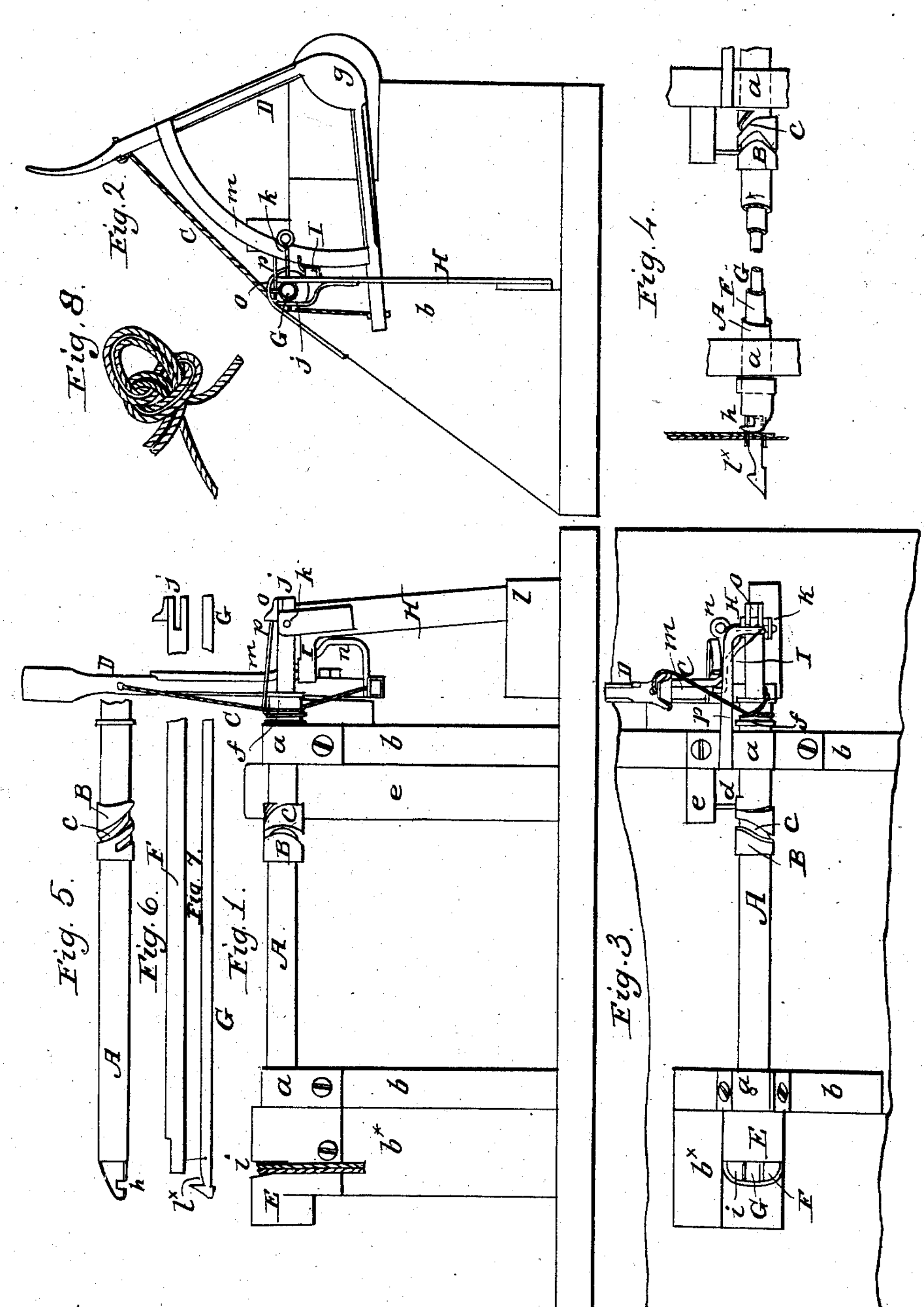
W. P. BARKER.

Grain Binder.

No. 46,869. Patented March 21, 1865.



