2 Sheets--Sheet 1.

W. H. PALMER, Jr.

Machine for Tentering Fabrics.

No. 164,026. Patented June 1, 1875.

Fig. 1.

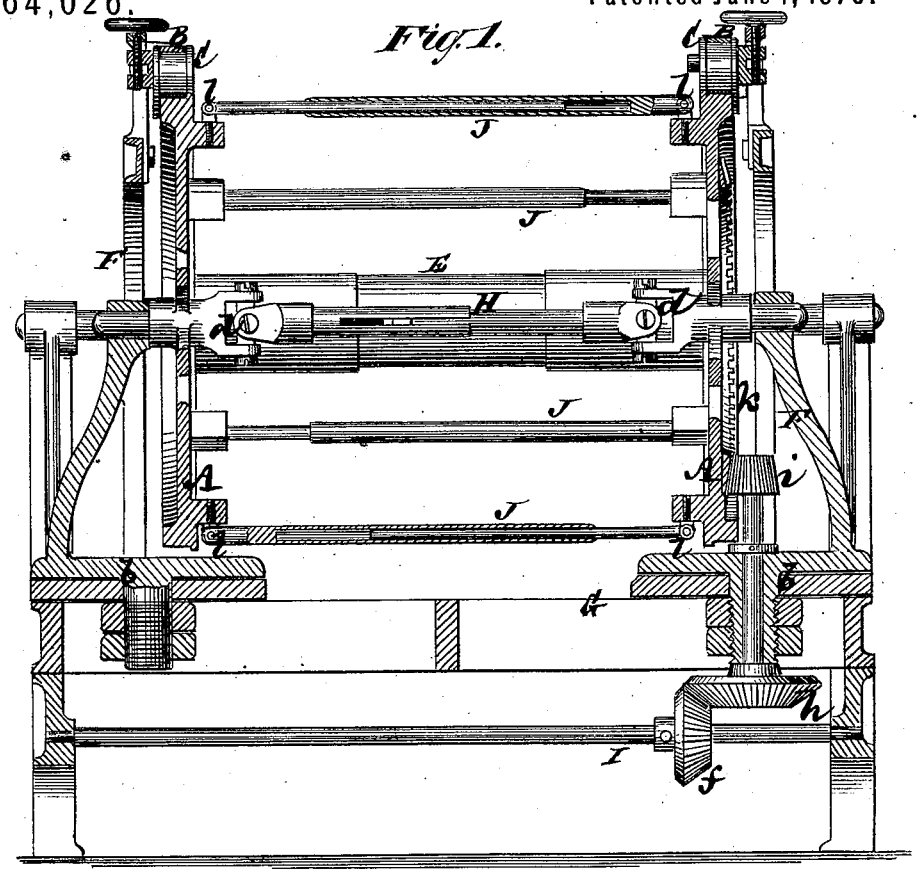
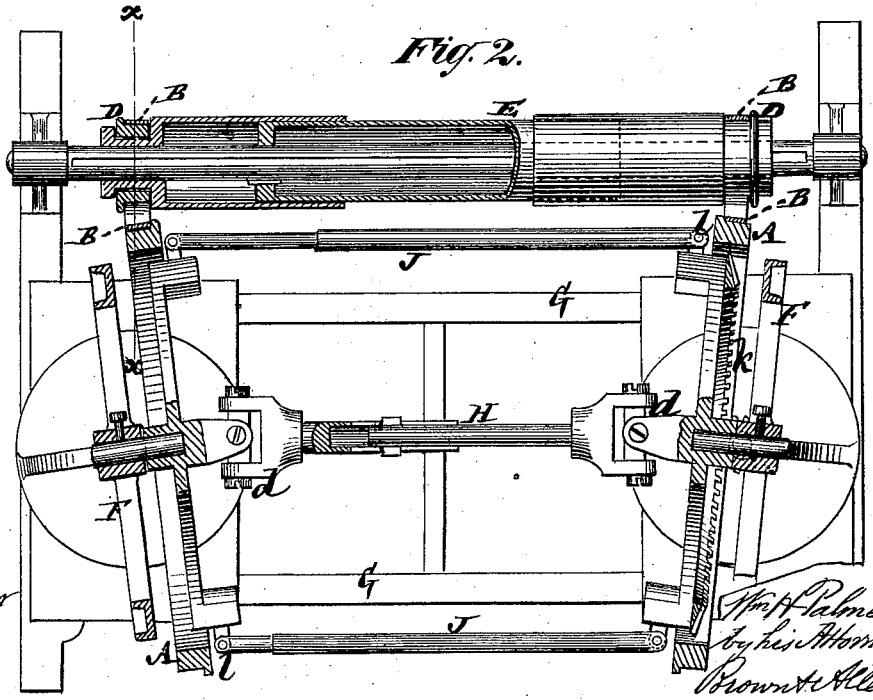


Fig. 2.



