

(No Model.)

3 Sheets—Sheet 1.

J. G. LEONARD.

CORD HOLDER FOR GRAIN BINDERS.

No. 339,994.

Patented Apr. 13, 1886.

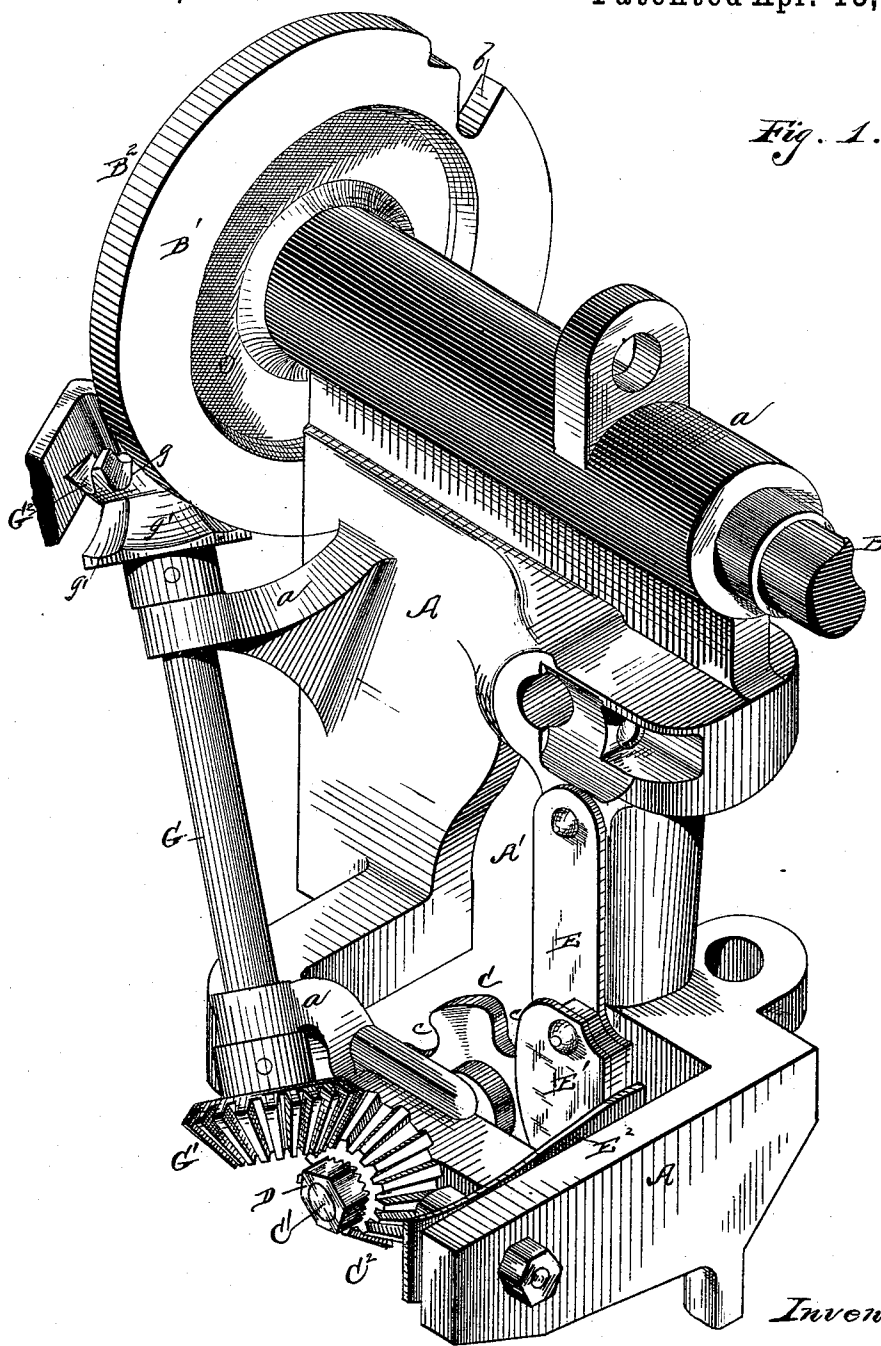


Fig. 1.

Inventor:

John G. Leonard

per

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Witnesses:

Chas. H. Gorman
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(No Model.)

