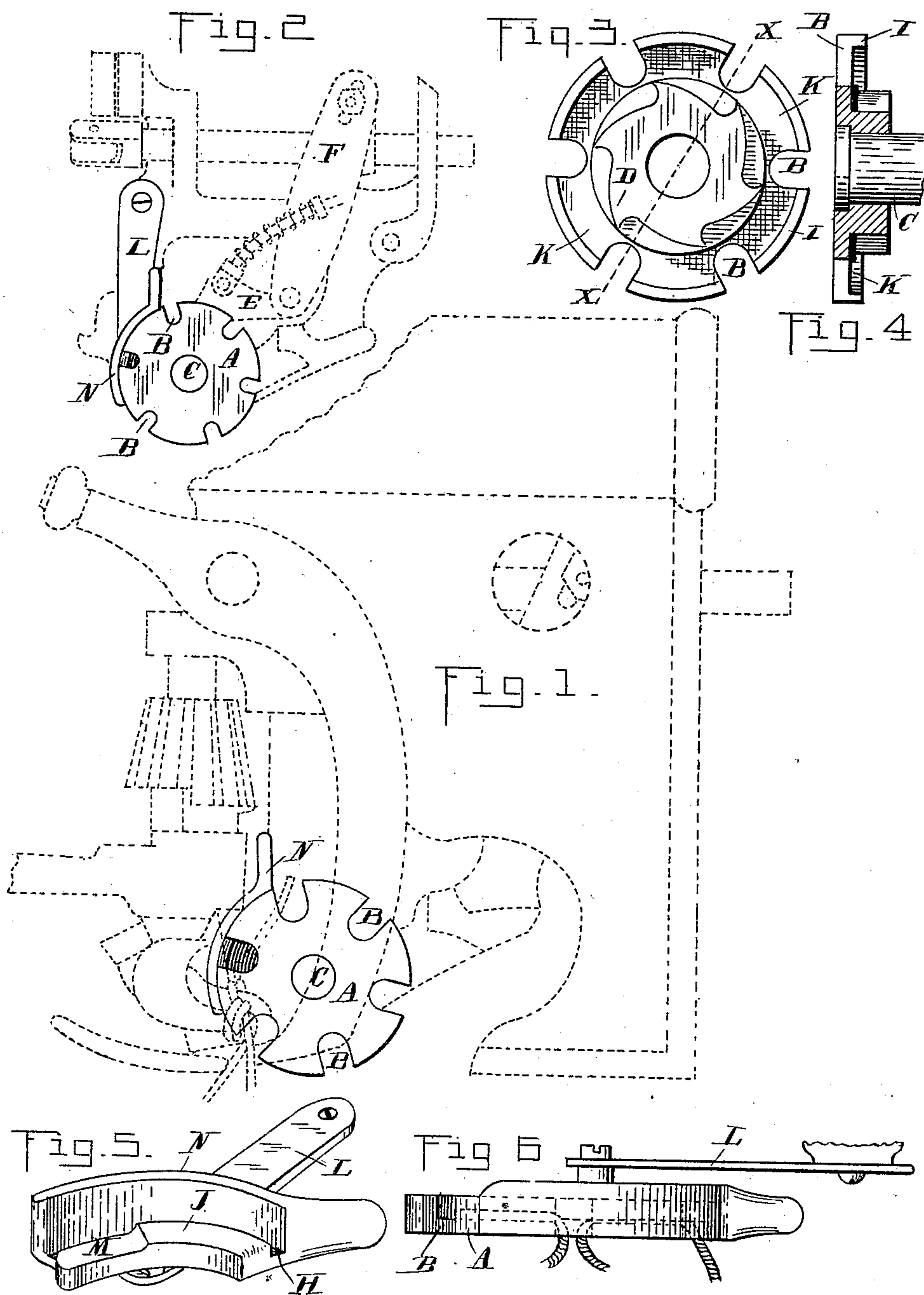


(No Model.)

D. GABEL.
TWINE HOLDER FOR GRAIN BINDERS.

No. 427,844.

Patented May 13, 1890.



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID GABEL, OF NEW DUNDEE, ONTARIO, CANADA.

TWINE-HOLDER FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 427,844, dated May 13, 1890.

Application filed August 16, 1889. Serial No. 320,930. (No model.)

