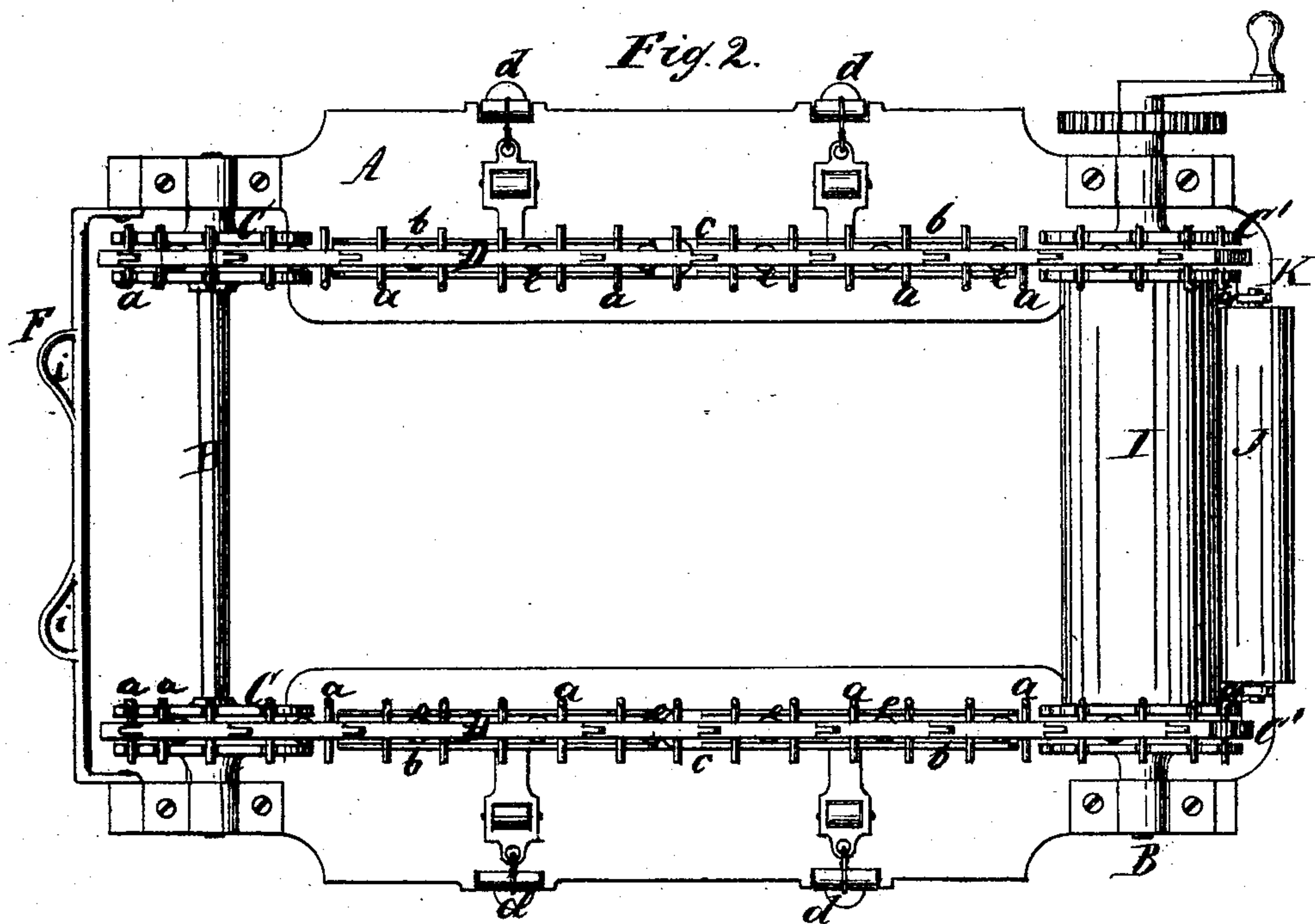
