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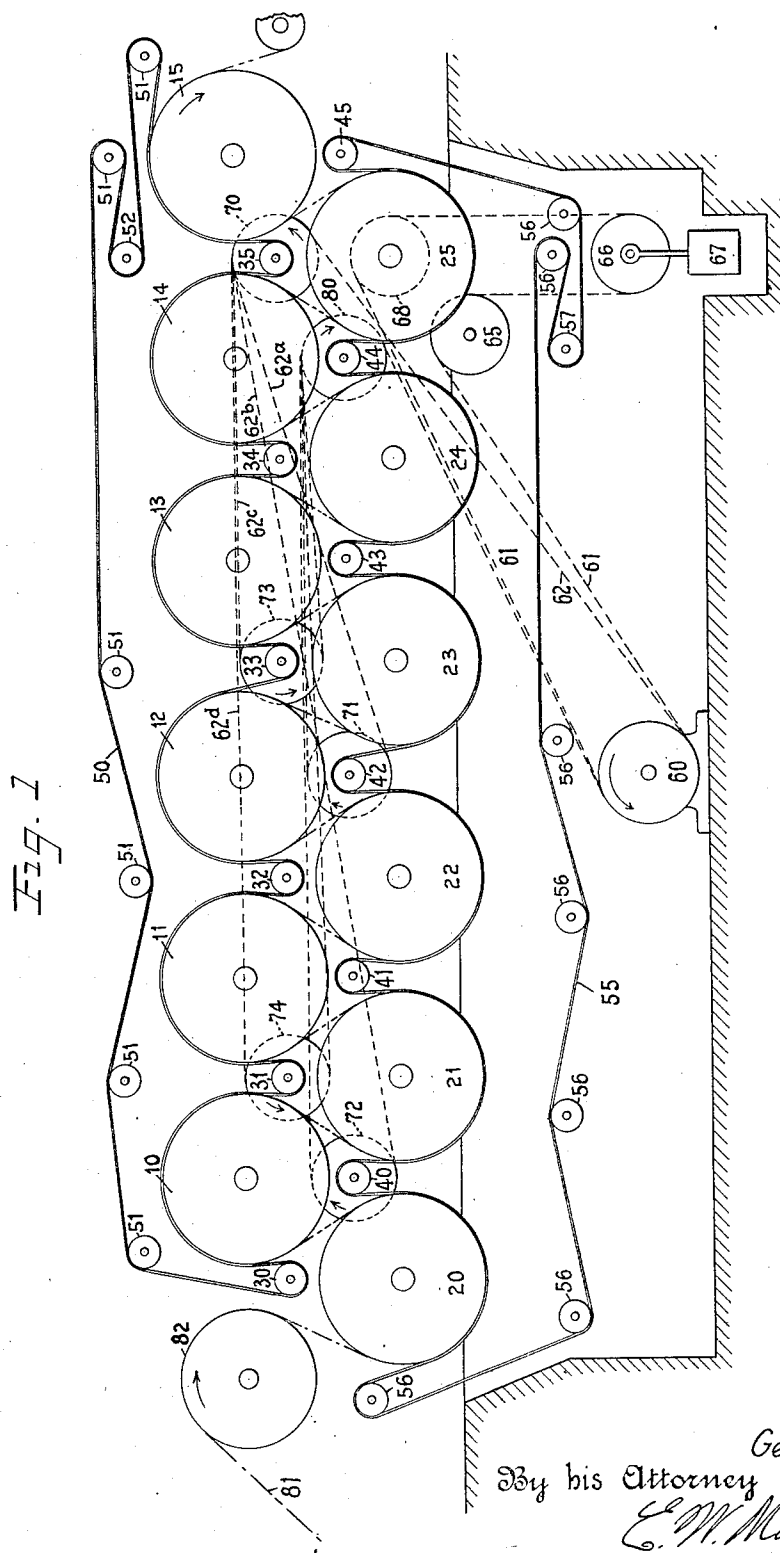
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G. D. KILBERRY

