(No Model.) 3 Sheets—Sheet 1.

# G. F. WRIGHT.

## WIRE NETTING MACHINE.

No. 529,093. Patented Nov. 13, 1894.

Fig. 1.

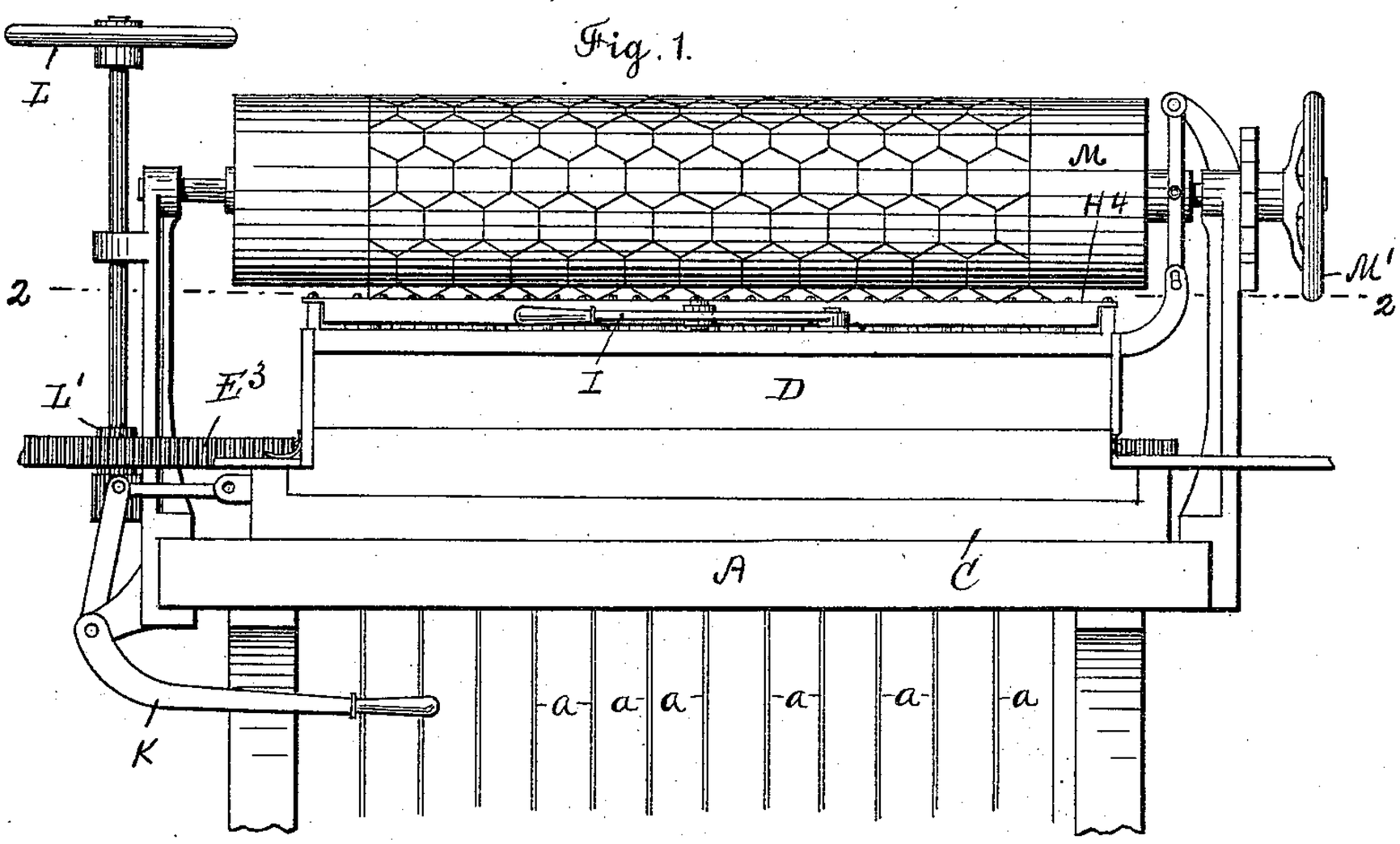



Fig. 2.

