(No Model.) 2 Sheets—Sheet 1.

G. H. SHELLABERGER.

PULL-OUT FOR WIRE WEAVING MACHINES.

No. 590,937. Patented Sept. 28, 1897.

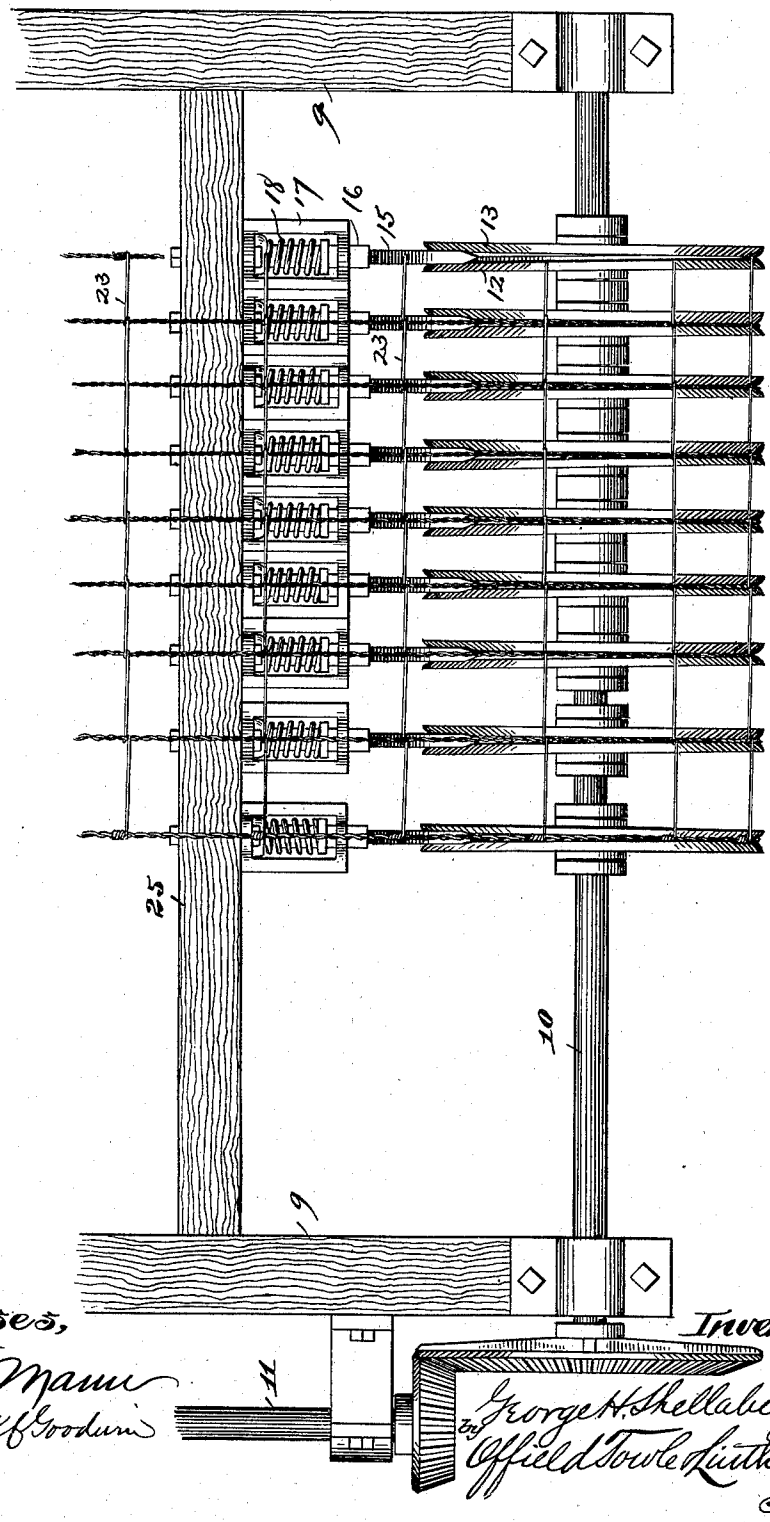

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

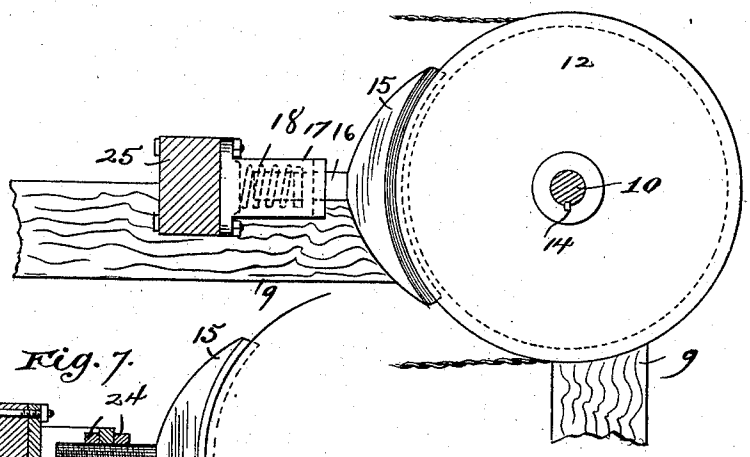


Fig. 7.

