

A. HECHT.
MACHINE FOR SHIRRING FABRICS.

No. 104,029.

Patented June 7, 1870.

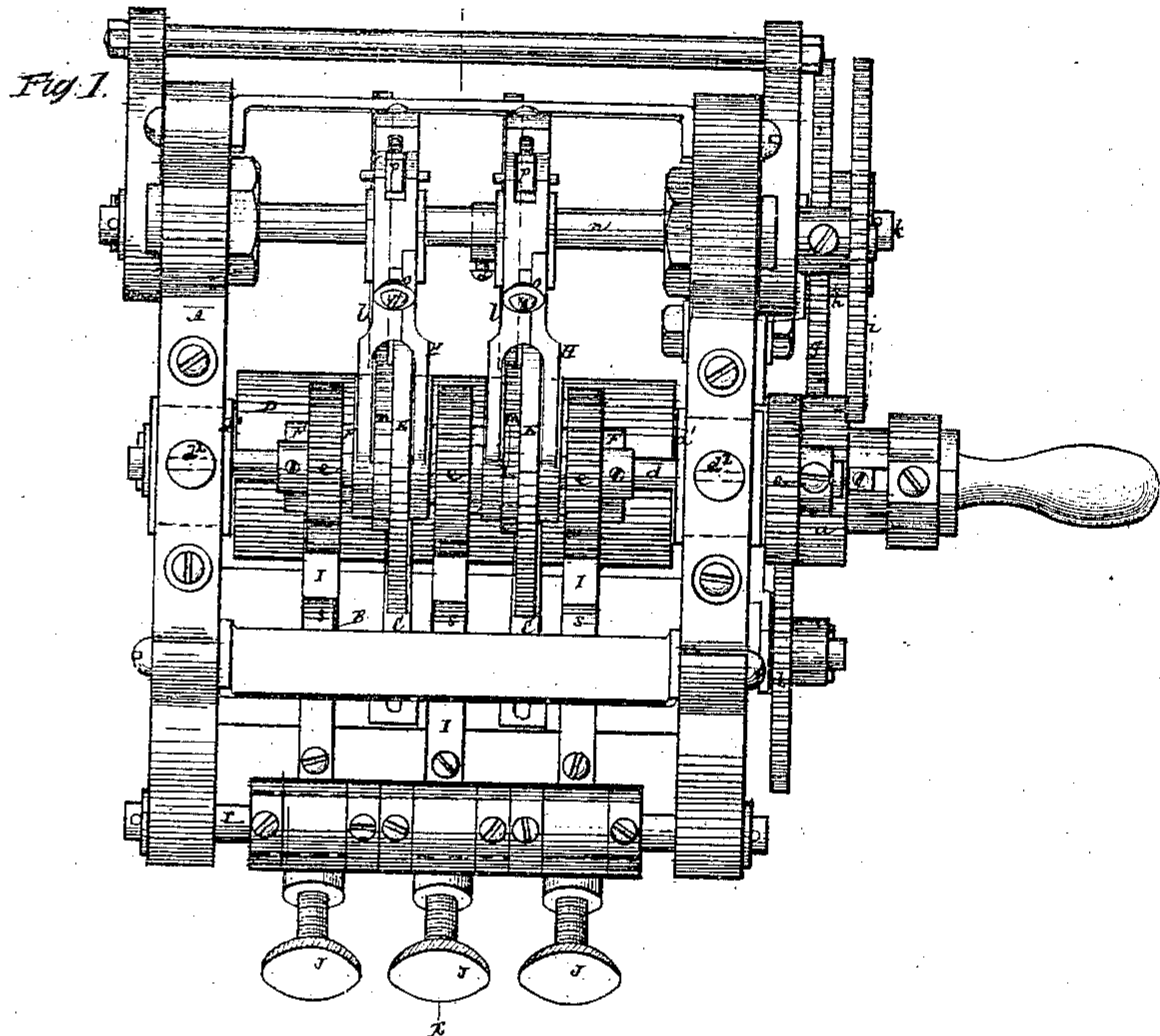
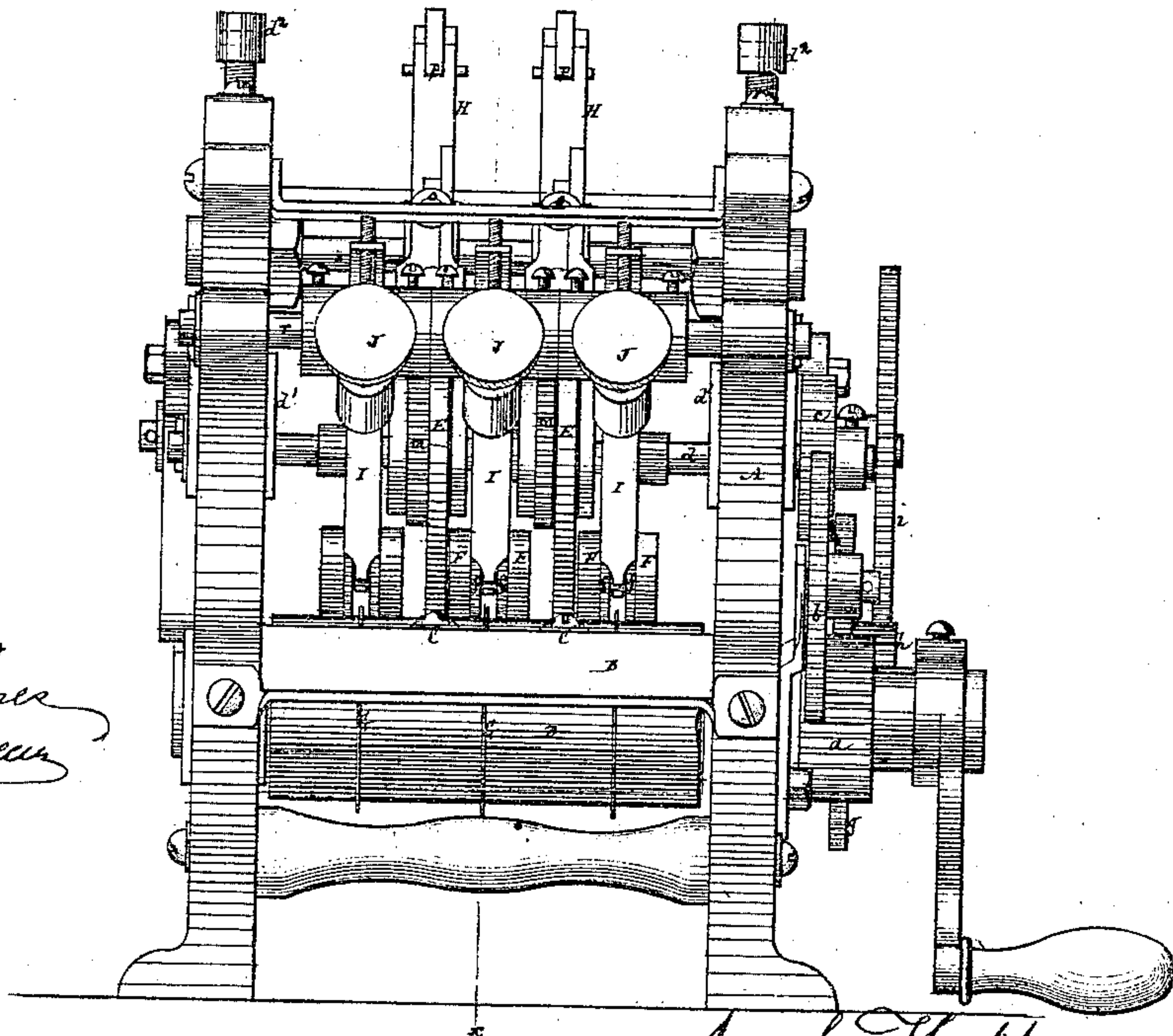


