R. KRON.

MACHINE FOR MAKING A WEAVABLE PAPER STRIP.

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1,219,958. Patented Mar. 20, 1917.

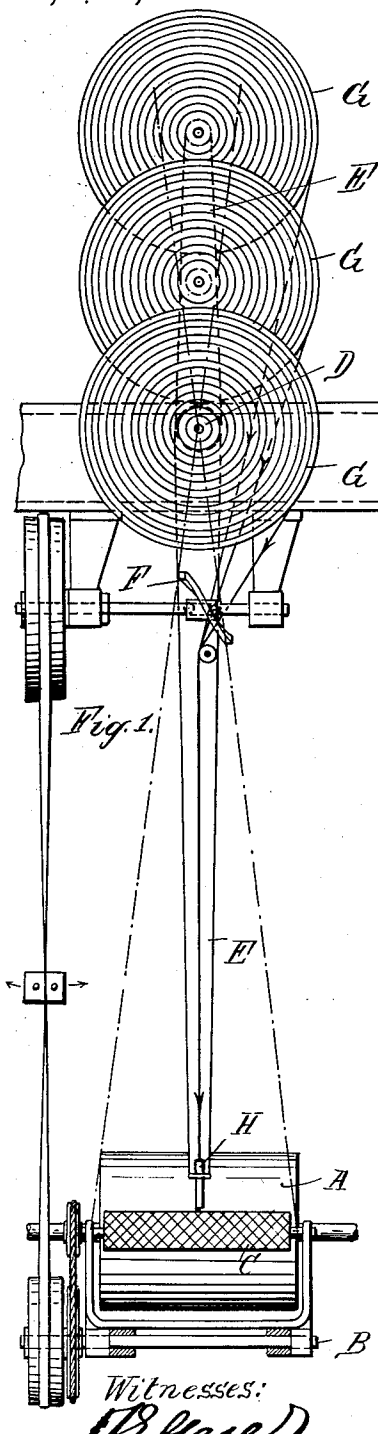


Fig. 1.

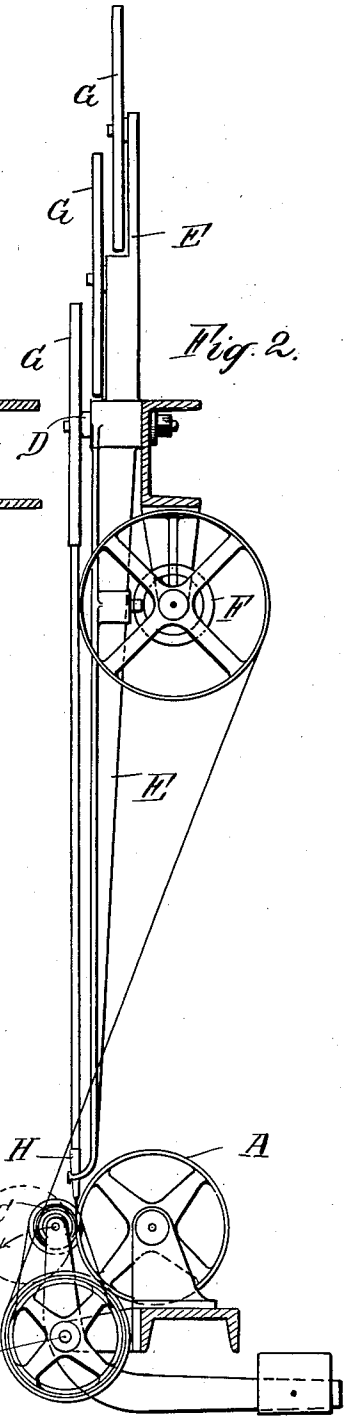


Fig. 2.



Fig. 3.



Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING A WEAVABLE PAPER STRIP.

1,219,958. Specification of Letters Patent. Patented Mar. 20, 1917.

Application filed July 30, 1914. Serial No. 854,190.

To all whom it may concern:

Be it known that I, RUDOLF KRON, a citizen of Switzerland, and residing in Thalheim, Erzgebirge, Germany, engineer, have invented certain new and useful Improvements in Machines for Making Weavable Paper Strips, of which the following is a statement.

