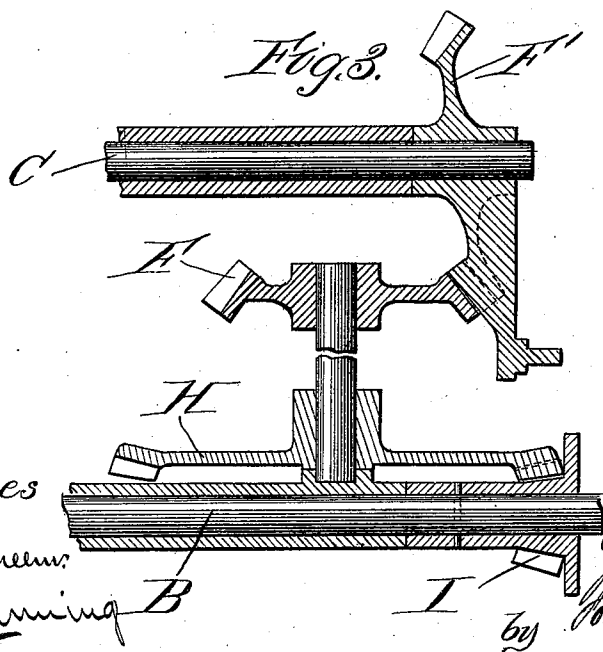
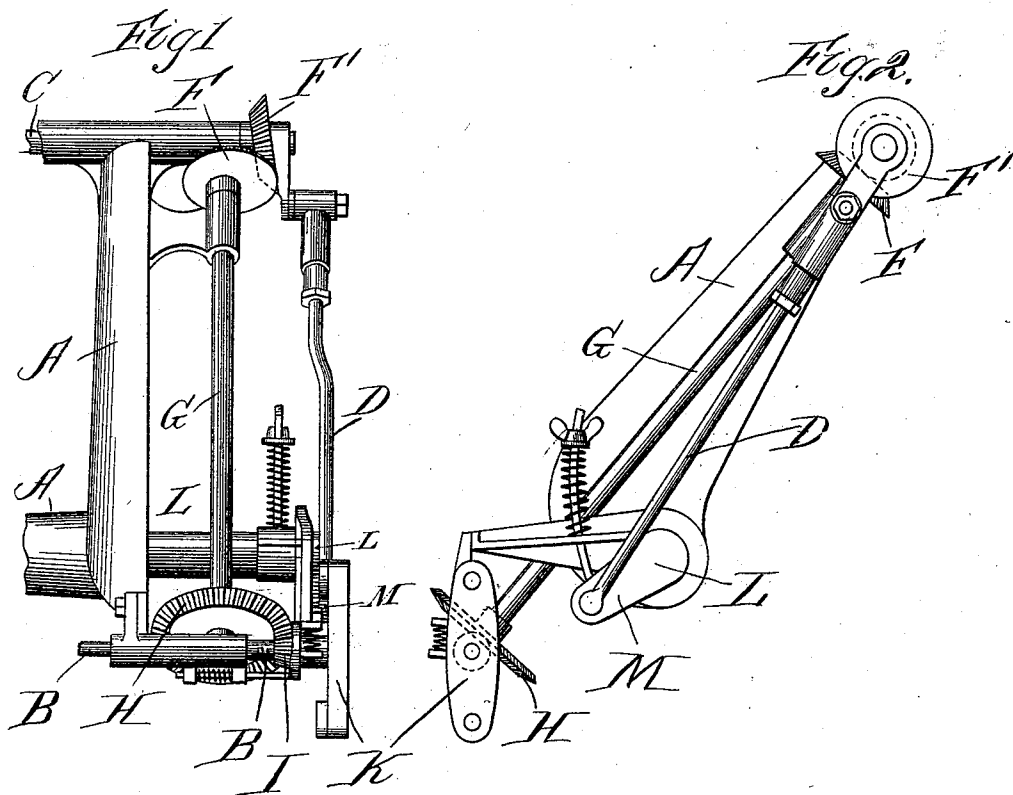


(No Model.)