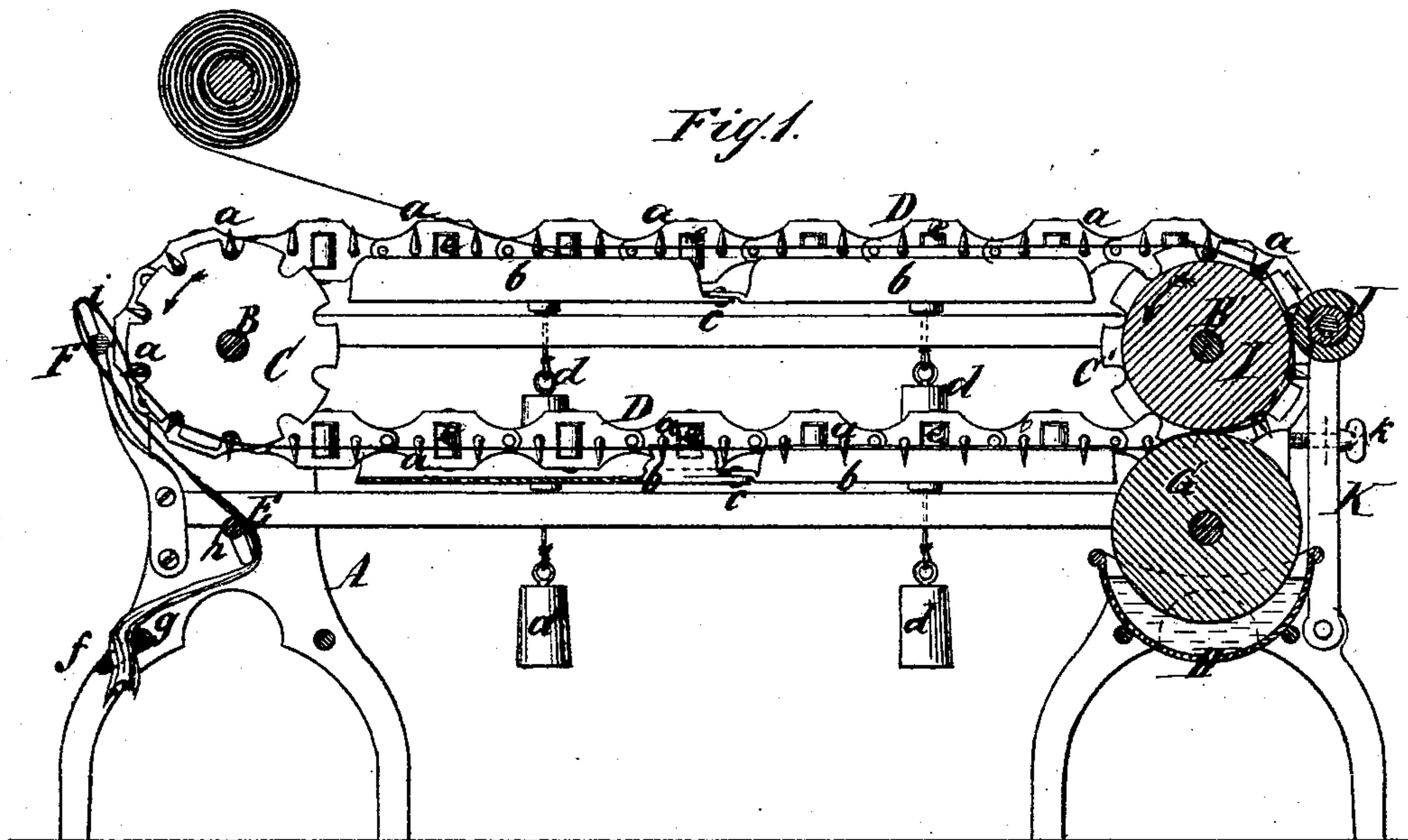