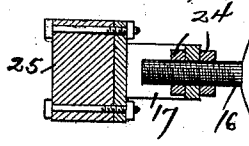


Fig. 3.

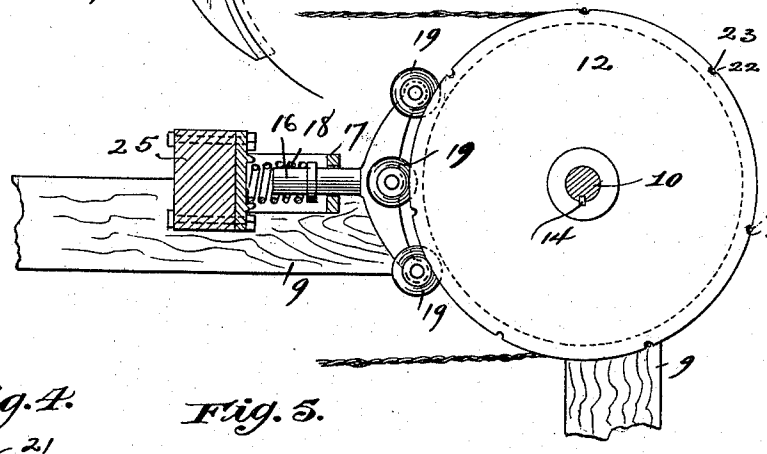


Fig. 8.

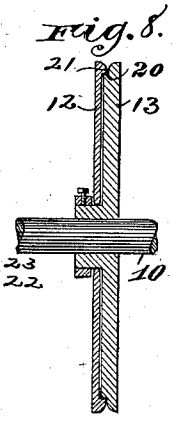


Fig. 4.

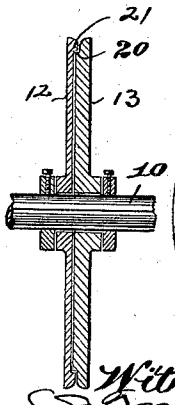


Fig. 5.

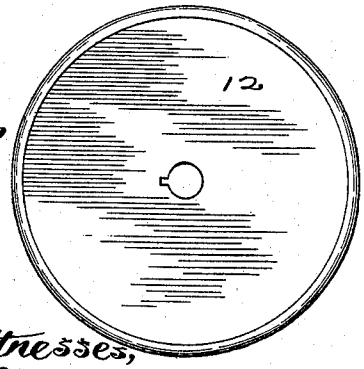
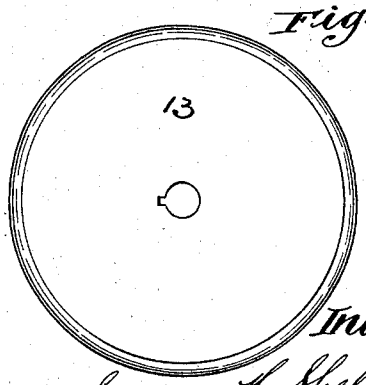


Fig. 6.



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By Offield Towle Graham & Offield
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE H. SHELLABERGER, OF DE KALB, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE DE KALB FENCE COMPANY AND THE I. L. ELLWOOD MANUFACTURING COMPANY, OF SAME PLACE.

PULL-OUT FOR WIRE-WEAVING MACHINES.

SPECIFICATION forming part of Letters Patent No. 590,937, dated September 28, 1897.

Application filed July 13, 1896. Serial No. 598,953. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. SHELLABERGER, of De Kalb, Illinois, have invented certain new and useful Improvements in Pull-Outs for Wire-Weaving Machines, of which the following is a specification.

The object of this invention is to provide an attachment for wire-weaving machines for the purpose of pulling out or withdrawing the fabric as the weaving progresses.

The invention is applicable to many kinds of wire-weaving machines, such as those employed for making woven-wire fabric used for a variety of purposes, including fencing, and is also applicable to barbed-wire machines and to machines for making various styles of picket fence having as elements thereof longitudinal wires interwoven with wire or wooden pickets.

My improved pull-out comprises a series of disk clamps mounted in pairs upon a rotatable shaft and turning therewith, one or both of said disk clamps being capable of a slight rocking movement, so as to enable the separation of the proximate faces of the pairs of clamping-disks on one side of their axis to permit the entrance of the strand-wires of the fabric between them, and a series of opening devices in the form of wedges, which enter between the disks upon one side to open them and to permit such entrance of the strand-wires and closing them tightly upon the strand-wires at the opposite side.

The construction is such that the strands are clamped and securely held through about one-fourth of the circular path of the periphery of the disk.

The opening device may be of various forms and the construction and arrangement of the disks may be slightly varied. I prefer to adjustably mount the opening devices and arrange a thrust-spring so as to yieldingly support the wedges, in order to accommodate variations in the thickness of the wires and to avoid a rigid construction.

In the accompanying drawings I have shown my invention in the preferred form and modification of certain of its structural features.

