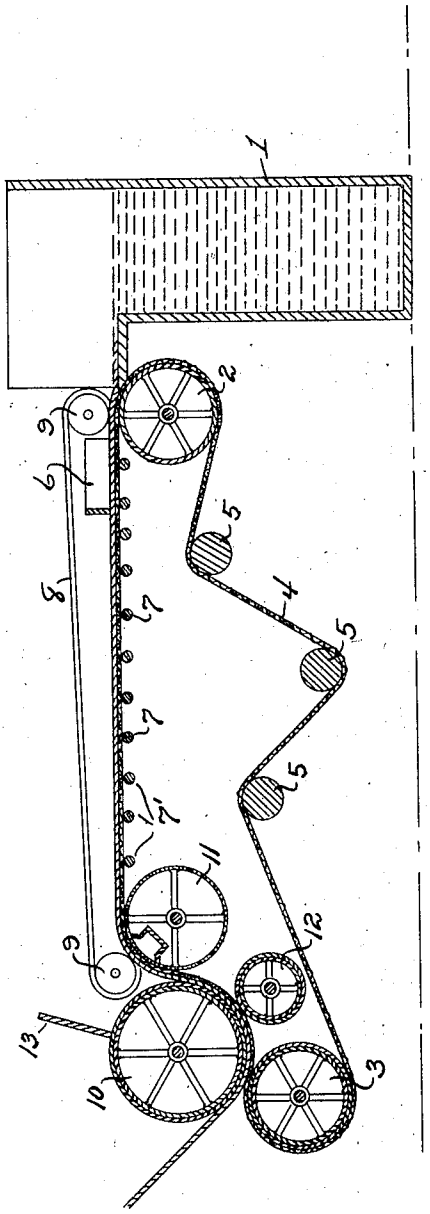
Dec. 3, 1929. M. R. WARE 1,737,781

PAPER MAKING MACHINE

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PAPER-MAKING MACHINE

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This invention relates to improvements in paper making machines of the Fourdrinier type, the general object of the invention being to so construct the machine that it will have greater efficiency in removing water from the sheet and a greater pressing action on the sheet, with increased speed of operation, thereby making it possible to produce sheets of almost any desired thickness without danger of the sheet splitting or peeling so that the machine can be used for the production of roofing sheets, asbestos, paperboard, etc.

Another object of the invention is to substitute small rolls for the suction boxes now in use on the Fourdrinier type of machine, which eliminates wear on the endless wire and to cause the wire to pass over a suction roller which acts to remove a greater quantity of water from the sheet than with the suction boxes, and also to use a pressure roller arranged between the suction roller and the driving roller and which acts to press the wire and sheet against the upper couch roller.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing which is a diagrammatic sectional view through the improved machine.

In the drawing, the numeral 1 indicates the vat of the machine, 2 indicates the breast roll, 3 the driving or lower couch roller and 4 the endless wire which passes over the rolls 2 and 3 and the guiding and tightening rolls 5. The numeral 6 indicates the dam board and the table rolls are shown at 7. The deckle belt is shown at 8 and its supporting rolls at 9. The upper couch roll is shown at 10, and in carrying out my invention, I eliminate the suction boxes and substitute therefor the table rolls 7′ and the suction roller 11, the wire passing over this suction roller before it passes under the upper couch roller 10.

I also place a pressure roller 12 between the rollers 3 and 11 which acts to engage the under face of the wire and to press the wire and the sheet thereon against the upper couch roller 10, as clearly shown in the drawing.

I prefer to place the rear roll 9 for the deckle at a point where the deckle will support the edge of the sheet until the water has been removed by the suction roller, though in some cases, the deckle can terminate at a point in front of the suction roller.

From the foregoing it will be seen that the front part of the machine is similar to an ordinary Fourdrinier type of paper making machine, but the rear part of such machine is changed by the elimination of the suction boxes and the substitution thereof of the table rolls and the use of a suction roller and a pressure roller for pressing the wire and sheet against the upper couch roller between the suction roller and the lower couch roller and the extension of the deckle over the suction roller. This arrangement increases the efficiency of the machine and the speed of operation as the wear on the endless wire is reduced and the use of a wire instead of a felt renders it possible to press a greater amount of water out of a sheet. Thus it is unnecessary to use suction presses. By arranging the pressure roller as shown, the roller 10 can be heavily weighted against the roller 3, thereby increasing the pressing action and making it possible to produce paperboard, roofing, asbestos, etc., on a Fourdrinier machine at much faster speeds than is possible on an ordinary machine and eliminating danger of the sheet splitting or peeling as the sheet is woven solid and is not built up in piles as is done on the present cylinder type of machine.

In some cases, it is unnecessary to use felt presses with this machine, as it will be found that the sheet of paper produced by this machine will be as dry or drier than the same sheet would be after being passed through several felt presses. This machine can be driven with less power than the machines now in use.

The usual guard board 13 is provided for cleaning the jacket on the roller 10.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be

made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A paper making machine comprising a breast roller, a driving roller, an endless wire belt passing over the rollers, a suction roller, table rollers for supporting the belt between the suction roller and the breast roller, an upper couch roller arranged between the suction roller and the driving roller and pressing the wire and sheet upon the driving roller, a pressure roller arranged between the suction and driving rollers and engaging the under face of the wire and pressing the wire and sheet against the upper couch roller and a deckle for forming and holding the edge of the sheet between the breast and suction rollers.

2. A paper making machine comprising a breast roller, a driving roller, an endless wire belt passing over the rollers, a suction roller, table rollers for supporting the belt between the suction roller and the breast roller, an upper couch roller arranged between the suction roller and the driving roller and pressing the wire and sheet upon the driving roller, a pressure roller arranged between the suction and driving rollers and engaging the under face of the wire and pressing the wire and sheet against the upper couch roller, a deckle for forming and holding the edge of the sheet between the breast and suction rollers, said deckle extending over the suction roller.

3. In a paper making machine including a breast roller, upper and lower couch rollers and an endless wire belt passing over the breast roller and lower couch roller and under the upper couch roller, the combination of a suction roller over which the belt passes before reaching the upper couch roller, supporting rollers for the belt between the suction roller and the breast roller, said suction and supporting rollers eliminating the use of flat suction boxes and a pressure roller arranged between the suction roller and lower couch roller and engaging the upper face of the wire and pressing the wire and sheet against the upper couch roller.

In testimony whereof I affix my signature.

MELVIN R. WARE.