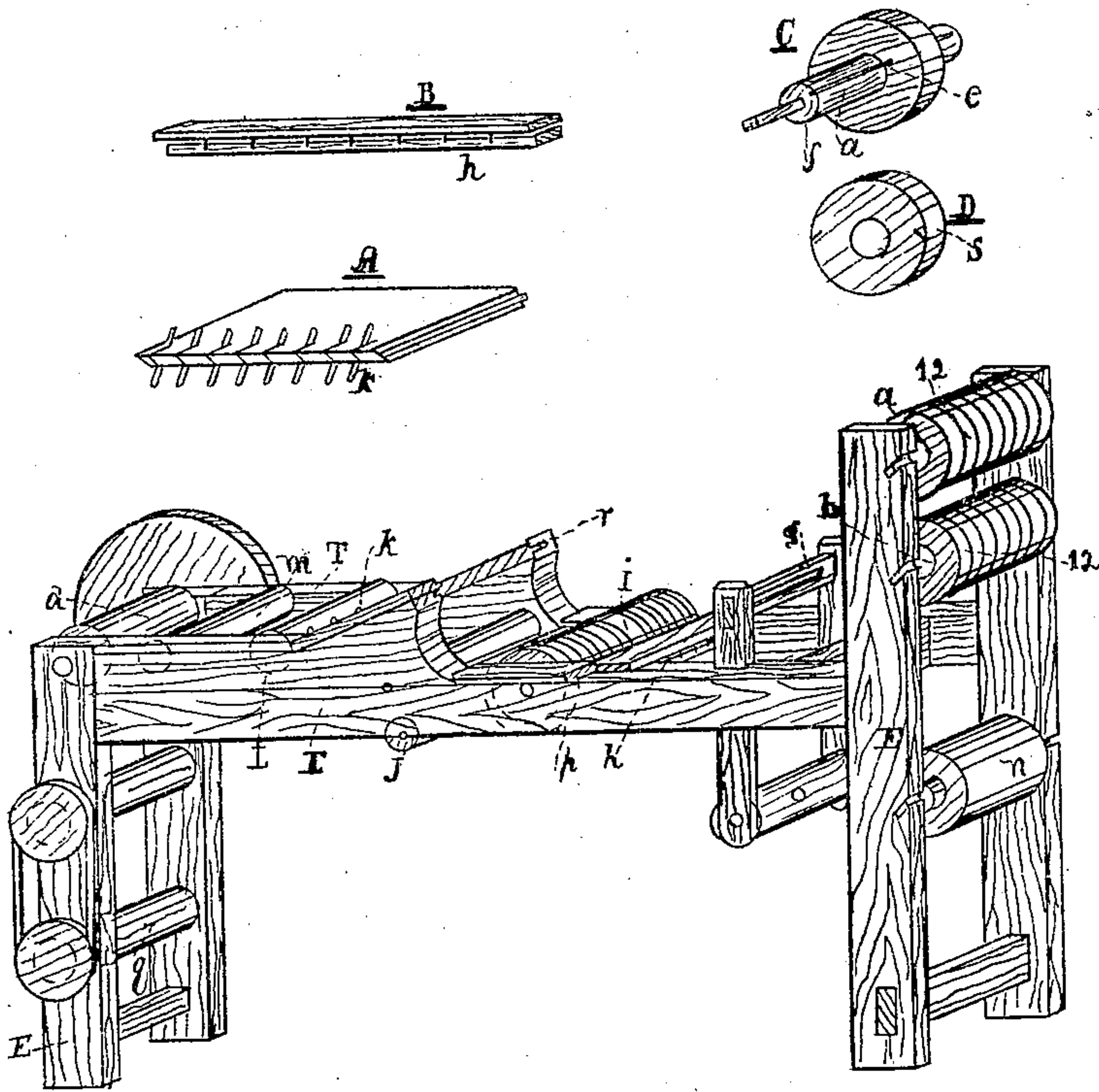


*E. P. Furlong,*  
*Bosom Machine.*

No. 90.739.

*Patented. June 1. 1869.*



Witness:

## Inventor

Henry C. Houston.  
Mr. Franklin Carey.

Per. Wm. H. Coffey ASST.



# United States Patent Office.

EDWARD P. FURLONG, OF PORTLAND, MAINE.

Letters Patent No. 90,739, dated June 1, 1869.

## IMPROVEMENT IN MACHINES FOR FORMING SHIRT-BOSOMS FROM PAPER AND CLOTH COMBINED.

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, EDWARD P. FURLONG, of Portland, in the county of Cumberland, and State of Maine, have invented a new and useful Bosom-Machine; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others to make and use my invention, reference being had to the accompanying drawings, forming part of this specification, in which is shown a side view, in perspective, of my invention.

