

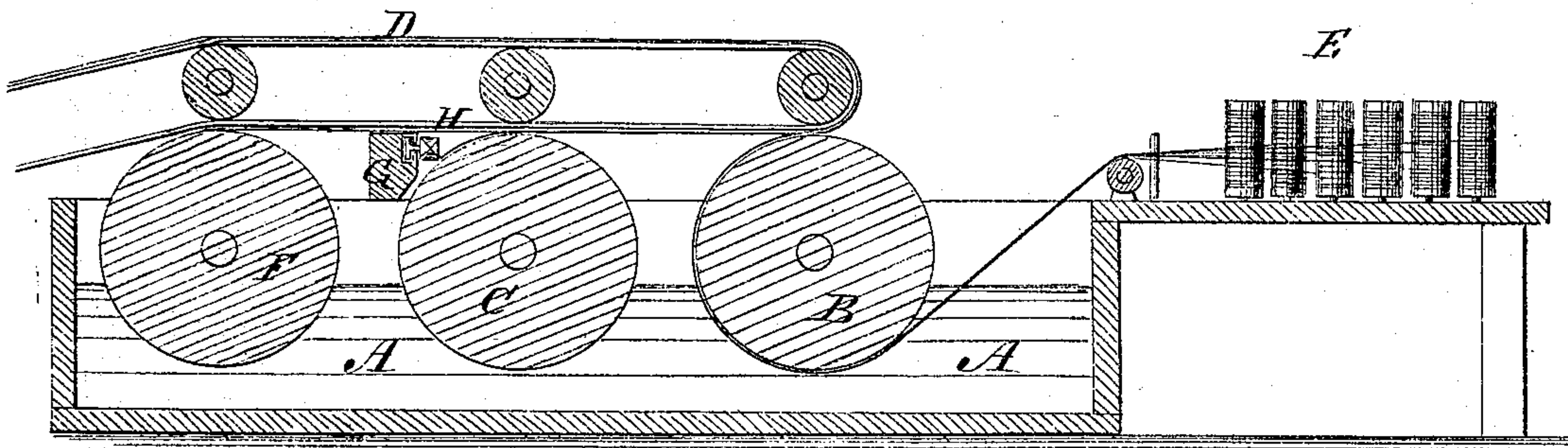
L. M. CRANE.

Improvement in Apparatus for the Manufacture of Warp  
and Paper-Pulp Fabrics.

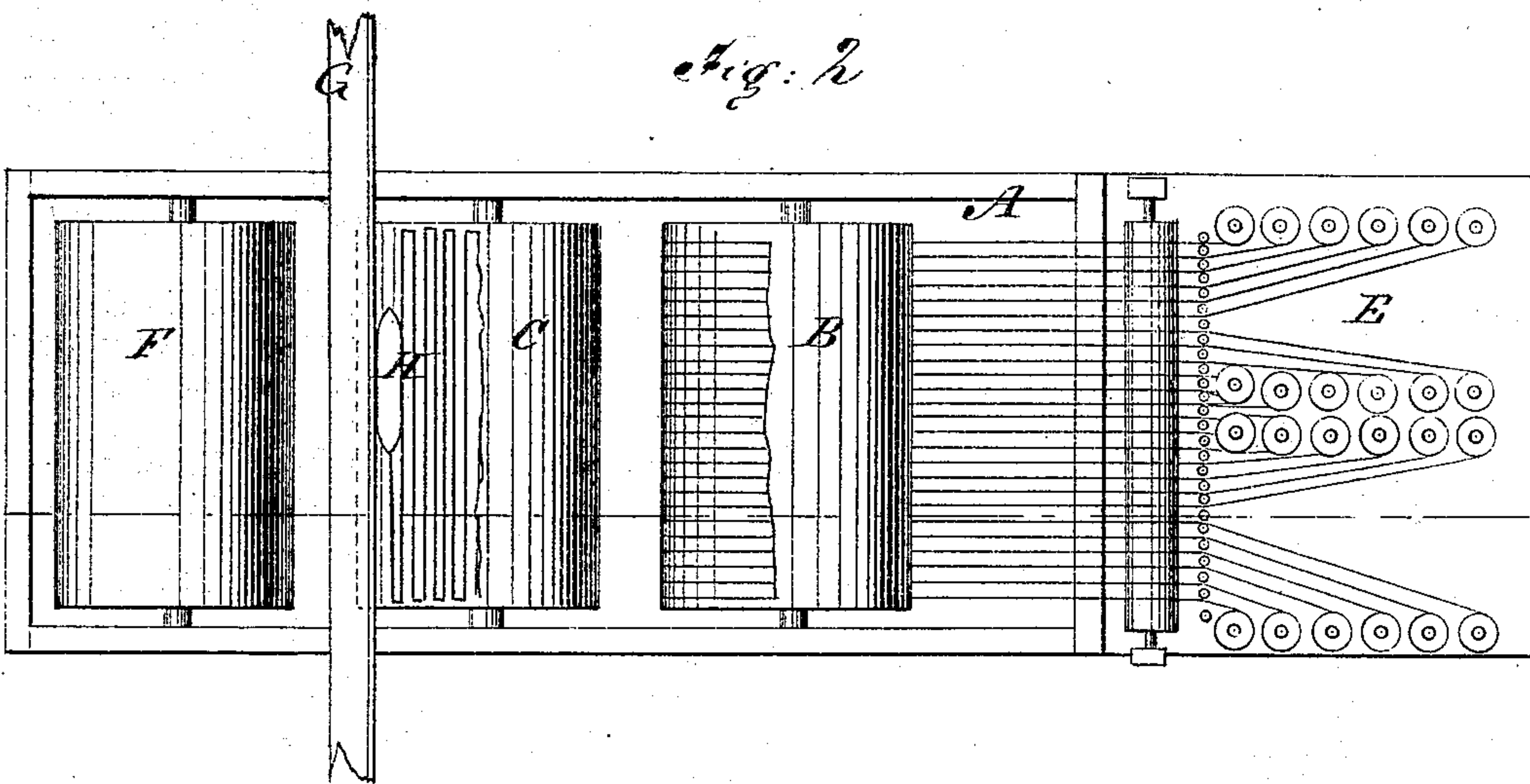
No. 127,463.

