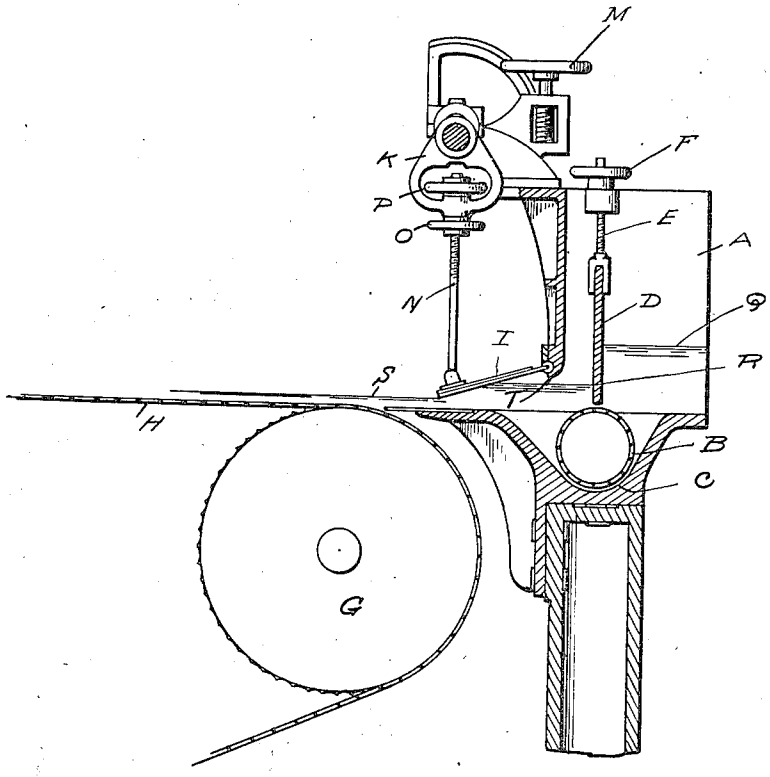
Sept. 16, 1930. R. T. LANG 1,775,905

STOCK INLET FOR PAPER MACHINES

Filed March 20, 1928



INVENTOR.

Richard T. Lang

BY C. P. Goepel

ATTORNEYS

Patented Sept. 16, 1930

1,775,905

UNITED STATES PATENT OFFICE

RICHARD T. LANG, OF WEEHAWKEN, NEW JERSEY, ASSIGNOR TO AMERICAN VOITH CONTACT CO., INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

STOCK INLET FOR PAPER MACHINES

Application filed March 20, 1928. Serial No. 263,033.

This invention relates to improvements in stock inlets for paper machines and has for its purpose to adapt the so-called Voith stock inlet to the requirements of slow running Fourdrinier paper machines for producing thick and heavy paper as f. i. rag paper, card board, etc.

A proper formation of such heavy webs on the wire can only be obtained if the speed of the stock delivered to the wire does not materially differ from the speed of the wire itself. This means a relatively low speed of the stock when leaving the outlet gate of the inlet which can only be obtained if the head of the stock in the inlet box is small. In the present stock inlets using a perforated roll for the uniform distribution of the stock over the width of the wire, this roll is so located in the inlet box that its lowest point is near the bottom of the inlet box or about at the same level with the wire so that the roll extends its full diameter over said level of the wire. For reasons of design the roll has a diameter of at least 5″ and it has to be fully submerged in the stock, as otherwise lumps etc. would be formed which, when getting loose from the roll, would be delivered to the wire and would cause breaks of the web at the couch press and the wet presses. For a successful operation of the inlet a head of at least 5″ has therefore to be maintained in the inlet box, which would produce a speed of the stock of about 300 ft. per minute at its outlet gate. Heavy sheets and fine rag paper are manufactured with working speeds of from 20–100 ft. per minute only. For this class of paper a speed of the stock of 300 ft. would produce an extremely bad and cloudy formation of the web even on a wire running uphill to some extent.

The standard design of the stock inlet with the distributing roll located at the bottom of the inlet box, therefore, cannot be successfully used for low speed paper machines. The disadvantages described before can be eliminated, however, and the good features of the stock inlet can be fully utilized for low speed paper machines also when designing the stock inlet in accordance with the present invention.

The new inventive thought is to locate the distributing roll in a recess in the bottom of the inlet box in such a manner that its vertex does not materially project beyond the bottom of the box. A baffle board is provided on top of the roll, which can be set more or less close to the roll. This board divides the inlet box into 2 compartments with the roll forming the perforated partition for letting the stock pass from one compartment into the other. Such an arrangement allows to maintain a head in the backward compartment of the inlet box—i. e. the compartment on the side of the screens—high enough to make the stock fully cover the perforated roll and force it through the latter, which acts like a throttle reducing the head of the stock in the forward compartment of the box—i. e. the compartment on the side of the breast roll—to such an extent that the speed of the stock leaving the inlet box is consonant to the speed of the wire proper. It is essential that the distributing roll be located as close as possible to the outlet gate of the inlet box so that no undercurrents or the like can be produced when the stock flows from the rolls to the outlet gate, as otherwise streaks or a wild formation of the web would be the result.

I have shown an application of my invention in the accompanying drawing which represents a vertical cross-section through the stock inlet and the breast roll end of the wire.

In this drawing A is the inlet box, B is the distributing roll which is located in a recess C in the inlet box A. D is the baffle board on top of the roll which divides the inlet box into a forward and backward compartment. The baffle board can be made adjustable by means of spindle E and handwheel F so as to enable its more or less close setting to the roll. G is the breast roll over which the wire H is running. I is the outlet gate on the inlet box A through which the stock is delivered on to the wire H. Means K, L, M are provided for making the gate adjustable in order to vary the height of the opening of the outlet gate through which the stock flows on the wire H, thereby controlling the quantity of stock delivered upon same. The gate

I is made of flexible material and means N, O and P are provided for warping it more or less at different points across the width of the wire for purpose of obtaining an even and uniform flow of the stock on to the wire over its entire width. The head of the stock in the backward compartment is shown on level Q, whereas in the forward compartment it is shown on level R corresponding with the level S of the head of the stock over the wire.

The end of the stock inlet box is shown at T and this end terminates above the bottom in proximity to the baffle plate D and distributing roll B. The outlet gate I is movably attached as by hinging or otherwise along one edge to the lower edge of this end.

The drawing shows one application of the inventive idea only. It is to be understood, however, that different arrangements and locations of the individual parts may be had without departing from the spirit of my invention.

I claim as my invention:

1. In a paper machine, a stock box having one end shaped to provide an outlet opening, an outlet gate in said opening, the bottom of said box being povided with a transverse recess adjacent said opening, a perforated roll in said recess, and a baffle plate supported by the box adjacent the end above said roll.

2. In a paper machine, a stock inlet box having one end shaped to provide an outlet opening, a gate to control said opening, the bottom of the box adjacent said opening having a transverse recess therein, a perforated roll in said recess, a baffle plate extending across the box above said roll and adjacent said end, and means for adjusting said baffle plate towards and from the roll.

3. In a paper machine, a stock inlet box having one end shaped to provide an outlet opening, a gate associated with said end to control said opening, a baffle plate arranged transversely of the box and extending into the path of approach to said outlet opening, and a perforated roll arranged transversely of the box below said baffle plate.

In testimony that I claim the foregoing as my invention, and have signed my name hereto.

RICHARD T. LANG.