

(No Model.)

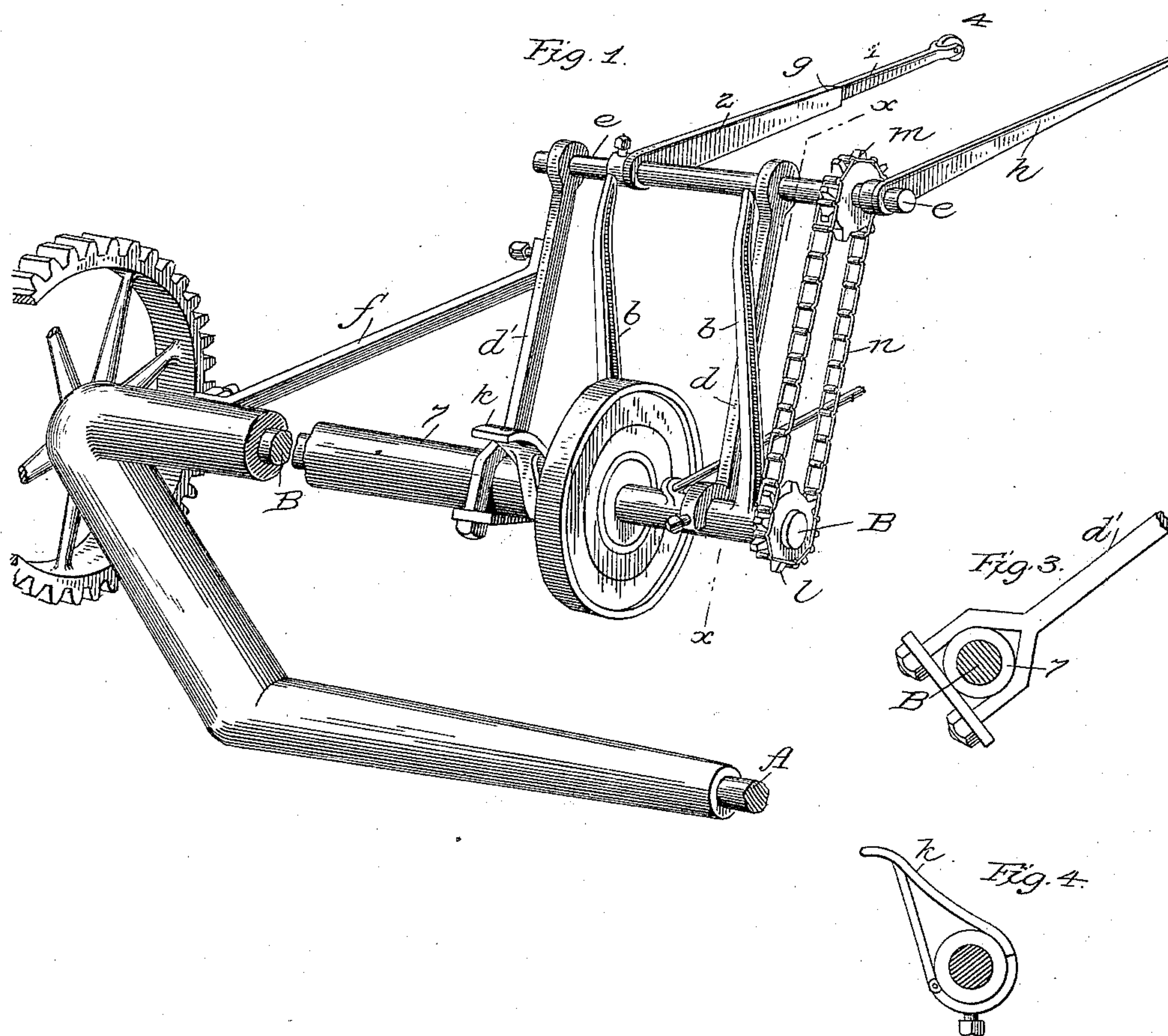
2 Sheets—Sheet 1.

L. G. KEMP & P. ROSS.

GRAIN BINDER.

No. 331,142.

Patented Nov. 24, 1885.



Attest:
Walter Donaldson
J. L. Middleton

Inventors
Lewis G. Kemp
& Peter Ross
by Joyce & Spear
Attys.