A. HEUSCH.
GRAIN BINDER.

No. 554,691.

Patented Feb. 18, 1896.



Witnesses

Wm. M. Rheum.

Wm. J. Fleming

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Atty.

UNITED STATES PATENT OFFICE.

ANTON HEUSCH, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WARDER, BUSH-
NELL & GLESSNER COMPANY, OF SPRINGFIELD, OHIO.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 554,691, dated February 18, 1896.

Application filed January 20, 1894. Serial No. 497,504. (No model.)

To all whom it may concern:

Be it known that I, ANTON HEUSCH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Grain-Binders, of which the following is a specification.

This invention relates to improvements in grain-binders, and its object is to simplify and render more efficient the mechanism for communicating motion from the packer-shaft to the knotter driving-shaft and the needle-shaft.

The invention will be shown in the accompanying drawings, described in the subjoined specification, and more particularly pointed out in the claims.

Like letters refer to the same parts in the several figures of the drawings, in which—

Figure 1 is a side elevation of one form of the mechanism which I may employ. Fig. 2 is an end view of the same; and Fig. 3 is a detail view, partly in section, showing the arrangement of gears.

In the drawings there is provided a suitable frame for supporting the various shafts operating in connection with the binder, which frame is commonly known as the "binder gear-standard," and is in the drawings designated by the letter A.

B designates the packer-shaft, which latter is connected to the knotter driving-shaft C by intermediate gearing, and this in turn, by means of the usual crank and pitman D, communicates motion to the crank M, which latter actuates the needle-shaft.

In the form of mechanism shown in the drawings, a pair of bevel-wheels F F' are arranged, the one upon the knotter driving-shaft and the other upon a vertical shaft, the lower end of which carries a bevel-gear H, which in turn meshes with a bevel-pinion I operated from the packer-shaft B by a clutch of a well-known form, the constantly-revolving part K of which is secured to the shaft in the usual manner.

It is to be understood that the wheels F F' are peculiarly constructed and arranged. The one shown at the top of the vertical shaft is an eccentric bevel-gear and the one arranged upon the knotter driving-shaft, as shown in the drawings, is a bevel-wheel arranged obliquely upon the knotter driving-shaft, so that

when the long side of the eccentric is presented to the teeth of the oblique wheel the latter will be far enough over to mesh properly, and when the short side of such eccentric bevel is presented to the oblique wheel a nearer portion of the same will be in position for engagement. Thus a simple and efficient mode of securing the engagement of the eccentric wheel at all times with the companion wheel is provided. Of course the position of the eccentric wheel and the oblique wheel need not necessarily be at the point shown, but instead may be arranged the one upon the packer-shaft and the other adjacent thereto, and the bevel-wheels in the drawings now shown in that position may be placed in the former position of the eccentric and oblique wheels.

It is manifest that many variations may be made in the details of construction without departing from the principle of the invention, and I therefore do not wish to be understood as limiting myself to the precise construction shown and described.

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

1. In a grain-binder, the combination of a packer-shaft, a knotter driving-shaft, a needle-shaft, an intermediate gearing, comprising two intermeshing bevel-wheels, one of which is mounted eccentrically to its shaft, and the other of which is a concentric wheel set obliquely; substantially as and for the purpose set forth.

2. In a grain-binder the combination of a constantly-rotating packer-shaft, a clutch, a bevel-pinion engaged periodically by such clutch, and a bevel-wheel at one end of a vertical shaft, another bevel-wheel at the other end of such shaft, mounted eccentrically thereto, a knotter driving-shaft, and a bevel-wheel mounted on the knotter driving-shaft obliquely thereto, and intermeshing with the eccentric bevel-wheel, and crank and pitman connections between the knotter driving-shaft and the needle-shaft; substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

ANTON HEUSCH.

In presence of—

MAURICE KANE,
JOHN E. BAYRD.