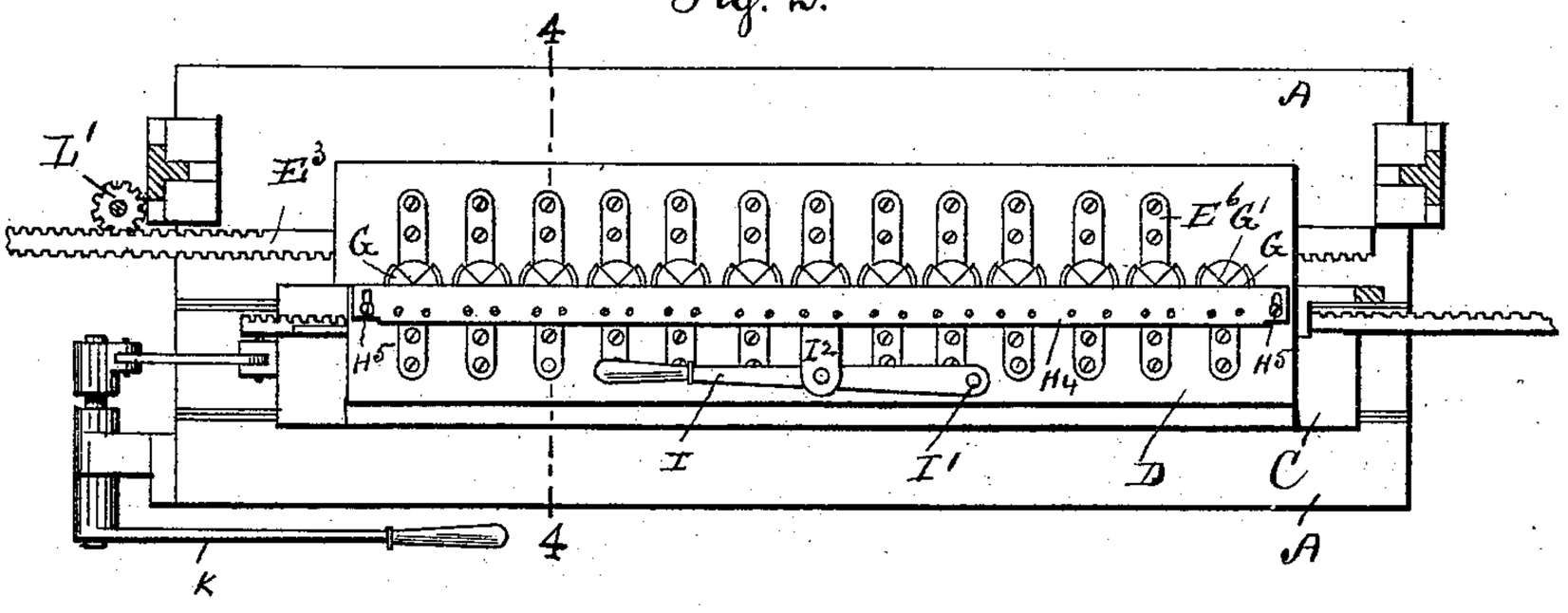
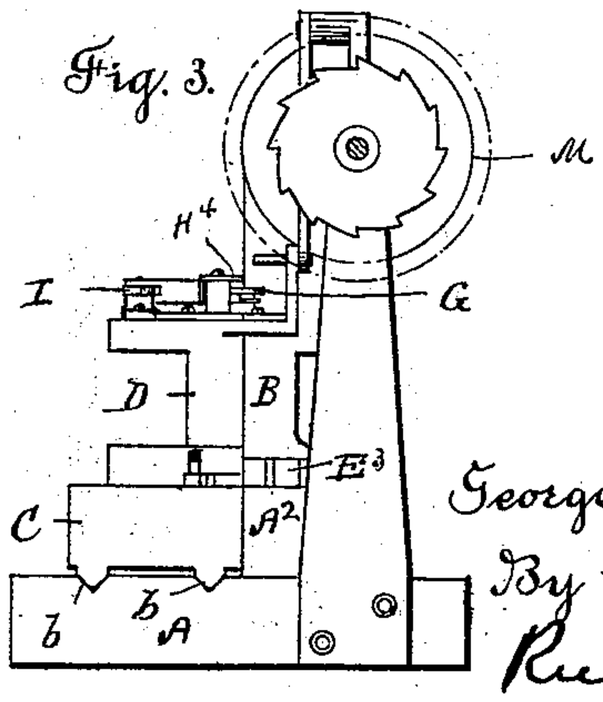



Fig. 3.




Witnesses.
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(No Model.) 3 Sheets—Sheet 2.

