

(No Model.)

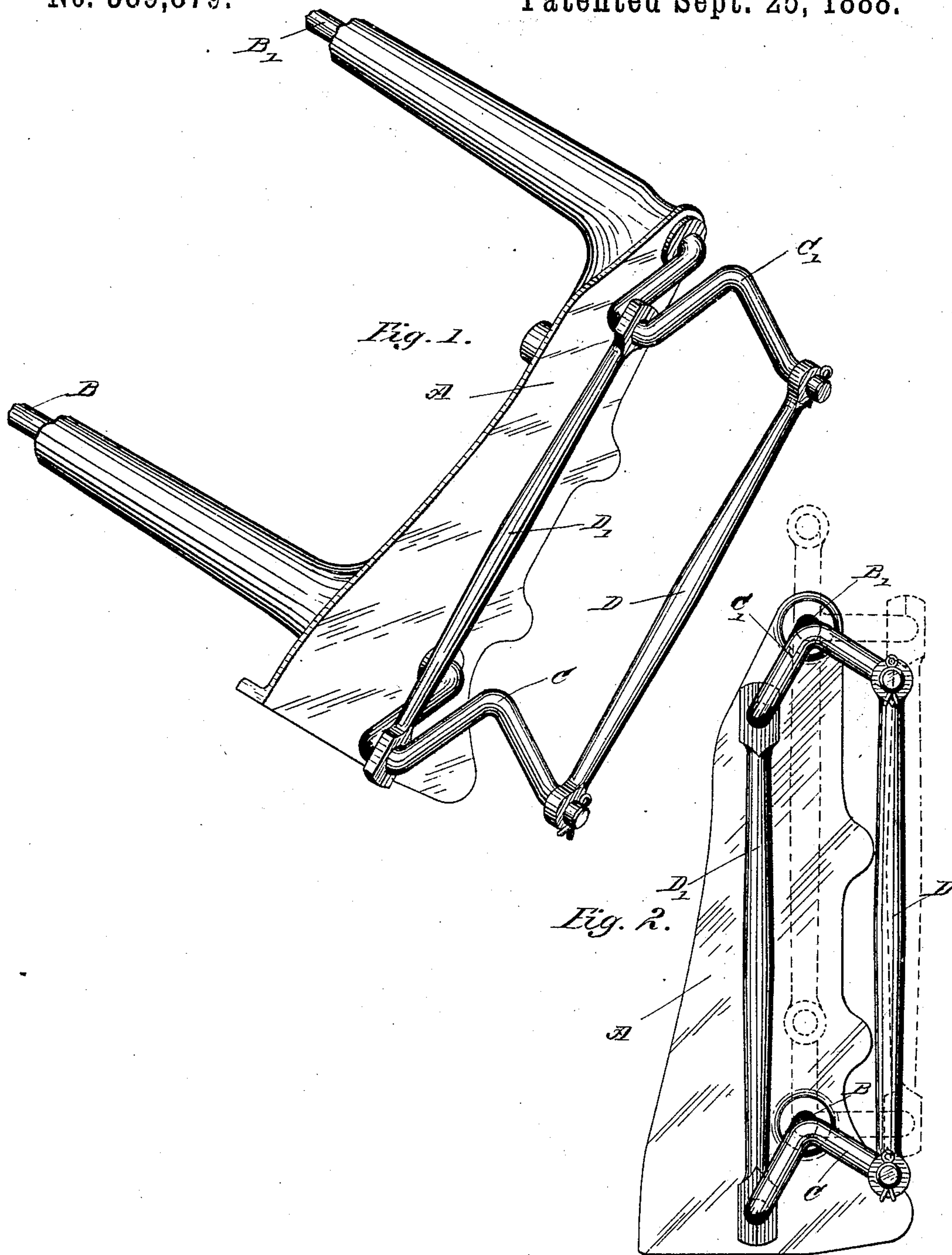
2 Sheets—Sheet 1.

S. DYER & D. F. GRAHAM.

MECHANICAL MOTION.

No. 389,879.

Patented Sept. 25, 1888.



Witnesses:
Eug. Cook
William L. Bennett

Inventors:
Samuel Dyer,
David F. Graham.

