E. CHAPMAN.

WIRE-TWISTER FOR SELF-BINDERS.

No. 184,505. Patented Nov. 21, 1876.

Fig 1.

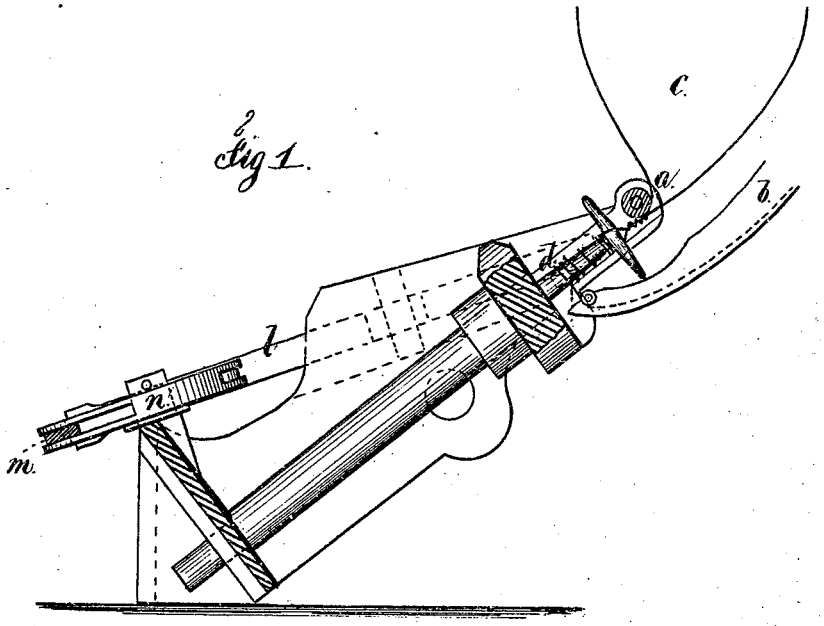
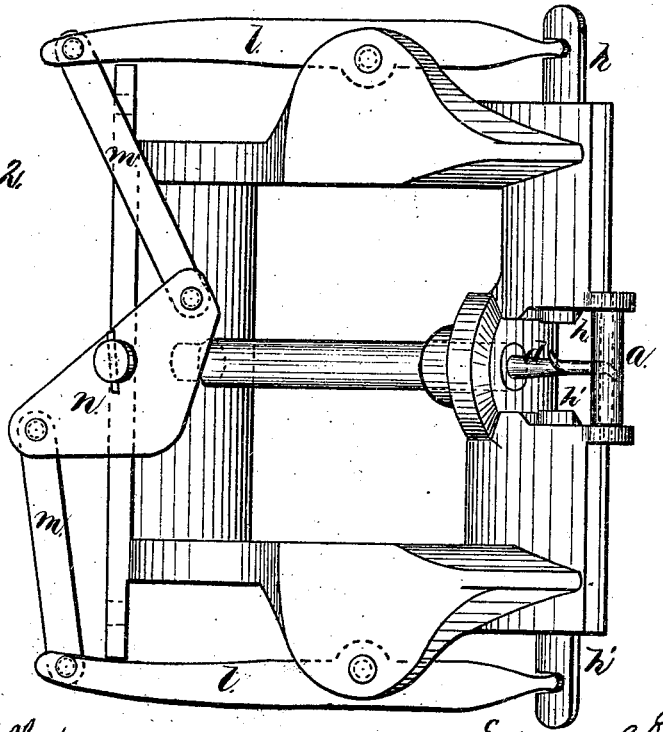


Fig. 2.



Witnesses.

Geo. D. Walker

Harold Serrell

Inventor.

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UNITED STATES PATENT OFFICE.

EDWIN CHAPMAN, OF ROCHESTER, MINNESOTA, ASSIGNOR TO THE CHAPMAN BINDER COMPANY.

IMPROVEMENT IN WIRE-TWISTERS FOR SELF-BINDERS.