# G. F. WRIGHT.

## WIRE NETTING MACHINE.

No. 529,093. Patented Nov. 13, 1894.

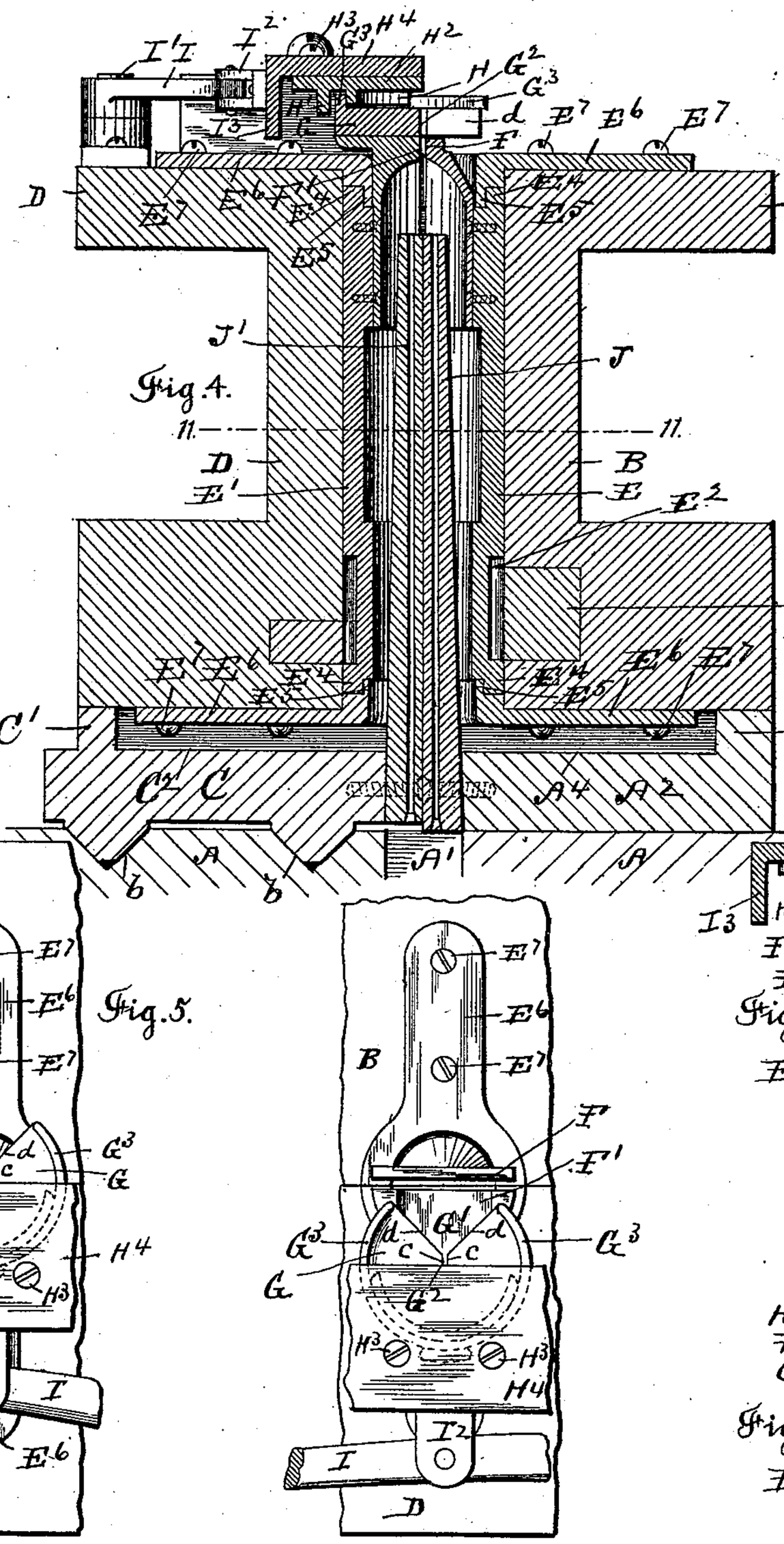

Fig. 4.



Fig. 5.



Fig. 6.