To all whom it may concern:

Be it known that I, DAVID GABEL, a citizen of the Dominion of Canada, residing at New Dundee, in the county of Waterloo and Province of Ontario, Canada, have invented certain new and useful Improvements in Twine-Holders for Grain-Binders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in knotting devices for grain-binders; and the invention consists more particularly in the peculiar construction and arrangement of the twine-holder, whereby the free end of the twine, instead of being cut off when the knot is tied, is released from the twine-holder in such a manner as to effect a saving of twine and greater cleanliness, as there are no waste ends of twine, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is an elevation of an ordinary type of knotter, shown in connection with my improved holder. Fig. 2 is a smaller view with some of the parts removed. Fig. 3 is a detached view of the disk of the twine-holder. Fig. 4 is a section thereof on line *xx*. Fig. 5 is a detached perspective of the shoe of the twine-holder. Fig. 6 is an edge view of the shoe and disk in their relative positions to each other, and illustrating the operation of releasing the twine.

Fig. 1 shows the parts of a knotter of known construction—such as found in the Appleby binder, with the exception of the twine-holder, which consists of the usual disk A, provided with circumferential notches B, into which the twine is engaged by the binder-arm, and which is intermittently revolved on its pivot C a part of a revolution equal to the distance between the notches, there being commonly a ratchet D, formed on the back of the disk, into which engages the feed-pawl E on the oscillating lever F.

G is a shoe or clamp, which engages with the edge of the disk to nip the twine between it and the disk.

My invention refers altogether to the peculiar construction of this shoe N, which is shown in detached perspective view in Fig. 5, wherein H is a groove into which the flange I on the edge of the disk engages, and J is

the annular bearing with which the shoe rides on the annular bearing K, formed between the notches on the back of the disk, and between which and the bearing J the twine is clamped, as in the usual manner. This shoe is pressed against the disk by means of a spring L, the tension of which exerts the clamping action on the twine, the shoe being secured to the free end of said spring, preferably pivotally.

It will be seen from the drawings that the shoe is substantially L shape in cross-section, the curved wall forming a rim which engages the rim of the disk, and the notch H in the shoe receiving the rim of the disk, and the other wall of the shoe having the bearing-face which engages the cord.

Instead of having the bearing J of the shoe bear against the disk the whole length of the shoe, as in the usual construction, I have a portion of said bearing reduced, in order that it will not clamp with the twine, as shown at M in Fig. 5. The bearing J is of such a length as to extend the distance between two of the notches, whereby it will not cover said notches.

In practice, the parts being constructed as shown and described, it will be seen that in the operation of the device the reduced portion M of the shoe acts as a relief to the free end of the twine, and as the twine is cut off when the knot is completed the pressure of the knife is sufficient to draw out the free end of the twine, or whatever portion there is still held between the portion M of the shoe and the bearing K on the disk, without cutting it off, the other end of the band being only required to be cut off.

It will further be seen that as the knot is being formed the free end of the twine is lightly enough clamped between the portion M of the shoe and the disk to provide slack for the knot, and by the time the knot is completed there will be such a small end of twine left as will constitute a very trifling waste, if any.

By pivotally securing the spring L at or near the center of the shoe the shoe accommodates itself to whatever thicknesses of twine there may be, which is also a great improvement, as there are often unequal portions in the twine which interfere with the smooth working of the machinery.

It is well known that often great disarrangement is caused in the operation of the binder by the waste particles of twine being left in the twine-holder, as the accumulation of these parts is liable to clog up the machinery. My improvement not only avoids this, but it saves a considerable amount of twine.

What I claim as my invention is—

1. The herein-described twine-holder, consisting of the disk having peripheral notches and a hub or offset provided with ratchet-teeth adapted to be operated upon by a pawl, a shoe substantially L shape in cross-section, having one wall forming a rim-wall curved and fitting against the periphery of the disk and its other wall formed with a bearing adapted to lie between the hub and periphery of the disk, and a flat spring having one end connected to the shoe and causing the bearing thereof to press against the cord.

2. In a twine-holder, the combination of the notched disk having ratchet-teeth and its periphery formed with a rim, a pawl adapted to engage the ratchet-teeth to rotate the disk, a shoe substantially L shape in cross-section, having a groove to receive the rim of the periphery, a bearing lying between the ratchet-teeth and rim of the disk, and a flat spring having one end connected to the machine and the other end connected to the shoe, substantially as and for the purpose described.

In testimony whereof I affix my signature, in presence of two witnesses, this 16th day of May, 1889.

DAVID GABEL.

Witnesses:

GEO. A. GREGG,
ED. MCBREARTY.