

No. 675,550.

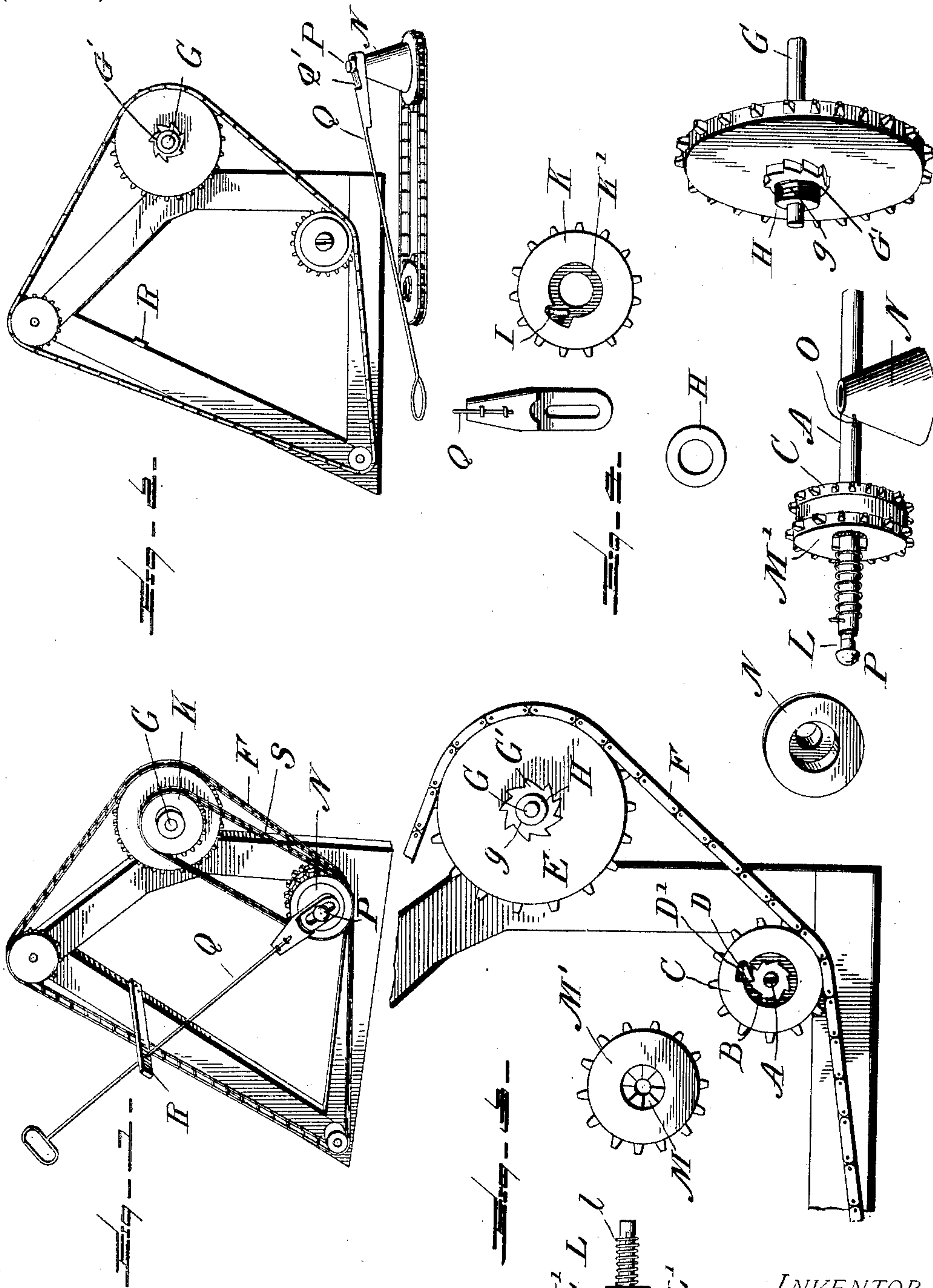
Patented June 4, 1901.

T. MEYERHOFF.

CHANGEABLE GEARING FOR BINDER DRIVING OR OTHER MECHANISM.