In the drawings, Figure 1 is a plan view. Figs. 2 and 3 are side elevations sectional through a shaft and a portion of the framework. Fig. 4 is a transverse sectional view through a portion of the clamp-disks. Figs. 5 and 6 are face views of the inner sides of the disks. Fig. 7 shows a modification in the manner of mounting the openers; Fig. 8, a modification in the construction of the disks themselves.

In Fig. 8 the disk clamp 13 has a wide hub, and the disk clamp 12 is apertured to pass over said hub and is adapted to rock thereon. In such case a retaining-collar 26 is employed.

9 represents the framework, which may be a portion of the supporting-frame of a wire-fabric machine. 10 represents a shaft mounted thereon, and 11 a driving-shaft.

On the shaft 10 are mounted a series of disk clamps, (shown in detail in Figs. 4, 5, and 6 and marked, respectively, 12 and 13,) as shown in Fig. 4, both of said clamps being keyed so as to be rotated with the shaft, the key-seats shown in Figs. 5 and 6, and the key (marked 14) in Fig. 3.

The bore of the hubs is slightly larger than the diameter of the shaft, so that the disk clamps have a slight rocking movement angular to their axis. The members of each pair of disk clamps are maintained slightly separated at their peripheries through about three-fourths of their circumferences and are held tightly closed against each other through an arc of about ninety degrees. This is accomplished by the employment of the opening devices, which may be of the construction shown in Fig. 2, consisting of a wedge 15, having its front edge curved to enter between the disk clamps. These wedges have stems 16, which slide in the guides 17 and are backed up by the spring 18, which tends to thrust them between the edges of the disks.

In the construction shown in Fig. 3 the rolling wedges 19 are employed, mounted in the same manner as in the previously-described construction.

In order to prevent the wire from entering too far, the disk clamp 13 has an offset shoulder 20 and the disk clamp 12 has the overhanging flange 21. The inner edges of the

disk clamps are preferably beveled or rounded, as shown, to permit the easy entrance of the strand-wires.

In Fig. 3 the disk clamps are shown as provided with shallow notches or recesses 22 to receive the transverse pickets or stay-wires 23 of the fabric.

Obviously the structural details herein shown may be varied—as, for example, one member of each pair of disk clamps may be stationary and the other member permitted a slight rocking movement.

The operation will be understood without further description.

The device is adequate to pull out a wire fabric as the weaving thereof progresses, and it may be driven either continuously or intermittently. By slightly varying the form of the wedge or the mounting of the disk clamps the latter may be made to clamp the fabric during a greater or less portion of their rotation. The clamping and releasing of the fabric is automatic, and the device, while simple in its construction and operation, is adequate to pull out the fabric evenly, so as to insure a uniform feed, and consequently even lengths of the longitudinal strands of the fabric, and consequently an equal tension throughout the fabric and the avoidance of warping and twisting thereof, thus enabling the fabric to be stretched easily and evenly.

By using wedge-shaped opening devices and beveling the inner edges of the peripheries of the disk clamps all wear is compensated for. The pull-out will work with little friction, requiring small power for its operation.

Instead of mounting the wedges upon springs their stems may be screw-threaded, as shown in Fig. 7, and provided with adjusting-nuts 24, or they may be rigidly mounted upon the beam 25 and the latter made adjustable.

I claim—

1. In a pull-out for wire-weaving machines, a pair of rotatable clamping-disks adapted for the separation of their proximate faces on one side of their axis of rotation, and an opening device operating between said faces at the peripheries of the disks, substantially as and for the purpose described.

2. In a pull-out mechanism for wire-weaving machines, the combination with a rotatable shaft, of a pair of clamping-disks mounted upon and secured to rotate with said shaft, and one or both disks capable of a slight rocking movement whereby the proximate faces of said clamp-disks may be separated upon one side of their axis and clamped at the opposite point, substantially as described.

3. In a pull-out mechanism for wire-weaving machines, the combination with a rotatable shaft, of clamping-disks arranged in pairs mounted upon said shaft and adapted for separation at their peripheries, the inner edges whereof are beveled, and wedge-shaped opening devices operating between the peripheries of the disk clamps, substantially as described.

4. In a pull-out mechanism for wire-weaving machines, the combination with a series of clamping-disks arranged in pairs and capable of separation at their peripheries, and a series of yieldingly-mounted opening devices having wedge-shaped edges adapted to enter between the edges of the disks, substantially as described.

5. In a pull-out mechanism for wire-weaving machines, the combination with a rotatable shaft, of a pair of clamping-disks mounted thereon and capable of a slight rocking movement on the shaft; said disks having the inner edges of their peripheries beveled, one of said disks being provided with a shoulder or flange to form a seat for the strand to be clamped, and an opening device adapted to enter between the edges of said disks whereby to separate them, substantially as described.

6. In a pull-out mechanism for wire-weaving machines, the combination with clamping-disks arranged in pairs, one of said disks having its periphery beveled and recessed to provide a shoulder, and the other of said disks having its edge also beveled and provided with a flange overhanging the shoulder, each pair of disks being mounted so as to rock upon the support, and wedge-shaped opening devices, one for each pair of disks, and whereby their proximate faces may be separated, substantially as described.

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