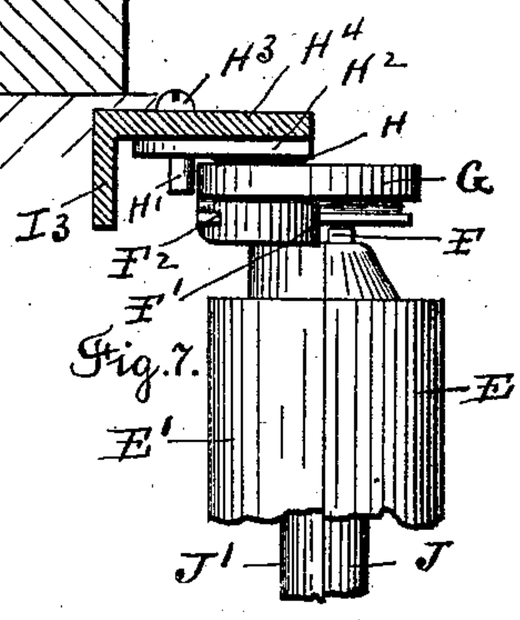

Fig. 7.

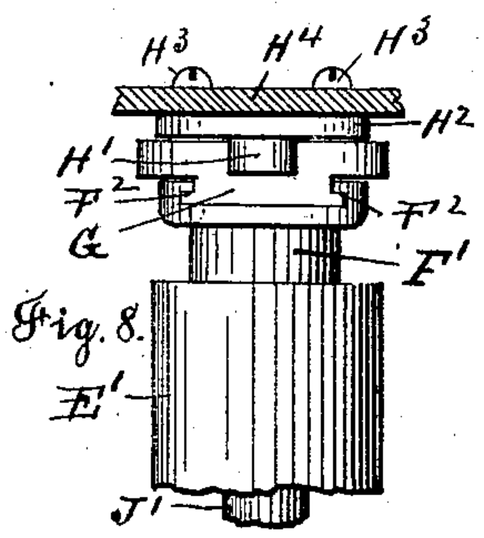

Fig. 8.

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(No Model.) 3 Sheets—Sheet 3.

# G. F. WRIGHT.

## WIRE NETTING MACHINE.

No. 529,093. Patented Nov. 13, 1894.

