

(No Model.)

J. H. LORIMER.
APRON FOR TEXTILE MACHINERY.

No. 521,912.

Patented June 26, 1894.

Fig. 1.

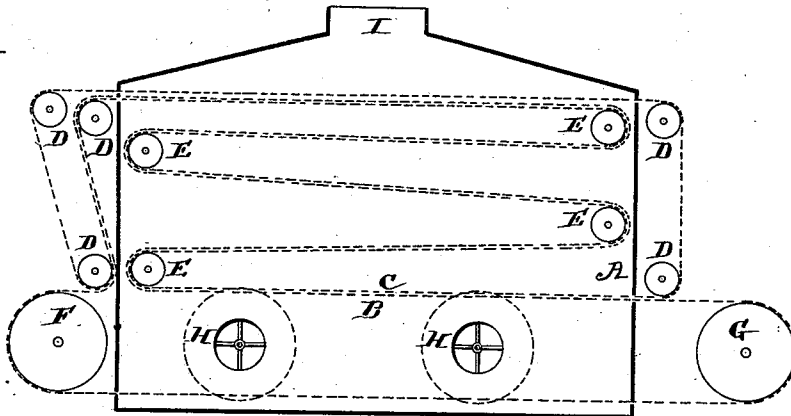
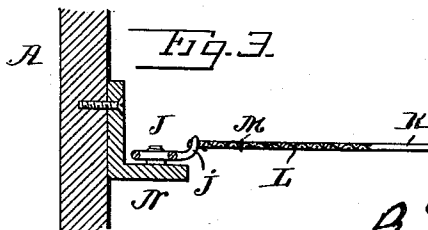
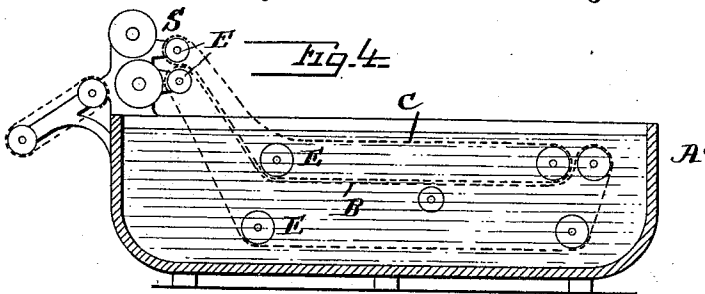
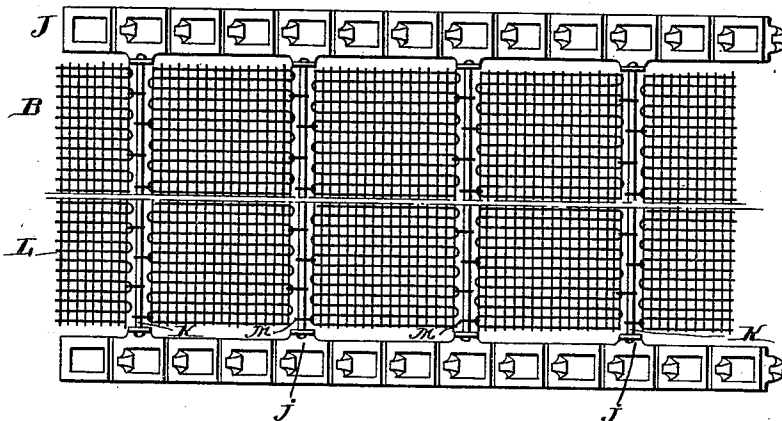


Fig. 2.



Witnesses.

Jesse B. Heller,
[Signature]

Inventor.

John H. Lorimer,
[Signature]
Attorney.

UNITED STATES PATENT OFFICE.

JOHN H. LORIMER, OF PHILADELPHIA, PENNSYLVANIA.

APRON FOR TEXTILE MACHINERY.

SPECIFICATION forming part of Letters Patent No. 521,912, dated June 26, 1894.

Application filed October 3, 1893. Serial No. 487,079. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. LORIMER, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Aprons for Textile Machinery, of which the following is a specification.

My invention has reference to aprons for textile machinery, and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

Heretofore in textile machinery, such as machines for drying, scouring, or treating textile materials either in the raw or improved condition as when in yarns, it has been customary to employ endless aprons of more or less open construction which will convey the material and permit air, gases, or liquids to penetrate or permeate the textile material while in the custody of said aprons and during its travel through the apparatus. As these aprons are required to pass about rollers or wheels of comparatively small diameter, there has been considerable difficulty in the construction thereof owing to the tendency of the aprons to become broken, or when this is avoided to have either too great a density or be too weak in structure for practical use.

My invention comprehends certain improvements in aprons adapted to various classes of machinery for operating textiles which overcome all of the objections which have heretofore existed in the various constructions of aprons which have been heretofore used in the market upon textile machinery.