P. C. RITCHIE.  
Machines for Sizing Netting.

No. 151,915.

Patented June 9, 1874.



Witnesses.  
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Henry Gentner

Inventor.  
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attys

2 Sheets--Sheet 2.

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Fig: 3

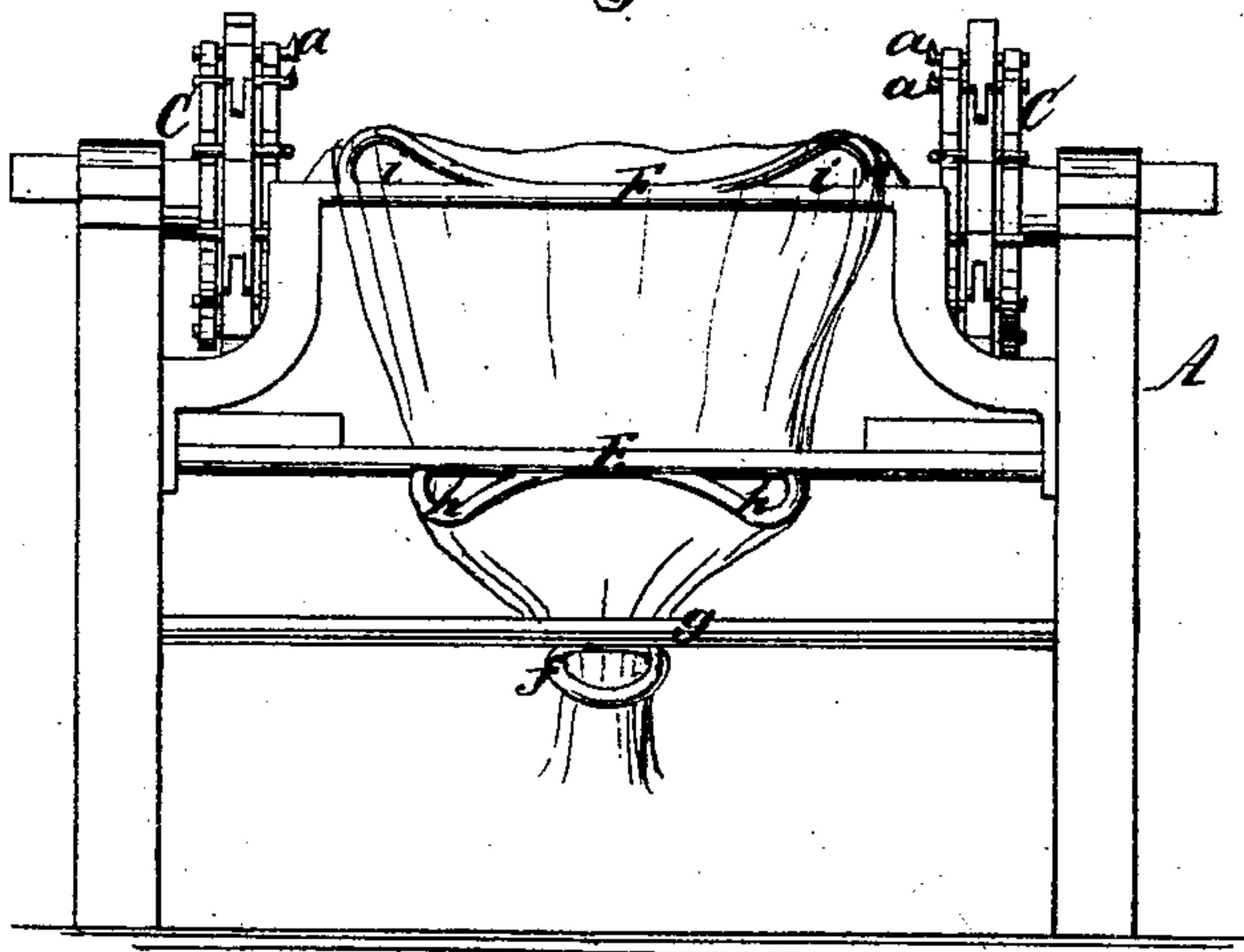
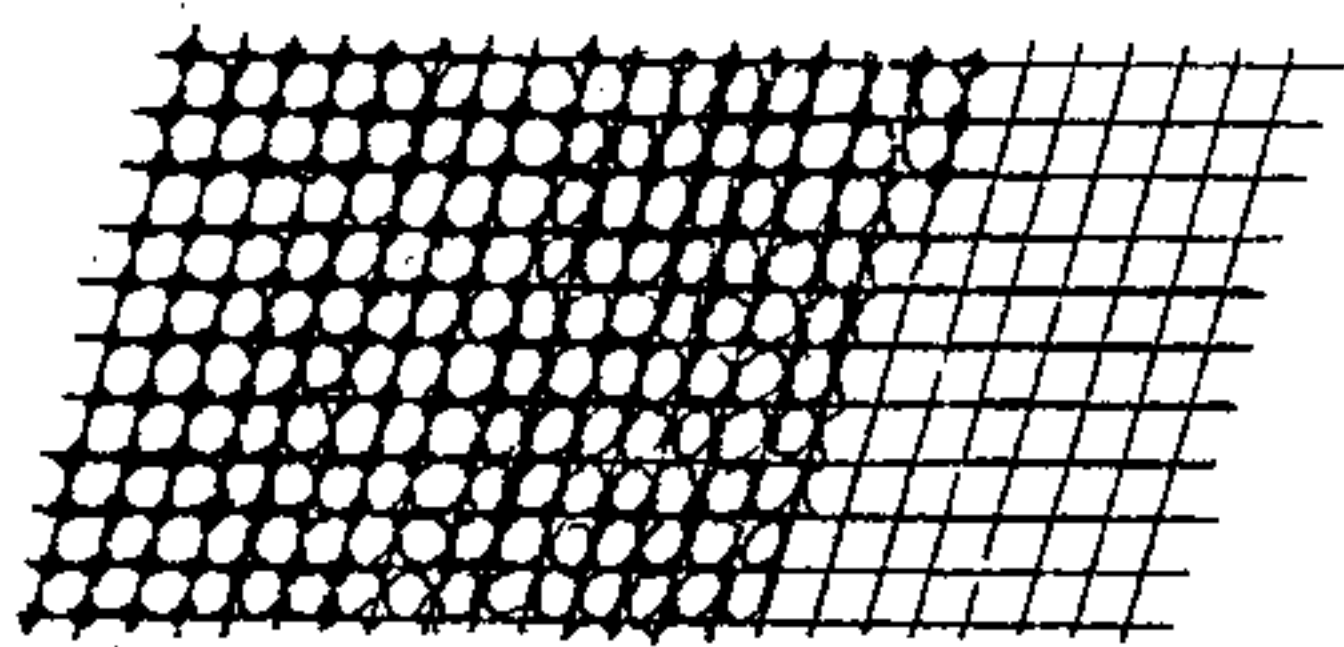


Fig: 4.