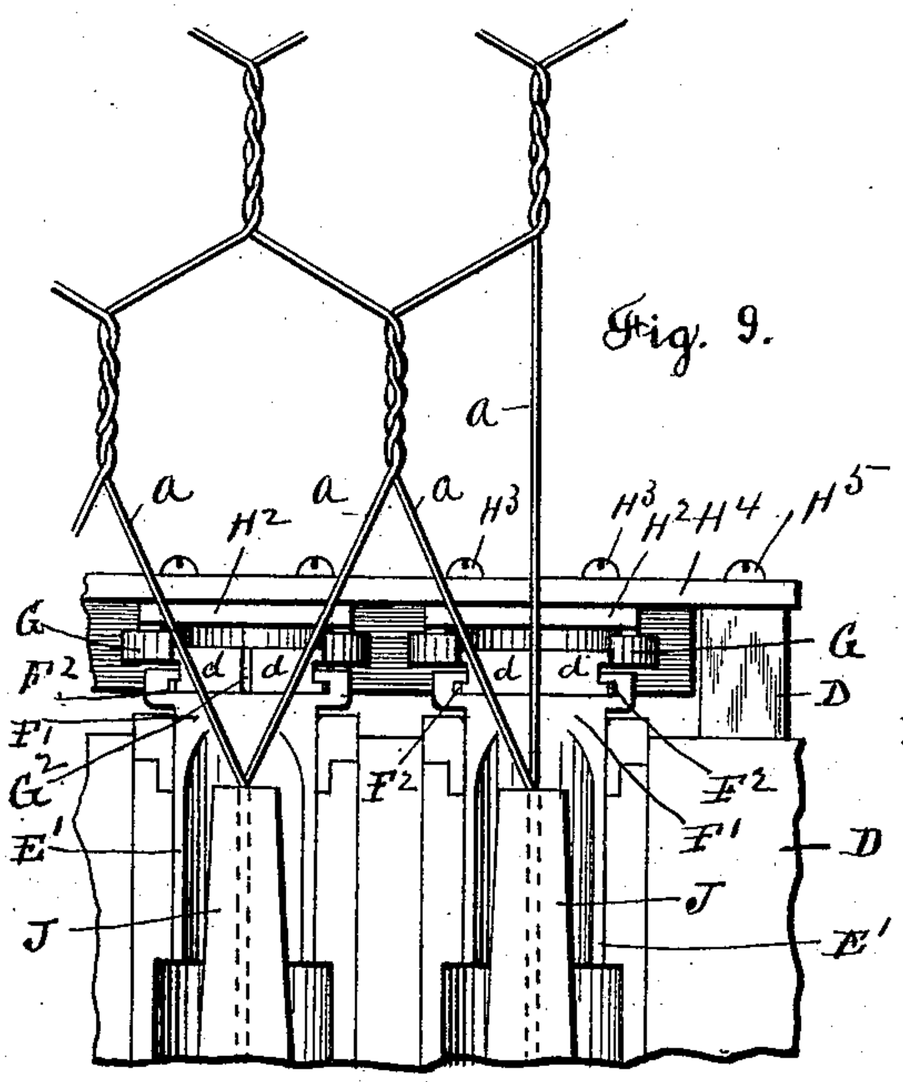


Fig. 9.

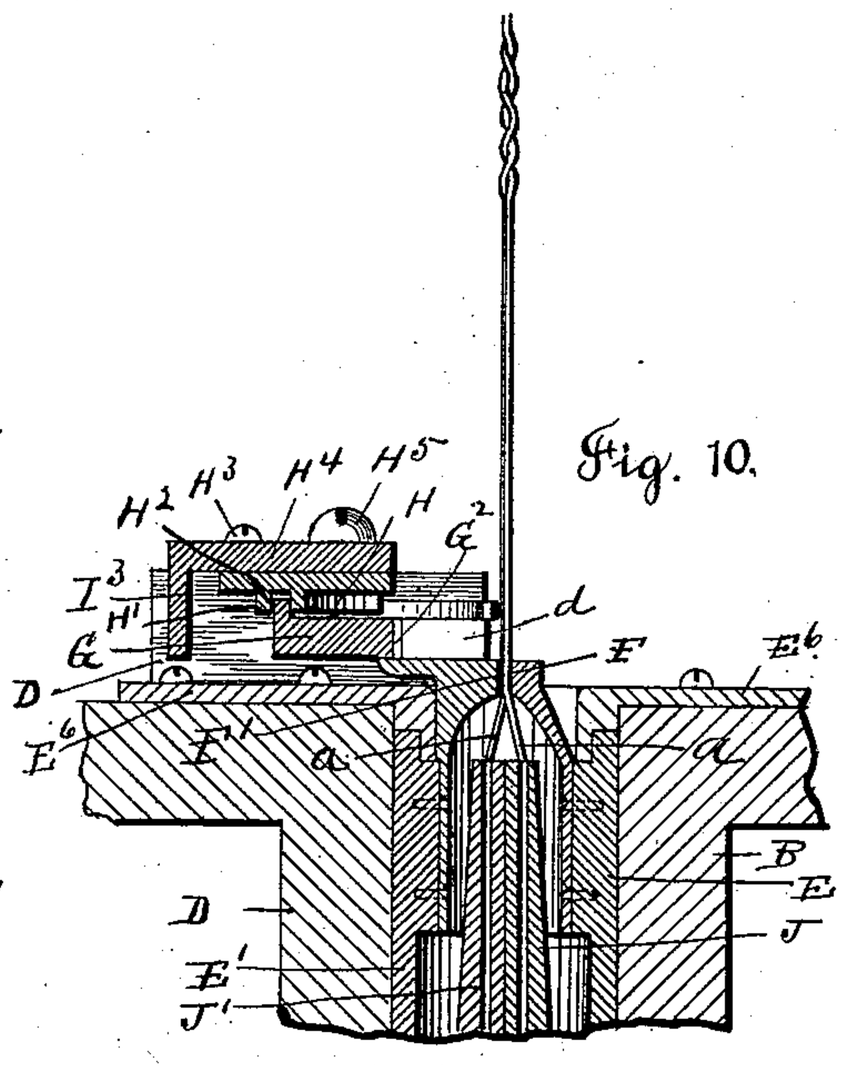


Fig. 10.

