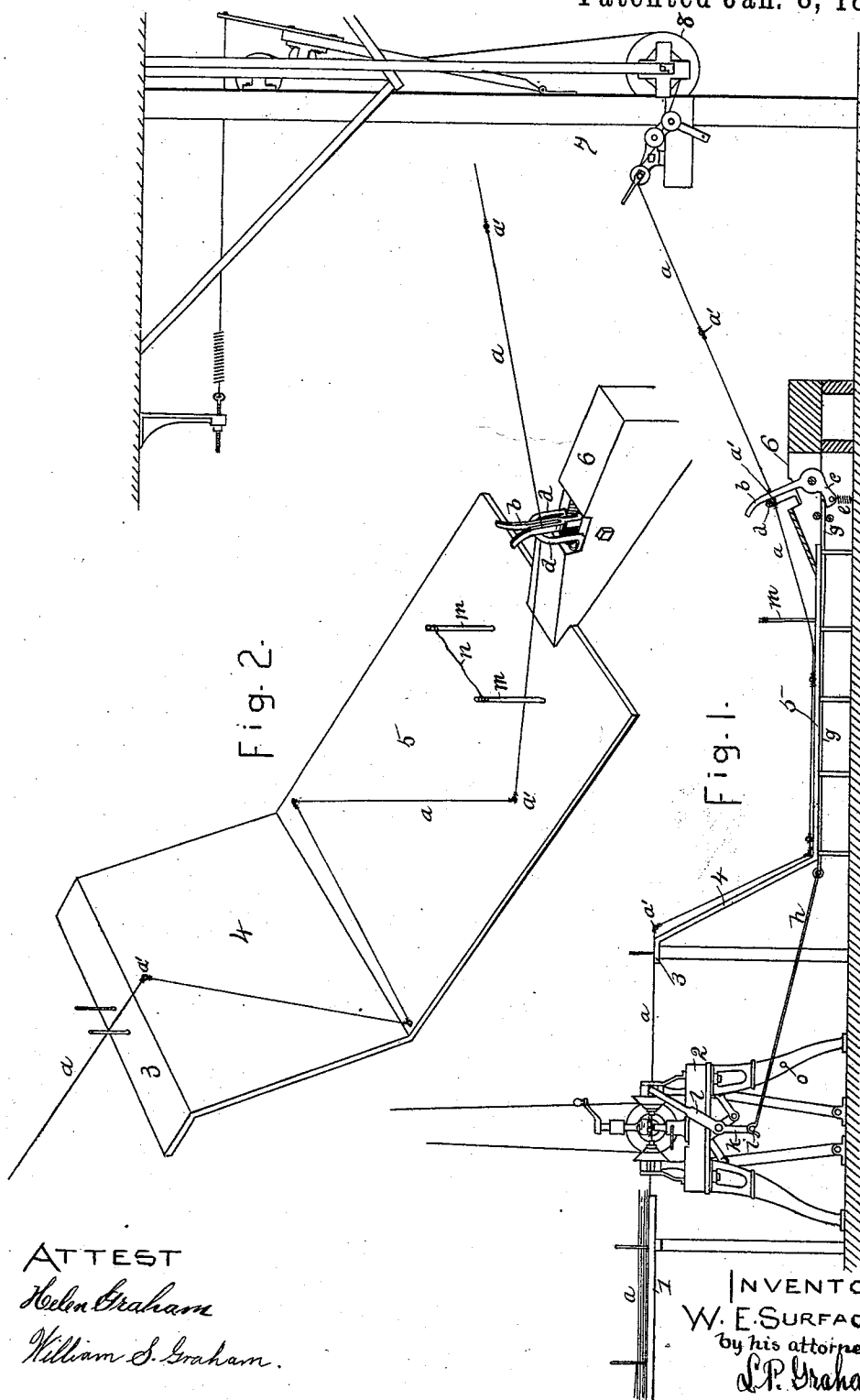


(No Model.)

W. E. SURFACE.
MECHANISM FOR REELING CHECK ROW WIRE.

No. 532,112.

Patented Jan. 8, 1895.



ATTEST

Heben Graham

William S. Graham.

INVENTOR.
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by his attorney
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UNITED STATES PATENT OFFICE.

WILLIAM E. SURFACE, OF DECATUR, ILLINOIS, ASSIGNOR TO THE FARIES MANUFACTURING COMPANY, OF SAME PLACE.

MECHANISM FOR REELING CHECK-ROW WIRE.

SPECIFICATION forming part of Letters Patent No. 532,112, dated January 8, 1895.

Application filed January 27, 1894. Renewed November 5, 1894. Serial No. 527,982. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. SURFACE, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Mechanism for Reeling Check-Row Wire, of which the following is a specification.

My invention relates to mechanism for reeling up check row wire as it is knotted on a knotting machine, and it is embodied in the mode of operation, details of construction, combinations and relative arrangement of parts hereinafter set forth and claimed.

Previous to this invention it has been attempted to reel the wire from knotting machines by running the wire taut from the machine to the reel, drawing the links from the machine by the rotation of the reel, and holding the reel against rotation during the formation of each knot. The time consumed in withdrawing a link after the knot is formed is very short as compared with the time required to form the knot. The reel consequently had long intervals of rest between very short and rapid movements, and the jerking resulting from the quick stops and starts damaged the wire and mechanism to such an extent that it was necessary either to run the machine so slow as not to be profitable, or to return to the common method of reeling on a separate reel by an independent operation.