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Inventor:

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*pr.*  
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# UNITED STATES PATENT OFFICE.

PETER C. RITCHIE, OF NEW YORK, N. Y.

## IMPROVEMENT IN MACHINES FOR SIZING NETTING.

Specification forming part of Letters Patent No. **151,915**, dated June 9, 1874; application filed May 9, 1874.

*To all whom it may concern:*

Be it known that I, PETER C. RITCHIE, of the city, county, and State of New York, have invented a new and useful Improvement in Machines for Stiffening Netting; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention. Fig. 2 is a plan or top view of the same. Fig. 3 is an end view of the same. Fig. 4 is a plan of the netting after the same has passed through my machine.

Similar letters indicate corresponding parts.

This invention consists in the combination of two or more spreaders of increasing width with endless chains which carry hooks for the reception of the netting, so that the netting is automatically spread and delivered to the hooks of the chains. The invention also consists in the combination of spreading-troughs with carrying-chains, a sizing-roller, and squeezing-rollers, in such a manner that the netting is stretched by the troughs as it is carried along by the chains to the sizing and pressing rollers.

In the drawing, the letter A designates a frame, which forms the bearings for two shafts, B B', on which are mounted chain-wheels C C' for the reception of two endless chains, D. These chains are constructed each of a series of links, and in each of these links are secured one or more hooks, *a*, for the purpose of carrying the netting. Between the chain-wheels C and C', on each side of the frame A, are placed troughs *b*, two or more under the upper, and two or more under the lower, strand of each chain. These troughs, under each strand of the chains, are connected to each other by hinge-joints *c*, and they are subjected to the action of weights *d*, which have a tendency to pull said troughs outward, so as to produce a strain on a fabric held between the hooks of the chains. The links of said chains are provided with friction-rollers *e*, placed on vertical arbors, so that they move with the least pos-

sible friction in the tension-troughs. The netting is fed to the chains through a loop, *f*, which is fastened to a traverse, *g*, secured in the legs of the frame A. After leaving this loop the netting is extended over the first spreader, E, and from this it passes over the second spreader, F, which distends the same to its full width, and delivers its edges to the hooks of the chains D, which move in the direction of the arrow marked on the chain-wheel C in Fig. 1. The spreaders E and F are composed of rods, which are firmly secured in the frame A, and from which project spreading-cams *h i*, the cams *h* of the spreader E being somewhat closer together than the cams *i* of the spreader F, so that the netting is gradually distended to its full width, and that it passes from the last spreader automatically to the hooks of the carrying-chains. As the netting is carried along by the chains E it is held distended by the action of the weights *d*, (or, if desired, springs may be substituted for these weights,) which act on the spreading-troughs *b*, and in this distended state the netting is carried over a roller, G, which revolves in a fountain, H, containing sizing, and which serves to bring said sizing in contact with the netting. After having received a supply of sizing the netting is carried by the chains D through between the squeezing-rollers I J, which serve to remove the surplus sizing, the roller J having its bearings in a hinged frame, K, which can be moved toward the roller I by means of set-screws *k*, so that the pressure exerted by the roller J on the netting passing through between it and the roller I can be regulated to suit circumstances.

As the netting passes through between the squeezing-rollers its square meshes are filled up with sizing; but when the netting is carried off from the circumference of the roller I, the central portion of the sizing contained in each mesh adheres to the roller, while the corners of the mesh remain filled with sizing, (see Fig. 4,) and by these means the square-mesh netting, after having passed through my machine, has a close resemblance to round-mesh netting, and it commands a higher price than it does if finished in the ordinary way.

After having been completely sized and finished, as above described, the netting is taken up by a roller placed above the frame A, so that by the strain of said roller itself the netting is withdrawn from the hooks of the chains.

If desired, however, the netting may be thrown off from said hooks by a suitable cam or other device arranged within the frame A.

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

1. In a machine for stiffening netting, the combination of two or more spreaders of increasing width with endless chains which carry

hooks for the reception of netting, the netting being delivered automatically from the spreaders to the hooks of the chains and stretched, substantially as described.

2. The combination, in a machine for stiffening netting, of hinged spreading-troughs *b*, operating as specified, carrying-chains D, sizing-roller G, and squeezing-rollers I J, substantially as described, for the purpose set forth.

PETER C. RITCHIE.

Witnesses:

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E. F. KASTENHUBER.