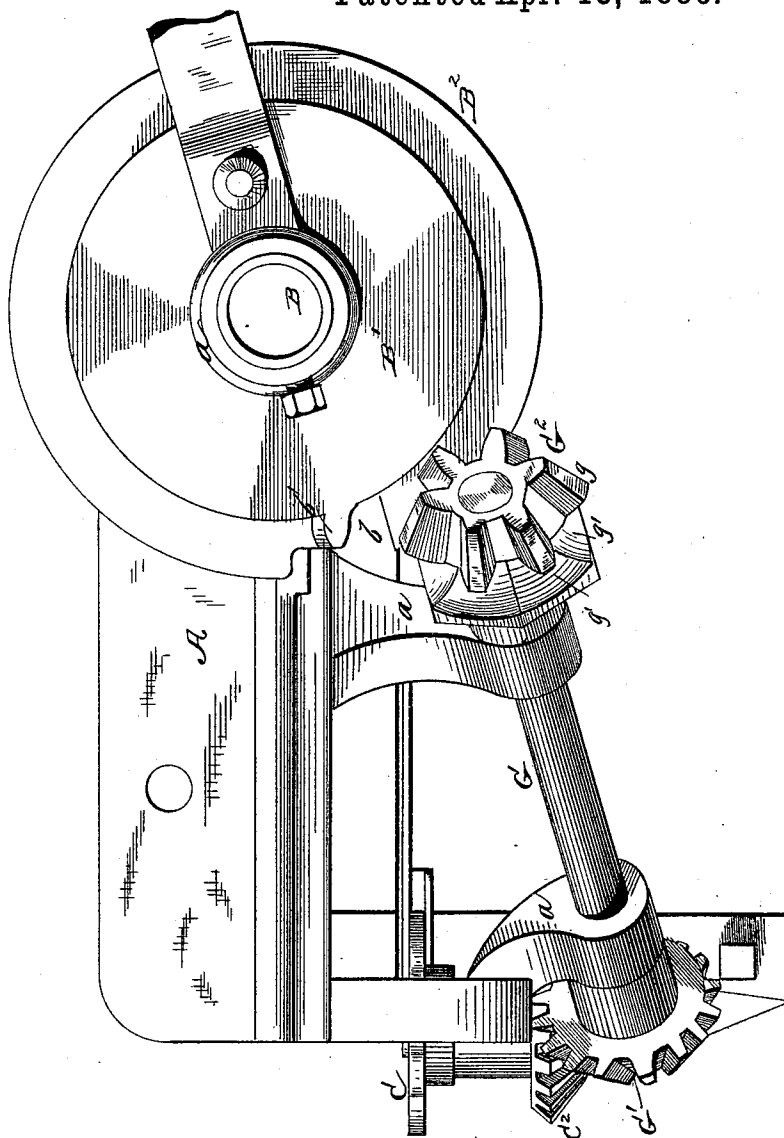
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Inventor:

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3 Sheets—Sheet 3.

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Fig. 3.

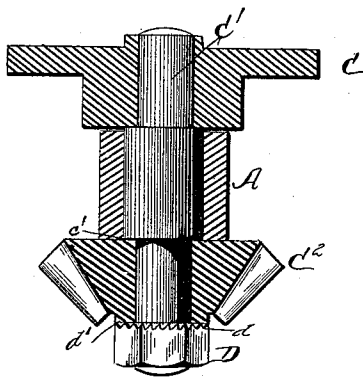


Fig. 4.

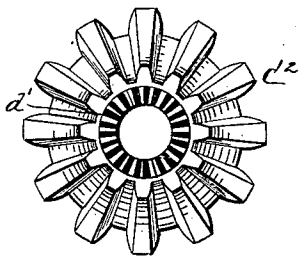
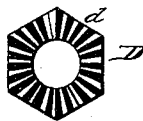


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN G. LEONARD, OF PLYMOUTH, INDIANA.

CORD-HOLDER FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 339,994, dated April 13, 1886.

Application filed May 20, 1884. Serial No. 132,906. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. LEONARD, a citizen of the United States, residing at Plymouth, in the county of Marshall and State of Indiana, have invented certain new and useful Improvements in Cord-Holders for Grain-Binders, of which the following is a specification, to wit:

This invention relates to an improvement in cord-holders for grain-binders; and it consists in the peculiar construction and arrangement of the same, substantially as will be hereinafter more fully set forth and claimed, whereby the holder is greatly simplified and cheapened, made more positive in its action, and rendered adjustable for wear.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention as applied to the cord-holding devices of a reaping and binding machine. Fig. 2 is an end elevation of the same. Figs. 3, 4, and 5 are detail views of the manner of adjusting the cord-holder.

A represents a portion of the main frame which supports the cord holding and knotting devices of a grain-binder, in which the knotter and knife are not represented, as they are common and well-known devices, and are not necessary to render this invention clear to those familiar with the art. The upper part of the frame-casting A is formed with a sleeve, *a*, through which passes the shaft B, which operates the cord holder, knotter, and knife, and upon the end of which is placed a gear and cam wheel, (not here represented,) and upon the shaft on the other side of the knotter is a disk or wheel, B', which operates the cord-holder by intermediate connections, as will be presently described. This disk B' is formed with a flange, B², having a notch, *b*, as seen in Fig. 1, and upon the periphery of the main body of the wheel, beside the flange, and in close proximity to its notch, is formed a single tooth or cog, *b'*, as in Fig. 2.

