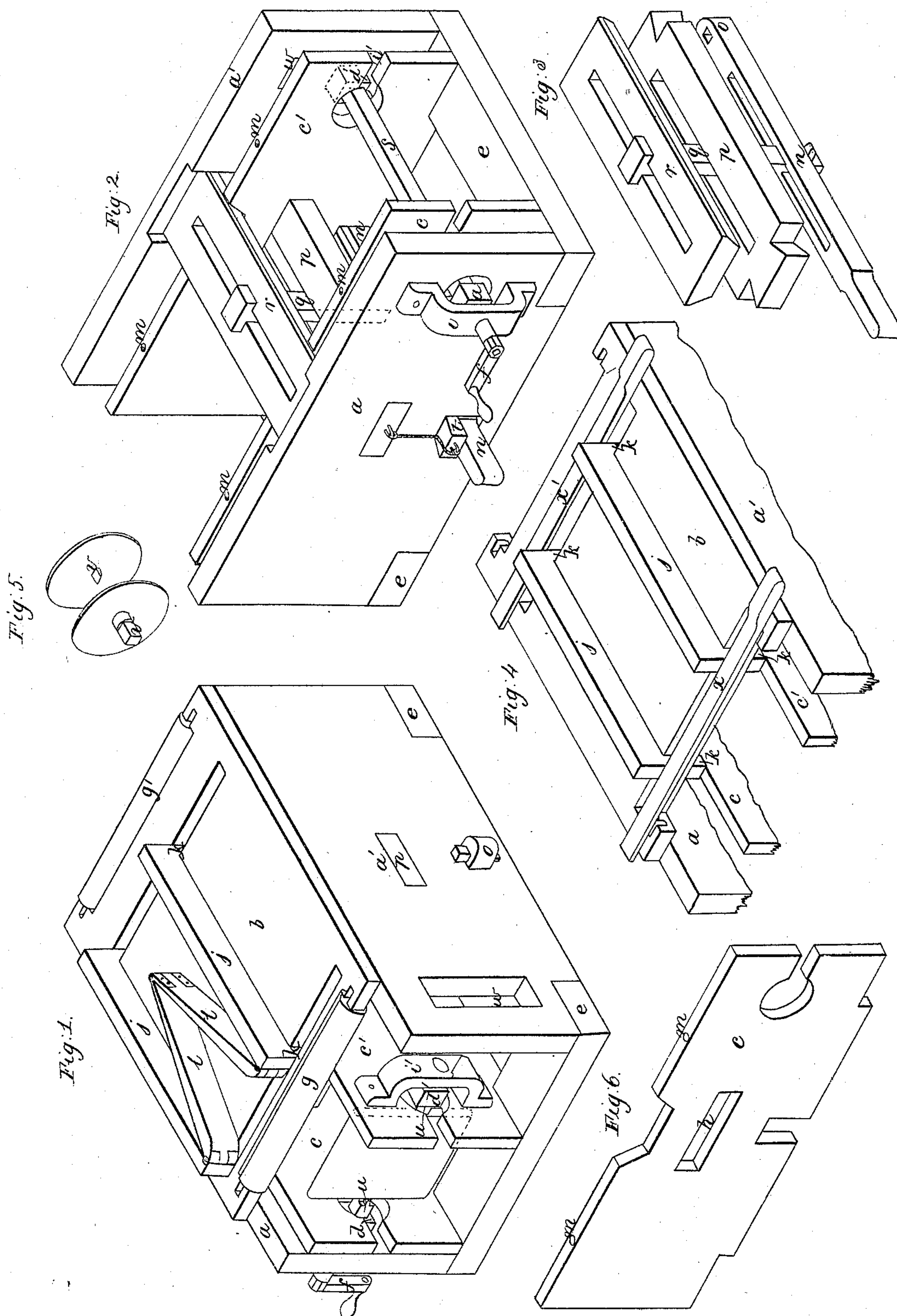


T. P. Forsyth Cloth Folding Mach.

N^o 10,782.

Patented Apr. 18, 1854.



UNITED STATES PATENT OFFICE.

THOMAS P. FORSYTH, OF DALTON, INDIANA.

MACHINE FOR WINDING AND FOLDING CLOTH.

Specification of Letters Patent No. 10,782, dated April 18, 1854.

To all whom it may concern:

Be it known that I, THOMAS P. FORSYTH, of Dalton, in the county of Wayne and State of Indiana, have invented a new and Improved Machine for Rolling, Folding, and Stretching Dry Goods, Cloth, Paper, &c.; and I do hereby declare the following to be a full and exact description of the construction and operation thereof, reference being had to the annexed drawings, forming part of this specification, wherein—

Figure 1 is a perspective view of my machine. Fig. 2 is a perspective view of my machine, some parts being removed to exhibit more clearly its construction. Fig. 3 is a representation of the lever *n*, plate *r* and cross tie *p*, to exhibit their construction and the connection of the parts. Fig. 4 is a representation of the upper part of my machine showing the arrangement of the parts when it is to be used for folding. Fig. 5, shows the bits *v*, *v*, used for winding ribbons and similar articles, and Fig. 6, is a representation of one of the slides *c* separated from other parts of the machine, the same letters of reference being employed in the several figures for the corresponding parts of my machine.

