(No Model.) 2 Sheets—Sheet 1.

G. F. HELLIWELL.

MACHINE FOR FASTENING SACKS.

No. 365,380. Patented June 28, 1887.

Fig. 1.

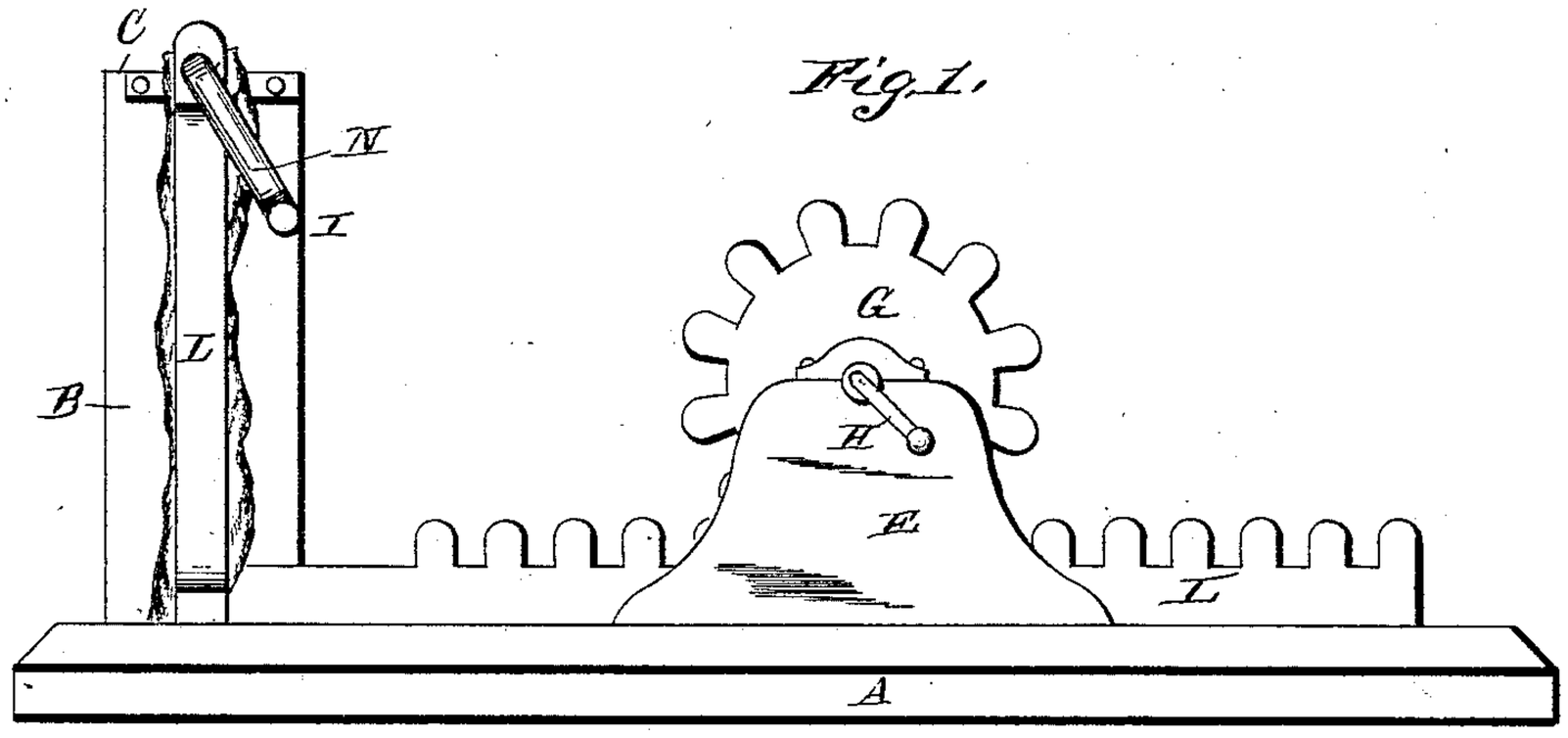
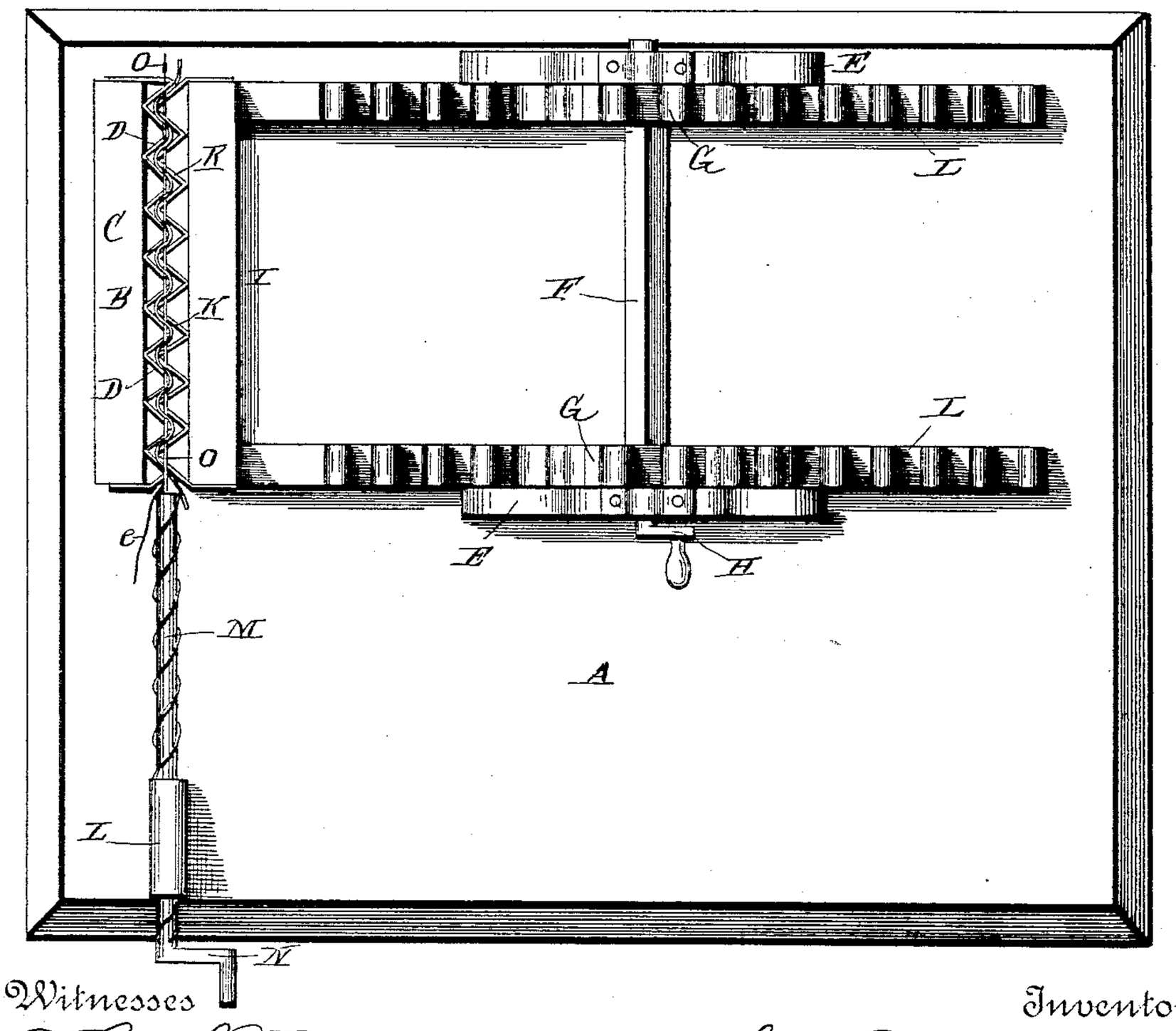


