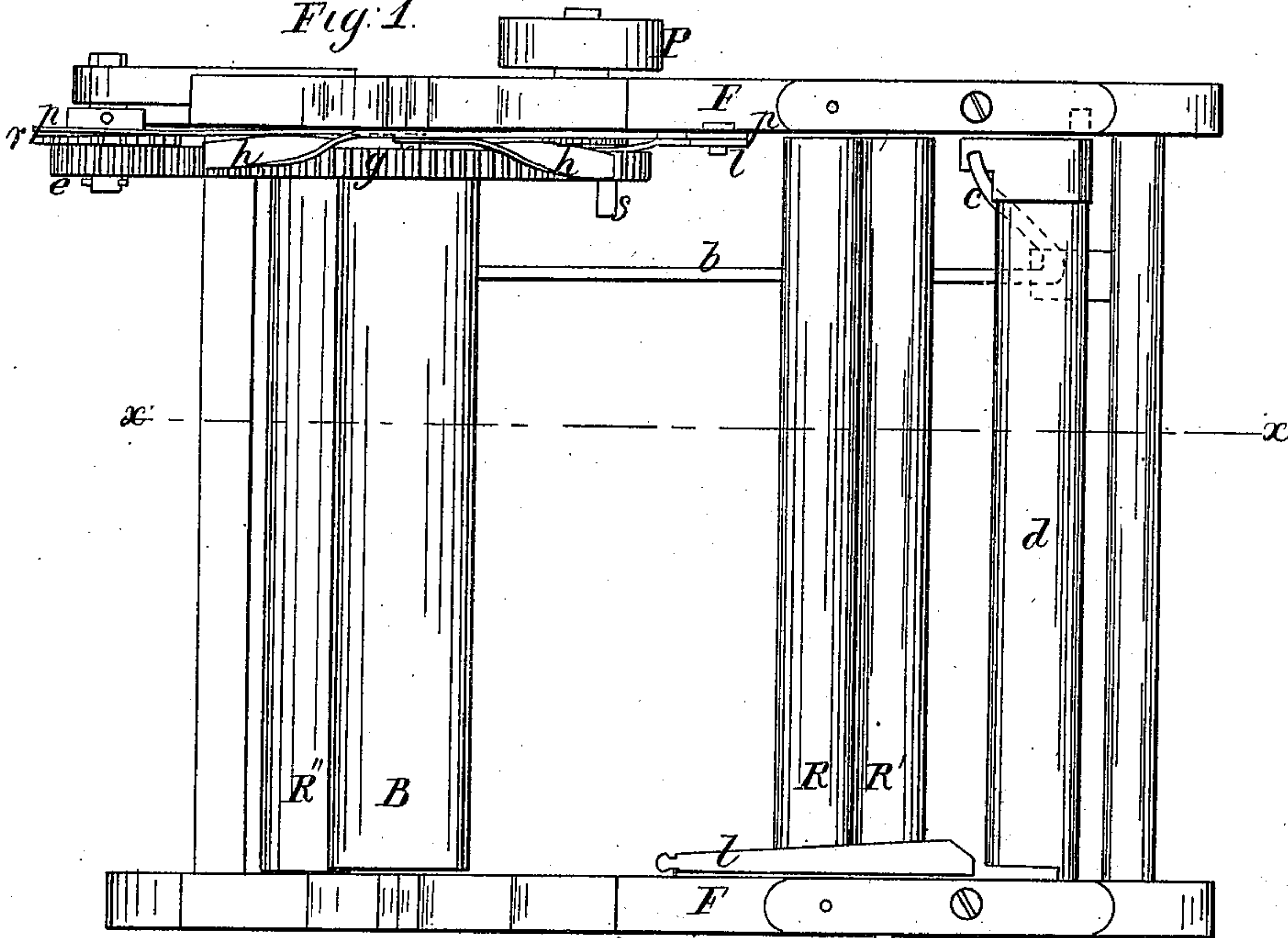


Netting Mach.