The main frame-casting A is formed with an opening, A', through which the point of the needle passes in delivering the cord to the holder, and in the bottom of the frame-casting,

just beneath this opening, is journaled the cord-holder, consisting of a disk, C, having cord-receiving notches or recesses *c*, as usual. The short shaft C' of this disk has a bearing in the casting A, and its outer end is turned down or reduced in diameter to form a shoulder, *c'*.

Upon the outer end of the shaft C' is placed a bevel-pinion, C², which is secured against the shoulder *c'* by a nut, D, as shown in the drawings. The nut D is upon its inner side formed with a series of radial teeth or serrations, *d*, which engage with similar serrations, *d'*, upon the face of the pinion C², and secure it in any desired position upon the shaft C' against the shoulder, as will be at once evident by an inspection of the drawings.

Upon the outer face of the casting A is pivoted a small bar, E, the lower end of which carries the shoe E', which straddles or clasps the edge of the cord-holding disk C, against which the shoe is pressed by a spring, E², against its rear side.

In lugs or brackets *a a*, cast on the outer face of the main frame-casting A, is journaled a shaft, G, upon the lower end of which is a bevel-pinion, G', meshing with and giving motion to the bevel-pinion C², and upon the upper end of this shaft is a second bevel-pinion, G², of peculiar formation. The teeth *g* of this bevel-pinion G² engage with the single tooth *b'* upon the disk B', and just in rear of these teeth *g* the pinion G² is formed with a hub hexagonal in shape, or having as many flat faces *g'* as there are notches in the cord-holding disk C. These flat faces lie in contact with the projecting flange B² of the disk B' and keep the bevel-wheel G² and the cord-holders stationary till the proper time for its moving.

In binding grain the driving-shaft B and its wheel or disk B' are constantly revolving, and thereby actuate at proper times the cord holding, tying, and cutting devices. The needle in its descent carries the cord through the opening A' and lays it in one of the notches *c* of the disk C. The tooth or cog *b'* then engages and turns the pinion G², its movement being allowed by reason of the notch *b* in the flange B² at this time coming in proper place to admit of the angular face *g* of the hub of the bevel-pinion G² turning in it. This movement

of the gear G^2 and its shaft G and pinion G' turns the pinion C^2 and cord-holder C , and carries the cord into the cord-holder shoe E' , where it is firmly held, as will be evident.

5 The continued motion of the disk B' again locks the cord-holder by contact of the flange B^2 and hexagonal hub g' , and the holder cannot move either forward or backward till the needle-arm again descends to secure another

10 bundle of grain. This arrangement forms a simple and cheap mechanism for imparting a positive action to the cord-holder at stated intervals and firmly locking it in the interim, and may readily be applied to any of the well-known

15 binding-machines without other changes than those required in the shape of the main casting to fit the different machines.

It is well known that much annoyance has been found in the use of such machines by the

20 wear upon the cord-holder, which soon becomes so worn that the movement given it at first is not sufficient to properly carry the cord into the shoe and there securely hold it. This is entirely obviated by simply loosening the

25 nut D and slightly turning the cord holder C and its shaft C' within the bevel-pinion C^2 , so that the given motion of this gear will throw the holder C farther over. The nut is then again tightened till its serrations engage those

30 of the pinion C^2 , and the machine will operate as well as when new. This enables the operator to take up all lost motion readily and keep his machine at all times in perfect working order.

Having thus fully described my invention,

what I claim as new, and desire to secure by 35 Letters Patent, is—

1. In a cord-holder for grain-binders, a notched cord-holding disk secured upon a shaft, in combination with a driving-pinion adjustably secured upon the same shaft, where- 40 by the relative positions of the disk and the pinion may be changed to compensate for wear and consequent lost motion, substantially as shown and described.

2. In a cord-holder for grain-binders, a 45 notched holding-disk having its shaft turned down or reduced in diameter to form a shoulder against which its driving-pinion abuts, said driving-pinion formed with a serrated face, in combination with a retaining-nut upon 50 the end of the shaft also formed with a serrated face, substantially as and for the purpose set forth.

3. The driving-shaft B , and disk B' , formed with a single tooth or cog, b' , and having a 55 locking-flange, B^2 , with notch b , in combination with the pinion G^2 , having a many-sided collar, g' , and means, substantially as set forth, for connecting the pinion with the cord holding disk C , substantially as and for the pur- 60 pose set forth.

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

JOHN G. LEONARD.

Witnesses:

W. C. MCARTHUR,
CHAS. KRESSMANN.