

T. H. PARVIN  
Grain-Binder for Harvesters.

No. 219,506.

Patented Sept. 9, 1879.

Fig. 2.

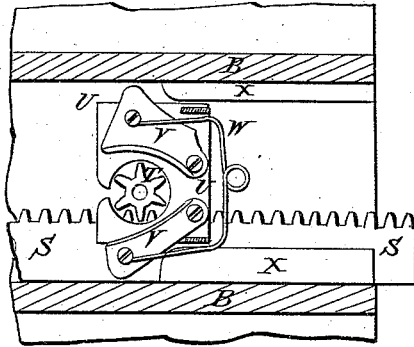
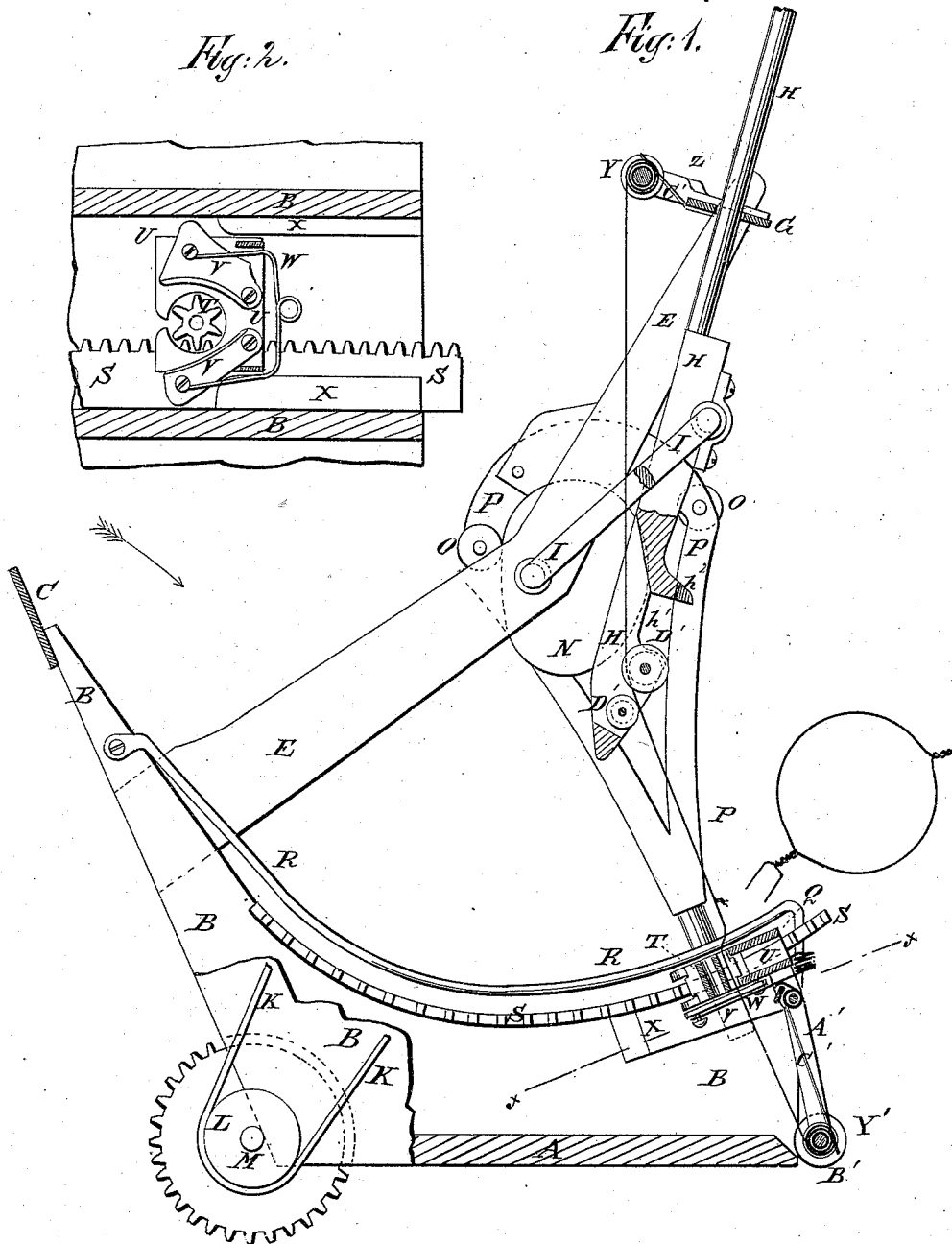


Fig. 1.