Witnesses
John Becker
Fred Haynes

Wm. H. Palmer
by his Attorneys
Brown & Allen

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

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Machine for Tentering Fabrics.

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Fig. 3.

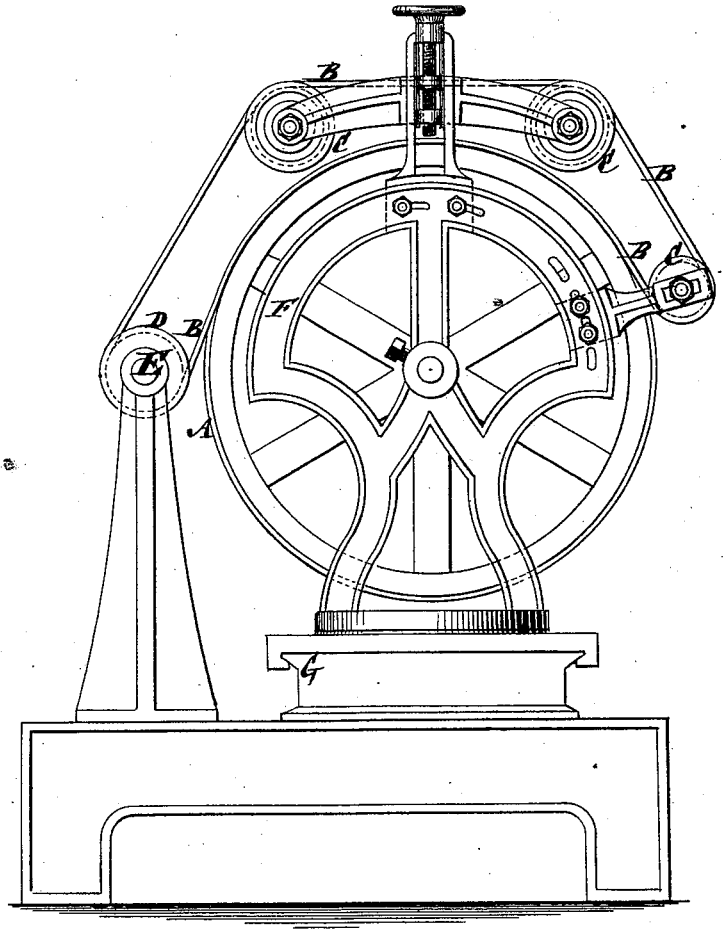

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM H. PALMER, JR., OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO HERBERT F. PALMER, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR TENTERING FABRICS.

Specification forming part of Letters Patent No. **164,026**, dated June 1, 1875; application filed April 3, 1875.

CASE A.

To all whom it may concern:

Be it known that I, WILLIAM H. PALMER, Jr., of Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Machines for Tentering and Straightening Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification, and in which—

Figure 1 represents a transverse vertical section of a machine constructed in accordance with my invention; Fig. 2, a horizontal sectional view of the same; Fig. 3, an end elevation thereof; and Fig. 4, a transverse section, on the line *x x*, of an extensible delivery-roll which may be used in the machine.

One part of this invention relates to apparatus for straightening and tentering cloth and other fabrics, in which selvage feeding and carrying devices composed of endless traveling or revolving carriers and belts, bands, or chains arranged to move therewith, and hold the selvages of the fabric in between them and the carriers, are used. This part of the invention consists in a novel combination of endless belts, bands, or chains, and pulleys or rollers for directing the fabric by its selvages, with a delivery-roll or sheaves attached to said roll, round which the bands or their equivalents also pass, and obliquely-disposed revolving selvage-carriers, whereby a more direct run is obtained for both the upper and lower courses of said endless bands, the number of guiding pulleys or rollers from the latter are diminished, and all lost space, producing sagging of the fabric between the selvage feeding and carrying devices and the delivery-roll, is done away with.

Another part of the invention consists in a longitudinally adjustable or extensible connecting-shaft, attached by universal joints to the revolving selvage-carriers, which may be made capable of having their obliquity changed, and of varying their distance apart as required, whereby a direct central or driving connection is established between said carriers under all adjustments of the latter.

The invention also consists in a certain combination of mechanism with said connected revolving selvage-carriers, for driving the carriers on both sides of the machine from one side of the latter.

The invention likewise consists in a combination, with the revolving selvage-carriers, of longitudinally adjustable or extensible and jointed or free connecting rods, bars, or ribs between the selvage-carriers for rotation with the latter, and for support of the body of the cloth or fabric between the selvage feeding and carrying devices under all adjustments of the latter; likewise, in a combination, with the longitudinally-adjustable delivery-roll, of sheaves on the ends of said roll for the endless belts, bands, or chains of the selvage carrying and feeding devices.