In the operation of my device slack wire is interposed between the reel and the machine, and the reel is run while the knotting operations are performed. The slack wire is in the nature of a reserve supply which enables the reel to take up one link while the link in process of completion is held in the knotting machine. By utilizing the time of the withdrawal of the links and a considerable portion of the time of formation of the knots, the reel is enabled to run sufficiently slow to avoid all danger of damage to the mechanism or the wire.

An incidental feature in the operation of my device consists in a peculiar arrangement of the slack wire, whereby tangling is prevented and free manipulation of the wire in the machine is permitted; and this, together with the appliances used to perform the op-

erations will appear from the following detailed description and appended claims.

In the drawings forming part of this specification Figure 1 is a representation of the different appliances used in the making and reeling of the wire, the knotting machine and adjuncts, and the reeling machine being shown in side elevation, while the stop device is shown in central longitudinal vertical section. Fig. 2 is a perspective view representing the preferred arrangement of the slack wire, and showing the reel stop, the rest, the incline and the table, or floor, on which the wire is arranged.

1 designates a stand on which the lengths of wire are laid preparatory to knotting.

2 is a machine capable of joining links of wire together in such manner that the joints, or knots, may be used to actuate the dropping mechanism of planters.

3 is a rest that carries one end of a link while the other end is operated on by the machine.

4 is an incline down which the links hang as fast as completed.

5 is a table, or floor, that is used to support the slack links of wire.

6 is a housing for the reel stop.

7 is the reeling machine, and 8 is a reel upon which the wire is wound. The links of wire are designated by *a*, and the knots, or joints, by *a'*.

b is a forked lever, with diverging ends, which is pivoted in housing 6, and provided at its lower end with bell crank extension *c*.

d is an arched rod that is secured at both ends to the housing 6, and that crosses the forked lever in front and below the diverging portions of the forks.

e is a spring that connects the bell crank extension with something immovable, as for instance the floor of the building.

g is a bolt that normally engages the extension *c* and holds the forked lever in contact with the arch.

h is a rod that connects with the bolt and provides means for withdrawing the bolt from contact with the extension of the forked lever. The rod is preferably provided with a hooked end, as *i*, which may engage a pin on

some intermittently moving part of the knotting machine, as for instance, arm *k* which is an extension of the lever *l*, used to move the coiling wheels into operative position. The connecting rod may, when not in use, rest on pin *o*, which projects from a leg of the knotting machine. Pins *m m* project upward from table 5. They are connected at their upper ends by wire *n*, and the pins and wire together form a guide to aid in directing the check row wire toward the stop mechanism.

The knotting machine is operated in the customary manner until a sufficient number of knots have been formed to enable the wire to be passed through the stop to the reel, as indicated in the drawings, and to provide sufficient slack to permit the reel to run while the knotting operation is in progress, as before explained. The reel is driven by a continually moving belt or other friction driver, and the wire, after being connected with the reel, is wound up until a knot on the wire encounters the lever and arch, when the belt will be compelled to slip until, at a certain period in the formation of another knot, the lever is released by withdrawing the bolt. As the lever rocks away from the arch the knot rides along the inclined surfaces of the fork into the space between the diverging ends, thereby freeing itself and the reel, and permitting the lever to be retracted by the spring and locked by the bolt preparatory to a repetition of the operation. As the release of the stop may be always coincident with some particular step of the knotting operation, it is advantageous to connect rod *h* with an intermittently moving part of the machine, something after the manner indicated, and so permit the releasing bolt to be automatically operated. This is not essential, except as a matter of convenience, as the operator may make the release of the stop a part of his work and perform it during each knotting operation, or at the beginning or ending thereof, with sufficient uniformity for all practical purposes.

In Fig. 2 the wire is shown disposed in zig zag lines, or in other words, each link forms an angle with its fellow, and this arrange-

ment prevents the slack wire from tangling and permits free manipulation of the wire in the machine. The particular arrangement of the incline 4 and table 5, shown in the drawings, is convenient in the operation of the device; and particularly in carrying the slack wire, but I do not consider it essential to my invention.

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

1. Mechanism for making and reeling check row wire, comprising a knotting machine in which the wire is detained during the act of knotting and is passed quickly out a section at a time after each knot is formed, a friction-driven reel on which the wire is wound, such reel being speeded slower than the normal movement of the wire from the knotting machine, and a trip-stop adapted to engage knots on the wire and arrest the motion of the reel, whereby the reel may be run more nearly continuously or with shorter intervals of rest, substantially as set forth.

2. Mechanism for making and reeling check-row wire, comprising a knotting machine, a reel driven by friction, and a trip stop adapted to engage the knots of the wire and stop the reel when locked and to release the knots and reel when tripped, substantially as set forth.

3. Mechanism for making and reeling check-row wire, comprising a knotting machine, a reel driven by friction, a forked lever adapted to engage the knots of the wire, and a bolt adapted to lock the lever in position to hold the knots, substantially as set forth.

4. In combination with a knotting mechanism and a reeling mechanism the stop mechanism consisting in the combination of the forked lever, the bell crank extension, the sliding bolt adapted to engage the extension, and the arch crossing the front of the lever, substantially as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

WM. E. SURFACE.

Attest:

W. H. BARNETT,
E. S. McDONALD.