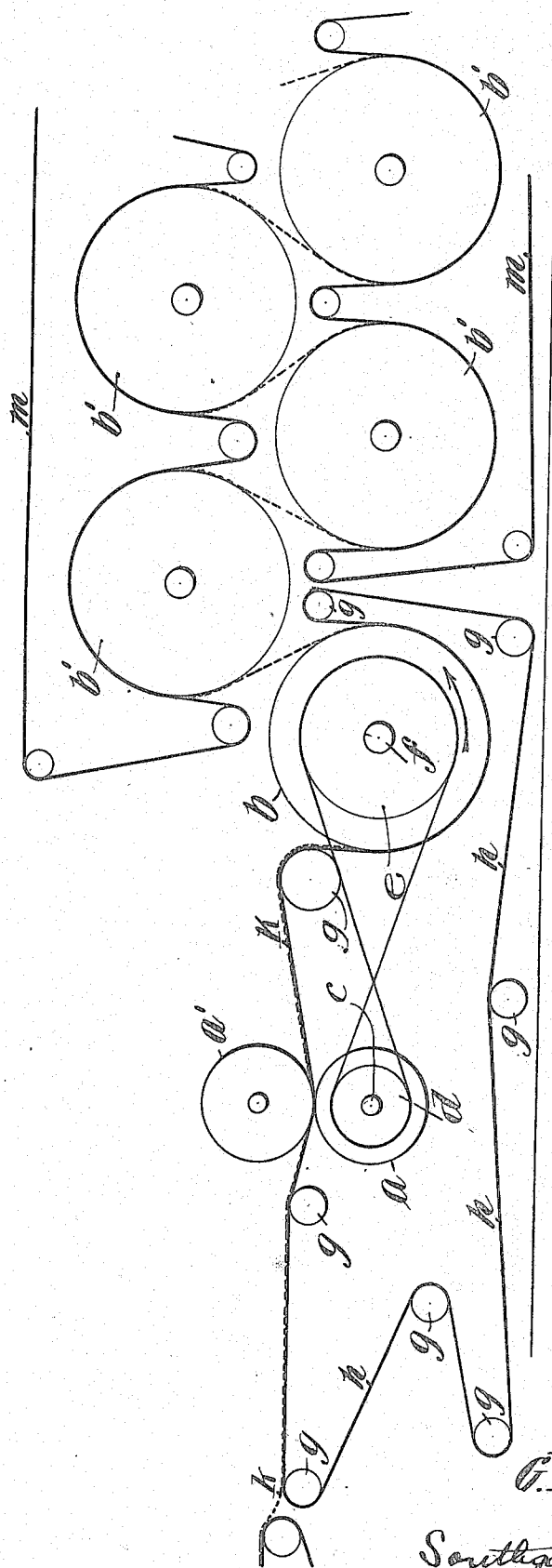


G. D. KILBERRY.
PAPER WEB DELIVERY.
APPLICATION FILED NOV. 21, 1913.

1,122,281.

Patented Dec. 29, 1914.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE D. KILBERRY, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO RICE, BARTON & FALES MACHINE & IRON COMPANY, A CORPORATION OF MASSACHUSETTS.

PAPER-WEB DELIVERY.

1,122,281.

Specification of Letters Patent.

Patented Dec. 29, 1914.

Application filed November 21, 1913. Serial No. 802,289.

To all whom it may concern:

Be it known that I, GEORGE D. KILBERRY, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Paper-Web Delivery, of which the following is a specification.

Although the idea of delivering the web to a paper drying machine directly by mechanical means from the press rolls to the first drying cylinder of the drier has been suggested, yet it has been customary to pass paper webs, and especially those for news paper and comparatively heavy work, by hand to the first cylinder of the drier after it is delivered from the press rolls. This requires considerable expense for the labor involved and also seriously limits the speed of the entire plant.

