2 Sheets—Sheet 1.

J. M. ROSEBROOKS.

GRAIN-BINDER.

No. 186,272. Patented Jan. 16, 1877.

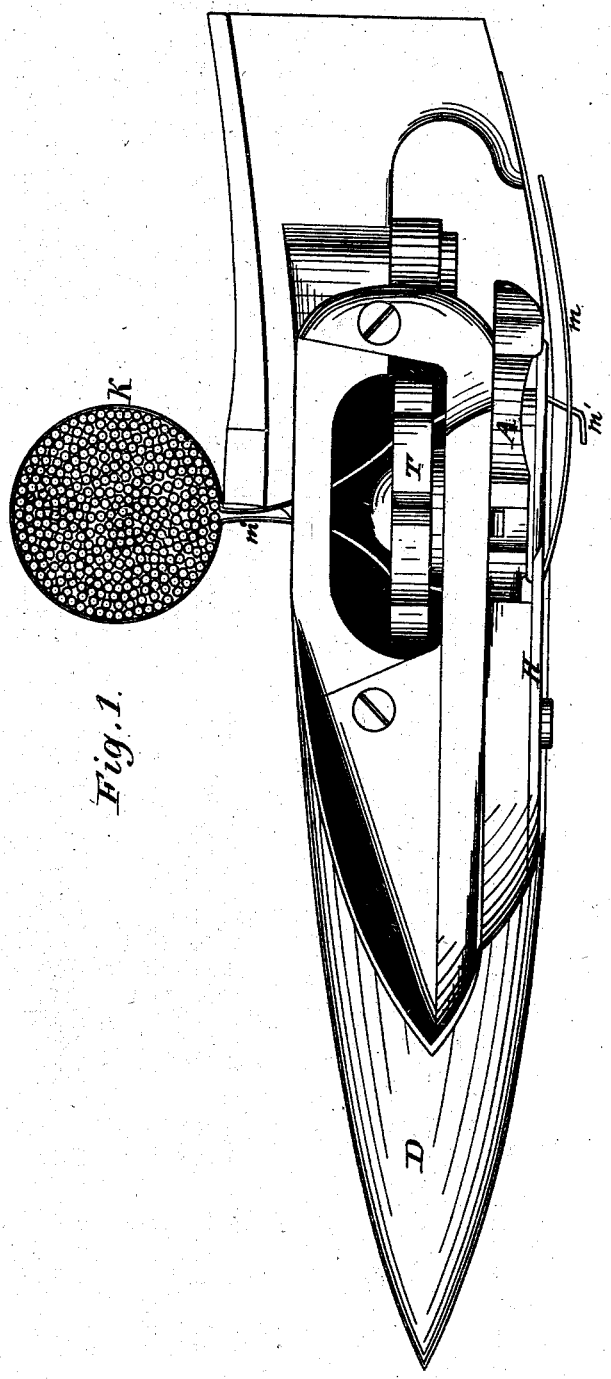

Fig. 1.

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2 Sheets—Sheet 2.

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Fig. 3.

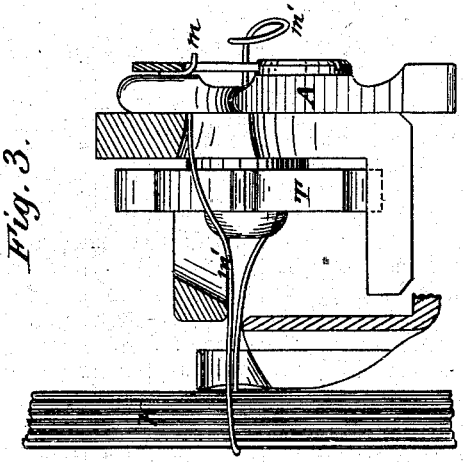
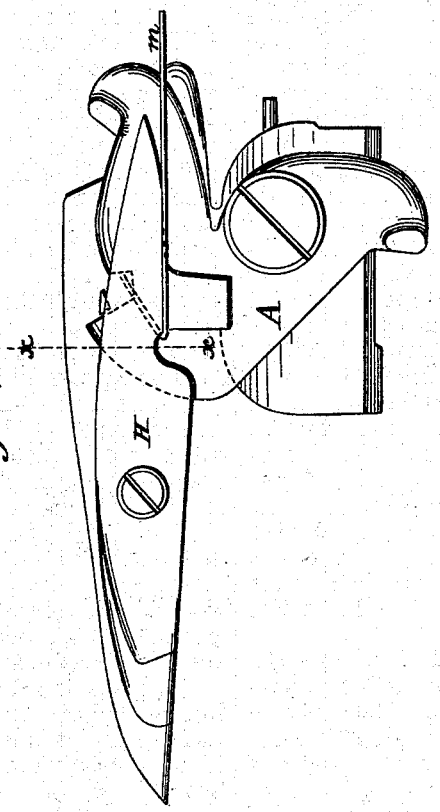


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN M. ROSEBROOKS, OF HOOSICK FALLS, NEW YORK.

