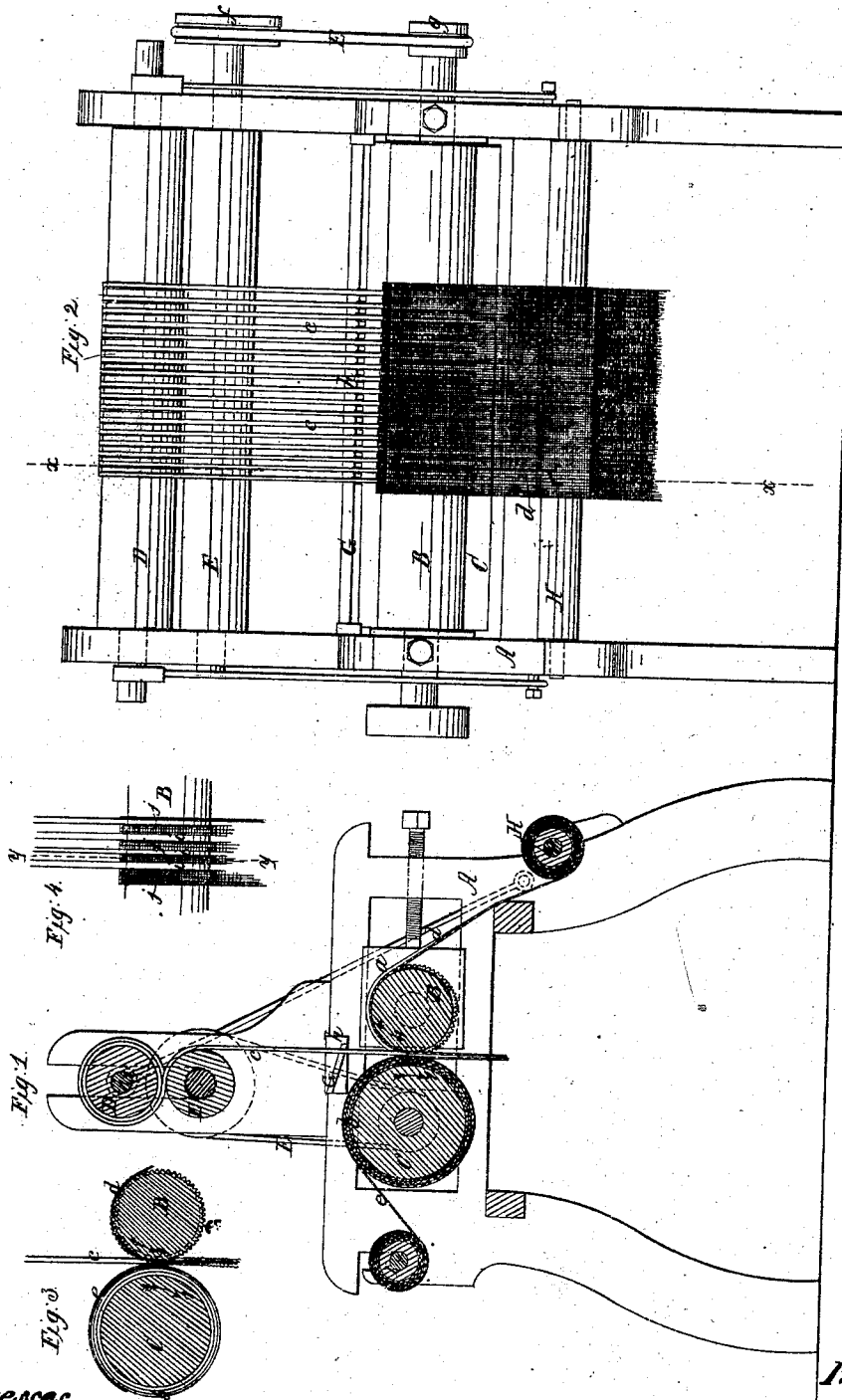


R. Solis.
Making Shirred Goods.

Patented Mar. 26, 1861.

31,832.



Witness
W. G. Smith
R. S. Spencer

Inventor
Riche Solis
per Munn & Co
Attorneys

UNITED STATES PATENT OFFICE.

RICHARD SOLIS, OF NEW BRUNSWICK, NEW JERSEY.

MACHINERY FOR MAKING ELASTIC SHIRRED GOODS.

Specification of Letters Patent No. 31,832, dated March 26, 1861.

To all whom it may concern:

Be it known that I, RICHARD SOLIS, of New Brunswick, in the county of Middlesex and State of New Jersey, have invented a new and Improved Machine for Manufacturing India-Rubber Shirred Goods; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1. is a vertical section of my invention taken in the line *x. x.* Fig. 2; Fig. 2. a front elevation of the same; Fig. 3. a detached transverse section of the rollers of the same, taken in the line *y. y.* Fig. 4. Fig. 4, a view of a portion of the front fluted or grooved roller of the same.