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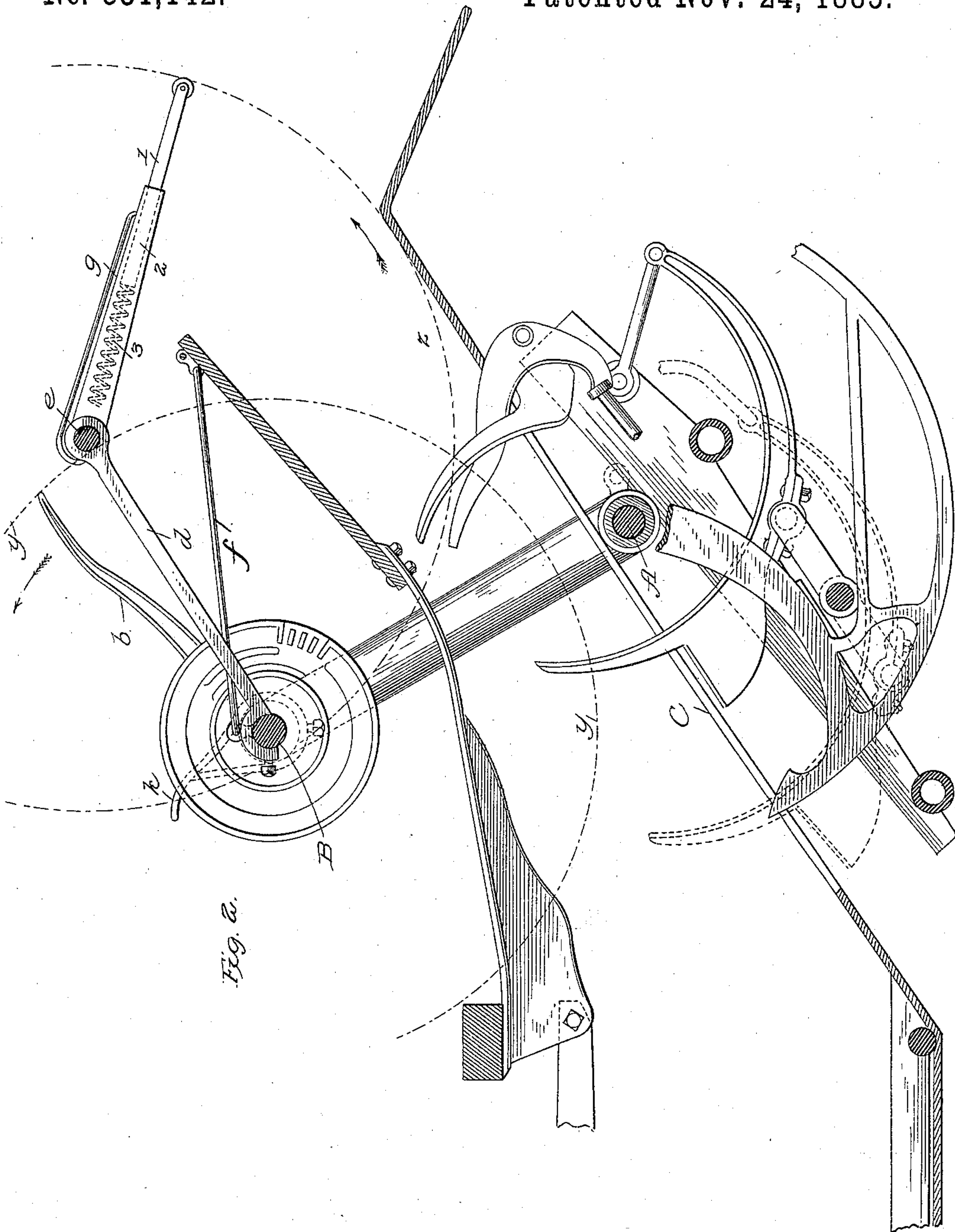
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UNITED STATES PATENT OFFICE.

LEWIS G. KEMP AND PETER ROSS, OF FREDERICK, MARYLAND.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 331,142, dated November 24, 1885.

Application filed August 16, 1884. Serial No. 140,725. (No model.)

