G. G. BISHOP.

Cloth-Friezing Machine.

No. 165,657. Patented July 20, 1875.

Fig: 1.

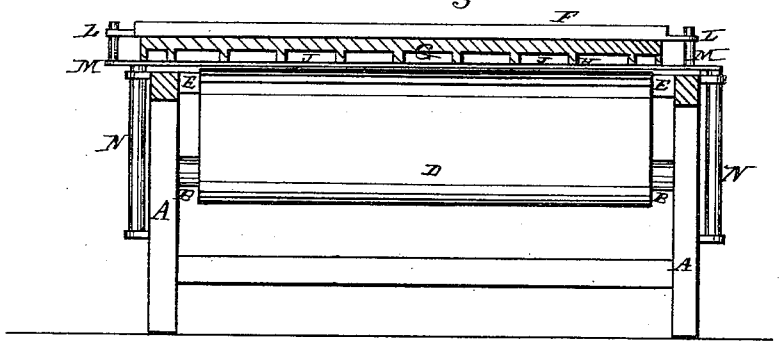


Fig: 2.

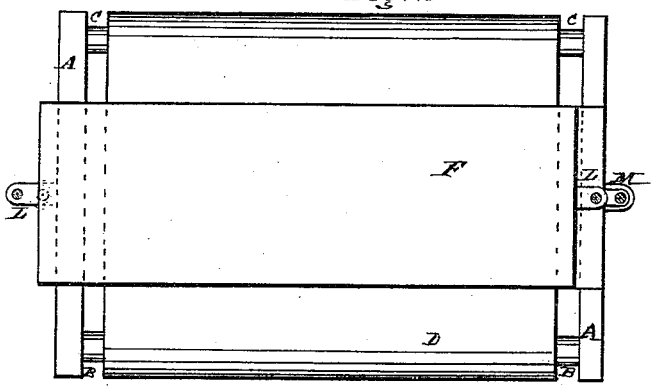
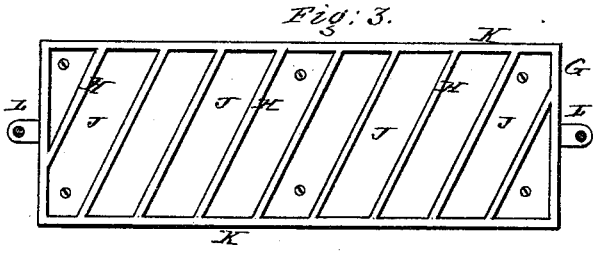


Fig: 3.



Witnesses.

Alfred N. Camp

Ezra N. Parker

Inventor.

George G. Bishop

UNITED STATES PATENT OFFICE.

GEORGE G. BISHOP, OF NORWALK, CONNECTICUT, ASSIGNOR TO THE UNION MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN CLOTH-FRIEZING MACHINES.

Specification forming part of Letters Patent No. **165,657**, dated July 20, 1875; application filed June 19, 1875.

To all whom it may concern:

Be it known that I, GEORGE G. BISHOP, of Norwalk, Fairfield county, State of Connecticut, have invented an Improvement in Cloth-Friezing Machines, of which the following is a specification:

The object of my invention is to frieze or curl the nap of woolen or other cloth so as to produce a shaggy coat or finish on its face.

In my invention for a similar purpose patented April 6, 1875, I therein show and describe a "friezer" having its lower surface formed into a series of diamond-shaped cavities.

By constant use of the friezer so made it is found that after a little time the cavities get filled up with the flock and loose fibers of wool on the surface of the cloth. When this occurs it necessitates the stopping of the machine and removal of the friezer therefrom to free the cavities from the accumulations of flock therein before the friezing operation can be resumed again.

The nature of my present invention is, therefore designed to overcome this difficulty; and consists in making the face of the friezer into series of obliquely-transverse spaces bounded by elastic walls or friezing-rubbers, whereby the accumulation of the flock is prevented as with diamond-shaped walls, and at the same time an equally good effect is produced.

But to describe my improvements more particularly I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference wherever they occur referring to similar parts.

Letter A represents the frame of the machine. Across its front and back ends are secured, in suitable bearings, cloth-beams or rollers B and C. On the roller B a piece of cloth, D, is tightly wound. Its outer end is then carried over a solid bed-board, E, arranged transversely of the middle of the machine, and thence secured, by tenter-hooks, to the face of the roll C, so that, by any suitable gearing and pulley-belts, the cloth will be tightly and firmly stretched over the upper surface of the bed, and at the same time progressively carried forward from one roll to the other, as required for the friezing operation. This operation is effected by means of a vibrating platen, F, of about twelve to fifteen inches in width, and of sufficient length to extend across the width of the web of cloth, having firmly secured to its lower surface an elastic friezer, G. This friezer is made of vulcanized india-rubber, or other vulcanizable gum or substance possessing similar properties. Its lower surface is sub-divided by a series of obliquely transverse elastic walls or partitions, H, of about one-sixteenth of an inch in thickness by about three-eighths of an inch in depth, and separated from each other by about five-eighths of an inch, thus leaving depressed channels J between the walls, and bounded on their outer ends by a marginal wall, K, solidly united to the ends of the partition-walls H, to stengthen and keep them fixedly in an upright position.

It will thus be obvious that by the action of the edges of the obliquely-arranged walls H on the surface of the cloth the same beneficial effect is produced as in the diamond-shaped friezer, without the possibility of getting choked up by the flock, and thereby, by the saving of time consumed in cleaning the diamond-shaped friezer, greatly enhances the value of the improvement.

The action of the friezer on the cloth is transversely of the forward or lengthwise motion of the cloth. To obtain this vibratory motion of the freizer perforated lugs L are formed on or attached to the ends of the platen, so as to engage with the cranks M on the upper ends of two vertical rotating rods, N, secured in suitable bearings on each side of the frame of the machine, to which any suitable propelling power may be applied. Thus as they rotate a rapid vibratory motion is given to the friezer upon the surface of the cloth while it is being drawn forward over the bed.

Having now described my improved friezer, I will set forth what I claim:

The combination of the platen F with a vulcanized gum-elastic friezer having its surface sub-divided by a series of obliquely-transverse elastic walls or partitions H, marginal wall K, and intervening depressed channels J, all constructed substantially as described, and for the purposes set forth.

GEORGE G. BISHOP.

Witnesses:
ALFRED H. CAMP,
EZRA H. PARKER.