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WEB CARRIER FOR PAPER MAKING MACHINES

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Fig. 1.



Fig. 2.

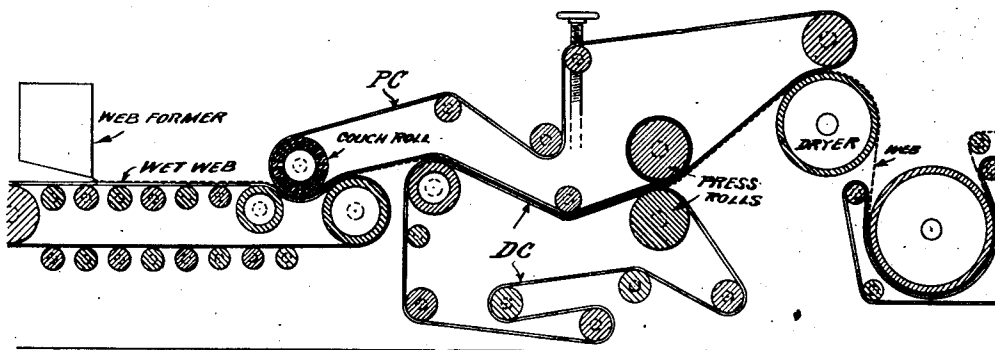


Fig. 3.

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WEB CARRIER FOR PAPER-MAKING MACHINES.

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My present invention relates to paper-making machines, particularly to the web-carrying means employed on such machines at a number of points, and which form a part of the means used to convey or carry the wet web of paper from the web-forming device to and through the couch and press rolls, and then to the dryers.

The object of this invention is to provide a wet-web carrier which will be stronger, and will wear and give satisfactory results for a much greater period of time than will the usual paper-makers' felts adapted for the same service and which are made from woven wool yarns; and which will be less expensive to use than are, and may be substituted for the present usual felts.

This present invention is in line with, and is an improvement over the web-carriers disclosed in United States Patent No. 1,536,533 issued to me under date of May 5, 1925; and the endless felt disclosed in United States Patent No. 1,062,877, and which was issued to Arthur H. Bogani and myself under date of May 27, 1913.

The manner in which I accomplish my object is illustrated in the accompanying drawings, in which:

Fig. 1 is a diagram illustrating the structure of my improved web-carriers; Fig. 2 is a similar diagram illustrating the structure of my improved web-carrier when it is to be used in place of a usual drainage felt; and Fig. 3 is a diagram of a typical paper-making machine and illustrates uses for which my improved carriers are adapted.

Referring to Figs. 1 and 2 of the drawings, B represents an endless woven fabric base made from cotton, jute, or other suitable vegetable fiber yarns. This belt or base may be rubberized as is the reinforced base referred to in the prior patent to me before mentioned, if so desired. F represents a covering sheet or layer of wool, either carded wool, wool pounded into a felt, or wool spun and made into a fabric. The working face of this covering sheet, the exposed face, is to be smooth and to be given the particular finish required for the work it is intended.

The base B, and the covering sheet or face F, are secured together by means of a suitable elastic adhesive C. This adhesive is to be a rubber cement or some other suitable adhesive which is insoluble by water.

Web-carriers which are to be used in place

of the usual drainage felts must be porous, but when they are to be used to pick up and carry the web of paper it is desirable to have them air-tight. When making my improved carriers I, therefore, distribute the adhesive material in more than one manner. If the carrier is to be used as a "pick-up felt" the adhesive is laid on in a continuous sheet, as illustrated in Fig. 1, while if the carrier is to be used as a drainage felt the adhesive is laid on in such a manner that it is porous instead of continuous, and the base on which it is laid is preferably of a coarser weave; a carrier adapted for use as a drainage felt is illustrated by Fig. 2. In Fig. 3 I have indicated two uses for which my improved web-carriers are adapted. In the figure PC represents a carrier the structure of which is that illustrated in Fig. 1, wherein the adhesive is a continuous sheet which prevents the passage of air through the carrier, as well as securing together the base and face parts. The carrier is here used as a pick-up felt.

In this same figure (3) DC represents a web-carrier the structure of which is that illustrated in Fig. 2, wherein the adhesive is not continuous, it being here used in place of the usual drainage felt which is used to carry the web of paper while it is in a very moist state, and which preferably is of high porosity.

By using an endless belt of woven vegetable fibers as the base or main strain supporting member of my improved carriers, and securing to one side thereof a properly finished homogeneous sheet of wool, by means of a suitable adhesive laid therebetween, I am able to produce a web-carrier which is exceptionally strong and will withstand for an unusually long period of time, without stretching out of shape, the strains to which it is subjected while in service.

By using vegetable fibers in the production of the base or endless belt, I secure an unusual strength at a comparatively lower cost; and by securing thereto a homogeneous sheet of wool to form the working face, and in a manner which is simple, inexpensive, and efficient, I am enabled to make use of comparatively inexpensive short wool in producing said working face. While I may use any of the before mentioned styles of homogeneous sheets of wool for the working face of my improved carriers, I now prefer to use what is known as a pound-

ed felt as such a facing will wear much longer than will the working face of any present type of paper-makers' felt and it cannot possibly cause "yarn marks" on the web of paper.

The use of the elastic adhesive for joining together the base and face portions of the carriers not only provides a simple, effective, and inexpensive bond, but in those felts which are preferably air-tight it insures the attainment of the preferred condition.

I claim:

1. In paper-making machines, in combination with the usual web-forming device, couch rolls, and press rolls: means for conveying a wet web of paper from the web-forming device to, and through the press rolls and to a dryer, said means including an endless belt of woven vegetable fibers, and a homogeneous sheet of wool secured to one side thereof by means of an elastic adhesive.

2. In a paper-making machine, in combination with the usual web-forming device, couch rolls, and press rolls: means for conveying a wet web of paper from the web-forming device to and through the press rolls, and to a dryer, said means including an endless belt of woven vegetable fibers, to one side whereof is secured by means of an elastic adhesive, a homogeneous sheet of wool adapted to engage the wet web of paper.

3. In a paper-making machine, in combination with the usual web-forming device, couch rolls, and press rolls: means for conveying the wet web of paper from the web-forming device to and through the press rolls, said means including a web carrier

comprising an endless belt of coarsely woven vegetable fibers, and secured to one side thereof by means of a suitable adhesive, such as rubber cement, which is insoluble by water, a homogeneous sheet of wool the exposed side whereof is smooth and forms the work engaging surface of the carrier.

4. A web-carrier for use on a paper-making machine, said carrier comprising an endless belt of woven vegetable fibers, and secured to said belt by means of an elastic adhesive, such as a rubber cement, a homogeneous sheet of wool.

5. A web-carrier for use on a paper-making machine, said carrier comprising an endless belt of woven vegetable fibers, to which there is secured, by means of an elastic adhesive, such as rubber cement, a homogeneous sheet of wool the exposed surface whereof is smooth and forms the work engaging face of the carrier.

6. A web-carrier for use on paper-making machines, and comprising an endless belt of woven vegetable fibers, to one face whereof is secured by means of a layer of elastic adhesive material, such as rubber cement, a sheet of pounded felt the exposed side whereof is smooth and forms the work engaging face of the carrier.

7. A web-carrier for use on a paper-making machine, and comprising an endless belt of woven vegetable fibers, to one face whereof is secured by means of a perforated layer of elastic adhesive material, such as rubber cement, a homogeneous sheet of wool.

In testimony whereof I have affixed my signature.

WILLIAM E. SHEEHAN.