In my application for Letters Patent Serial No. 814,892, filed January 28, 1914 I have described the method of producing a fabric composed of a strip of paper folded several times along its longitudinal edge and subsequently compressed, the said strip being interwoven for producing such fabric, either as warp with jute and the like threads as weft, or as weft with such threads as warp, or lastly as warp with similar paper strips as weft.

The present invention relates to a machine for producing such doubled and compressed weavable strips of paper.

In the accompanying drawing such a machine is exemplified.

Figure 1 is a front view of the machine.

Fig. 2 is a side elevation, partly in section.

Figs. 3 and 4 are two different types of the strip doubling nozzle.

On a revolving shaft, which is driven by suitable means, not shown in the drawing, is fitted a drum A, which frictionally drives a winding reel C oscillating on a fulcrum B, and held tightly pressed against said drum A by suitable means, for example a weighted lever.

High above the described winding gear a double-armed lever E is fulcrumed at D and carries on its upper arm reels G containing the narrow strips of paper to be threaded in the machine. At its lower end the said double-armed lever E carries the doubling nozzle H. The paper strips unwinding from the reels G are conducted in a suitable manner to the nozzle H, for example by means of a guide roller, as shown in the accompanying drawing. The machine may be constructed with either a single reel G, or with several such reels G, as shown, according to the number of levers which the final paper strip contains.

Below the fulcrum the said lever E is provided with an abutment stud, which engages a cam F, fitted on a suitably journaled shaft, driven, as shown in the drawing, by crossed belt or the like from the friction winding gear at the bottom of the machine. By the engagement of this worm with the abutment stud on the double-armed lever E, the latter is rocked to and fro, the dimensions being so chosen, that such rocking traverses an angle of such size, that the doubling nozzle at the lower end of the double-armed lever E travels along the whole length of the winding reel C, thereby allowing the paper strip produced to be wound in smooth layers on said reel.

The doubling nozzle H is so shaped that the strips of paper or like material arriving flat at the entrance of said nozzle are therein either doubled over with their longitudinal edges or laid in a spiral manner, so that on emerging from said nozzle the said strips, passing between pressure rollers are compressed to flat multiple layered strips or weavable narrow paper bands without being twined or twisted. In the constructional form shown in the drawing the said compression of the doubled strips is obtained by the pressure between the friction roller A and the reel C. The present invention is, however, not limited to this arrangement and any other suitable means of compressing the doubled strip may be employed.

The reels G carrying the original paper strips are fitted to the other end of the rocking lever E with the object of making them participate in the rocking movement and thereby preventing any variation in the length of the unwound paper strip that may lead to tensions and jerks during the working of the machine or to a break of the strips.

The worm F which effects the rocking movement of the double-armed lever is preferably driven from the winding reel, by chain or gear drive from shaft B and thence by a regulable drive to the cam shaft, so as to allow an accurate regulation of the rocking motion, whereby the strips are wound closely on the reel.

I claim:

1. Machine for making a weavable strip of paper comprising a rocking lever, at the upper end of said rocking lever a reel carrying the flat paper strip, at the lower end of said rocking lever a doubling nozzle, means for conducting said paper strip from said reel to said doubling nozzle, a winding gear at the lower end of the machine adapted to wind the doubled paper strip emerging from said doubling nozzle, means for rocking said lever to and fro in front of said winding

gear and means for compressing the doubled strip emerging from said nozzle to a flat strip before it is finally wound on the reel.

2. Machine for making a weavable strip of paper composed of several layers, comprising a rocking lever, at the upper end of said rocking lever reels carrying the flat paper strips to compose the final strip, at the lower end of said rocking lever a doubling nozzle, means for conducting said paper strips from said reels to said doubling nozzle, a winding gear at the lower end of the machine adapted to wind the doubled, multiple layered paper strip emerging from said doubling nozzle, means for rocking said lever to and fro in front of said winding gear and means for compressing the doubled multiple layered paper strip emerging from said nozzle to a flat strip before it is finally wound on the reel.

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

RUDOLF KRON.

Witnesses:
F. E. STEGER,
W. H. MÜCKE.