A shows a guide-rack containing the guides.

B is an edge view of another guide or rack.

C is a view of the manner of preventing certain of the trucks from revolving on the shafts *a b*.

D is a view of one of the revolving trucks.

My invention relates to a machine for the manufacture of bosoms from paper and cloth, and is set in a proper and convenient frame or support, E.

Motion is imparted to the machine at the wheel *c* on the shaft *d*.

The residue of the rolls of the machine are revolved by the connection of the material to be manufactured with such rolls and the shaft *d*.

On the shafts *a b* are trucks or rolls, as shown, but every other one only revolves; *i. e.*, if, for instance, 1 is rotary, then 2 is fixed on the shaft; and still further, if 1 on the shaft *a* is rotary, then 1 on the shaft *b* is fixed, &c.

On each of these rotary trucks or rolls is placed a roll of paper, formed of a strip, of which the plaits of the bosom are made.

A certain number is placed on the rolls of the shaft *a*, and others on those of *b*, placed beneath the spaces, between those on *a*.

The rotary trucks are wound with paper, and then placed on their shafts *a b*, which are then set in the upright part of the frame of the machine, as represented.

The trucks can also be removed by simply slipping them off the shafts, when such shafts are taken out of the machine.

The stationary trucks (see C) are kept immovable by being constructed with a small metal lip in their holes, (see *e*), to fit a groove, *f*, in the shaft.

This allows them to be removed and replaced, when desired, with ease, and still keeps them from revolving on the shaft.

The placing a fixed between every two rotary trucks, has for its object to prevent one contiguous truck from carrying another by contact and friction, and thus unwinding the paper from it too rapidly.

The strips thus placed on the movable trucks, are then passed through the guide-rack *g*, through another guide-rack, *h*, over the paste-roll *i*, under the roll *j*, through the guides *k*, over the roll *l*, under the roll *m*, and then are wound on the shaft *d*.

The cloth is wound on the roll *n*, and, passing under the roll *o*, passes up through guides *k*, over the roll *l*, and so follows, in the same course with the paper, to the shaft *d*.

The paste-roll *i* is placed in a trough, *p*, containing the adhesive mixture.

It is, moreover, furnished with raised parts, shown in the darker color in the drawing.

As it revolves, it takes up the paste, &c., on these raised parts, and the paper, passing over and resting on such parts, takes up the paste, and so when the cloth and paper come together, the two are united by the paste.

*q* shows a roll under the roll *d*, upon which I wind a roll of rubber cloth, and this roll of cloth is wound upon the roll *d* by the revolution thereof, and rests between the convolutions of the bosom-material, and thus prevents it from adhering together, as it would otherwise be likely to do when the paste is green, and the paper and cloth just united.

Thus it will be seen that the paper and cloth are wound off their respective rolls by the revolution of *d*.

The guides *k* direct the strips properly on to the paste-roll.

The guides *k* bring the strips in a proper position to unite with the cloth.

The cloth is not in strips, but in one sheet or strip, covering the back of the bosom-paper, and the strips of paper being slightly separated by the guides, are united on the back or inside by the cloth, and are so united as to fold over upon one another when desired.

The guides *k* are inserted in a table, A, shown in the detail, which is capable of moving backward and forward in the inclined track *r*.

An edge view of the guides *k* is seen at B.

The method of attaching the paper to the rotary rolls is illustrated at *s*, where an inclined slit in the truck allows the end of the paper strip to be inserted, and the strip then wound on the truck.

The roll *m* is of great importance in the machine, for, pressing gently against the roll *d*, with its roll of cloth and paper united, it smooths each successive convolution, and prevents wrinkling or roughness, and as the roll grows larger, slips back in the groove *t*.

After the material is thus put together, it is unwound from *d*, and cut into the required forms.

When thus unwound, the rubber cloth is also unwound, and wound on to *q* again, preparatory to another use.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The shafts *a b*, with their peculiarly-constructed fixed and rotary trucks, as herein described.

2. The combination of the said trucks with the paste-roll and shaft *d*, as described.

3. The combination of the trucks on the said shafts *a b* with the guide racks, guide-rolls, paste-roll, and shaft *d*, as described.

4. The smoothing-roll *m*, arranged as described, and for the purpose set forth.

5. The adjustable table A, with its guides *k*, combined and arranged as herein described.

EDWARD P. FURLONG.

Witnesses:

W. H. CLIFFORD,  
HENRY C. HOUSTON.