In carrying out my invention I provide two sprocket chains or flexible parts separated at a considerable distance from each other, and united at intervals by transverse rods or bars, and between the said rods or bars and intermediate of the sprocket chain or their equivalent I arrange woven or interlaced wire frames which are preferably of iron galvanized on account of economy and the less liability to be acted upon by acids or reagents which may be used in the process of treating the textiles while in the custody of the aprons. The woven wire frames substantially fill the space between the chains and two adjacent transverse rods or bars, and are loosely con-

nected to the said bars or rods by loops or links so that they are practically sustained thereby and yet form flexible joints so as to permit the ready passage of the aprons about the guide wheels or rollers.

In practice it is customary to employ two sprocket wheels upon a transverse shaft. The sprocket wheel corresponding in position to the two sprocket chains, the space between the said sprocket wheels being open so as to permit the ready passage of the frames of the aprons which in effect form polygonal sides when passing about the said sprocket wheels. The looseness in play between the connections of the frames and the transverse rods of the conveyer or apron permits the frames to accommodate themselves to each other and to the said rods and sprocket chains.

My invention will be better understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a drying machine showing the employment of the endless aprons or conveyers and their guide wheels or pulleys. Fig. 2 is a plain view of my improved apron. Fig. 3 is a transverse section of one side of the apron and a portion of the wall of the drying chamber showing the method supporting the apron intermediate of the wheels; and Fig. 4 is a sectional elevation of a scouring machine showing the employment of two of these aprons.

A is the drying chamber and may be formed in any suitable shape.

B and C are two endless aprons or conveyers and are guided about the wheels or cylinders E within the chamber A, and wheels or cylinders D and G and F without the chamber A. It is evident that the aprons come together adjacent to the rollers G and D where they hold the textile material between them and take it within the chamber A. After the material has been conveyed back and forth through the chamber A it is discharged from the aprons adjacent to the wheels F and D on the left hand side. During the conveyance of the material through the chamber A, air or gas is drawn through the opening I and through the various aprons and materials held thereby and discharged by the fans H.

The aprons B and C are constructed as illustrated in Figs. 2 and 3 and consist of

sprocket chains J, J, connected at intervals by transverse rods or bars K preferably connected to the sprocket chains by lugs *j* upon some of the links of the sprocket chains. Interposed between the sprocket chains J, J, and adjacent bars or rods K, K, are frames L of woven or interlaced wire having the ends and the length of the apron finished by the selvages in the weaving and having the free ends of the wires adjacent to the chains doubled under so as to make smooth edges. In this manner very light frames L may be employed and yet the frames will be exceedingly strong and durable, and by arranging the frames in the manner described they may be linked by flexible links or connections M to the rods K and thereby held to the rods in the line of their greatest strength and thus overcome any tendency of the frames being pulled to pieces. As the sprocket chains J pass over the wheels E the aprons of the two parts B and C will remain in contact and there will be sufficient play to prevent them jamming or straining the woven wire work. The chains between the wheels E, E, may rest upon angle iron guides N secured to the side walls of the chamber A, as is more clearly shown in Fig. 3. These angle irons also act as intermediate guides, and insure the air circulating through frames L. In using frames of this kind but very little obstruction is interposed to the free passage of the air and yet the material to be treated is positively and firmly held by a most durable support.

Another type of machine in which this class of apron will be used is what is known as the washing or scouring machine, and is clearly shown in Fig. 4. In this case the vessel A, contains the endless aprons B and C guided about suitable rollers or sprocket wheels E. The textile material after being conveyed through the washing and scouring liquor contained in the vessel or tank A' is delivered to the squeeze rolls S.

The two types of machines illustrated in Figs. 1 and 4 will give the general idea of the use of my improved aprons, for in all machines of this class it is desirable to make the aprons open or porous, of great durability,

and of such construction that they shall not be liable to injure the materials.

I do not limit myself to the minor details of construction as my invention comprehends the use of woven wire frames hinged or linked to a suitable conveyer structure adapted to pass about wheels, and therefore the details may be more or less modified without departing from the spirit of the invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a conveying apron for textile machines, the combination of two flexible parallel chains or bands connected at intervals by transverse rods, and a series of interposed independent frames composed of interlaced or woven wire.

2. In a conveying apron for textile machines, the combination of two flexible parallel chains or bands connected at intervals by transverse rods, a series of interposed independent frames composed of interlaced or woven wire, and loose connections between the interposed frames and the transverse rods.

3. A conveying device for textile material consisting in the combination of two parallel sprocket chains, transverse bars or rods connected to links of the two chains and arranged at a distance apart, and interposed independent frames formed of woven wire arranged intermediate of the sprocket chains and rods or parts and flexibly connected to said rods.

4. A conveying device for textile material consisting of the combination of two parallel sprocket chains, transverse bars or rods connected to links of the two chains and arranged at a distance apart, interposed independent frames formed of woven wire arranged intermediate of the sprocket chains and rods or parts and flexibly connected to said rods, an inclosing chamber or vessel, and guide wheels or pulleys for guiding the sprocket chains arranged within the said chamber.

In testimony of which invention I have hereunto set my hand.

JOHN H. LORIMER.

Witnesses:

ERNEST HOWARD HUNTER,
HELEN L. MOTHERWELL.