Fig. 2.



Witnesses
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Inventor
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

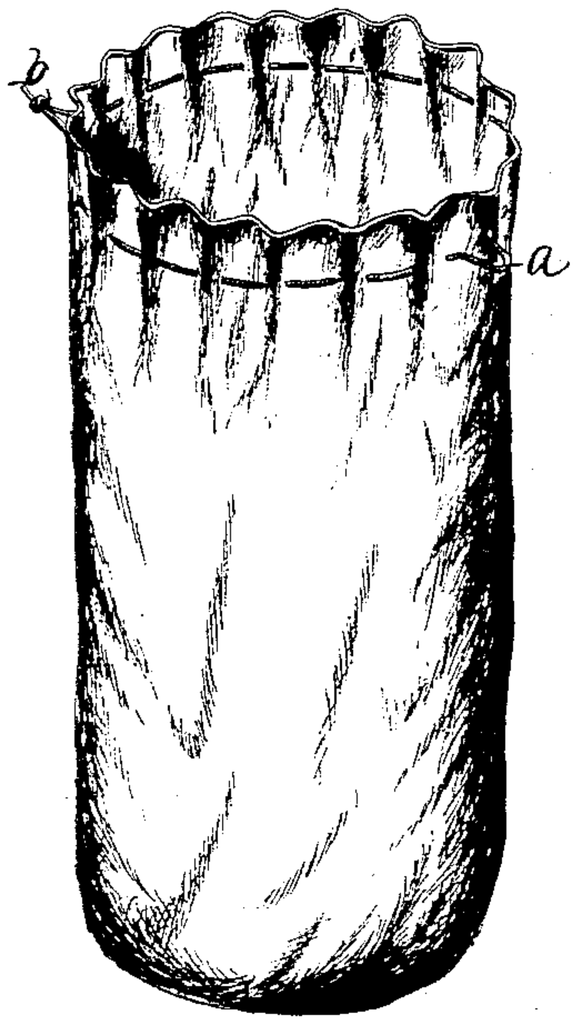


Fig. 4.

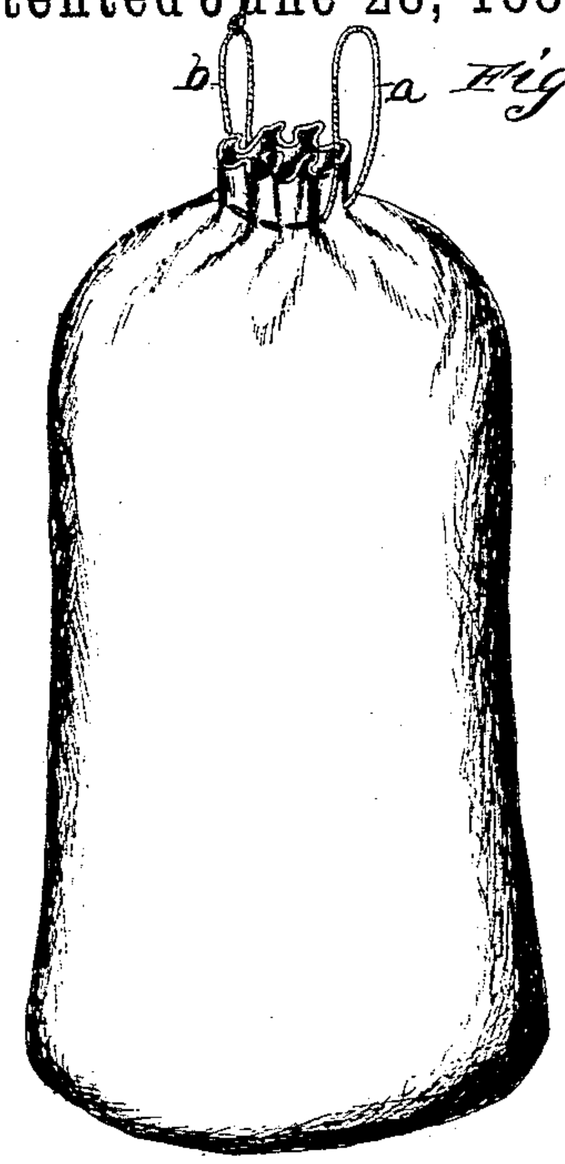


Fig. 5.