IMPROVEMENT IN GRAIN-BINDERS.

Specification forming part of Letters Patent No. **186,272**, dated January 16, 1877; application filed October 12, 1876.

To all whom it may concern:

Be it known that I, JOHN M. ROSEBROOKS, of the village of Hoosick Falls, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Automatic Grain-Binders, of which the following is a full, clear, and accurate description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of the binding-head of an automatic grain-binder. Fig. 2 is an elevation of the spring wire-holder and a part of the binding-head, which shows a partial elevation of the cutter and jammer, and a plan of another portion of the binding-head. Fig. 3 is part elevation and part cross-section; the cross-section of Fig. 3 is taken through the line *x x* on Fig. 2.

This invention relates to that class of automatic binding-machines which carry the wire, or other material to bind the bundle, around the same by a constantly rotating or reciprocating movement, and, by means of the mechanism connected therewith, draws the wire from a spool located on some other portion of the machine, and when so drawn passes the wire around the bundle, and brings it in connection with the twisting device, and, when so brought in connection with the twisting device, takes hold of the wire, or any other material by which the sheaf is made, and retains the wire, or other material by which the sheaf is bound, in its grasp, after binding the bundle for the next sheaf.

In the drawings, Figure 1 represents the binding-head, which may be attached to a revolving or reciprocating arm, which may be advanced in its revolving or reciprocating motion from some point outside of the stream of grain which may be delivered to it, and is so formed that its point (represented by D) can pierce the grain as it is revolved or reciprocated toward the stream of grain. As it is presented to it, and while so passing toward and through the grain, it carries with it the wire, or other binding material which is intended to encircle the grain in the gavels. The jammer and cutter in these drawings are represented by A.

I do not deem it necessary to describe in detail the method of twisting and holding the wire, or other material by which the grain is bound, except to say that the drawings fully set forth the construction and operation, when taken in connection with a specification of Letters Patent granted to S. D. Locke, March 31, 1874, No. 149,233.

This invention is an improvement upon the invention set forth in said patent granted to said Locke.

In the said patent the specification states: "The front edge of said nipper is provided with a notch, *k*, and it works under stationary plate V, clamping the end of the band-wire thereunder, while it, by the same movement, cuts the wire free from the sheaf by means of the said notch *k*, acting against a stationary cutting-edge formed by a steel plate, *m*, inserted in the base-plate *h*. The thickness of the nipper-plate is not quite equal to the thickness of the space within which it moves beneath the plate V, so that the binding-wire may be drawn under said plate by the notch *k*, and clamped there while the head G is being carried around the gavel."

In this application, D represents the point of the binder-head, which passes into the grain, and corresponds to G in the patent of said Locke, constructed in two parts, one being the pointed inclosing-shell *g*, and the other the base-block and shield *h*, as represented in said patent of Locke. In the drawings accompanying this specification, K represents the bundle encircled by the wire *m'*, which passes through, and is shown on each side of the twisting-pinion T.

The operation of twisting a half-turn, clamping the end of the wire for the next bundle, and cutting off the wire to release the band, is substantially the same as shown in the patent of Locke aforesaid.

In practice I have found that frequently on one spool of wire used in the field there has been a variation in the diameter of the wire. A spool of wire supposed to be No. 20, put on the machine, would run off a certain distance No. 20, and quickly get to be No. 22, or possibly get to be No. 19 wire, owing to the carelessness of the wire-manufacturer by winding two or more sizes of wire on the same spool.

Again, I have found that different sizes of

wire are sometimes furnished to supply the purchasers of binding-machines, and to an unpracticed eye it is difficult to detect the difference between two sizes of wire small as is used for binding grain.

I propose to remedy this difficulty by using a spring, which is represented in the drawings connected herewith by H, which has sufficient elasticity to allow the use of wire of different sizes, (within ordinary limits,) and to pass through and be held by the binding-head, so that in case there is a change in size of the wire, either by the mistake of the wire-maker in reeling on the same spool two sizes of wire, or the necessity of change of wire from one size to another by the consumer, the difficulties of "losing the end" will not occur.

Having thus fully described the nature and object of my invention, what I claim, and desire to secure by Letters Patent, is—

The yielding spring H, in combination with an oscillating jammer for holding the wire, substantially as described.

JOHN M. ROSEBROOKS.

Witnesses:

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A. J. DUDLEY.