

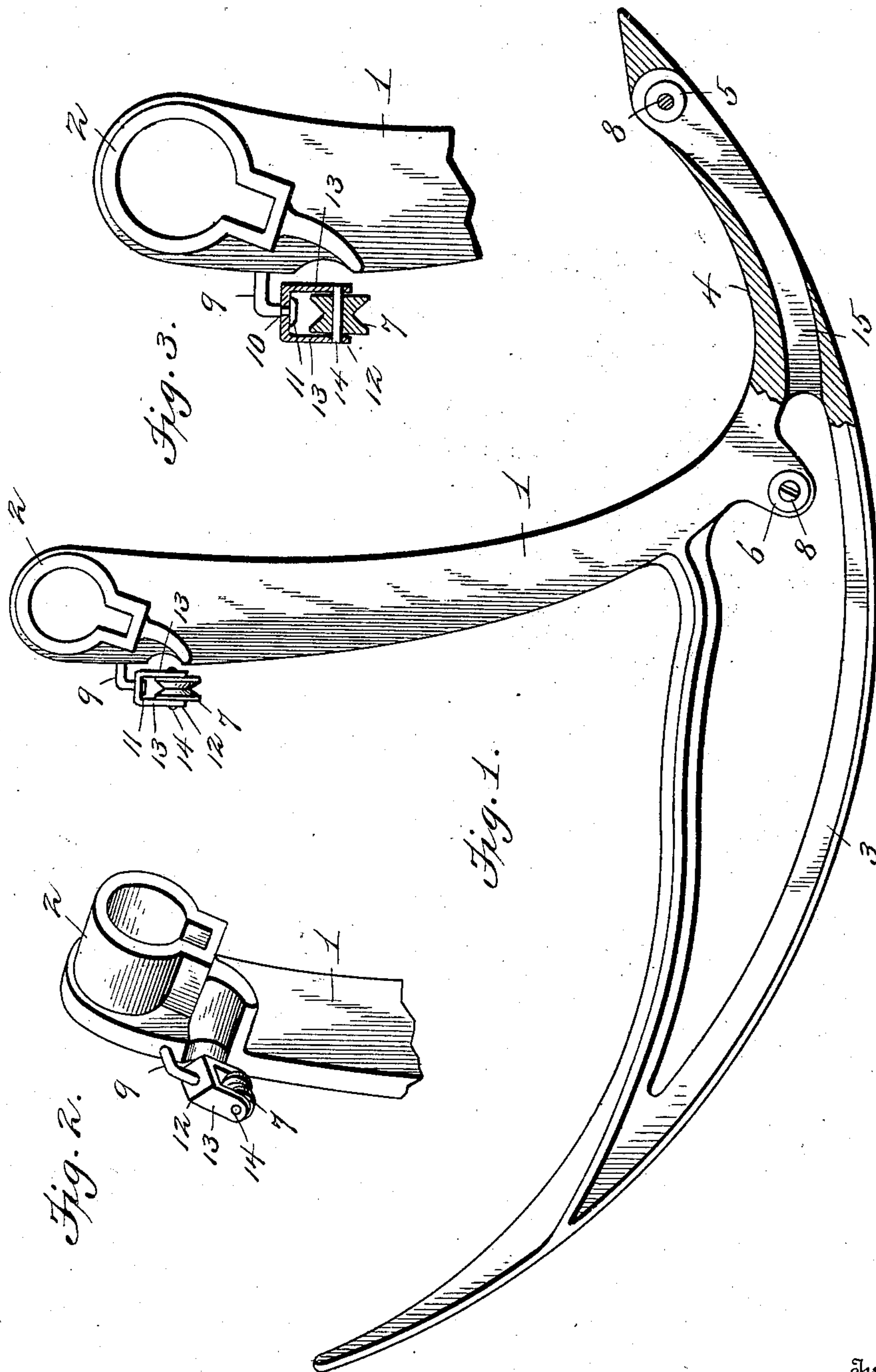
No. 661,779.

Patented Nov. 13, 1900.

J. VOLLMERS.  
NEEDLE FOR GRAIN BINDERS.

(Application filed Sept. 17, 1900.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOHN VOLLMERS, OF LAKE CITY, MINNESOTA.

## NEEDLE FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 661,779, dated November 13, 1900.

Application filed September 17, 1900. Serial No. 30,355. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN VOLLMERS, a citizen of the United States, residing at Lake City, in the county of Wabasha and State of Minnesota, have invented a certain new and useful Needle for Grain-Binders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to needles for grain-binders; and the object of the invention is to enable the twine or wire with which the bundles are bound to pass freely through the point or eye of the needle and also along the main body of the needle to the twine-receptacle, so as to avoid the possibility of any knots or kinks in the twine or wire being caught, and the twine or wire thereby broken.

The invention enables the twine or wire to pass through the needle with perfect freedom, and thereby greatly facilitates the binding action and avoids the necessity of frequent repair of the twine or wire rendered necessary by the breakage thereof.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a complete needle for grain-binding harvesters, the needle being partly broken away to better illustrate the application of the present improvements thereto. Fig. 2 is a detail perspective view of the hub portion of the needle, showing the swiveled pulley. Fig. 3 is a detail section through the swiveled pulley, showing the manner of mounting the same.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

Referring to the drawings, 1 designates the main body or arm of the needle for grain-binding harvesters, provided at one end with the hub portion 2 to receive the needle-shaft and at its opposite end with the arc-shaped grain-guard 3, the latter being provided at its forward end with the usual eye or bill 4, from which the twine or wire passes to the knotter.

In carrying out the present invention I provide the needle with three grooved pulleys or sheaves 5, 6, and 7, the pulley 5 being journaled directly in the eye of the needle, the pulley 6 near the junction of the arc-shaped guard and the main body or arm 1, and the pulley 7 being journaled adjacent to the hub portion 2. The pulleys 5 and 6 are journaled on stationary studs or spindles 8, while the pulley 7 has a swiveled connection with the needle. For this purpose a curved or L-shaped bracket 9 projects laterally from the needle and has its outer extremity provided with a groove 10 and a head 11 for the reception of a yoke or hanger 12, comprising parallel portions or ears 13, connected by a pin 14, forming the journal upon which the grooved pulley 7 rotates freely. By this construction and arrangement the yoke or hanger is adapted to turn on an axis at right angles to the axis of rotation of the pulley 7, thereby enabling the pulley to readily adjust itself to the different angles which the twine or wire assumes in its passage from the twine-receptacle to the eye of the needle. The twine after leaving the twine-receptacle passes over the pulley 7, thence under the pulley 6, thence through the hollow shank 15 of the needle, and thence partially around the pulley 5 to the knotter.

From the foregoing description it will be seen that great freedom of movement is given to the twine or wire in its passage through the needle, any knots or kinks passing freely over the pulleys without danger of breaking, thus avoiding the frequent repair to the binding wire or twine caused by knots or kinks catching in the small openings or holes generally provided for that purpose. This action is facilitated by the feature of the pulley 7 being mounted so as to swivel or turn freely under the influence of the twine or wire in its varying angles caused by the change of position and oscillations of the needle.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a needle for grain-binding harvesters, of guide-pulleys for the twine or wire, one of said pulleys being arranged adjacent to the axis of the needle and



having a swiveled connection with the needle, substantially as described.

2. The combination with a needle for grain-binding harvesters, of guide pulleys or  
5 sheaves for the binding twine or wire, one of said pulleys being arranged adjacent to the axis of the needle and journaled in a yoke or hanger having a rotatable engagement with a

bracket projecting from and carried by the needle, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

JOHN VOLLMERS.

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