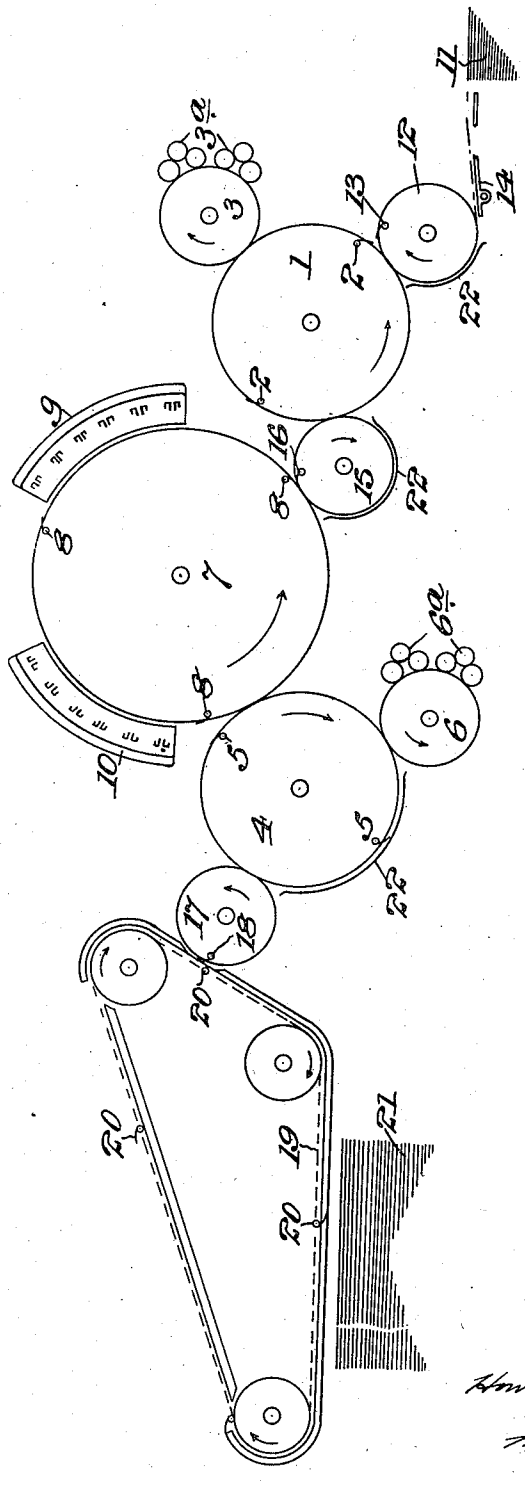
Oct. 3, 1939. H. M. BARBER 2,174,864

SHEET-FED ROTARY PERFECTING PRINTING PRESS

Filed July 21, 1937



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Patented Oct. 3, 1939 2,174,864

UNITED STATES PATENT OFFICE

2,174,864

SHEET-FED ROTARY PERFECTING PRINTING PRESS

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Application July 21, 1937, Serial No. 154,705

4 Claims. (Cl. 101—229)

In sheet fed rotary perfecting presses where quick drying inks and drying units are employed, it is very desirable that the several units be so located with respect to one another 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, sheet supply, sheet feeding means, transfer carriers, and sheet delivery means that the sheets can be printed and the inks dried with a minimum travel of the sheets.

Another object of my invention is to so locate the drying unit with respect to the form cylinders of the printing units that the vapors rising from the drying unit can have no influence on said form cylinders.

A further object of my invention is to provide a series of cooperating sheet taking means positioned on the several units to pass the sheets from a source of sheet supply through the several units of the press to a delivery pile.

My invention comprises, generally, first and second printing units, means for feeding sheets to the first printing unit from a sheet supply, a drying unit, a transfer carrier for transferring the sheets to the drying unit from the first printing unit, a delivery, and a second transfer carrier for transferring the sheets thereto from the second printing unit.

A practical embodiment of my invention is represented in the accompanying drawing which is a diagrammatic side elevation of so much of a printing press as will give an understanding of my invention.

The first printing unit comprises an impression cylinder 1, its two diametrically opposed sheet taking devices 2, form cylinder 3, and inking mechanism 3a.

The second printing unit comprises an impression cylinder 4, its two diametrically opposed sheet taking devices 5, form cylinder 6 and inking mechanism 6a.

The impression cylinders 1 and 4 of these two printing units are located in substantially the same horizontal plane and in line with each other.

The drying unit comprises a cylinder 7 with its three equally spaced sheet taking devices 8, a heating device 9 (in the present instance a series of gas burners), and a cooling device 10 (in the present instance a series of cold air blast nozzles).