Witnesses:
C. L. Topliff
Harry Munn

Inventor:
W P Barker
per Munn & Co
Atty's

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

W. P. BARKER, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN GRAIN-BINDERS.

Specification forming part of Letters Patent No. 46,869, *dated March* 21, 1865; *antedated March* 6, 1865.

To all whom it may concern:

Be it known that I, W. P. BARKER, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and Improved Machine for Tying Knots in Grain-Binding Devices; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, an end view of the same; Fig. 3, a plan or top view of the same; Fig. 4, a plan or top view of the principal working parts of the same in section; Figs. 5, 6, and 7, detached views of certain parts pertaining to the same; Fig. 8, a view of the knot formed or tied by the invention.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved device for tying knots in sheaf-cords, and is designed to be used in connection with a grain-binding apparatus.

The invention consists in the employment or use of a slotted shield in connection with a revolving tube, a sliding tube, and a sliding rod, provided with a hook, all arranged to operate substantially as hereinafter set forth.

A represents a tube, which is fitted in bearings *a a* on suitable standards *b b'*, and is allowed to rotate freely in its bearings. This tube A has a hub, B, upon it, provided with a spiral slot, *c*, in which a pin, *d*, on a standard, *e*, is fitted, and on one end of this tube A there is a pulley, *f*, around which a cord, C, passes, said cord being attached at its ends to the ends of a sector, D, which is pivoted to the standard *b*, as shown at *g*.

E is a tubular shield, which is permanently attached to a standard, $b^{\times}$, and in which the end of the tube A, which is opposite to the end having the pulley *f* upon it, is fitted. This end of the tube A is provided with a hook, *h*. (Shown clearly in Figs. 4 and 5.) The shield E has a slot, *i*, made transversely in its upper surface, as shown in Figs. 1 and 3.

Within the tube A there is placed a sliding tube, F, the latter extending entirely through the former, and having a rod, G, within it, through one end of which and a slot, *j*, in the corresponding end of tube F a pin, *k*, passes, said pin connecting the tube F and rod G to the upper end of a bar, H, the lower end of which is connected by a pivot, *l*, to the base of the device. The end of the rod G which is within the shield E is provided with a hook, $l^{\times}$.

Near the upper end of the bar H there is attached an arm, I, having a forked projection, in which the front bar *m* of the sector D is fitted, said bar *m* being curved at its lower end, as shown at *n*. On the tube F, just above the slot *j*, there is a projection, *o*, which strikes against a bar, *p*, on the standard *b*, and limits the movement of tube F.

The operation is as follows: The cord with which the sheaves are bound is passed around the gavel by any of the known grain-binding devices, and the lapped ends are fitted in the slot *i* in the shield, the ends hanging down from the slot about two inches. The sector D is then raised, and the tube A rotated by the cord C, and the hook *h* at the end of the tube A draws the ends of the cord within the shield E, and winds them around the inner tube F. During this turning of the tube A a forward movement is given it, in consequence of the pin *d* being fitted in the spiral groove *c* in the hub B, and this forward movement enables the hook *h* to draw the cord within the hook $l^{\times}$ of the rod G. At this point the curved part *n* of the bar *m* draws back the rod G, and the ends of the cord are drawn through the loop formed by the turning of the ends of the cord around the tube F, and the tube F, when the hook $l^{\times}$ of the rod G comes in contact with it, is also drawn back, and the knot is cast off from the tube F and rod G. The knot formed by the device is shown clearly in Fig. 8.

I claim as new and desire to secure by Letters Patent—

1. The revolving and longitudinally-moving tube A, provided with the hook *h*, the sliding tube F, and the rod G, provided with the hook $l^{\times}$, in connection with the shield E, or its equivalent, all arranged to operate in the manner as and for the purpose herein set forth.

2. The sector D, connected with the tube A by a cord, C, or by gearing, in connection with the bar *m*, provided with the curve *n*, and the pivoted bar H, and the spirally-slotted hub B and pin *d*, all arranged as shown, for operating the tubes A F and rod G, as described.

W. P. BARKER.

Witnesses:

J. T. ELLIOTT,

F. B. DAY.