Fig. 2.



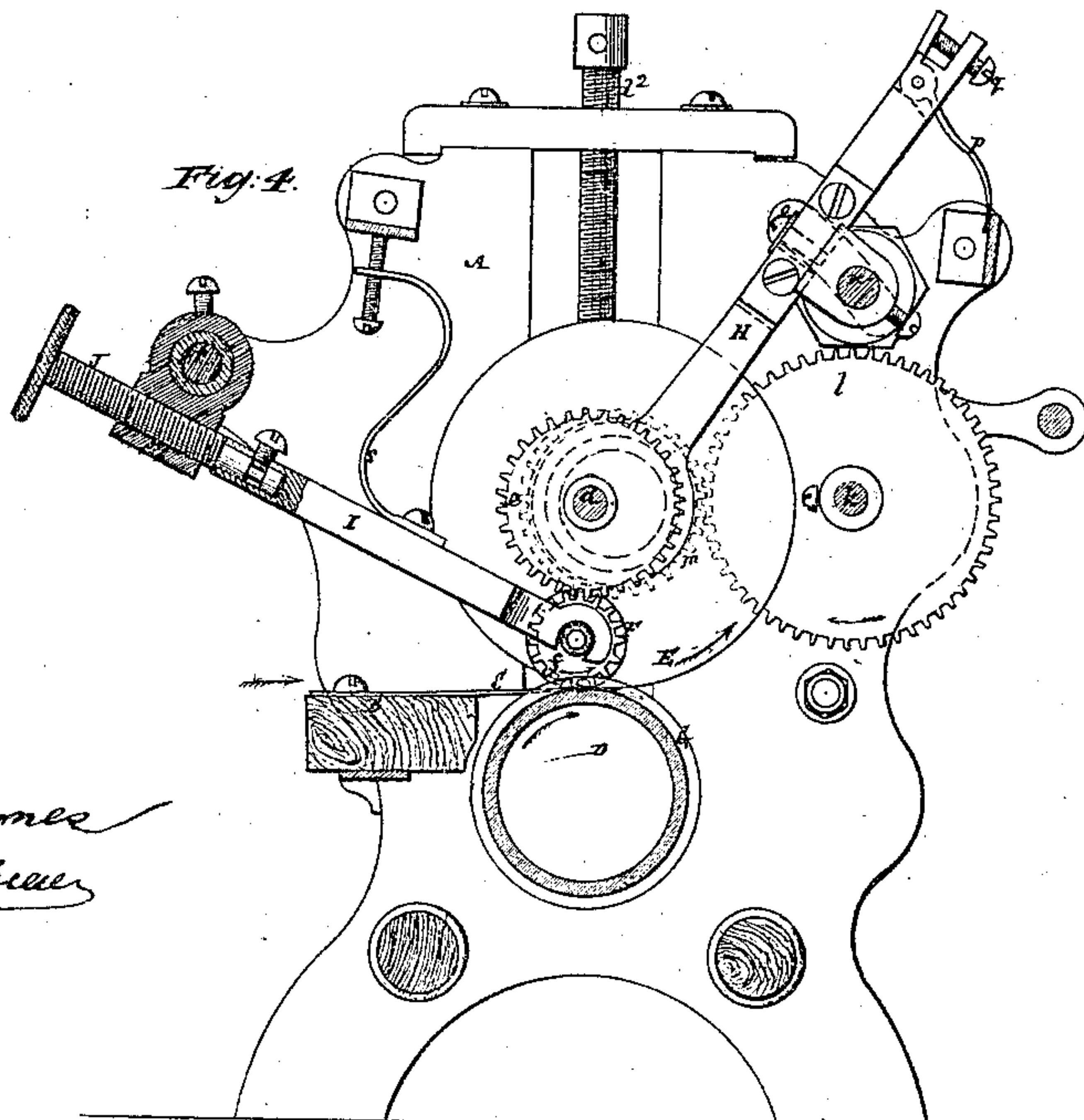
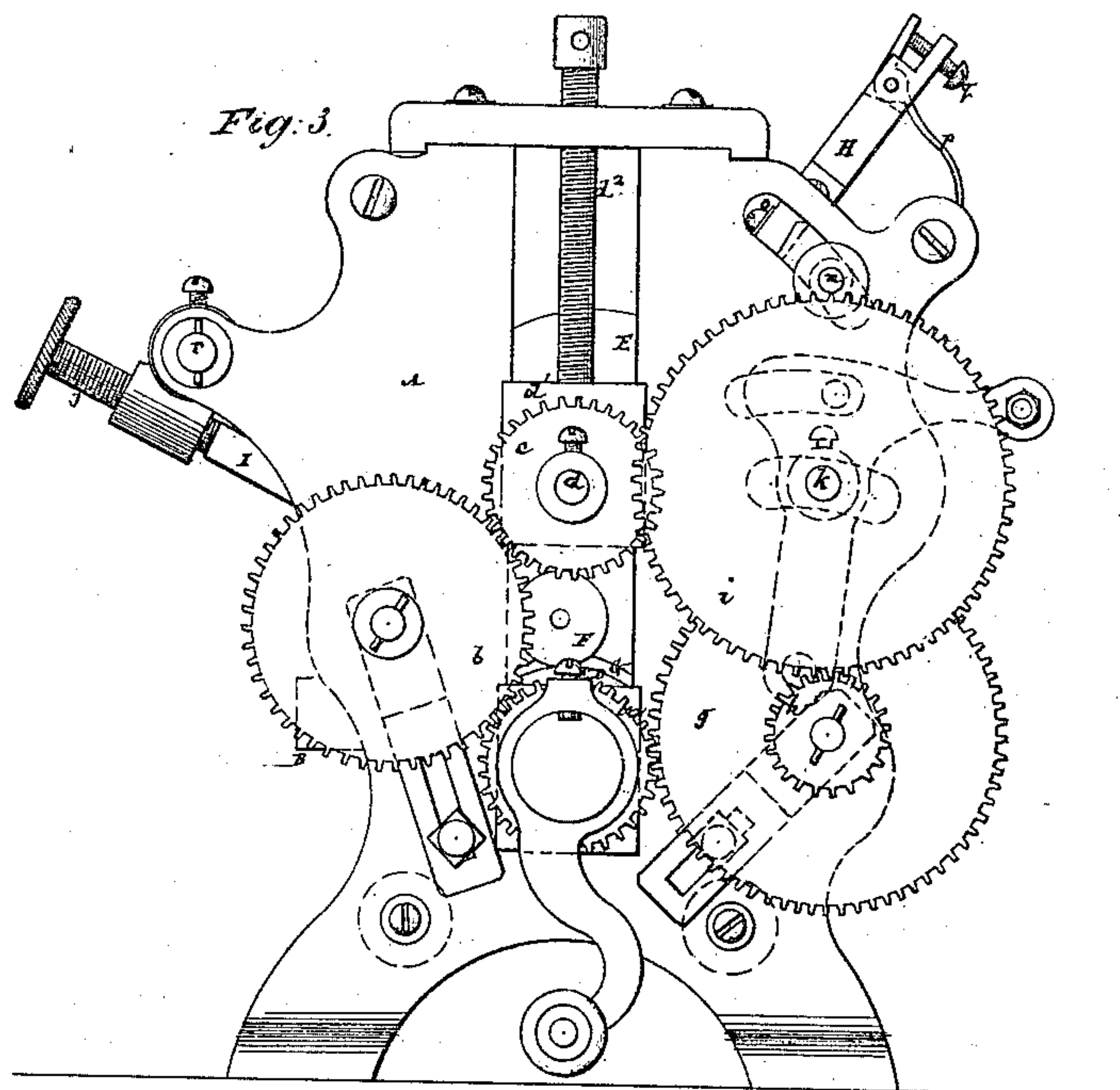
Witnesses
Fred. Haynes
R. R. Rabeau