Patented June 4, 1872.

*Fig. 1.*



*Fig. 2.*



Witnesses:

*Chas. Nida.*  
*Alex. D. Roberts*

Inventor:

*L. M. Crane*  
PER *Munn & Co.*  
Attorneys.

# UNITED STATES PATENT OFFICE.

LINDLEY M. CRANE, OF BALLSTON SPA, NEW YORK.

IMPROVEMENT IN APPARATUS FOR THE MANUFACTURE OF WARP AND PAPER-PULP FABRICS.

Specification forming part of Letters Patent No. 127,463, dated June 4, 1872.

Specification describing a new and Improved Warp and Pulp Fabric, invented by LINDLEY MURRAY CRANE, of Ballston Spa, in the county of Saratoga and State of New York.

My invention consists of a new fabric of paper-pulp and warp-threads of cotton, linen, silk, or any other fibers incorporated with the pulp at the same time that it is formed into a sheet by the rolls used for that purpose, the threads being fed in between the roll with the pulp, or both warp and weft-threads may be incorporated with the pulp so as to cross and thus increase the strength of the said fabric in both directions, the said transverse or weft-threads being laid on or supplied to the warp-threads in any approved way, as they are drawn in between the rolls, or a sheet of the fabric previously formed with threads running one way only may be laid on other warp with its threads at right angles thereto, as the said warp and pulp are being fed to the rolls, thus making a kind of double fabric.

This improved fabric I propose to use for making wearing apparel, sacks, envelopes, wrapping-paper, and any other purpose for which it may be found useful.

Figure 1 is a longitudinal sectional elevation of one arrangement of apparatus that may be used to make my improved fabric; and Fig. 2 is a plan view of the same.

Similar letters of reference indicate corresponding parts.

A represents the pulp-vat; B and C the rollers, and D the endless apron of the common arrangement for making paper by taking the pulp from the vat and delivering it to the

apron continuously, the pulp so laid on being passed thence to the dry rolls. Now, I propose to combine a spool-stand, E, or its equivalent, a warp-beam, with this apparatus, as indicated in the drawing, and arrange the warp-threads on the roller B in such manner as to be drawn in and laid in between the two layers of pulp delivered to the belt by the rolls B C, and in this manner make my said improved fabric of paper and warp-threads; and to make the fabric with both warp and filling, I propose to provide another pulp-laying roller, F, with the belt D behind roller C to deliver a third layer of pulp, and between this roller and roller C I arrange a shuttle-race, G, whereon a shuttle, H, may be worked back and forth to lay the filling on the pulp upon roller C to be laid on the belt D, between the layers delivered by said rollers C and F. I may, however, employ other means for the manufacture of this improved fabric.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the rollers C and B and the endless belt D of paper-making machinery, of a spool-stand or warp-beam, substantially as specified.

2. The combination, with belt D and roller C, of the roller F and a shuttle and shuttle-race, substantially as specified.

LINDLEY MURRAY CRANE.

Witnesses:

GEO. W. MABEE,  
T. B. MOSHER.