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WEB PERFECTING ROTARY PRESS

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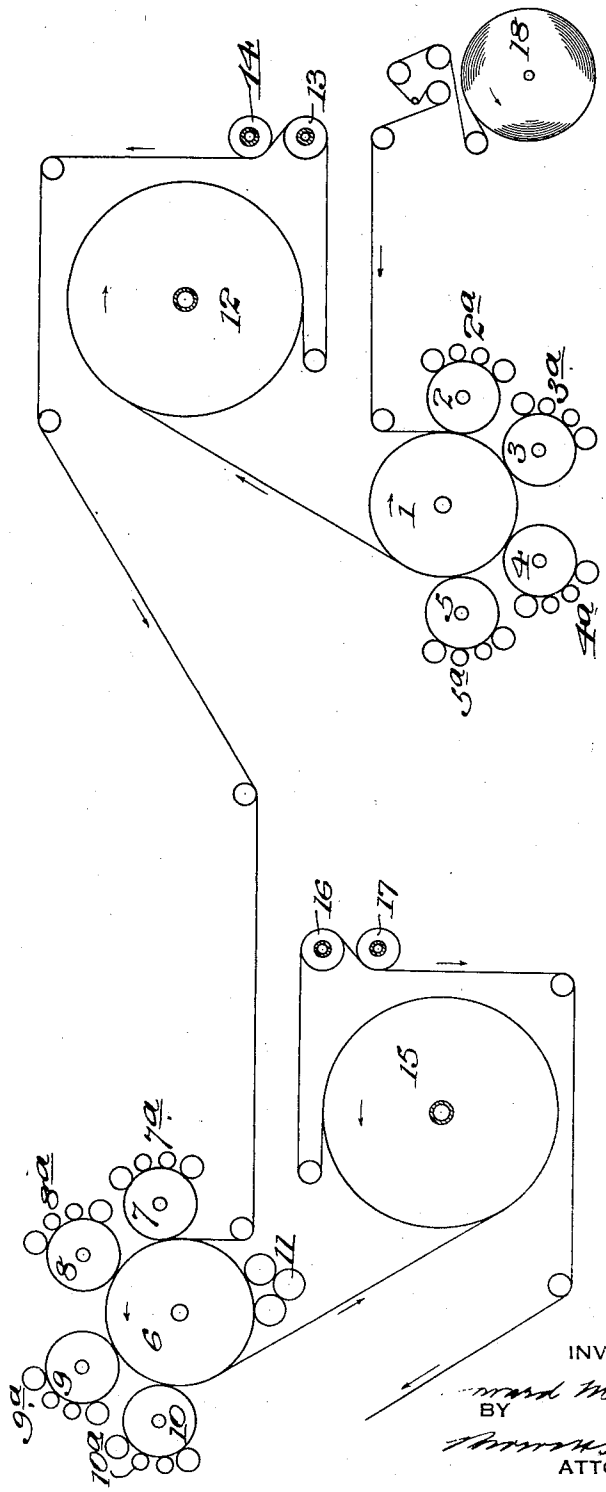

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WEB PERFECTING ROTARY PRESS

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4 Claims. (Cl. 101—179)

In high speed web perfecting rotary presses where quick drying inks and web drying units are employed, it is very desirable that the several units be so located with respect to each other as to produce the best results while occupying a minimum amount of space.

The object of my invention is to so locate the printing and drying units and the web supply roll that the web can be fed and printed and the inks dried with a minimum travel of the web.

My invention comprises, generally, first and second multicolor printing units located in line with each other, each printing unit consisting of an impression cylinder and a plurality of form cylinders (in the present instance four form cylinders) arranged in the first printing unit around the under side of their impression cylinder and in the second printing unit around the upper side of their impression cylinder, inking mechanisms for the form cylinders, first and second drying units located in different horizontal planes, in line with the printing units, an oil offset mechanism for the second impression cylinder, and a web supply roll.

Means are provided for passing the web from the supply roll to and through the first printing unit, then to and through the first drying unit, then to and through the second printing unit, then to and through the second drying unit, and finally directing the web in the desired direction as, for instance, to a delivery point at the end of the press.

A practical embodiment of my invention is represented in the accompanying drawing, in which the figure represents a diagrammatic side elevation of my invention where a single web is perfected. The first printing unit is herein represented as a four color unit, the impression cylinder being denoted by 1 and its four form cylinders by 2, 3, 4, 5, which form cylinders are arranged around the under side of the impression cylinder. The inking mechanisms for the four form cylinders are denoted by 2*a*, 3*a*, 4*a*, 5*a*, which inking mechanisms apply the inks to their respective form cylinders in the usual manner.