Said drying unit is located between and in line with the printing units and in a higher horizontal plane in order that the form cylinders of the printing units may not be influenced by the vapors given off from the drying unit.

A sheet supply 11 is located at one end of the press, and rotary sheet feeding means 12, having sheet taking means 13, is arranged to coact with a sheet feeding table 14 to feed the sheets in the well known manner to the sheet taking devices 2 of the impression cylinder 1 of the first printing unit.

Said sheet supply 11 and sheet feeding means 12 are located in line with the several other units of the press.

A rotary carrier 15, having a sheet taking device 16, is interposed between the impression cylinder 1 of the first printing unit and the cylinder 7 of the drying unit. The sheet taking device 16 of the rotary carrier 15 is arranged to transfer sheets from the sheet taking devices 2 of the impression cylinder 1 to the sheet taking devices 8 of the cylinder 7.

A second rotary carrier 17, having a sheet taking device 18, is interposed between the impression cylinder 4 of the second printing unit and the sheet delivery endless carrier 19, having sheet taking devices 20. Said sheet taking devices 20 are arranged to take the sheets from the sheet taking device 18 of the rotary carrier 17 and deliver them to a sheet delivery pile 21, located at the opposite end of the press from the sheet supply 11.

Said rotary carriers 15, 17, said sheet delivery endless carrier 19, and said delivery pile 21 are all located in line with one another and with the other several units of the press.

It is to be understood that any suitable heating medium, such as gas, may be supplied to the heating device 9 of the drying unit and that any suitable cooling medium, such as cold air, may be supplied to the cooling device 10 of the drying unit.

It will also be understood that any well known or approved means may be employed for driving the several units of the press.

It will also be understood that the sheets are controlled on the surface of the cylinders of the respective units by means of sheet guides 22 and/or other well known or approved means, not shown herein.

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

It will be seen that the sheets as they pass from the first to the second printing unit are subjected to the action of heating and cooling devices 9 and 10 while being held on the surface of the cylinder 7 of the drying unit.

The parts shown, described, but not claimed herein, form the subject matter of my copend-

ing application, filed July 21, 1937 Serial No. 154,706.

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, hence I do not intend to limit myself to the embodiment herein shown and described.

What I claim is:

1. In a sheet fed rotary perfecting printing press, first and second printing units, each comprising an impression cylinder, a form cylinder and an inking mechanism therefor, means for feeding sheets to the impression cylinder of the first printing unit, a drying unit comprising separate heating and cooling devices, and a cylinder coacting therewith, a rotary carrier for transferring the sheets from the impression cylinder of the first printing unit to the cylinder of the drying unit, means for transferring the sheets from the cylinder of the drying unit to the impression cylinder of the second printing unit, a delivery, and a rotary carrier for transferring the sheets thereto from the said impression cylinder of the second printing unit.

2. In a sheet fed rotary printing press, first and second printing units, each comprising an impression cylinder, a form cylinder and an inking mechanism therefor, means for feeding sheets to the impression cylinder of the first printing unit, a drying unit comprising separate gas heating and cold air supply devices and a cylinder coacting therewith, a rotary carrier for transferring the sheets from the impression cylinder of the first printing unit to the cylinder of the drying unit, means for transferring the sheets from the cylinder of the drying unit to the impression cylinder of the second printing unit, a delivery, and a rotary carrier for transferring the sheets thereto from the said impression cylinder of the second printing unit.

3. In a sheet fed rotary perfecting printing press, first and second printing units, each comprising an impression cylinder, a form cylinder and an inking mechanism therefor, a rotary carrier for feeding sheets to the impression cylinder of the first printing unit, a drying unit comprising a cylinder and separate heating and cooling devices arranged around the upper side of the cylinder, a rotary carrier for transferring the sheets from the impressing cylinder of the first printing unit to the under side of the cylinder of the drying unit, means for transferring the sheets from the under side of the drying unit cylinder to the impression cylinder of the second printing unit, a delivery, and a rotary carrier for transferring the sheets thereto from the impression cylinder of the second printing unit.

4. In a sheet fed rotary perfecting printing press, first and second printing units, each comprising an impression cylinder, a form cylinder and an inking mechanism therefor, a rotary carrier for feeding sheets to the impression cylinder of the first printing unit, a drying unit comprising a cylinder and gas heating and cold air supply devices arranged around the upper side of the cylinder, a rotary carrier for transferring the sheets from the impression cylinder of the first printing unit to the under side of the drying unit cylinder, means for transferring the sheets from the under side of the drying unit cylinder to the impression cylinder of the second printing unit, a delivery, and a rotary carrier for transferring the sheets thereto from said impression cylinder of the second printing unit.

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