WITNESSES:

*Chas. Nida*  
*C. Sedgwick*

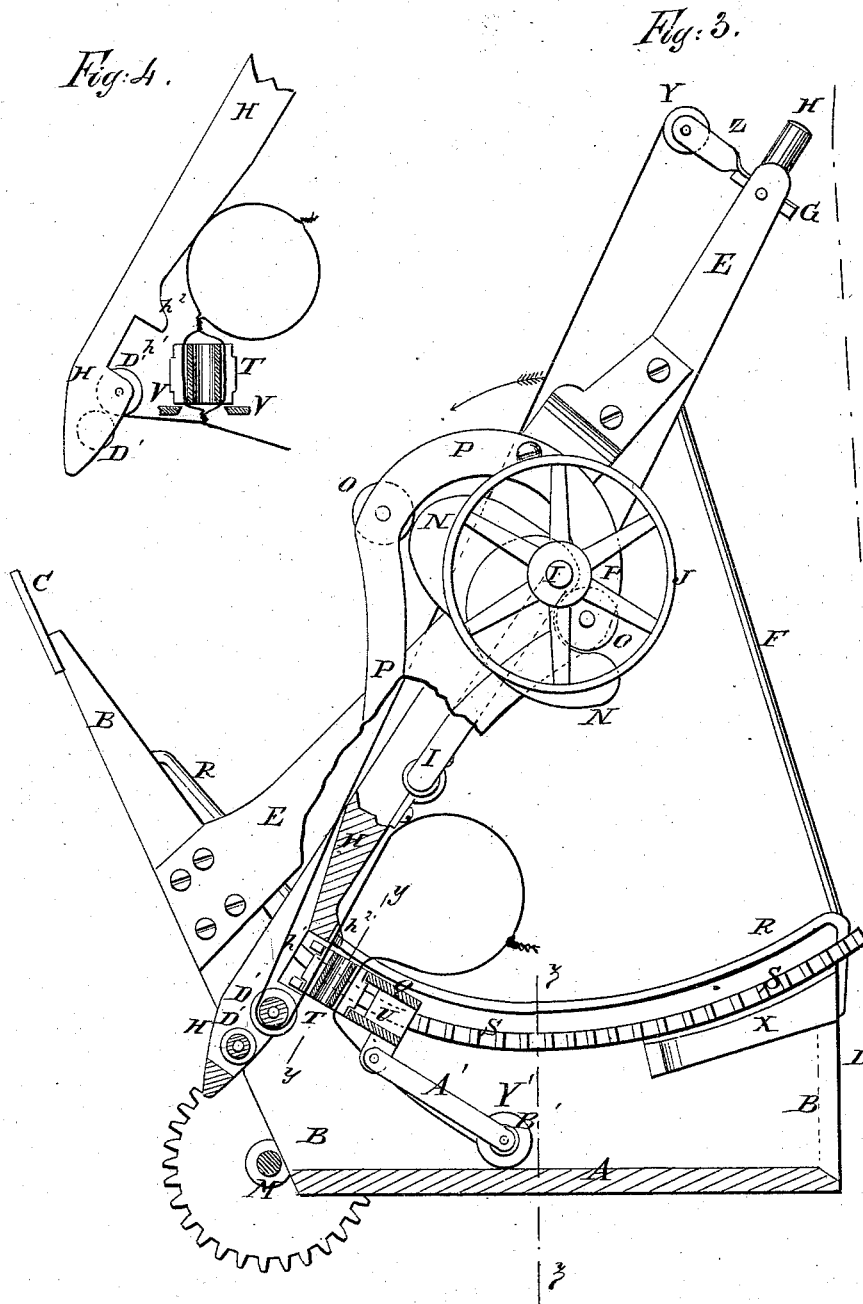
INVENTOR:

*T. H. Parvin*  
BY *Munroe*  
ATTORNEYS.

