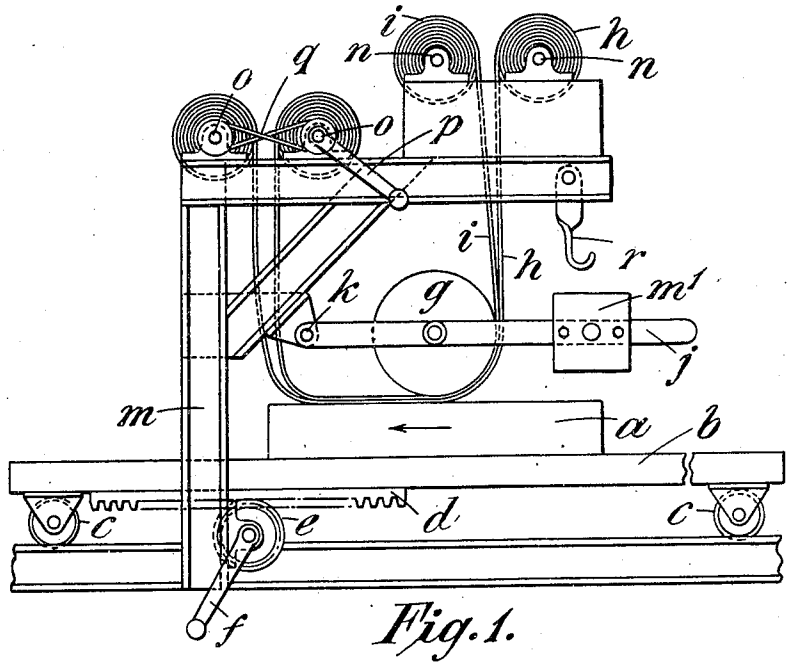
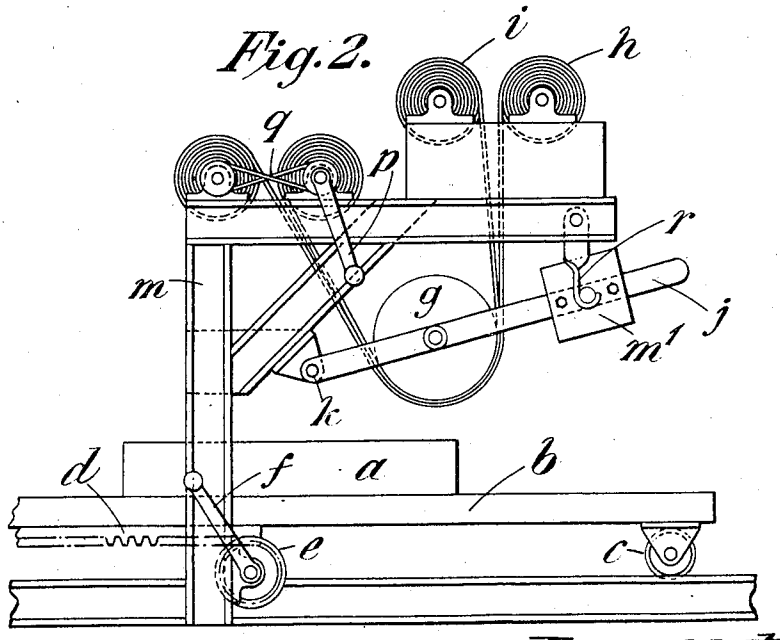


Fig. 1.

Fig. 2.



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MULTICOLOR PRINTING

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3 Claims. (Cl. 101—187)

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This invention relates to multi-colour printing by the use of a printing unit or block which consists of or contains the dyes which effect the printing, made of a material (which may be dry or viscous and may be hard or plastic or a powder) which prints the requisite coloured pattern and is used up in the printing operation.

The object of the present invention is to provide means for printing a more or less continuous pattern on a length of fabric by the use of a printing unit or block of definite length, whilst giving a long period of contact between the material being printed and the printing surface.

