

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SPREADING-ROLLERS FOR STRETCHING CLOTH.

Specification forming part of Letters Patent No. 14,659, dated April 15, 1856.

To all whom it may concern:

Be it known that I, JONATHAN I. HILLARD, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Spreaders for Widening and Stretching Cloth; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an outside view of a spreader constructed according to my invention. Fig. 2 is a longitudinal section, and Fig. 3 a transverse section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

The spreader constructed according to this invention is composed of a series of parallel serrated bars having a rotary motion around a common shaft or axis and at the same time a longitudinal motion parallel with the said shaft or axis; but the bars are connected with the shaft and have their longitudinal movement produced by a different method to those of the common spreader, whereby the friction is much reduced, and consequently the spreader is acted upon more easily by the friction of the cloth upon the bars, and the cloth may be widened or stretched to a greater degree than by the old spreader. It is in this improved method of connecting and giving motion to the bars that my invention consists.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the shaft of the spreader, and B B and B' B' the serrated bars.

C C and C' C' are cylindrical flanged collars, which are bored obliquely and keyed to the shaft, the obliquity of C C being in an opposite direction relatively to the shaft to that of C' C'. On each of these collars a small wheel E, bored truly, is fitted to turn freely, and in each wheel is a series of loose radial spokes D D, which are confined in the direction of their length, but fitted with journals *b* and *c* to turn freely. These spokes are so arranged that if continued their axes would intersect the axis of the collars at the point where the latter intersect the axis of the shaft, as indicated by red lines in Fig. 2, and they have heads outside the wheel, fitted easily to longitudinal grooves in the bars, as

shown in Fig. 3, and the bars are attached to them by transverse pivots *a a*, the bars B B of one-half the spreader being attached to the spokes of the two wheels on C C and the bars B' B' of the other half of the spreader to the spokes of the two wheels on C' C'. This mode of connecting the bars with the shaft allows the greatest requisite degree of freedom to the longitudinal movement of the bars, the pivots *a a* and the journals *b c* of the spokes being the only parts upon which any friction is produced by the said longitudinal movement, and this friction, owing to the almost imperceptible movement, is so slight that no oil is required on those parts, the only oil required being between the interior of the hubs of the wheels and the collars C C and C' C', upon which they revolve. This dispensing with oil is of great advantage, as it obviates all danger of greasing the cloth. The wheels E E are kept in their proper place by the flanges *c c* of the collars.

I am aware that the revolving spreader formed of serrated bars arranged parallel to the axis or encircling the same and formed each line of bars in two lengths or parts having longitudinal play in opposite directions parallel to the axis is in itself no new device, but is a well-known form of spreader used in machines for stretching and widening cloth. Such, therefore, I do not claim, nor yet operating the stretching-bars, as specified, by wheels set obliquely on the shaft or axis of the spreader, as this has before been done; but

I do claim as a new and useful improvement on the revolving reciprocating spreader herein referred to—

The jointed and pivoted arrangement herein shown and described of the serrated stretching-bars B B B' B', with the obliquely-set wheels E, on or around the axis of the spreader by means of the loose radial spokes D D, and transverse pivots *a a* for connecting the stretching-bars with the obliquely-set revolving wheels, and whereby increased freedom in the longitudinal play of the bars is obtained and the cloth thereby more easily and effectually stretched without injury and without the interposition of lubricating material where such would be apt to soil the cloth, as set forth.

JONATHAN I. HILLARD.

Witnesses:

S. H. WALES,
WM. TUSCH.