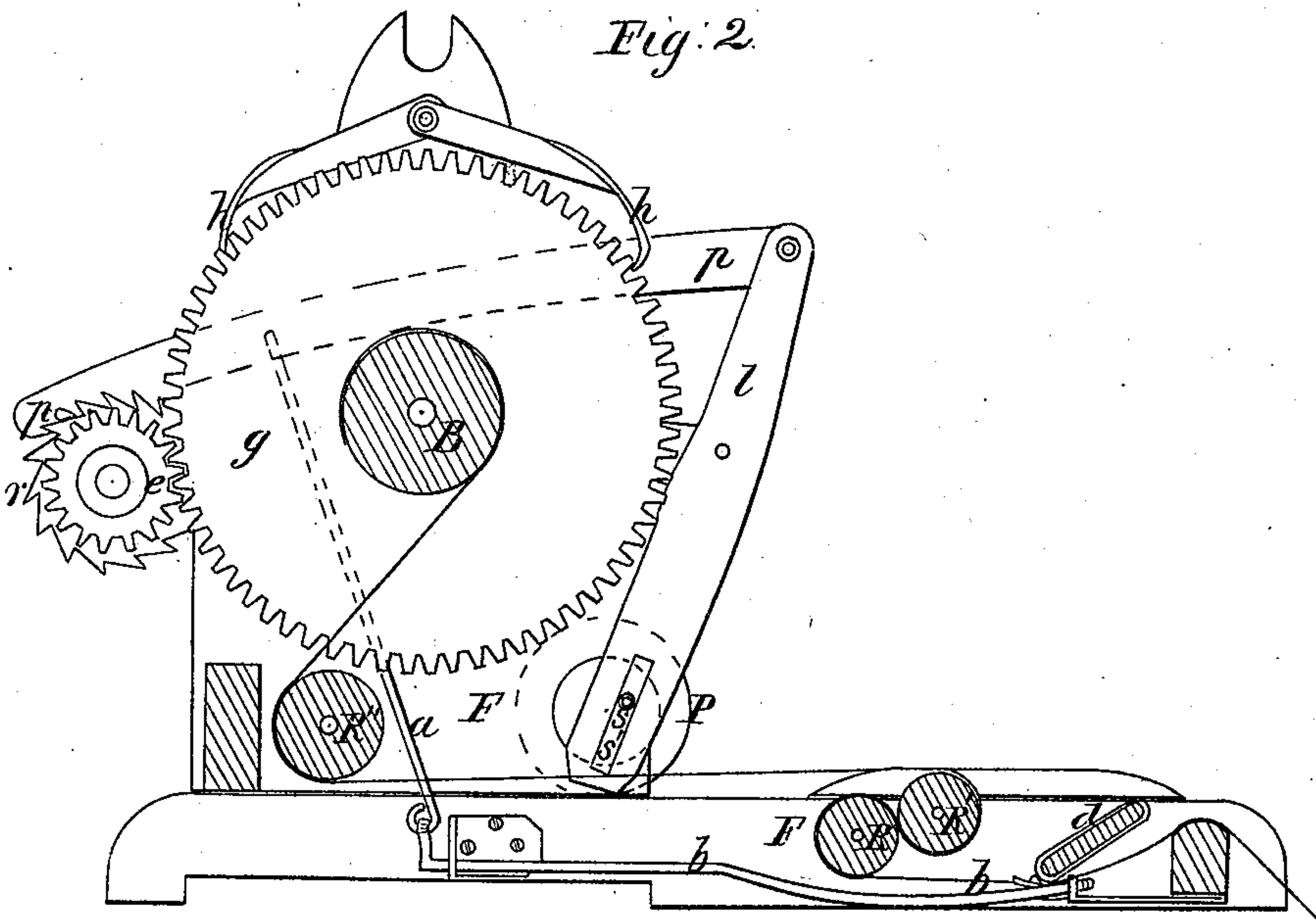
N<sup>o</sup> 15,245.

*Patented Jul. 1, 1856.*

*Fig. 1.*



*Fig: 2.*



# UNITED STATES PATENT OFFICE.

JOHN McMULLEN, OF BALTIMORE, MARYLAND.