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

This invention relates to a new and improved machine for placing india-rubber cords between two laminae of cloth and then crimping the latter, so that a certain degree of elasticity will be allowed it. Goods thus formed and commonly termed "shirred goods" have hitherto been manufactured by two distinct machines, one being employed for cording the fabric and the other for crimping it. This double operation is attended with some difficulties; the fabric is more or less soiled by repeated handling and the colored portion of the cloth frequently stains and disfigures the white inner cloth or lining in consequence of being wound on a roller under a requisite degree of tension as it passes from between the cording rollers. During the secondary or crimping operation the rubber cords are liable to be cut and the goods are frequently so much injured as to materially damage them in a commercial point of view.

The object of the within described invention is to obviate these difficulties, and to this end, I employ a roller provided with circumferential and longitudinal grooves, and use in connection therewith a roller having a yielding surface or periphery, the parts being arranged substantially as hereinafter described, whereby the india-rubber cords are placed and secured longitudinally between the two layers or laminae of cloth and the latter crimped or corrugated transversely, the whole being done at one operation and without injuring the fabric.

To enable those skilled in the art to fully

understand and construct my invention, I will proceed to describe it:

A. represents a framing which may be constructed in any proper way to support the working parts of the machine, and B. is a metal roller which is placed in the framing, said roller having its journals in adjustable bearings *a.*

C. is a roller which is placed in the framing A. parallel with the roller B. The roller C. has an elastic or yielding periphery which may be obtained by wrapping cloth *b.* or any suitable yielding substance and said roller C. The two rollers B. C. run in contact.

D. E. are two rollers which are placed in the upper part of the framing A. and one over the other in the same axial plane. On the upper roller D. elastic cords *c.* are wound, said cords passing over the lower roller E. and extending down between two layers or laminae *d. e.* of cloth which pass over the rollers B. C. and down between them, as shown clearly in Fig. 1. One end of the roller E. has a pulley *f.* at one end and a band F. passes around this pulley *f.* and a pulley, *g.* at one end of roller C. as shown in Fig. 2.

G. is a plate which is placed horizontally in the framing A. and is notched at one edge as shown at *h.* the notches being directly over and in a vertical plane with the line of the rollers B. C. The metal roller B. is provided with circumferential grooves *i.* which are at equal distances apart and correspond or are in line with the notches *h.* in the plate G. the notches serving as guides for the cords *c.* and directing or keeping them in the grooves *i.* of roller B. The roller B. is also grooved longitudinally as shown at *j.* the grooves *j.* bisecting the grooves *i.* at right angles as shown clearly in Fig. 4.

The cloth *u.* is the outer layer or lamina of the fabric and the cloth *e.* the inner layer or lining, the layers or laminae are wound around rollers H. I. which cause them to pass between the rollers B. C. under a proper degree of tension.

The operation of the machine is as follows: The adjoining surfaces of the layers or laminae *d. e.* are covered with a proper adhesive substance—a solution of india-rubber being generally used—and power being applied to the roller E. the two rollers B. C. are rotated in the direction indicated by the

arrows 1. and the two layers or laminae *d. e.* are compressed together and made to adhere permanently by the adhesive substance; the cords *c.* being secured longitudinally between the layers or laminae *d. e.* and without being compressed or acted upon by the rollers in consequence of fitting in the circumferential grooves *i.* of the roller B. The longitudinal grooves *j.* of roller B. cause the spaces between the circumferential grooves *i.* to be corrugated and these corrugated spaces crimp or corrugate the fabric between the cords *c.* as shown at *k.* in Fig. 2. Thus it will be seen that the fabric is corded and crimped simultaneously or at one operation, and it will also be seen that the corrugated surfaces of the spaces between the grooves *i.* do not come in contact with the cords *c.* or with the portion of the cloth or layer *d.* that covers them and consequently said cords will not be compressed nor cut, nor the fabric injured in any way by the action of said corrugated surfaces, a contingency which occurs in the ordinary mode of manufacture in consequence of the

crimping being done by a separate machine and the longitudinal grooves *j.* extending unbroken their whole length, so that they will press against the cords *c.*

I would remark that it is not essential that the crimping be formed by longitudinal grooves *j.* said grooves may be of zig-zag form if desired.

I do not claim broadly the pressure rollers B. C. nor the notched plate G. nor do I claim the circumferential grooves *i.* in roller B. for said parts have been previously used, but;

I do claim as new and desire to secure by Letters Patent

The combination of the circumferential grooves *i.* and longitudinal or other crimping grooves *j.* in the roller B. when used in connection with the roller C. to operate substantially as and for the purpose set forth.

RICHARD SOLIS.

Witnesses:

JOHN McLAREN,
JAMES CROUCH.