T. H. PARVIN  
Grain-Binder for Harvesters.

No. 219,506.

Patented Sept. 9, 1879.



WITNESSES:  
*Chas. Nida*  
*C. Sedgwick*

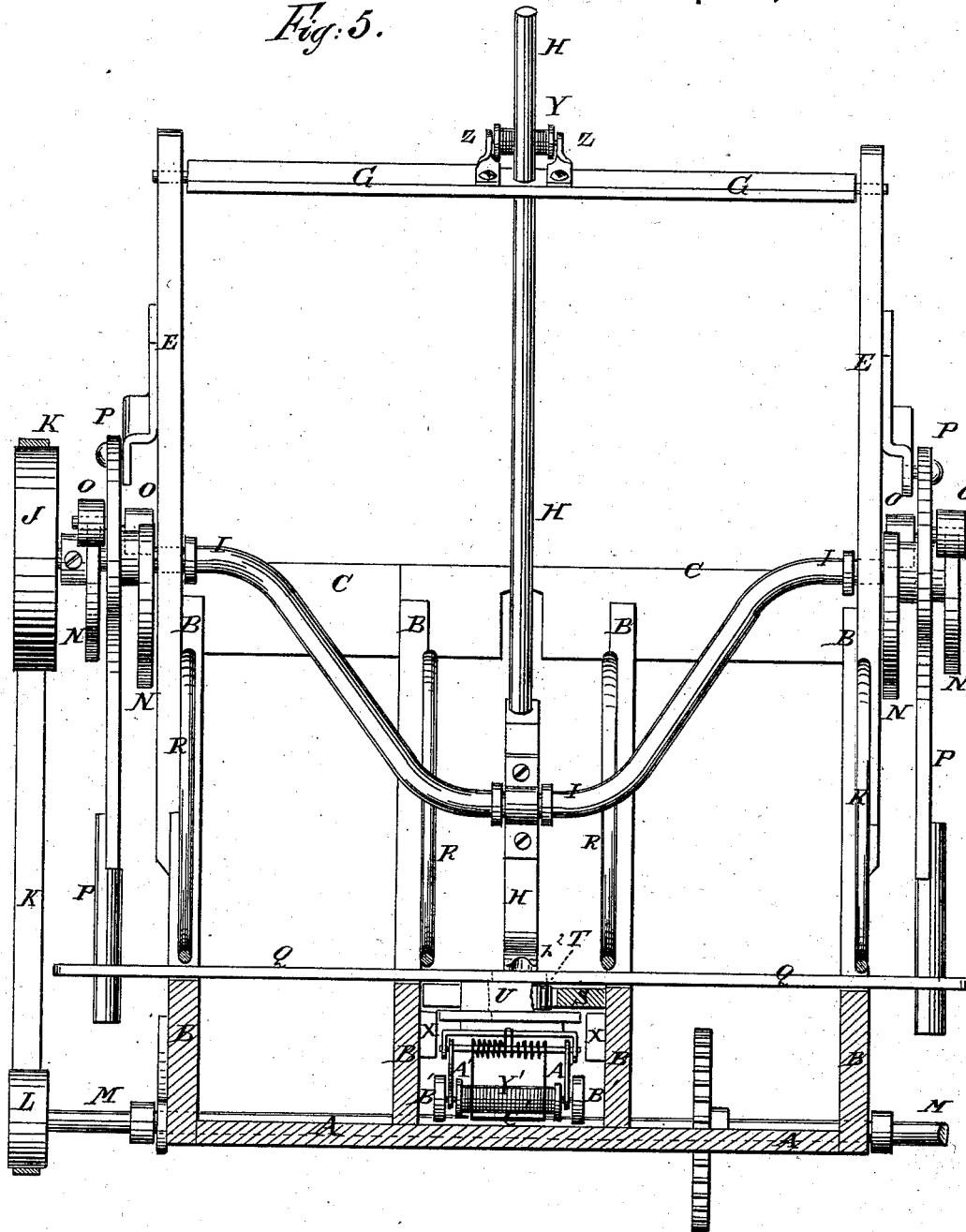
INVENTOR:  
*T. H. Parvin*  
BY *Munn & Co.*  
ATTORNEYS.