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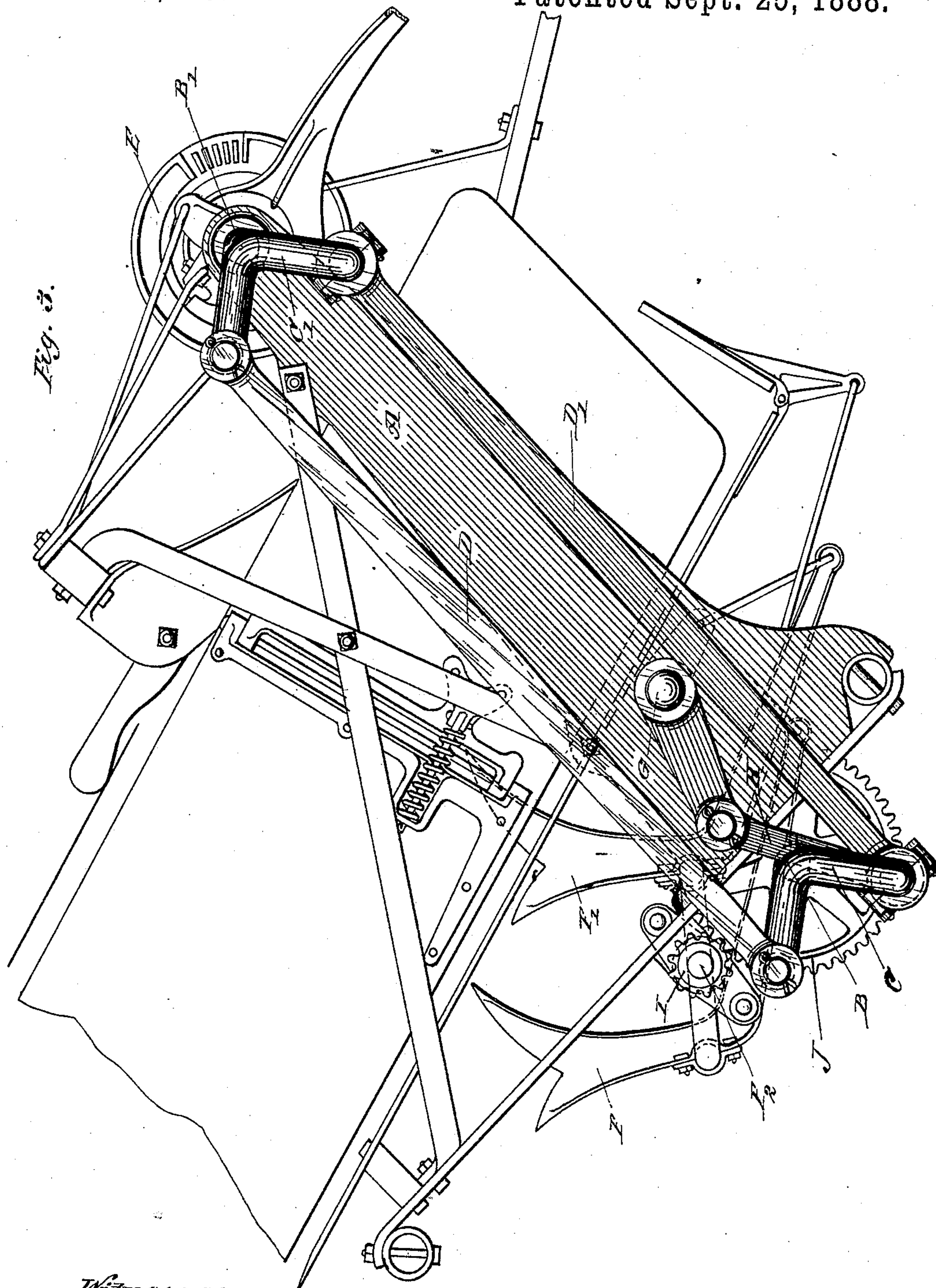
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MECHANICAL MOTION.

No. 389,879.

Patented Sept. 25, 1888.



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Ed. Cook
William L. Beith

Inventors:
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David F. Graham

UNITED STATES PATENT OFFICE.