The second printing unit for perfecting the web is herein represented as a four color unit, the impression cylinder being denoted by 6 and its form cylinders by 7, 8, 9, 10, which form cylinders are arranged around the upper side of the impression cylinder. The inking mechanisms for the form cylinders are denoted by 7*a*, 8*a*, 9*a*, 10*a*, which inking mechanisms apply the inks to their respective form cylinders in the usual manner.

These two printing units are located in line with each other at the required distance apart and they are also preferably located in different horizontal planes.

An oil offset mechanism 11 of a well known or approved form may be used for the purpose of keeping the packing clean on the second impression cylinder 6 and eliminating not only smut that might be caused when the web is not absolutely dry, but will also remove from the packing any dried particles of ink that may be picked off by the make-ready when receiving the impression from the second printing unit.

The first drying unit is herein represented as comprising a large heating cylinder 12 and two small cooling cylinders 13, 14, said drying unit being located above the first printing unit.

The second drying unit is herein represented as comprising a large heating cylinder 15 and two small cooling cylinders 16, 17, said drying unit being located below the second printing unit.

These two drying units are located in different horizontal planes in line with the printing units and said supply roll. The second drying unit is located between the first and second printing units.

The web supply roll is denoted by 18 and it is located at the opposite end of the press from the point of delivery and in line with the several units.

The web is led through the press as follows: The unprinted web passes from the supply roll 18 to and through the first printing unit where the web is printed in multicolor upon one side thereof. The web is then led to and around the heating cylinder 12 and cooling cylinders 13, 14 of the first drying unit. From thence the web is led to and through the second printing unit where the web is printed in multicolor on the other side thereof. The web is then led to and around the heating cylinder 15 and cooling cylinders 16, 17 of the second drying unit. The perfected web may then be directed from the second drying unit in the desired direction.

The means for driving the several units is not shown or described herein, but any well known or approved means may be employed. It is understood that the first and second units may be driven separately either for the purpose of "making ready" or for permitting a single or two separate non-perfected multicolor products to be produced.

It is to be understood that guide rolls are provided for passing the web in prescribed paths from the web supply roll 18 to the delivery point.

It will also be understood that any suitable

heating medium, such as steam, may be supplied to the heating cylinders 12 and 15 and that any suitable cooling medium, such as water may be supplied to the cooling cylinders 13, 14 and 16, 17.

It will also be understood that any well known or approved quick drying inks may be used in the printing units.

From the above description it will be seen that I have provided an arrangement of the several units of the press whereby the inks on the freshly printed sides of the web may be thoroughly dried with a minimum travel of the web, the form cylinders of the two printing units at the same time being so positioned that ready access thereto may be obtained.

It is evident that various changes may be made in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention, and hence I do not intend to limit myself to the embodiment herein shown and described.

What I claim is:

1. In a web perfecting rotary press, first and second multicolor printing units located in different horizontal planes in line with each other, each printing unit comprising an impression cylinder and a plurality of form cylinders arranged in the first printing unit around the under side of their impression cylinder and in the second printing unit around the upper side of their impression cylinder, first and second drying units, a web supply roll, and means for leading the web through said units.

2. In a web perfecting rotary press, first and second multicolor printing units located in different horizontal planes in line with each other, each printing unit comprising an impression cylinder and a plurality of form cylinders arranged in the first printing unit around the under side of their impression cylinder and in the second printing unit around the upper side of their impression cylinder, first and second drying units, the first drying unit located above its printing unit and the second drying unit below its printing unit, a web supply roll, and means for leading the web through said units.

3. In a web perfecting rotary press, first and second multicolor printing units located in different horizontal planes in line with each other, each printing unit comprising an impression cylinder and a plurality of form cylinders arranged in the first printing unit around the under side of their impression cylinder and in the second printing unit around the upper side of their impression cylinder, first and second drying units, the first drying unit located above its printing unit and the second drying unit below its printing unit and between said first and second printing units, a web supply roll, and means for leading the web through said units.

4. In a web perfecting rotary press, first and second multicolor printing units located in different horizontal planes in line with each other, each printing unit comprising an impression cylinder and a plurality of form cylinders arranged in the first printing unit around the under side of their impression cylinder and in the second printing unit around the upper side of their impression cylinder, first and second drying units, the first drying unit located above its printing unit and the second drying unit below its printing unit and between said first and second printing units, said drying units being located in different horizontal planes, a web supply roll, and means for leading the web through said units.

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