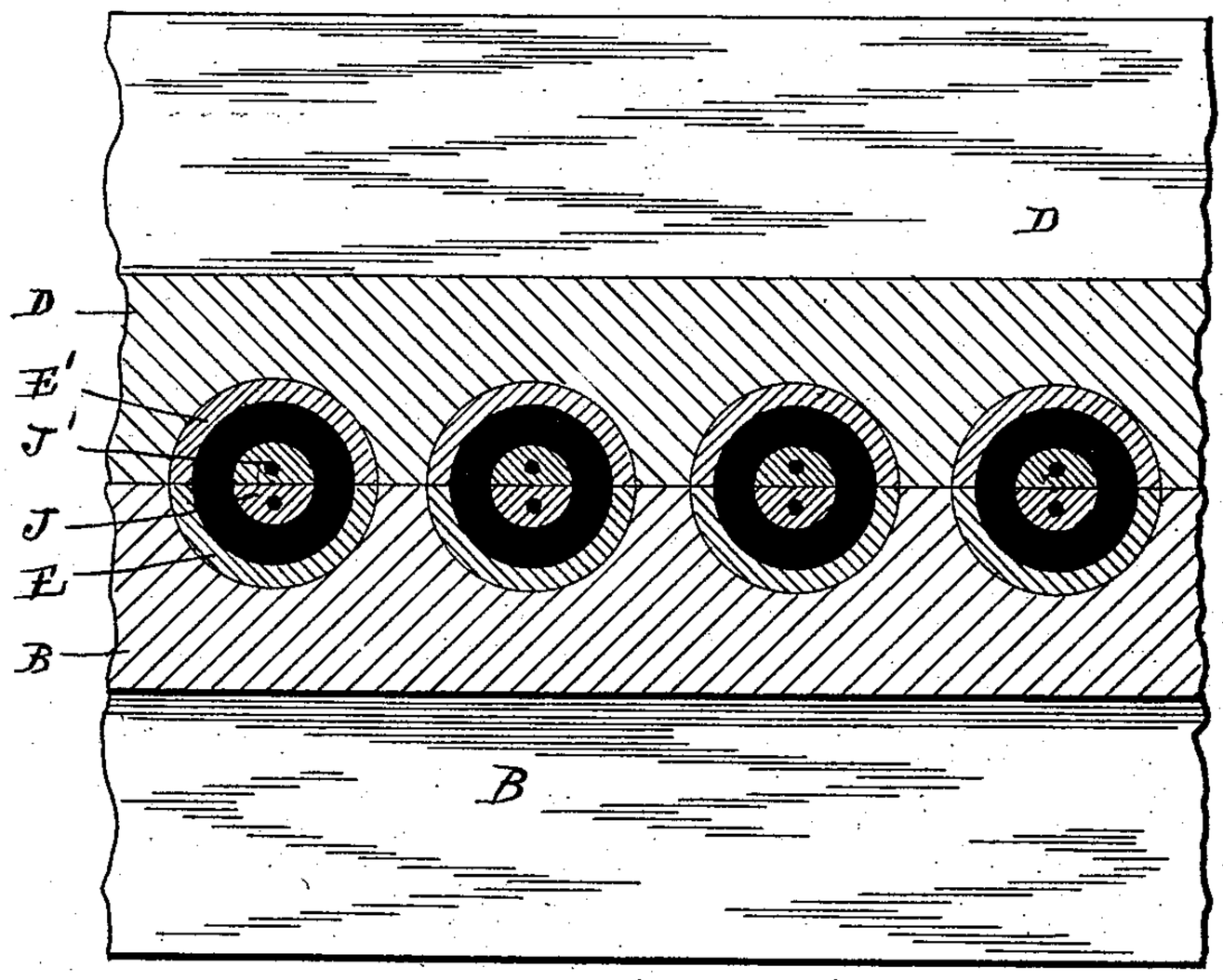


Fig. 11.

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# UNITED STATES PATENT OFFICE.

GEORGE FLETCHER WRIGHT, OF WORCESTER, MASSACHUSETTS.

## WIRE-NETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 529,093, dated November 13, 1894.

Application filed March 26, 1892. Serial No. 426,616. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE FLETCHER WRIGHT, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Wire-Netting Machines, of which the following is a specification, accompanied by drawings representing a machine for making wire netting and embodying my invention, and in which—

Figure 1 represents a front view of so much of the machine as comprises the operative mechanism by which the meshes of the netting are formed. Fig. 2 is a top view of the same with the take up roll removed, the section being taken on line 2—2, Fig. 1. Fig. 3 is an end view of the same the hand wheel by which the take up roll is turned having been removed. Fig. 4 is an enlarged central vertical sectional view on line 4—4, Fig. 2. Fig. 5 is a top view of the twisting plate shown in position during the operation of twisting the wires. Fig. 6 is a top view of the same showing its position when withdrawn to release the twisted wires and allow the sliding carriage to be shifted. Fig. 7 is a side view of the upper end of the rotating twisting mechanism detached from its supporting framework, and Fig. 8 is a rear view of the same. Fig. 9 represents two of the wire jaws in front view, the opposing jaws having been removed. Fig. 10 is a sectional view of a pair of wire jaws and the upper ends of the wire tubes, the sliding twisting plate being shown as withdrawn and the wires released therefrom, and Fig. 11 is a sectional view on line 11, 11, Fig. 4.

