J. GARRARD.

Grain-Binder.

No. 169,251. Patented Oct. 26, 1875.

Fig., 1.

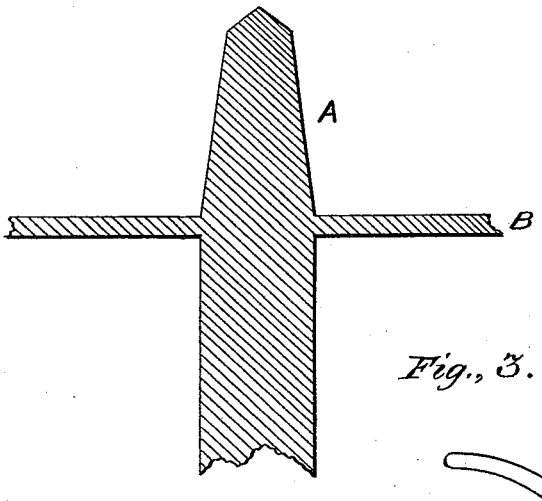


Fig., 2.

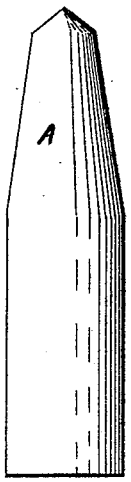
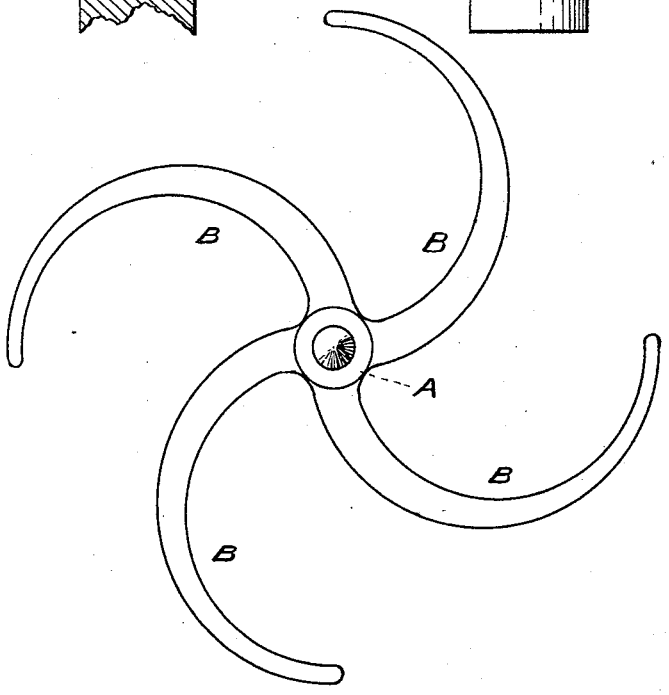


Fig., 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JEPTHA GARRARD, OF CINCINNATI, OHIO.

IMPROVEMENT IN GRAIN-BINDERS.

Specification forming part of Letters Patent No. **169,251**, dated October 26, 1875; application filed August 7, 1875.

To all whom it may concern:

Be it known that I, JEPTHA GARRARD, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Grain-Binders, of which the following is a specification:

The invention relates especially to machines for binding grain with wire. The invention consists in constructing a twister with a spindle projecting from the point or plane at which the wires are held toward or into the bundle, in such a manner that the wires will be caused to wrap around the said projecting spindle, and will climb thereon and form off the end thereof a twist, which will secure the bundle in a sheaf. The object of the invention is to afford means of putting a tight band around a bundle of straw, and drawing it into a cylindrical shape.

To make a good bundle it is requisite that the band, after it is secured about a rounded bundle, shall have a diameter so near the same as the bundle when rounded as to prevent any change of shape or size in the bundle. My invention secures this object by causing a reduction in the diameter of the bundle in the act of twisting the wire, and at the same time forcing the wires to twist toward the bundle, so that there results a cylindrical bundle, and a band placed so closely about it as to prevent any subsequent expansion.

In the accompanying drawing, Figure 1 is a vertical longitudinal section of a portion of a twister and spindle illustrating the invention. Fig. 2 is an elevation of the point of the spindle. Fig. 3 is a front view of the twister and spindle.

In Figs. 1, 2, and 3, A represents a conical-ended spindle, and B B a series of curved arms projecting radially from the side of the said spindle at some distance from its point or extremity. The arms B have a form which is common in twisters for binding grain with wire, the said arms being intended to catch the two ends of the wire band and twist them one around the other. According to the present invention the rotation of the twister will cause the wire to be wrapped around the projecting end of the spindle A, and by reason of the conical or tapering form of said projecting end of the spindle, or by reason of the angle or position of the wires, the wires will be caused to climb thereon, and thereby to approach the surface of the bundle, toward or into which the point of the spindle projects until, on reaching the extremity of the spindle, the two parts of the wire come in contact, and are firmly twisted together.

It will thus be understood that the climbing of the wire on the twister causes it to reduce the diameter of the bundle, and finally draw it into cylindrical shape, if the parts of the bundle are free to move on themselves. The bundle is thus firmly bound in cylindrical shape before it is discharged from the machine.

The invention is not limited in its application to any particular machine for cutting and gathering the grain; but suitable machinery of my invention for these purposes will be described in other applications.

The following is claimed as new:

A twister constructed with radial arms, and with a prominence converging at the point or end, rigidly connected, and projecting beyond the plane of said radial arms.

JEPTHA GARRARD.

Witnesses:

OCTAVIUS KNIGHT,

WALTER ALLEN.