The object of my machine is to enable cloth, dry goods and other articles of whatsoever width, which are usually put up in rolls, or wound on boards, to be thus rolled or wound, not only expeditiously but evenly, so as that the sides of the fabric or article to be rolled may be uniform and even.

My machine is also designed to remove any creases in the article rolled, by stretching it out before it is rolled or wrapped around the board or other receptacle.

My machine consists of a frame work of two side pieces *a*, *a'*, connected at the bottom, at both ends by cross pieces *e*, *e*, which, like the other parts of my machine, may, unless otherwise specified, be made of wood, iron or other suitable material. Supported by these side pieces *a*, *a'*, is a flat table, *b*, presenting a level and uniformly flat surface, over which the cloth or other article is to pass on its way to the rod, roller, or board on which it is to be stretched or wound. At either end of this table is a roller *g*, *g'* the top of which rises a shade higher than the level of the table *b*. They are designed to facilitate the passage of the goods over the table. Under this table *b*,

and parallel to the side pieces *a*, *a'*, are two slides, *c*, *c'*, which extend from one end of the machine to the other, so as to project in front beyond the shaft *s* see Fig. 2 on which the cloth &c. is to be rolled. A circular hole is made near the front end of each of the slides *c*, *c'*, communicating with slits extending to the front end of the slides to allow the shaft *s*, to be passed to its place between the gudgeons *d*, *d'*. The slides *c*, *c'*, are supported partly by resting at either end on the crosspieces *e*, *e*, but chiefly by the strong crosstie *p*, which passes through them, extending from one side of the machine to the other, midway from either end. The hole *h*, in the side pieces see Fig. 6 through which the crosstie *p*, passes, is so large that they can slide upon it from side to side of the machine, always in planes parallel to the side pieces *a*, *a'*. The design of these slides *c*, *c'*, is to form a guide for the cloth, &c., to be wound, in order to keep the edges uniformly even, and as either or both of them can be moved sidewise toward or from each other from one side of the machine to the other they may be adjusted to the width of the article to be wound.

The two guides *j*, *j*, are placed each immediately above one of the slides *c*, *c'*, and parallel thereto, being attached at either end to the slides *c*, *c'*, by pins *k*, *k*, at the end of the guides which descend through slots or grooves in the table *b*, near to each end and pass into holes *m* in the slides *c*, *c'*. These guides *j*, *j*, are adjusted with the slides *c*, *c'*, to the width of the fabric to be rolled, &c., and the ends of the guides *j*, *j*, entering into the slots or grooves at either end of the table, serve to keep the article to be wound straight as it is passing over the table *b*, to the winding shaft *s*, or roller.

The stretcher which is designed to prevent any folds or creases remaining in the cloth &c., consists of two strips *l*, *l*, which are placed between the guides *j*, *j*, so as to form an angle more or less acute, according as the guides *j*, *j* and slides *c*, *c'* are nearer together or farther apart. These strips *l*, *l* are connected at their angle by a hinge of leather or metal, and the other end of each one is attached to one of the guides *j*, *j*, by a hinge or pivot of any suitable kind on which it turns. The edges of the strips *l*, *l*, forming the stretcher, rest on the surface of the table *b*, the cloth &c. passing over the table

and under the stretcher, the angle of the stretcher pointing from the front of the machine toward the back end of it.

The slides c, c' , (and with them the guides j, j') are easily adjusted to the width of the fabric by hand, but as it is necessary to fix them steadily in any desired position, I accomplish the object thus: A lever n , is placed horizontally about midway from either end of the machine, the fulcrum of which at o , is attached to the side a' , of the machine. The other end extending outside of the machine through an opening in the side piece a . The perpendicular arm q , extends from the lever n to the plate r , which plate extends across the machine, being let into grooves in the side pieces a, a' , and sufficiently below the table b , so as not to interfere with it. In the center of the plate r , the crosstie p , and the lever n , is a long narrow slit or groove, these slits being parallel, and in the same perpendicular plane, and extending across the machine to within a short distance of each side. Through these slits the upright arm q , passes, connecting the lever n , with the plate r , there being a knob or button on the top of the arm q , resting on the surface of the plate r , and a washer and pin at the lower extremity of the arm q , under the lever n , the object of the slits in the lever, plate and crosstie, being to allow of the arm q , being shifted backward to and from the fulcrum of the lever, so as not to interfere with the passage back and forth of the sliding boards c, c' . The edges of this plate r , are beveled and fit into a beveled notch in the upper edge of each slide c and c' , so that when the lever n , is forced down and secured by inserting the wedge t , between the lever and the upper edge of the hole, the plate r , is pressed into the beveled grooves in the slides c, c' , into which it fits tightly, and the slides c, c' , are pressed against the cross pieces e, e' , so that they become firm and steady. They may easily be relieved by withdrawing the wedge t , and lifting up the long arm of the lever n . Outside of one of the side pieces a , of the machine, near to the front is a circular opening, corresponding and in a horizontal line with the circular holes in the sliding pieces c, c' , before mentioned. These circular holes in the slides are for the shaft s , or the bits u, u' to pass through which hold the boards, roller, &c., on which the articles are to be wound or rolled. A bracket i , placed over the circular hole in the side piece a , is attached to the side piece a , and forms the journal of the axis which carries the gudgeon d , and the crank f . A similar bracket i' is attached to the other side of the sliding piece c' , over the circular hole before mentioned, and in the same horizontal line with the bracket i . This bracket i' carries the gudgeon d' . As the bracket i'