A A are the diverging or obliquely-arranged selvage-carrying wheels or revolving devices on opposite sides of the machine, and onto or between which and endless bands or chains B B, moving in common with said wheels, the selvages of the fabric to be tentered and straightened are passed. These belts, bands, or chains B B occupy an outside relation, as regards both their upper and lower courses of travel, to the peripheries of the wheels A A, the same passing over guide pulleys or rollers C C and sheaves D, attached to or forming part of the delivery-roll E, said rollers and sheaves having their peripheries opposite to or facing and in close proximity with the peripheries of the wheels A A, over which the bands B B also pass to give the necessary hold on the selvages of the fabric as the latter is introduced at its selvages between the bands and wheels under the guide-pulleys C, which are farthest from the delivery-rolls E. This combination of the endless bands or chains B B with the selvage-carrying wheels A is exceedingly simple and direct, thereby avoiding all twisting of the belts, bands, or chains by reason of all the band guiding and carrying devices being in

parallel axial relation with each other, or nearly so; and it furthermore dispenses with any great multiplicity of guide pulleys or rollers, and provides for a close arrangement of the delivery-roll E with the selvage carrying and feeding devices, whereby all lost space producing sagging of the fabric between said roll and the selvage carrying and feeding devices is done away with.

The same side or end frames F F which carry the revolving selvage-carriers also support or carry, by adjustable band-tightening branches or attachments, the guide pulleys or rollers C C. It is immaterial, so far as this combination of selvage carrying and feeding devices is concerned, whether the wheels A A or the bands B B be the drivers of the fabric, or whether the fabric be used to drive said devices by its selvages being drawn in between the bands and wheels, which latter, in any case, both move in common. Said devices, however, will hereinafter be referred to as being both selvage feeders and carriers, and, instead of driving the bands B by the delivery-roll E, the wheels A will be made the drivers. Said selvage-carrying wheels A A may either be separate for rotation at different velocities on opposite sides of the machine or be connected to uniformly rotate in common, which latter is the arrangement herein shown, and in which arrangement not only the one wheel A is made to drive at a time, but both wheels A A simultaneously and equally so in a positive manner. To these ends, and to provide for varying the obliquity and distance apart of the selvage carrying and feeding devices, when such adjustments, or either of them, are required, the side or end frames F F are not only made capable of turning on centers at *b*, and of being slid on or along the bed G, but the revolving selvage-carriers A A are connected by a sectionally-constructed and longitudinally-adjustable or extensible central shaft, H, united with the revolving selvage-carriers A A by universal joints *d d*, and a positive driving motion is communicated to both of said carriers, from the one side of the machine only, by means of a bevel-pinion, *f*, which may be adjusted along a driving-shaft, I, and which gears with a bevel-wheel, *h*, on the shaft of which is a bevel-pinion, *i*, that gives motion to a bevel-wheel, *k*, fast on the face of the one selvage-carrier A.

The delivery-roll E, under which the cloth or fabric is passed, is made capable of extension or contraction by constructing it in a telescopic manner of longitudinally-adjustable or sliding and extensible sections, to conform to the adjustments of the selvage carrying and feeding devices. The sheaves D D, over which the belts, bands, or chains B B pass, may either be rigidly or loosely attached to said roll, according to circumstances; but in either case their attachment to the roll, instead of having other supporting-axles provided for them, simplifies not only the construction of the machine, but its adjustment, as the said sheaves are adjusted with the roll itself to suit the width of the fabric.

Connecting the selvage-carriers A A at or near their peripheries by pivoted or jointed attachments *l l*, are sectionally-constructed and longitudinally adjustable or extensible rods, bars, or ribs J J, which thus rotate in common with the carriers A A, and are capable of adjustment therewith, and which constitute a frame to support the body of the cloth or fabric as the latter is simultaneously carried at its selvages, by the selvage-carrying or carrying and feeding devices of the machine.

I claim—

1. The combination, with the revolving selvage-carriers A A, of the endless belts, bands, or chains B B, in like relation as regards both their lines or courses of travel with said carriers, the delivery-roll E, around which the bands pass, and the guide-pulleys C C, in parallel axial relation, or thereabout, with the revolving carriers, substantially as shown and described.

2. The combination, with the adjustable revolving selvage-carriers A A, of the longitudinally and universally adjustable shaft H, connecting said carriers in a positive manner, essentially as described.

3. The combination of driving mechanism, applied to the one revolving selvage-carrier on the one side of the machine, with the connected and adjustable revolving selvage-carriers on the opposite side of the machine, substantially as herein set forth.

4. The longitudinally-adjustable bars or ribs J, connected with the revolving selvage-carriers, and adapted to serve as a traveling frame for the support of the body of the fabric, essentially as described.

5. The adjustable telescopic delivery-roll, provided at its ends with sheaves, substantially as and for the purpose herein described.

W. H. PALMER, JR.

Witnesses:
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FRANK F. STARR.