

J. F. LANGWORTHY & G. E. NORRIS.
Starching-Machine.

No. 225,149.

Patented Mar. 2, 1880.

Fig. 1

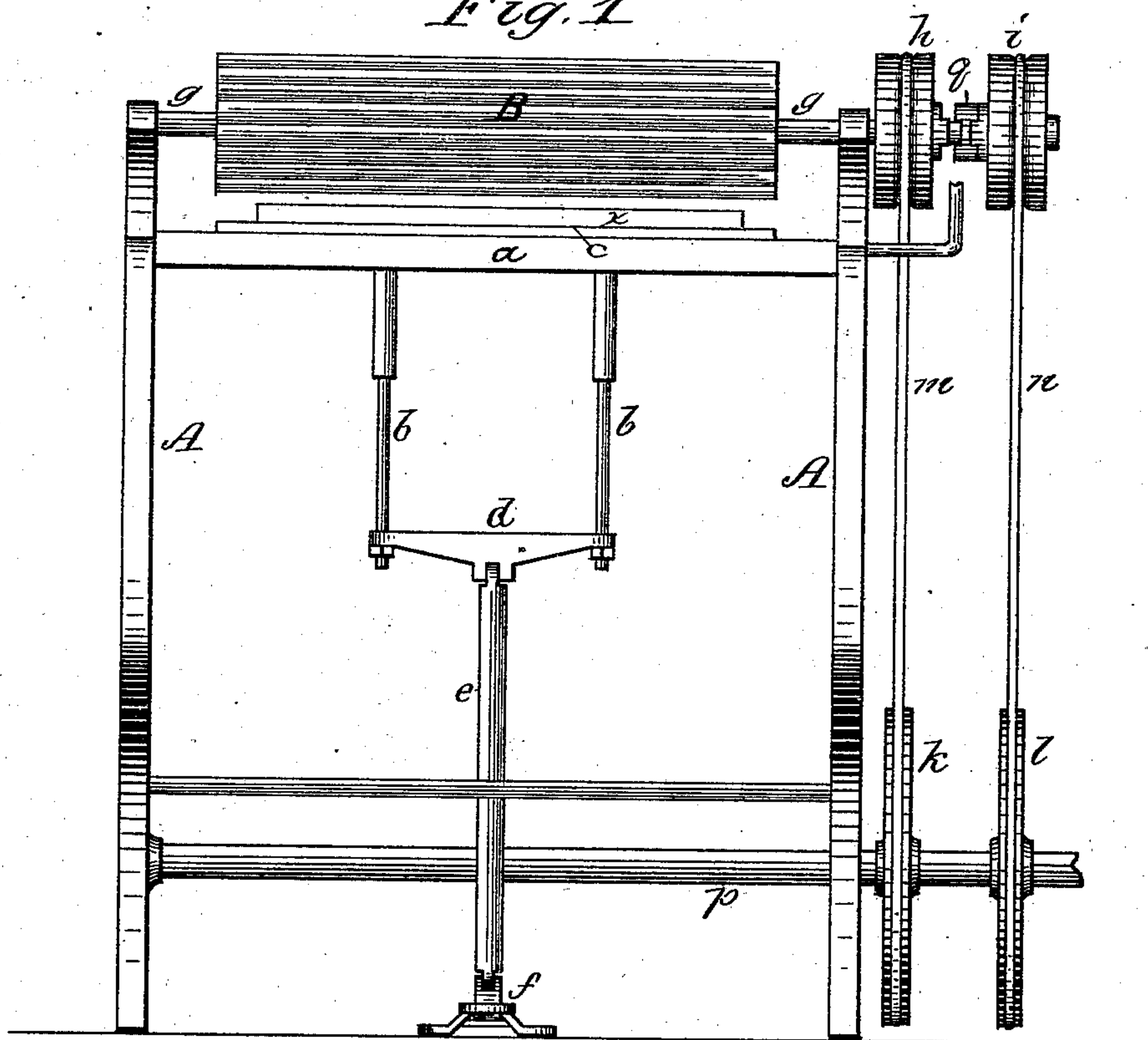
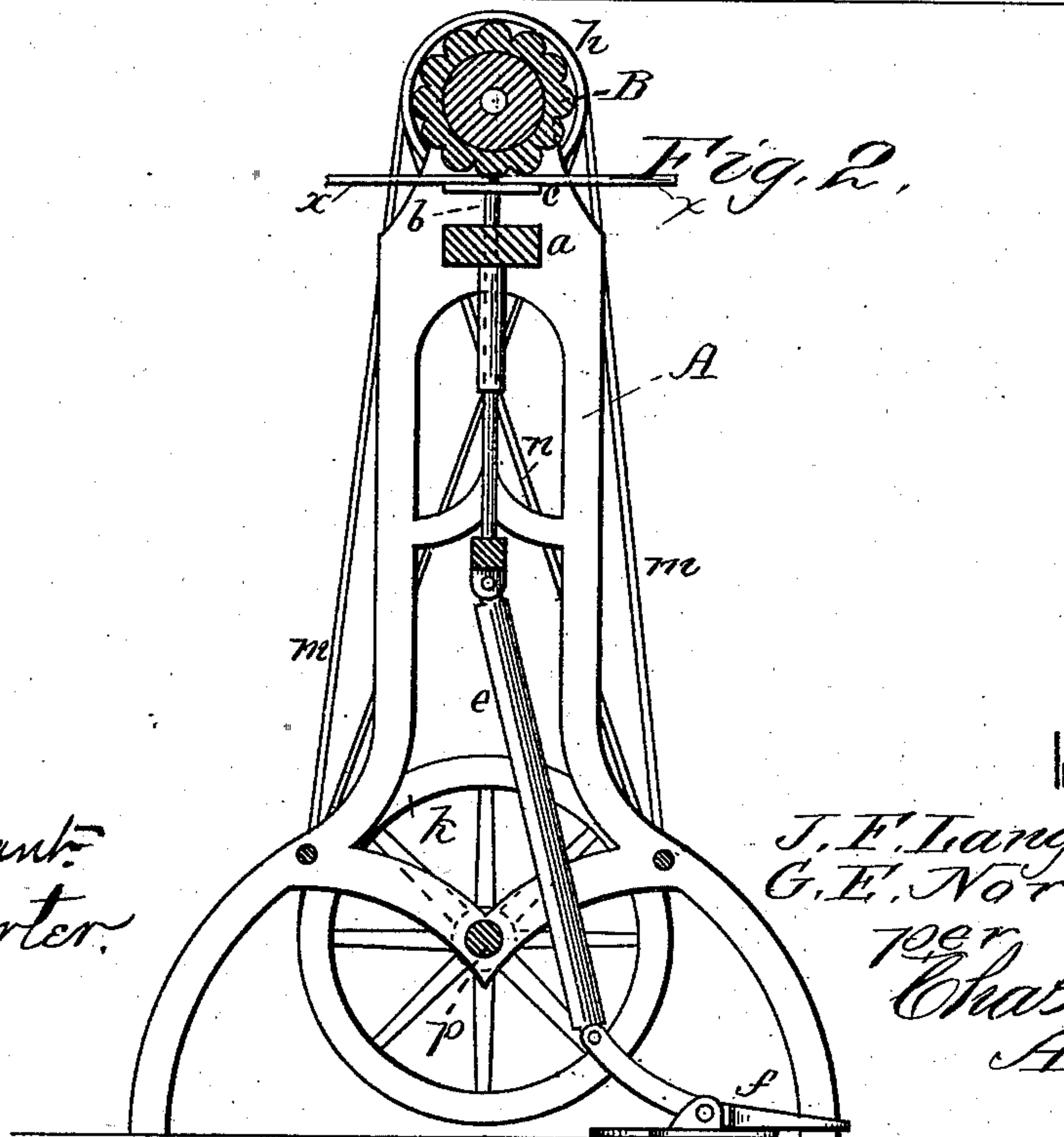