Similar letters refer to similar parts in the different figures.

My invention relates to certain improvements in machines for making wire-netting in which the wires forming the meshes are twisted together by a right and left hand twist, one half of each twisted section being a right hand twist and the other half being a left hand twist, and it consists in providing means by which the wires are twisted together as hereinafter described and set forth in the claims.

In Figs. 1, 2, and 3, I have represented such portions of a hand operated machine for making wire-netting as will illustrate the operation of the several parts. In practice, however, the operating parts are usually driven by power and the successive operations are made to succeed each other automatically through driving and controlling mechanism, which is common in machines of this class and will be readily understood by those familiar with the art of making wire-netting.

The construction and operation of machinery for making wire-netting are too well known to require detailed description and I have shown and described such parts only as are deemed necessary to fully illustrate the nature of my present invention.

Referring to the drawings, A denotes a supporting table or stand having a central opening A′, Fig. 4, through which are conducted the wires *a*, *a*, from spools or bobbins, not shown in the drawings.

Attached to the table A is a plate $A^2$ provided with a flange $A^3$ at its ends and rear, upon which rests the flanged frame B forming a chamber $A^4$. The flanged frame B is securely fixed in position so that the frame B and plate $A^2$ are rigidly held upon the table A.

Sliding in ways *b* upon the table A is a plate C provided with a flange C′ at its ends and side upon which is securely fastened the flanged frame D, forming a chamber $C^2$.

In the opposing faces of the frames B and D, which rest against each other, are formed a series of equidistant circular openings in which are journaled the twisting cylinders formed in halves E and E′ and represented in central sectional view in Fig. 4. These cylinders are provided with gear teeth $E^2$, which are engaged by a sliding rack $E^3$ by which the cylinders are made to rotate.

The half cylinders E and E′ are provided with flanges $E^4$ at their ends which are inclosed within the flanges $E^5$ of the cylinder holding plates $E^6$, which are attached by screws $E^7$ to the flanged frames B and D, although other means can be employed for retaining the half cylinders in position.

Attached to and projecting above the upper end of the twisting cylinder E, is a jaw F, and attached to and projecting above the end of the half cylinder E′, is a jaw F′, provided with ways $F^2$, (Fig. 9) in which slides a circular plate G provided with a triangular notch G′

(Fig. 6) and having at the apex of the triangular notch a short slot $G^2$ whose depth is equal to twice the diameter of the wires to be twisted and whose width or distance between the opposite sides *c*, *c*, is equal to the diameter of the wire to be twisted.

The distance between the opposing faces of the jaws F and F′ is equal to twice the diameter of the wires to be twisted, or the depth of the slot $G^2$.

The circular plate G forms the twisting plate, by the rotation of which the wires are twisted together into a right and left hand twist and during the operation of twisting, the plate G occupies a position concentric with the twisting cylinders, with the slot $G^2$ extending across the space between the opposing faces of the jaws F and F′, as shown in Figs. 4, 5 and 7, the wires to be twisted passing between the jaws and through the slot $G^2$ within which they are held side by side.

The twisting plate G is provided upon its upper side with a concentric flange $G^3$, which, during the operation of the twisting plate G, turns between the circular flange H and prong H′ upon the under side of the plate $H^2$ which is attached by screws $H^3$ to the under side of the sliding bar $H^4$.

The sliding bar $H^4$ is supported by its ends upon the frame D and is held by screws $H^5$ which pass through slots $H^6$ allowing the bar $H^4$ to be moved backward and forward by means of the lever handle I, pivoted upon a stud I′ upon the upper side of the frame D and pivotally connected with the lugs $I^2$ projecting from a flange $I^3$ extending downward from the edge of the sliding bar $H^4$. By moving the sliding bar $H^4$ backward and forward all the circular twisting plates G are moved in the ways $F^2$ in the jaws F′, the forward movement of the bar $H^4$ carrying the twisting plates into the position shown in Fig. 5 and the backward movement of the sliding bar carrying the twisting plates into the position shown in Fig. 6. By carrying the twisting plates forward into the position shown in Fig. 5 the wires to be twisted are pushed by the inclined sides *d*, *d*, into the slot $G^2$, the wires being held during the forward movement of the plates G by the face of the jaw F and as the slot $G^2$ is only as wide as the diameter of the wires, they are held from slipping by each other, causing them to be twisted above and below the plate into a right and left hand twist.