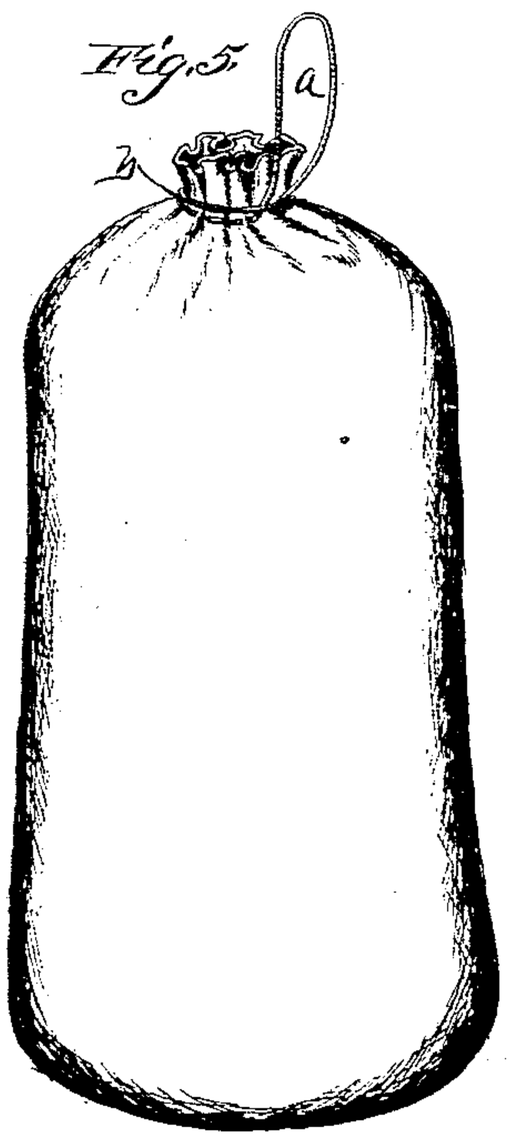
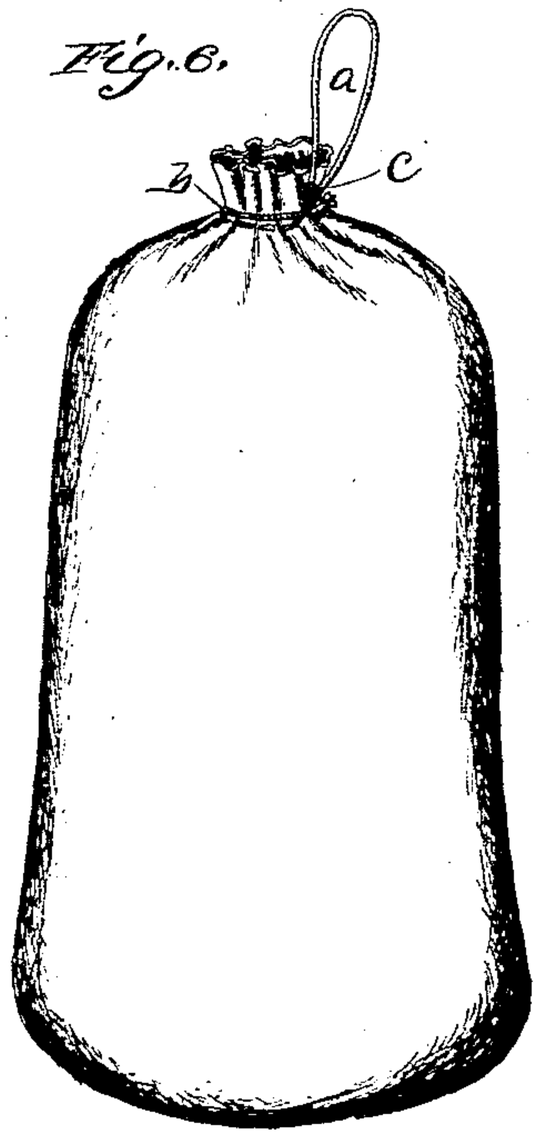


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE F. HELLIWELL, OF MINNEAPOLIS, MINNESOTA.

MACHINE FOR FASTENING SACKS.

SPECIFICATION forming part of Letters Patent No. 365,380, dated June 28, 1887.

Application filed November 1, 1886. Serial No. 217,723. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. HELLIWELL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in Methods of and Machines for Fastening Sacks, of which the following is a specification.

My invention relates to an improvement in methods of and machines for fastening sacks; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

It further consists in the method of fastening a sack by running a gathering-string through the open edges of the sack, uniting the ends of the string to form loops, drawing upon the loops at opposite sides of the mouth of the sack to close or gather the same, and then passing one of the loops around the neck of the sack, threading the other loop through the encircling loop to effectually close the sack, and tying a knot in the said loop to prevent the mouth of the sack from opening.

In the accompanying drawings, Figure 1 is a side elevation of a sack-fastening machine embodying my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a perspective view of a sack after the gathering string has been attached thereto. Fig. 4 is a similar view showing the manner of closing the mouth of the sack by drawing upon a loop formed in the gathering-string on opposite sides thereof. Fig. 5 is a similar view with one of the loops encircling the neck of the sack. Fig. 6 is a similar view showing the fastenings completed.