Specification forming part of Letters Patent No. **184,505**, dated November 21, 1876; application filed September 4, 1876.

To all whom it may concern:

Be it known that I, EDWIN CHAPMAN, of Rochester, in the State of Minnesota, have invented an Improvement in Twisting Mechanism for Self-Binding Harvesters, of which the following is a specification:

Harvesters have been made with a revolving hook for twisting together the ends of the wire that secures the bundle. With this kind of twister the end of the wire remains simply in a coil around the hook after the bundle and its band are delivered, and it is liable to become misplaced, or to untwist and draw off the hook under the strain to which it is subjected in drawing the wire around the next bundle. To prevent this the wire has to be heavier or stiffer than would otherwise be required for binding the bundle of grain, and the coil of wire left upon the end of the hook after the separation of the twisted wire band has to be forced off the hook by the next coil that is twisted upon the hook.

My improvement consists in a twister with a tapering shank and a T-head, applied in connection with the parts that compress the bundle and carry the wire, in such a manner that the T-shaped end of the twister in its revolution catches and twists together the two parts of the wire that are brought near each other after passing around the bundle, and at the same time twists a coil of wire around the shank of the twister. After this is done, there are two cutters brought up at opposite sides of the twister, that separate the wire, so that the completed bundle falls away, and at the same time the coil of wire that had been left around the shank to hold the end of the wire to the twister is cut at opposite sides and falls away.

By this construction I am enabled to use smaller and softer wire than heretofore, because the twisting operation is very perfect, securing the ends of the wire together, and the coil of wire that is left around the tapering shank of the twister is not liable to be pulled off or uncoiled, because it draws up against the T-head as the wire-carrying arm draws back, leaving the wire for the grain to fall against it. This coil cannot escape, because the T-head effectually holds the same, and the wire passing up from the lower or back end of the coil draws the coil itself against the T-head, locking the same, and the wire bends at an angle against the T-head, so that it cannot move, and will be held or locked firmly, even when thin soft wire is used. After the wire has been twisted to hold the bundle, and a fresh coil has been wound around the shank a little distance away from the T-head, the first coil is cut to pieces and falls away, and the last coil draws along the tapering shank to the T-head as the wire is again stretched for a new bundle.

In the drawing, Figure 1 is an elevation of the twisting mechanism, and Fig. 2 is a plan of the same.

There are several grain-binding machines that have been patented, and one for which I have made application for a patent, in which the wire passes around a roller, *a*, in a nearly vertical position, and against which the grain falls, and the wire is carried by an arm, *b*, around the bundle *c*, and the said wire is brought by the arm adjacent to the portion of the wire below the roller *a*. It is at this point that my twister is to be employed, and its tapering shank *d* is in line, or nearly so, with these wires; and it has a cross or T head at the end, and one or both of the points should be bent into a curve, to insure the proper catching of the wires, and the twisting of them together by the revolution of the twister. Any suitable gearing is to be used to communicate to the twister the proper revolution at the right time.

I arrange the sliding cutters *h h'* at opposite sides of the shank of the twister, and near the head, and I bring them up simultaneously by levers *l* and links *m*, actuated by the double crank-piece *n*, or other suitable means, that are operated as soon as the revolution of the twister is stopped, to separate and cut to pieces the coil, as aforesaid.

I claim as my invention—

1. The wire-twister in a grain-binding machine, made with a cross or T head upon the end of a slightly-tapering shank, for the purpose of twisting the wires outside the T-head,

and winding the wire from the carrier-arm around the taper shank, substantially as described.

2. The combination, with the revolving twister and shank in a grain-binding machine, of two knives acting at opposite sides of the shank of the twister, to cut the wire for liberating the bundle and separating the coil of wire from the twister and shank, substantially as set forth.

3. The combination of the T-headed twister and its shank, and the cutters, with the levers for actuating the cutters, arranged and operated substantially as set forth.

Signed by me this 24th day of August, 1876.

EDWIN CHAPMAN.

Witnesses:

THOS. H. MCCONNELL,

C. H. BLISS.