In accordance with my invention, the printing unit, which may comprise a block or a number of blocks, each of which contains the dyes or the like for effecting the printing, is flat and cooperates with a roller or rollers, the fabric to be printed passing between the roller and printing unit, the roller revolving only and the printing unit traversing at the same surface speed as the roller so that the fabric is laid on the printing unit by the roller and drawn from the unprinted supply until the end of the unit and of the printing surface is about to leave the roller, when the latter and the printing unit are moved apart and the fabric is detached from the printing unit. The printing unit is returned to its initial position and the impression roller lowered on to the fabric for the next printing operation.

Normally the material to be printed has a backing cloth between itself and the roller.

Referring to the accompanying explanatory drawings:

Figures 1 and 2 illustrate a printing machine constructed and arranged in one convenient form in accordance with this invention, Figure 1 showing the machine actually performing the printing operation and Figure 2 showing the machine when a printing operation is completed.

The printing unit *a* is carried by a carriage *b* mounted on wheels *c* which is adapted to be reciprocated by a rack *d*, pinion *e* and crank handle *f*. The impression roller *g* which rides upon the material *h* being printed or upon a backing cloth *i* thereon, is mounted upon a lever *j* fulcrummed at *k* in a bracket on the machine frame *m*. A weight *m'* adjustable along the lever *j* determines the pressure applied between the fabric *h* and the printing unit.

The fabrics *h* and *i* are coiled upon spindles *n* carried in the machine and as they pass through the machine are recoiled upon spindles *o* revolved in unison by a crank handle *p* and belt *q*.

To commence printing, the printing unit *a* is

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moved to the right in the figures and the impression roller *g* lowered so that the fabric to be printed is brought into contact with the printing surface at the right hand end of the unit. The handle *f* is now turned to advance the carriage *b* towards the left during which the fabric *h* is gradually rolled on to the unit *a* to which it temporarily adheres, until the fabric extends the full length of the printing surface and is adherent thereto. The fabrics *h* and *i* are drawn off the coils on the spindle *o* during the printing operation. When printing is completed the lever *j* is raised and supported by the hook *r* and the handle *p* is turned to peel the cloth *h* off the printing surface and to coil it and the backing cloth on to the spindles *o*. The printed cloth may be dried before being coiled. The printing operation is then repeated after the printing unit has been returned to its right hand position and after the lever *j* has been freed from the hook *r*.

The carriage *b* may be reciprocated mechanically.

What I claim is:

1. A multi-colour printing machine in which printing is effected by a printing surface which consists of or contains the dyes which effect printing, comprising a flat reciprocable printing surface, an adjustably weighted impression roller which rides on the back of the material which is being printed during the printing operation, and adjusts itself automatically to the height of the printing surface, rollers for paying out and taking up the material to be printed which passes in a loop between the rollers and beneath the impression roller, means whereby the impression roller may be raised and supporting means for holding the impression roller raised clear of the printing surface, the material when printed temporarily adhering to the printing surface and being peeled off the printing surface by being wound on to the take up roller when the traverse of the printing surface is completed and after the impression roller has been raised clear thereof.

2. A multi-colour printing machine as defined in and by claim 1 wherein an adjustably weighted lever supports the impression roller and provides the means whereby the same may be raised.

3. A multi-colour printing machine in which the printing is effected by a printing surface which consists of or contains the dyes which effect printing comprising a frame, a flat reciprocal printing surface, a lever pivotably connected to said frame and swingable in the path of movement transverse to and above the said printing

surface, a weight slidably adjustable on said lever, an impression roller supported by said lever and movable therewith, said roller riding on the back of the material which is being printed during the printing operation and being adjustable automatically to the height of the printing surface, supply and take-up rollers for the material to be printed supported on the frame, the material passing in a loop between the rollers and beneath the impression roller, a hook carried by the frame and disposed above the lever when the same is in its lowermost position and adapted to support the lever and thereby the impression roller in an elevated position when the roller has been raised clear of the printing surface by swinging movement of the lever, the material when printed

temporarily adhering to the printing surface and being peeled off the printing surface by being wound on to the take-up roller when the traverse of the printing surface is completed and after the impression roller has been raised clear thereof.

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The following references are of record in the file of this patent:

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