A represents the base-plate or platform of the sack-fastening machine. To one corner of the same is secured a vertical rectangular frame, B, having the horizontal cross-bar C, the inner side of which has a fluted or scalloped jaw, D.

E represents a pair of vertical standards, which are attached to the base or platform, and in the upper end of the standards is journaled a horizontal transverse shaft, F, which is provided with gear-pinions G, that bear against the inner sides of the standards, and has at its inner end a crank, H, by means of which the shaft and the pinions may be rotated.

I represents a vertical rectangular frame, which is similar to the frame B, and is provided with a scalloped or fluted jaw, K, on its outer side, that is adapted to fit the jaw B. From the lower side of the frame I extend horizontal sliding rack-bars L, the teeth of which engage the pinions G, the said bars L being adapted to slide back and forth from the base or platform A and bearing against the inner sides of the standards E, which latter serve as guideways for the sliding rack-bars. By turning the shaft F in one direction the frame I will be caused to recede from the frame B, and by turning the said shaft in the contrary direction the frame I will be caused to approach the frame B.

L represents a vertical standard, which rises from one corner of the base or platform and is opposite the frame B. In the upper end of the said standard is a horizontal screw-shaft, M, which is arranged parallel with the jaws D and K, and on a slightly higher plane than the said jaws. The outer end of the screw-shaft has a crank, N.

O represents a needle, which is secured in the inner end of the screw shaft and projects beyond the latter far enough to extend entirely across the upper sides of the frames B and I. The eye of the needle is near its point, and a cord, *e*, is threaded through the said eye.

The manner of operating my invention is as follows: A piece of cloth is cut in the requisite form and size to form a sack and before the sides and bottom edges of the cloth are sewed together to form a sack, the said cloth has its upper edge clamped between the gathering-jaws D and K. As the jaws are fluted or scalloped on their opposing faces, it will be readily understood that the cloth has its upper edge fluted or gathered. The operator then turns the screw-shaft M, causing the same to pass the needle through the gathers in the upper edge of the cloth, and thus run the string through the same to form a gathering-string therefor. The needle is then withdrawn by reversing the rotation of the screw-shaft, and the string is cut and the cloth released from between the gathering-jaws. The sides and bottom edges of the cloth are then sewed together to form an ordinary sack—such as is used for shipping flour, feed, and grain—and the ends of the gathering string are tied together.

Heretofore it has been the practice to sew

the mouth of the sack together after the sack is filled, in order to prevent the sack from spilling its contents when in transportation; but this method of securing the mouth of a sack is objectionable, for the reason that it requires the services of skilled workmen, and is expensive and slow. In my device the gathering-string is provided in the bag prior to the filling thereof.

After a sack provided with my gathering-string is filled the operator grasps the projecting loops *a* and *b*, which are formed in the gathering-string on opposite sides of the mouth of the sack, and draws the said loops upwardly, thereby closing the mouth of the sack, as illustrated in Fig. 4. He then passes the loop *b* around the mouth of the sack, so as to encircle the same, and threads the loop *a* through the said loop *b* and draws upon the loop *a*, so as to gather the loop *b* firmly about the neck of the sack, thus effectually and entirely closing the same and rendering the escape of any of the contents of the sack impossible. A knot, *c*, (illustrated in Fig. 6,) is then formed in the loop *a* above the encircling loop *b*, so as to prevent the mouth of the sack from opening, and also to prevent the loop *b* from slipping upwardly over the neck of the sack, thus completing the fastening and effectually securing the sack.

Having thus described my invention, I claim—

1. The combination of the gathering-jaws, the mechanism, substantially as described, to move one of the said jaws, and the longitudinally-movable shaft carrying the needle and adapted to pass the same through the flutes or scallops made in the edges of the cloth by the gathering-jaws, substantially as described.

2. The combination of the rigid frame B, having the gathering-jaw D, the movable frame I, having the gathering-jaw K, movable toward or from the jaw D, for the purpose set forth, the standard L, arranged at one side of the jaws, and the screw-shaft working in the said standard to pass a threaded needle through the gathers formed in the edge of the cloth by the gathering-jaws, substantially as described.

3. The combination of the rigid frame B, having the gathering-jaw D, the movable frame I, having the gathering-jaw K, adapted to engage the jaw D, the slide rack-bars attached to the movable frame I, and the rotating pinions engaging the said rack-bars, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE F. HELLIWELL.

Witnesses:
GEORGE F. GETTY,
W. R. STEDMAN.