SAMUEL DYER AND DAVID F. GRAHAM, OF SPRINGFIELD, OHIO, ASSIGNORS
TO THE WILLIAM N. WHITELEY COMPANY, OF SAME PLACE.

MECHANICAL MOTION.

SPECIFICATION forming part of Letters Patent No. 389,879, dated September 25, 1888.

Application filed April 30, 1888. Serial No. 272,230. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL DYER and DAVID F. GRAHAM, both citizens of the United States, and residing in the city of Springfield, in the county of Clark and State of Ohio, have invented a new and useful Mechanical Motion Specially Adapted to be Used on Harvester Binding Machinery, of which the following is a full and complete description of our invention, such a one as will enable any one skilled in the art to construct and use the same, reference being made to the drawings forming a part of this specification.

Our invention consists of two double cranks, constructed as hereinafter described, at the ends of two shafts, and connected by two pitmen, for the purpose of communicating a rotary motion from one set of cranks to the other set, the driver and the driven both rotating in the same direction with a positive regular movement.

The object of our invention is to simplify the means of revolving two parallel shafts in the same direction and applying the same to grain-binders, as well as for other purposes. We attain these objects by the mechanism illustrated in the accompanying drawings and set forth in this specification.

Figure 1 is a perspective view of a frame in which are mounted two shafts with double cranks on the outer end of each shaft. Said cranks are connected together by two pitmen, so located that both cranks rotate in one direction, one being the driver. Fig. 2 is an elevation of the end of frame and cranks with pitmen, showing the relative position of one crank to the other as connected with the pitmen, the dotted lines showing one set of cranks and pitmen passing dead-centers, while the other set and pitmen are on the next quarter at their strongest points. Fig. 3 is a perspective view of a grain-binder upon which we have placed the two double cranks and their pitmen, to show how this invention may be applied as a helper in operating a grain-binder.

Like letters refer to like parts.

A is the frame on which the cranks and their shafts are mounted.

B and B' are the shafts to which the double cranks are attached.

C and C' are the double cranks.

D and D' are the pitmen through which motion is communicated from one set of cranks to the other.

E is the tyer-wheel; F and F', the packers; F², the packer-shaft; G, the needle-arm shaft; H, the link connecting needle-arm shaft to double crank C, which operates it.

The operation of this device is as follows: The shaft B is operated and caused to rotate by any of the well-known devices, which in turn rotates double crank C, which, through pitmen D and D', rotates the double crank C' in the same direction with itself, both cranks with their shafts moving evenly and positively together in the same direction. By means of this device two shafts or wheels at any distance apart can be caused to rotate together positively and at the same rate of speed, one of them being the driver, without the use of intermediate gear.

In Fig. 3 we show it mounted upon a binder, where motion is transmitted from the packer-shaft F² to the needle-arm and knotting device by intermediate gear and the double cranks C and C', with their pitmen D and D', thereby saving complication and expense, and thereby making a more simple and effective combination. The driving-power is transmitted to the packer-shaft F² and its spur-pinion I, which meshes into an external gear-wheel, J, connected to the double crank C, and causes it to revolve, C being connected by pitmen D and D' to C', which is rigidly connected to the tyer-wheel shaft. The latter is caused to positively rotate in the same direction with the two double cranks C and C', thus operating the knotting mechanism and also the needle-arm, whose shaft is attached to crank C by link H.

The binder is otherwise of the well-known Champion type.

We are aware that cranks have been used for transmitting positive motion with two pitmen. We do not make any claim on that form of device, broadly, but only the construction which we have devised with especial reference to the needs of grain-binders.

Having thus fully described our invention, what we do claim as new, and desire to secure by Letters Patent, is—

The combination, with the packer-shaft, of the shaft B, the gears I and J, the double crank C, the pitmen D D', the tyer-wheel shaft, the tyer-wheel E, and the double crank C' on
5 said tyer-wheel shaft and connected by the pitmen with the first-mentioned crank, substantially as set forth.

In testimony whereof we hereunto set our

hands and affix our seals this 7th day of April, A. D. 1888.

SAMUEL DYER. [L. S.]
DAVID F. GRAHAM. [L. S.]

In presence of—
WILLIAM F. BEVITT,
ED. J. COOK.