When the operation of twisting has been completed the sliding bar $H^4$ is drawn back into the position shown in Fig. 6, withdrawing the twisting plates G and releasing the wires from the slot $G^2$.

The wires *a*, *a*, as they approach the jaws F, F′ pass through the wire tubes J, J′. The wire tubes J are attached to the plate $A^2$ and the wire tubes J′ are attached to the sliding plate C, each pair of wire tubes during the operation of twisting being inclosed within the half cylinders E and E′, and when the operation of twisting has been completed and the twisting plates G withdrawn into the position shown in Fig. 6, the sliding plate C is moved along the ways *b*, *b*, by means of the lever handle K carrying the wire tubes J′ and half cylinders E′ to the next adjacent tubes and half cylinders, bringing a new pair of wires between the jaws F and F′. The twisting plates G are then moved forward over the jaws F and F′, causing the wires *a*, *a*, between the jaws F, F′ to be brought together by the action of the inclined sides *d*, *d*, causing them to enter the slot $G^2$ when the cylinders and twisting plates G are rotated by the longitudinal movement of the sliding rack $E^3$ as actuated by the hand wheel L and pinion L′. The twisting plates are then withdrawn into the position shown in Fig. 6 and the sliding plate C moved back the distance between the centers of the twisting cylinders. The twisting plates G are pushed forward and again rotated in the opposite direction by the longitudinal movement of the rack $E^3$, the take up roll M being rotated by the hand wheel M′ between each operation of twisting far enough to take up the completed meshes and draw the wires *a*, *a*, through the tubes J, J′.

The shifting of the wire tubes J′ and half cylinders E′ carried by the sliding plate C and by the frame D, so that the wires held in each of the wire tubes J′ may be twisted alternately with the wires held upon the right and left sides in the wire tubes J, forms no part of my invention, as this method of shifting the half cylinders is common in wire-netting machines, neither do I herein claim as my present invention the employment of a twisting plate by which the wires to be twisted are held during the rotation of the twisting plate, as such a device was shown and described in my application for Letters Patent of the United States filed February 19, 1892, Serial No. 422,132; but my present invention relates to the construction and arrangement by which the twisting plates are rendered capable of an independent movement for the purpose of engaging and releasing the wires. I do not, however, confine myself to the specific means by which said plates are moved, as in practice the several parts, which I have shown and described as operated by hand levers would be so connected and actuated by power driven mechanism in the manner common to machines of this class that the several operations would be successively and automatically performed.

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

1. In a wire-netting machine, the combination with a pair of rotating half cylinders, of a twisting plate carried by one of said half cylinders and capable of sliding in a plane at right angles with its axis of rotation, whereby the wires to be twisted are engaged and released by said twisting plate, substantially as described.

2. In a wire-netting machine, the combination of the half cylinders E and E′, jaws F and F′, the jaw F′ being provided with ways, a twisting plate sliding in said ways and in a plane at right angles with its axis of rotation, whereby the wires to be twisted are engaged and released, substantially as described.

3. In a wire-netting machine, the combination of the rotating half cylinders E and E′, a twisting plate carried upon one of said half cylinders and capable of sliding in ways in a plane at right angles with its axis of rotation, a concentric flange on said twisting plate and a sliding plate engaging said flange, substantially as described.

4. In a wire-netting machine, the combination of a pair of rotating half cylinders, a twisting plate carried by one of said cylinders and capable of sliding in ways in a plane at right angles with its axis of rotation, a concentric flange on said twisting plate and a sliding plate provided with a segmental flange H and a prong H′ by which the flange of said twisting plate is engaged, substantially as described.

5. In a wire-netting machine, the combination of the half cylinders E and E′, jaws F and F′, a twisting plate carried in ways upon one of said jaws and capable of sliding in said ways in a plane at right angles with its axis of rotation, and connected means by which said twisting plate is moved in its ways to engage or release the wire to be twisted, substantially as described.

Dated this 2d day of March, 1892.

GEORGE FLETCHER WRIGHT.

Witnesses:
RUFUS B. FOWLER,
EMMA KESTER.