Amel Hecht

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United States Patent Office.

ANSEL HECHT, OF NEW YORK, N. Y.

Letters Patent No. 104,029, dated June 7, 1870.

IMPROVEMENT IN MACHINES FOR SHIRRING FABRICS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ANSEL HECHT, of the city, county, and State of New York, have invented a new and useful Improvement in Machines for Shirring Fabrics, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a plan of a machine constructed in accordance with my improvement.

Figure 2, a front view of the same.

Figure 3, a side elevation thereof; and

Figure 4, a sectional elevation, taken as indicated by the line *z z*, in figs. 1 and 2.

Similar letters of reference indicate corresponding parts.

My invention relates to machines for the manufacture of shirred goods, or puffing, made from muslin or other suitable material, applicable to shirt bosoms and other purposes.

The invention consists in certain mechanism or combination of devices, including rollers, arranged to run at different velocities, whereby an unequal feed is produced upon the fabric in such manner that it is subjected to a dragging action in certain lines or courses while the intervening portion or portions are puffed up or left full, and the fabric, as it issues from the delivery end of the machine, is formed into a puffing, composed of one or more loosely gathered or crinkled portions, raised at the center and falling off in reverse oblique directions from said center, and bound on either side by flattened crimped borders.

The several rollers which act upon the fabric to produce this action are preferably made smooth or free from corrugations on their peripheries, it not being designed to flute the goods, and all cutting or injury of the fabric is thereby avoided.

Referring to the accompanying drawing—

A represents the frame which carries the working mechanism, and which may be of any suitable description.

B is the feed-table, provided with springs or plates, C C, on its upper surface.