To all whom it may concern:

Be it known that we, LEWIS G. KEMP and PETER ROSS, of Frederick, in the county of Frederick and State of Maryland, have invented a new and useful Improvement in Grain-Binders; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to grain-binders, and is applied to a machine known as the "Buck-eye" machine.

For the purpose of more effectually discharging the sheaf from the machine our invention consists of an extensible supplemental discharge-arm attached to the shaft, having its bearing in a frame supported on a cam-shaft of the machine, and driven by suitable connection with said shaft, our improvements being applied directly to the Appleby binder.

We have shown in the accompanying drawings the parts of the said binder necessary to illustrate the mode of attaching our invention. The parts of the said Appleby binder shown by us are substantially the same as shown in the United States Letters Patent of Appleby, Nos. 212,420 and 262,883.

In the drawings, Figure 1 is a perspective view showing the needle and cam shaft of the Appleby binder with our improved frame and discharge-arms attached thereto. Fig. 2 is a longitudinal section of the binder-table of the Appleby binder, showing the compressor-arm and needle, and also showing a section of the cam-shaft and our improved attachment on line *xx* of Fig. 1. Fig. 2 also illustrates the movement of the supplemental discharge-arms in relation to the binder-table, compressor-arms, and needle of the Appleby binder. Figs. 3 and 4 show details hereinafter explained.

In these drawings, A represents the needle-shaft of the binder, and B the cam-shaft to which the tying mechanism is connected. The ordinary binder-table, C, is represented in Fig. 2, which also shows the needle-arm and compressors in side elevation.

On the shaft B are shown the ordinary discharge-arms, *b b*, and the dotted line *y* shows the circle in which their ends move and its relation to the binder-table and compressor-arms. We have found in practice that these arms do not invariably discharge the sheaf, and that

it is often necessary to have an attendant to watch the action of the machine in this respect. In order to avoid this defect and to provide for the certain and effectual discharge of the sheaf, we have mounted upon the frame of the shaft B a supporting-frame, *d d'*, in the upper and rear end of which is a shaft, *e*. The frame is properly stayed on the frame of the shaft B by a brace, *f*, connected to the said frame, and to the sleeve of said shaft B. The frame supporting the shaft *e* is clamped upon the sleeve 7, as shown in Figs. 1 and 3. Upon the shaft *e* are set the arms *g h*. The plane of movement of the arm *h* is outside of the end of the shaft B, so that it may move freely through the circle indicated in the dotted line in Fig. 2. The arm *g* is necessarily set within the frame, and therefore if it were made of a single piece of the same length of the arm *h* it would come in contact with the supporting-frame of the cam-shaft. In order to avoid this difficulty we make the arm *g* in two parts, the part 1 forming the outer end of the arm and entering into the part 2, which is fixed to the shaft *e*, and underneath it within the part 2 is a spring, 3. The part 1 should have a limited movement, so as not to move out from the part 2 at a distance greater than that shown in Fig. 2, and the spring should allow it to recede into the part 2 sufficiently to clear the shaft B. On the frame of the cam-shaft is set an inclined guide, *k*, in the path of the arm *g*, and the guide is adjusted to receive upon its outer end the wheel 4 on the end of the arm *g*. This guide pushes the part 1 into the part 2 and allows the arm to pass the shaft in this shortened condition, the arm extending as soon as it has passed the shaft, and thus reaching far enough to come in full contact with the sheaf.

The dotted circles in Fig. 2 show the movement of both sets of arms. The shaft *e* is driven from the shaft B by means of sprocket-wheels *l m* and chain *n*, and the arms *g* and *h* are timed to follow the arms *b*, so as to take the bundle from them and throw it up the incline and over the top thereof.

Although we have shown our invention in connection with the Appleby binder, we do not limit ourselves to the combination of our improvement with that particular form of binder.

We claim as our invention—

In combination with a knotter - operating shaft and primary discharge-arms mounted thereon, a supplemental shaft, a suitable driving mechanism connecting the shafts, and an
5 extensible arm, *g*, with a guide, *k*, fixed to the frame in the line of movement of said extensible arm, all substantially as described.

In testimony whereof we have signed our

names to this specification in the presence of two subscribing witnesses.

LEWIS G. KEMP.
PETER ROSS.

Witnesses:

PERRY B. MCCLURG,
WM. WALSH.