Fig. 2.



WITNESSES

Nat. E. Liphant
Geo. R. Porter.

INVENTORS

J. F. Langworthy,
G. E. Norris.

per
Chas. H. Fowler,
Attorney

UNITED STATES PATENT OFFICE.

JOHN F. LANGWORTHY AND GEORGE E. NORRIS, OF GLENS FALLS, N. Y.

STARCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 225,149, dated March 2, 1880.

Application filed January 5, 1880.

To all whom it may concern:

Be it known that we, JOHN F. LANGWORTHY and GEORGE E. NORRIS, of Glens Falls, in the county of Warren and State of New York, have invented a new and valuable Improvement in Starching-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of our invention; and Fig. 2 is an end view, partly in section.

The present invention has relation to machines employed in the laundry for starching shirts, cuffs, or collars; and the object thereof is to provide means whereby the starch is thoroughly rubbed or pressed into the texture or fibers of the cloth without leaving wrinkles thereon.

The invention consists in providing such a machine with a horizontal elastic roller having corrugations upon its face or periphery, in connection with a movable board or form, upon which the articles to be starched are placed and brought in contact with the corrugated face of the roller.

The invention further consists in providing such corrugated elastic roller with suitable mechanism, in connection with the movable form or board, so that the direction of rotation of the roller may be reversed or changed at or near the center of the article passing under it, for the purpose of evenly diffusing the fullness of the goods and enabling the operator to pass the article or articles entirely from under the roller without causing said article or articles to be turned up and off of the form, which would be the result were the motion of the roller in one direction only.

In the accompanying drawings, A represents the frame of the machine, of metal or other suitable material, having near its top a cross-brace, *a*. Through the brace *a* pass vertical rods *b*, having connected to their upper ends a bed, *c*, for supporting a movable form or board having a flat surface, upon which are placed the article or articles to be starched. The lower ends of the rods *b* are secured by suitable

nuts to a yoke, *d*, and to this yoke is pivoted one end of a lever, *e*, the lower end of the lever being pivoted to a foot-treadle, *f*.

This arrangement of devices admits of the form or board which is supported on the bed *c* being elevated to any desirable height to bring the article to be starched in contact with the roller B; or, if desired, in place of the bed being adjustable, the roller may have its journals in adjustable bearings, and by a convenient arrangement the roller may be raised or lowered as circumstances may require.

The periphery of the starching-roller B is corrugated, and is composed of rubber or other suitable elastic material adapted to the purpose.

The journals *g* of the roller B have their bearings in boxes upon the frame A, and to one of the journals are secured grooved pulleys *h i*, which connect with driving-pulleys *k l* by belts or cords *m n*, said pulleys being secured to a shaft, *p*, to which motion is given by steam or other convenient power; or, if desired, the machine may be so arranged as to be operated by foot or hand power.

The pulleys *h i* are loose upon the journal *g*, and between them is a double clutch, *q*, sliding upon a key or feather fixed on the journal *g*, and which is caused to slide to the right or left to engage with either of the pulleys *h i* when it is desired to reverse the motion of the roller B.

Any ordinary or well-known means may be employed for changing the motion of the roller, the construction shown being simply to illustrate the operation of the machine, which is as follows: The cuffs, collars, or shirts to be starched are first placed on the board or form *x*, and the surface of the article then covered lightly with starch by a brush or other suitable means, after which said board or form is placed on the bed *c*. Motion is now imparted to the roller B, rotating in a direction from the operator, while, with the hands or by suitable automatic power, the form is pushed along under the roller until it is at or about the center of the goods, when the rotating motion of the roller is reversed, which enables the articles to be passed on under the roller until it is over the ends of the collars or cuffs or bosom of the shirt, thereby evenly diffusing the

fullness of the material, effectually removing all the wrinkles, and preventing the roller from turning up the ends of the articles, which would be the case were the roller to rotate in but one direction, and that contrary to the direction in which the ends pointed. It would also carry the fullness of the goods from one end to the other, leaving it in large folds or wrinkles. These defects are entirely removed by causing the roller to move upon the article being starched in both directions, which diffuses the fullness of the cloth evenly over the surface, which is of great importance in starching shirt-bosoms; and in collars, when the roller runs in different directions from the center, the roller passes over each end of the collar without turning it up from the table.

A very essential feature in this class of machines is the corrugated or fluted surface of the roller, which, together with its elasticity or yielding nature, thoroughly presses or rubs the starch into the texture or fibers of the goods, and also smooths out all wrinkles at the same time it is rubbing in the starch.

If desired, the corrugations upon the surface of the roller may be arranged diagonally instead of straight; but the latter is considered preferable. Any form of corrugations, how-

ever, may be used, as we do not desire to confine ourselves to the particular form of corrugated surface shown.

Having now fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a starching-machine, a horizontal roller having a corrugated elastic surface, substantially as described, in combination with a movable board or form having a flat surface, upon which the article to be starched is placed to bring it in contact with the corrugated face of the roller, substantially as and for the purpose set forth.

2. A starching-machine consisting of a horizontal elastic roller corrugated upon its face, a movable board or form having a flat surface, upon which the article to be starched is placed, and a mechanism for reversing of said roller, substantially as and for the purpose specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JNO. F. LANGWORTHY.
GEO. E. NORRIS.

Witnesses:

J. C. HAVERTY,
C. W. HAVILAND.