T. H. PARVIN  
Grain-Binder for Harvesters.

No. 219,506.

Patented Sept. 9, 1879.

Fig. 5.



WITNESSES:

*Chas. Nida*  
*C. Sedgwick*

INVENTOR:

*T. H. Parvin*

BY

*Mumford*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

THOMAS H. PARVIN, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN GRAIN-BINDERS FOR HARVESTERS.

Specification forming part of Letters Patent No. **219,506**, dated September 9, 1879; application filed February 24, 1879.

*To all whom it may concern:*

Be it known that I, THOMAS HENRY PARVIN, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Grain-Binders for Harvesters, of which the following is a specification.

Figure 1, Sheet 1, is a vertical section of my improved binder. Fig. 2, Sheet 1, is a detail sectional view taken through the line *xx*, and showing the under side of the twisting device. Fig. 3, Sheet 2, is a side view of the same, partly in vertical section, to show the construction. Fig. 4, Sheet 2, is a detail side view of the lower part of the swinging rod, and showing the pinion and cutters in section through the line *yy*, Fig. 3. Fig. 5, Sheet 3, is a rear view of the same, partly in section, through the line *zz*, Fig. 3.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved binder for binding grain as it is delivered to it from any harvester, and which shall be convenient in use and effective and reliable in operation.

The invention consists in the combination of the rod provided with the two pulleys, the rock-shaft, the crank-shaft, the two pairs of cams, the swinging arms provided with the rollers, and the sliding bar with each other for passing the wire around the gavel; and in the combination of the hinged carriage with the box and the sliding bar for carrying the lower spool back and forth, as hereinafter fully described.

A is the base-plate of the binder, to the upper side of which are attached the lower edges of four or more upright parallel plates, B. The upper edges of the plates B are concaved, and their forward ends project farther than their rear ends.

The forward ends of the plates B are connected by a cross-bar, C, and the rear ends of the side pairs are connected by plates D.

To the forward parts of the side plates B are attached the lower ends of two standards, E, which are strengthened in position by the braces F.

To the upper ends of the standards E are pivoted the ends of a rock-shaft, G, through a

hole in the center of which passes and slides the upper part of the rod H.

To the rod H, a little below its center, is attached a bearing, in which revolves a crank formed upon the middle part of the shaft I. The end parts of the crank-shaft I revolve in bearings near the middle parts of the standards E.

To one end of the crank-shaft I is attached a pulley, J, to receive an endless band or chain, K, which also passes around a pulley, L, attached to the shaft M. The shaft M revolves in bearings in the lower forward part of the frame-work, and is connected with the axle or driving-shaft of the harvester by suitable gearing. The shaft M should be provided with a clutch and foot-lever, so that the binding mechanism may be thrown into and out of gear with the driving mechanism, as may be required.

To each end part of the crank-shaft I are attached two cams, N, which are placed in reverse positions and operate against two friction-rollers, O, pivoted to the opposite sides of the forward and rear parts of the semicircular upper end of the swinging bar P.

The upper parts of the bars P are made wide, are placed between the cams N, are pivoted at their upper ends to supports attached to the standards E, and have their middle parts cut away to form openings for the passage of the ends of the crank-shaft I, so as to allow the said bars to swing freely upon their pivots.