The principal objects of this invention are to entirely eliminate this hand operation, even in news paper and heavy work, and to substitute for it a mechanical operation capable of attaining any speed which the press and drier can maintain so that the cost of operation shall be materially reduced on account of the elimination of the hand labor and still further reduced on account of the increase in speed which is possible at the same time, and to support the web all the way from the press rolls to the point of delivery from the first drying cylinder. This results in the elimination of the uncertainties and irregularities of the hand delivery method.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing which is a diagrammatic side elevation of a portion of a press and a portion of a drier showing how the web is delivered from one to the other in accordance with this invention. The press is represented in the drawings only by a pair of press rolls a and a' . The drier is represented chiefly by a set of drier cylinders of which b represents the first drier cylinder and b' the others. In this case the first drier cylinder is at the bottom. These two machines can be driven entirely independently at the same peripheral speed. In the form shown, however, the driving shaft c , on which the press roll a is located, is provided with a pulley d . This pulley, by means of a belt, drives a pulley e on the

shaft f on which the first drier cylinder b is fixed. The ratio between the diameters of the pulleys d and e is the same as the ratio between the diameters of the roll a and the cylinder b respectively. Consequently, the surface speeds of this roll and cylinder will be the same. I have not shown the means for driving the shaft c as that can be driven in any of the ways ordinarily employed in this industry.

Located in convenient position are a series of idler rolls g and guided by these rolls is an endless felt apron h . These idler or guide rolls are so located that the endless felt apron receives the web k of paper from the press rolls on its upper surface and travels at the speed of the circumference of the press roll a and drier cylinder b from the former to the latter directly and continuously so that the web can neither be stretched or crumpled or otherwise distorted by any difference in speeds.

In the specific form shown the endless felt apron h passes between the two press rolls a and a' so as to receive the web before it passes between them. It is also located around the lower side of the drier cylinder b by means of these guide rolls and kept in contact with the drier cylinder throughout more than half the circumference thereof so as to press the paper web between it and the surface of the cylinder throughout the major portion of the circumference of the cylinder. For this purpose two of the rolls g are located above the center of the cylinder b and close to its circumference and the felt apron passes over them and under the cylinder. This apron is driven by its contact with this cylinder and with the press rolls so that it keeps up to the circumferential speed thereof. In this way it will be seen that the paper web is delivered directly and continuously from the press rolls to the under side of the first drier cylinder by means of this felt apron. It is carried around the major portion of the circumference of the cylinder and then led to one of the other cylinders b' and carried through the drier by means of the ordinary endless felt aprons m . This obviously keeps the web in proper condition while it is passing from the press rolls to the drier without the interposition of any hand labor or any uncertainty whatever and it permits the continuous operation of the two machines at a much higher rate

of speed than has been possible under any ordinary circumstances heretofore, particularly in the manufacture of news paper and other heavy grades of goods.

Although I have illustrated and described only a single embodiment of the invention, I am aware of the fact that modifications can be made therein particularly in the details of construction without departing from the scope thereof as expressed in the claim, therefore I do not wish to be limited in these respects, but

What I claim is:—

In a machine for making news print paper, the combination with a pair of press rolls and a drier comprising a plurality of upper and lower cylinders, the first two lower cylinders being spaced apart, of a single endless apron passing between said press rolls, receiving the web directly therefrom on its upper side, and passing directly to the first lower cylinder of the drier and around the bottom thereof and carrying the

web uninterruptedly to said first cylinder, said apron extending around more than half the circumference of the said first drier cylinder and extending into the space between it and the second lower cylinder so as to keep the web pressed in close contact with said first lower cylinder throughout more than half the circumference thereof and substantially to the point thereon from which the web passes to the first upper cylinder, whereby the web is carried continuously and directly from the press rolls to said first drier cylinder and kept in close contact with the under surface thereof as long as it engages that cylinder.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

GEORGE D. KILBERRY.

Witnesses:

ALBERT E. FAY,
C. FORREST WESSON.