is inside the machine and projects from the slide c' toward the side pieces a' it would prevent the slide c' from being pushed close up to the side of the machine, if there were not a hole w made in the side pieces a' to allow it to pass through at such times, see Fig. 1. 70

Having thus detailed the several parts of my machine I will now proceed to explain its operation. The fabric to be rolled is carried over the table b , under the stretcher l , the guides j, j' , and slides c, c' , being so adjusted as that the distance between them corresponds with the width of the article to be rolled. If the shaft s , is to be used as in Fig. 2, it is inserted into the squared holes in the gudgeons d, d' . This is done by drawing the slide c' toward the side a , of the machine, inserting the shaft through the slits in the ends of the slide e, e' , the slide c' is then drawn toward the slide c , until the shaft is tightly held by the gudgeon. The other slide c , is then placed at a distance from c' , equal to the width of the fabric to be rolled. Should the fabric be narrow, and the slide c have to be slid past the center of the machine, the upright arm q , will have to be also slid, which is readily done as it does not fit tightly in the grooves between which it passes. The lever n , is then pressed down and fastened by the wedge t , which causes the slides c, c' to be gripped tightly between the plate r , and the cross pieces e, e' , and thus held steadily in its place. The fabric to be rolled on the shaft is then passed over the roller g' as the back end of the table b , then under the stretcher s and over the roller g at the front end of the table b and thence between the ends of the slides c, c' to the winding shaft s , around which it is wrapped; the crank f , is then turned until the fabric is wound around the shaft. As the fabric passes over the table b , the creases are removed or prevented by the stretcher l , and the tightness with which the article is wound depends on the resistance offered by the stretcher e, e' to its passage under it, caused by the weight or pressure of the stretcher, which may be increased if desirable by laying a weight or some heavy article on a board laid horizontally across the guides j, j' . Should it be desired to wind the article on a board, as is frequently done with silks, bombazines and other fabrics, the shaft s , is taken out by withdrawing the slide c' , and instead of the shaft is placed a suitable board, in either end of which is driven a bit u , with a squared end, to fit into the gudgeons d, d' , as shown in Fig. 1. In order to adjust the machine for winding articles on a board or on rollers or reels, which will be of different widths, the slide c , is drawn close to the side a , of the machine, the squared end of one of the bits used to hold the board &c., is inserted in the gud- 130

geon d , and the slide c' is slid up toward the slide c until the other bit enters the gudgeon d' . The slides are then secured as before described by means of the lever n .

5 If it is designed to wind ribbons by my machine the bits v, v , Fig. 5 are substituted in place of the shaft s , and the slides are adjusted as just described in case of using a winding board. These bits v, v , have circular end pieces to serve as additional
10 guides to keep the edges of the ribbon, even in winding, (see Fig. 5.) The reel on which the ribbon is to be wound, is fastened to the bits by projecting points in the center of the bits v, v which are driven or
15 forced into the side of the reel.

If it is desired to use my machine for folding dry goods, it may be done as follows: The guides j, j , being placed at the
20 right distance apart for the width of the article to be folded, by adjusting the slides c, c' which support them, the stretcher l, l , is removed by drawing out the pins or loosening the hinge which fastens it to the
25 guides j, j . One fold of the cloth is then laid between the guides, and a thin straight

stick x , is laid over it at the end of the guides on the table, (see Fig. 4;) the cloth is then doubled over this stick and another fold carried by hand back over the table; a
30 similar stick x' , is then laid at the other end of the guides over the cloth &c, and a fold is carried again to the other end of the table, the first stick is then withdrawn and laid over the new fold, at the same end of the
35 guides, and this process is repeated until the whole is folded; by this means the folds are all of exactly the same length.

Having thus described my machine, what I claim as my invention and desire to se-
40 cure by Letters Patent is—

The use of the stretchers l, l , in combination with the adjustable guides j, j , and slides c, c' and the winding shaft s , (or the bits u, u , or v, v as the case may be) sub-
45 stantially in the manner and for the purposes hereinbefore described.

THOS. P. FORSYTH.

Witnesses:

D. B. ROBBINS,
R. THORNBURGH.