The lower ends of the bars P are rounded off and pass through and slide in holes in the ends of the sliding bar Q. The bar Q slides back and forth laterally upon the concaved edges of the plates B, and is kept in place upon the said concaved edges by the curved guard-bars R, the ends of which, beyond the sweep of the sliding bar Q, are attached to the said plates B.

To the inner side of the curved edge of one of the middle plates B is attached a curved rack-bar, S, into the teeth of which the teeth of the gear-wheel T mesh. This wheel revolves in a hole in the sliding bar Q and in a box, U, attached to the lower side of the said bar Q.

The upper end of the gear-wheel T is flush with the upper side of the sliding bar Q, and

in the forward edge of the said sliding bar Q is formed a notch leading into the said gear-wheel T, to allow the binding-wire to be placed in the teeth of the gear-wheel, so that the said wheel may act as a twister to twist the wire in binding the bundles.

To the lower side of the box U are pivoted two cutters, V, which are held apart by a spring, W, also attached to the box U. The cutters V are forced together to cut the wire by two cams, X, attached to the inner sides of the rear ends of the middle plates B.

The wire is placed upon two spools, Y Y', the upper one of which is pivoted to supports Z, attached to the middle part of the rock-shaft G. The lower spool, Y', revolves in the rear end of a small frame, A', the forward end of which is hinged to the box U or to a bar attached to the said box U.

To the rear corners of the frame A' are pivoted two small wheels, B', which roll back and forth upon the base-plate A as the box U and sliding bar Q move back and forth.

The spools Y Y' are provided with tension-springs C', to prevent the wire from unwinding any faster than it is needed. The wire from the upper spool, Y, passes down along the forward side of the swinging rod H, passes between two grooved pulleys, D', pivoted the one directly above the other, in a slot in the lower end or head of the said rod H, and its end is attached to the end of the wire from the lower spool, Y', which lower wire passes through below the box U.

With this construction, as the machine is drawn forward, the rod H rises, moves forward above the grain as it is delivered from the harvester, and passes down in the rear of the said grain. As the machine continues to move forward the rod H moves to the rearward, pushing the gavel before it and against the wire, looping the said wire around the said gavel, as indicated in Fig. 3. As the gavel is forced against the wire the pressure causes the wire leading to the lower spool, Y', to pass through a notch in the edge of the sliding bar Q, engage with the teeth of the pinion-wheel T, and be carried around to the rear side of the

said wheel. As the rod H comes close up to the sliding bar Q the wire leading to the upper spool, Y, is forced into the notch in the edge of the said sliding bar Q and caused to engage with the teeth of the pinion T. As the pinion T continues its revolution the two wires are twisted together above and below the said pinion, as shown in Fig. 4. As the sliding bar Q approaches the end of its rearward movement the cutters V strike the cams X and are forced together, cutting off the wires at the lower end of the pinion T and between the two twists, freeing the bound bundle, and leaving the wires connected together to receive another gavel.

In the rear side of the lower part or head of the rod H, just above the upper pulley, D', is formed a notch, h<sup>1</sup>, of sufficient size to receive the edge of the sliding bar Q and the side of the box U within it; and upon the said rod, at the upper end of the said notch, is formed a projection, h<sup>2</sup>, which is grooved to receive the wire as it is drawn upward around the upper pulley, D', in passing around the gavel.

By this construction the wire stands out from the body of the rod H, and thus readily enters the notch of the bar Q and passes between the teeth of the pinion-wheel T.

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

1. The combination of the rod H, provided with the two pulleys D', the rock-shaft G, the crank-shaft I, the two pairs of cams N, the swinging arms P, provided with the rollers O, and the sliding bar Q with each other for passing the wire around the gavel, substantially as herein shown and described.

2. The combination of the hinged carriage A' B' with the box U and the sliding bar Q for carrying the lower spool, Y', back and forth, substantially as herein shown and described.

THOMAS HENRY PARVIN.

Witnesses:

JASPER PARTRIDGE,  
THOMAS G. PARKER.