These springs may be made adjustable, and are arranged to rest at their forward ends, and overlap a lower main-feeding and heating-roller, D, and so that they lie between said roller and certain upper forming or drag-rollers, E E, whereby the fabrics in the feeding lines or courses of these latter rollers is restrained from being carried round or fed at an undue velocity by the lower roller D, which has a quicker surface travel than the rollers E E. These rollers E E, although moving at a slower surface velocity than the roller D, and than certain upper-forming rollers, F F, which have a surface velocity corresponding with that

of the roller D, are, nevertheless, of a much larger diameter, whereby they exert a more perfect flattening action on the crimped borders of the intervening full or puffed-up portion or portions of the goods. This last-named portion is formed into loose gathers or crinkled folds, raised at the center and falling off in reverse oblique directions from said center, mainly by the action of the more rapid rollers, F F, the lower roller D, with which the latter work in contact, or nearly so, and one or more rings, G, arranged on or around the roller D, between either pair of forming rollers F F, said rollers F F D, and ring or rings G, operating in concert with the slower moving rollers E E, which have an outside or lateral position relatively to the rollers F F, serving, respectively, the ring or rings G, to lift the fabric in the center line of the full portion of it, the rollers F F and D to form such full portion, on either side of the raised center, into loose reversely oblique crinkles or folds, while the slower traveling rollers E E, that form the flattened crimped borders on either side of the full or puffed-out portion, drag on the fabrics as compared with its feed by the other rollers, which dragging action has the effect of giving the necessary fullness to and of drawing on the edges of the puffed-out portion to secure the shaping of the same, as described.

The rings G fit loosely on the roller D, so that the same will have no cutting action, or exert any feed on the fabric.

The necessary driving motion may be communicated first to the feed-rollers D, and from it by a pinion, *a*, wheel, *b*, and pinion, *c*, to a shaft, *d*, on which are wheels, *e*, that gear with pinions *f*, fast to the rollers F F. The same pinion, *a*, may also be made to gear with a wheel, *g*, that, by means of a pinion, *h*, gives motion to a wheel, *i*, the shaft, *k*, of which carries wheels, *l*, that gear with pinions, *m*, fast to the rollers E. These several wheels and pinions are of suitable sizes, to secure to the rollers D and F an equal and comparatively rapid motion, and to the rollers E their proper relative and slower surface travel.

The rollers E, with their pinions *m*, are suitably recessed at their centers, and carried by yoke-shaped levers H to receive the shaft *d* through them, and to allow of free play or adjustment of said rollers, pinions and yoke in various transverse directions, relatively to the shaft *d*, for the purpose of adjusting the rollers E, both to rise and fall, or of being set forward or backward.

These several adjustments are effected by hanging the levers H on the shaft or rod *n*, providing them or the portion carrying the rollers E, with a longitudinally adjustable construction of parts, secured by a set-screw, *o*, and furnishing the upper ends of said levers H, which are arranged to occupy an oblique po-

sition with springs *p*, made adjustable by set-screws *q*, and serving to give a downward elastic pressure of the rollers *E E* on the bed-strips or springs *C*.

A similarly adjustable and elastic action is secured to the rollers *F*, and their pinions *f*, by means of obliquely arranged levers or bars *L*, made to form hook-shaped bearings for the rollers *F*, and hung in an adjustable manner on a shaft or rod, *r*, also made longitudinally adjustable by means of screws, *J*, and pressed down at their forward ends by adjustable springs, *s*, to give an elastic bearing or pressure of the rollers *F* on the roller *D*. The shaft *d* is also made vertically adjustable by means of sliding screws *d'*, and screws *d''*.

By means of these various adjustments and elastic provisions, the several upper rollers may be set as required, and any requisite pressure thrown upon the fabric in its passage through the machine.

I do not limit myself to any particular number of rollers, which may be varied according to the number of rows the puffing is required to be made up of.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination with the roller *D* of the rollers *E E* and *F F*, arranged as described, and adapted to run at different surface velocities, substantially as and for the purpose herein set forth.

2. The combination of the loose ring or rings *G* with the rollers *D*, *E E*, and *F F*, essentially as specified.

3. The combination of the plates or springs *C C* with the rollers *D*, *E E*, and *F F*, substantially as described.

4. The adjustable yoke-levers *H*, controlled by spring pressure, substantially as described, in combination with the rollers *E E* and their pinions *m*, arranged to loosely enter the shaft *d*, which carries the operating wheels of the rollers *F F*, essentially as specified.

5. The combination of the longitudinally adjustable and working bars *I*, the springs *s* and rollers *F F*, substantially as shown and described.

ANSEL HECHT.

Witnesses:

FRED. HAYNES,
HENRY PALMER.