PAPER MACHINE DRIVING MECHANISM

Filed May 24, 1923

2 Sheets-Sheet 1



Inventor

Geo. D. Kilberry

By his Attorney

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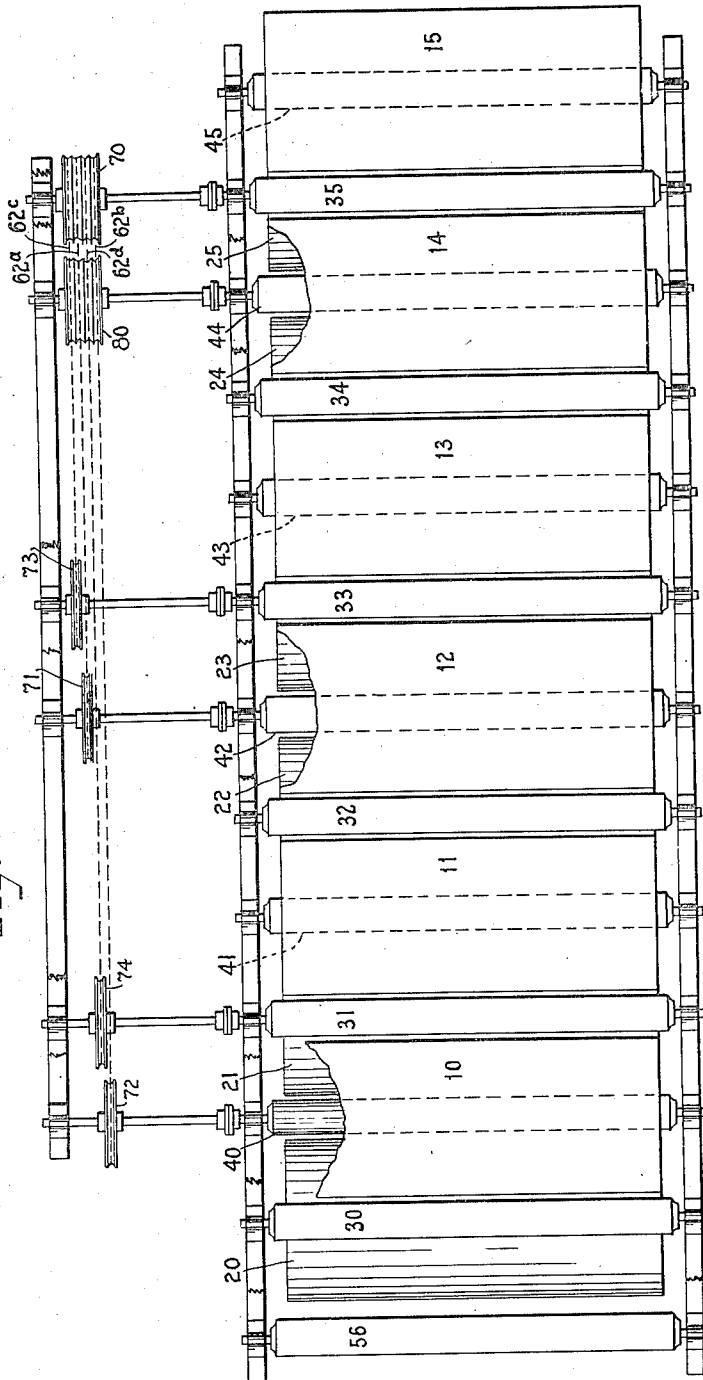
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Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE D. KILBERRY, OF EAST DOWNINGTON, PENNSYLVANIA.

PAPER-MACHINE DRIVING MECHANISM.

Application filed May 24, 1923. Serial No. 641,076.

To all whom it may concern:

Be it known that I, GEORGE D. KILBERRY, a citizen of the United States, and a resident of East Downington, county of Chester, and State of Pennsylvania, have invented certain new and useful Improvements in Paper-Machine Driving Mechanisms, of which the following is a specification.

This invention relates to driving mechanism for paper machines and particularly for the dryer rolls.

The dryer rolls of paper machines are usually driven by gears mounted on the dryer shafts, but with this construction it is impossible to gain access to the back bearings when the machine is running. These gears also are very noisy.

This invention has for its salient object to provide means for driving the dryer rolls of the paper machine in such a manner as to render the bearings thereof accessible at all times and to provide a noiseless and efficient drive for the dryer rollers.

Further objects of the invention will appear from the following specification taken in connection with the drawings, which form a part of this application, and in which—

Fig. 1 is a diagrammatic elevational view showing a paper machine having driving means constructed in accordance with the invention, and

Fig. 2 is a top plan view of the structure shown in Fig. 1, the dryer felt being omitted for the sake of clearness.

The invention briefly described comprises driving means for a paper machine having dryer rolls, felt rolls and an endless dryer felt passing around said roll, the drive being accomplished by positively driving the felt rolls, this drive being communicated to the dryer rolls by means of the endless dryer felt.