## NETTING-MACHINE.

Specification of Letters Patent No. 15,245, dated July 1, 1856.

*To all whom it may concern:*

Be it known that I, JOHN McMULLEN, of the city of Baltimore and State of Maryland, have invented a new and useful Improvement on John McMullen's Netting-Machine, patented June 27, 1846; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference  
10 being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is a plan and Fig. 2 a vertical section on line *x x*.

Similar letters of reference in the several  
15 figures denote the same part.

My invention, which is an improvement on the netting machine patented by me on the 27th day of June, 1846, is designed to effect the tightening of the knots, continuously and regularly, as the net is delivered from the aforesaid machine; making this tightening action simultaneous with the netting operation; and not interfering with the requisite slack of material for the formation of the knots by the machine.

The knots formed by my machine pass from it in a loose state, the welt which forms the half hitch, being in a transverse position, and causing the meshes to have an oblong shape, smallest in direction of the length of the net. Stretching lengthwise will double in this welt to form its portion of the knot, and thus square the mesh. Yet, to prevent too much of the welt being taken  
35 up in tightening the knots, it is necessary to effect a certain portion of this tightening by a lateral strain on the knots. These being the conditions under which the tightening apparatus must act, I will here state  
40 my invention as follows.

The nature of my invention consists in conveying the net as it comes from the machine, between and partially around two pressure rollers, and in effecting the tightening between those rollers and the cloth beam; the distance between said beam and the rollers, being such that longitudinal strain given the net, will, with the lateral resistance of the rollers, produce a square  
50 mesh and knots of the requisite tightness.

The invention further consists in so connecting a lever bar (under which the net

passes, on leaving the machine) with the pawl driving the cloth beam, that the tightening of the net, between the machine and  
55 the lever bar, beyond the slackness requisite for the formation of the knots, will stop the rotation of the cloth beam.

In the drawing *R R'* are the pressure rollers, and *B* the cloth beam. *R''* is a  
60 roller under which the net passes before reaching the cloth beam. These several parts are contained in a suitable frame *F*.

Motion is communicated to the cloth beam *B*, by the turning of ratchet *r* by pawl *p*.  
65 This pawl is moved by the lever *l*, with which it is jointed, by reason of stud *s* and slot *s'*. The pawl *p* is connected by rod *a* with the rock shaft *b*, the other arm *c* of which is attached to the lever bar *d*; so that  
70 the lifting of lower edge of said lever bar, will raise the pawl *p* from ratchet *r*. This connection of the lever bar with the pawl, is extremely sensitive, so that the slightest pressure against the lower edge of said bar,  
75 will lift the pawl and stop the rotation of the cloth beam. The movement of ratchet *r* is communicated to the cloth beam through pinion *e* and cog wheel *g*; the dimensions of which regulate the velocity of winding the  
80 net on the beam to the speed of delivery from the machine. Pawls *h h* hold wheel *g* and prevent slipping. This stretching apparatus is for convenience placed behind the netting machine the net passing, from where  
85 the knots are formed, under the machine to this stretcher. It may however be placed in front of the machine. Motion is communicated to the stretcher by a band over pulley *P*, and the net passed under the lever  
90 bar and between the pressure rollers as shown in the drawing. The pressure of the rollers is governed by lever *l*.

The net is stretched and the knots tightened between the pressure rollers and the cloth beam, as above set forth. When from  
95 any cause the portion of the net between the machine and lever bar, draws upon the said guard bar, with a tendency to decrease the requisite slack for forming the knots,  
100 the lever bar through the rock shaft connection above described, suspends the rotation of the cloth beam, until the requisite slack is again obtained.



What I claim as my invention is—

Finishing the meshes of the net and tightening the knots by the simultaneous longitudinal and lateral strain of pressure rollers and cloth beam operating substantially as specified; the relative position of said rollers and beam being automatically preserved.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

JOHN McMULLEN.

Witnesses:

WM. H. BAYJAND,  
L. M. REYNOLDS.