Referring to the drawings, the paper machine illustrated comprises one set of dryer rolls 10, 11, 12, 13, 14 and 15 arranged at one elevation and a second set of rolls 20, 21, 22, 23, 24 and 25 arranged in staggered relation with respect to the first set and on a lower level.

The machine also comprises two sets of felt rolls or idlers. One set includes rolls 30, 31, 32, 33, 34 and 35, these rolls being arranged intermediate the dryer rolls 10 to 15 inclusive. The other set of felt rolls comprises rolls 40, 41, 42, 43, 44 and 45, these

rolls being arranged intermediate dryer rolls 20 to 25 inclusive.

The arrangement of dryer rolls and felt rolls just described is the usual arrangement and each set of dryer and felt rolls has an endless dryer felt mounted thereon and co-operating therewith. As illustrated, a dryer felt 50 is mounted on the upper set of dryer rolls 10 to 15 inclusive and passes around the upper set of felt rolls 30 to 35 inclusive and this dryer felt also passes around idlers 51 and around a take-up roll 52.

The other dryer felt 55 passes in a similar manner around the dryer rolls 20 to 25 inclusive, around the felt rolls 40 to 45 inclusive and around idlers 56 and a take-up roll 57.

The driving mechanism for the felt rolls and dryer rolls consists of an endless rope drive by means of which certain of the felt rolls are driven and the dryer rolls are driven from the felt rolls through the dryer felts.

In the particular embodiment of the invention illustrated, a motor or other source of power 60 has mounted thereon a grooved sheave having five grooves therein, these grooves receiving five laps of the endless rope. The lap 61 passes around an idler sheave 65 having a single groove, around a take-up idler 66 having a weight 67 mounted thereon and from the take-up idler 66 this lap passes around a single groove idler 68. From the idler 68 the rope passes back to the five groove sheave on the motor shaft. The four laps indicated at 62 pass around a four groove idler 70 mounted on the shaft of the felt roll 35. These laps as they pass from the sheave 70 are indicated as 62^a, 62^b, 62^c and 62^d.

The lap 62^a passes around a single groove sheave 71 mounted on the shaft of the felt roll 42 and from this roll passes around a four groove sheave 80 mounted on the shaft of the felt roll 44 and back to the five groove sheave on the motor shaft.

The lap 62^b passes from the sheave 70 around a single groove sheave 72 and back around the sheave 80 to the five groove sheave on the motor shaft.

The lap 62^c passes around a single groove sheave 73 mounted on the shaft of the felt roll 33, around sheave 80 and back to the power driven sheave.

The lap 62^d passes around a single groove sheave 74 mounted on the shaft of the felt

roll 31 and from this sheave back around the four groove sheave 80 to the motor driven sheave.

From the preceding description, it will be seen that the felt rolls 35, 44, 33, 42, 31 and 40 are positively driven by the endless rope and the drive to these felt rolls is communicated to the dryer rolls through the endless dryer felts 50 and 55.

The paper web 81 passes around an idler roll 82 and from this roll around the dryer rolls in the following order,—20, 10, 21, 11, 22, 12, 23, 13, 24, 14 and 25, 15, the paper web being fed by the dryer felts in the usual manner.

From the preceding specification, it will be clear that the dryer rolls will be effectively and quietly driven by the dryer felts thereby eliminating the noise of the usual driving gearing and rendering the bearings of the roll accessible at all times.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:

1. In combination, a plurality of dryer rolls, a felt roll intermediate each pair of

dryer rolls, means for driving at least one of said felt rolls, said drive being communicated to said dryer rolls by the felt engaging the felt rolls and dryer rolls.

2. In combination, a plurality of dryer rolls, a felt roll intermediate each pair of dryer rolls, rope drive means for driving certain of said felt rolls, said drive being communicated to said dryer rolls by the felt engaging the felt rolls and dryer rolls.

3. In combination, a plurality of dryer rolls, a felt roll intermediate each pair of dryer rolls, means including an endless rope drive for driving at least one of said felt rolls, said drive being communicated to said dryer rolls by the felt engaging the felt rolls and dryer rolls.

4. A paper machine comprising dryer rolls and felt rolls, a dryer felt engaging said rolls and means for driving at least one of said felt rolls, said drive being communicated to the dryer rolls and remaining felt rolls by the dryer felt.

5. In combination, a plurality of dryer rolls, felt rolls positioned intermediate said dryer rolls, an endless felt passing partly around each of said dryer rolls and engaging said felt rolls and means for driving said felt to thereby rotate the dryer rolls.

In witness whereof, I have hereunto set my hand this 22nd day of May, 1923.

GEORGE D. KILBERRY.