(Application filed Mar. 5, 1901.)

(No Model.)



WITNESSES:

H. F. Doyle.
A. L. Hough.

INVENTOR

Theodore Meyerhoff,

BY *Franklin N. Hough*

Attorney

UNITED STATES PATENT OFFICE.

THEODORE MEYERHOFF, OF GEORGE, IOWA.

CHANGEABLE GEARING FOR BINDER DRIVING OR OTHER MECHANISM.

SPECIFICATION forming part of Letters Patent No. 675,550, dated June 4, 1901.

Application filed March 5, 1901. Serial No. 49,864. (No model.)

To all whom it may concern:

Be it known that I, THEODORE MEYERHOFF, a citizen of the United States, residing at George, in the county of Lyon and State of Iowa, have invented certain new and useful Improvements in Changeable Gearing for Binder Driving or other Mechanism; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in binder attachments, and especially to a changeable gear designed for use when it is desired to increase the speed of the machine while passing through a heavy field of grain as the machine has increased work to bind the grain as it is cut; and it consists in applying an extra set of gear-wheels having sprocket-chain connection, which gearing is manipulated by hand-operated mechanism.

More specifically, the invention resides in the provision of an extra set of sprocket-wheels with chain connections, one of said sprocket-wheels having a ratchet-and-pawl connection with the main shaft of the binding mechanism, and a clutch mechanism actuated by a hand-operated rod, whereby the speed of the binder-driving sprocket-chain may be increased while the machine is in motion or held from action, accordingly as it may be desired to drive the binding mechanism fast or slow.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this application, and in which—

Figure 1 is a side elevation of the changeable gear as applied to the ordinary binder-driving chain. Fig. 2 is a side elevation of the usual gear mechanism, showing my attachment removed. Fig. 3 is a side elevation showing some of the wheels and clutch detached. Fig. 4 is a view showing the clutch mechanism as applied to the driving-shaft with the other parts disassembled.

Reference now being had to the details of

the drawings by letter, A designates the driving-shaft of the ordinary binding mechanism on a reaper, to which shaft power may be applied in any suitable manner, (not shown,) and keyed or otherwise secured to normally rotate with said shaft and upon same is a ratchet-wheel B. C is a sprocket-wheel which is mounted about said ratchet-wheel and caused to rotate therewith in one direction by means of the pawl D, which is held against the teeth of said ratchet-wheel by means of a spring D'.

E designates a sprocket-wheel which is of larger diameter than the sprocket-wheel C, with which it is connected by sprocket-chain F. Said wheel E is mounted on a stub-shaft G, on which is also mounted a ratchet-wheel G'. Said shaft G is threaded, as at g, to receive the threaded ring H.

K designates a sprocket-wheel which is centrally apertured and provided with a recess K'. In an offset of said recess is pivoted a spring-actuated pawl I. This sprocket-wheel is designed to be placed over the ratchet-wheel G', and the pawl I is adapted to engage the teeth of said ratchet-wheel to cause the two wheels to rotate in one direction together. The ring H, before described, serves to hold the wheel K upon the shaft G and about the ratchet-wheel G'.

The shaft A, it will be observed, is slotted at one end to receive the spring-actuated clutch L, the inner end of which has laterally-extending wings L', which are adapted to engage the ratchet-teeth M on the sprocket-wheel M' about its central aperture. This sprocket-wheel M' is loosely journaled on the drive-shaft A and is designed to rotate with the shaft when the clutch L is held by the spring l in contact with the ratchet-teeth M. A conical cap N is mounted on the outer end of the drive-shaft A and a pin O passed through said cap and the shaft to hold the two together. To the outer end of said clutch is secured a knob P, which holds the operating-lever Q to the clutch. This operating-lever has an elongated slot in its head, so as to allow a slight play to the rod as it is actuated, and is inclined on one edge, as seen at Q' in Fig. 2. The shank portion of the rod passes through an aperture in the bar R, secured to the frame of the binder, and as said

rod is reciprocated the clutch may be thrown out of gear by the wedging action between said inclined edge and knob, the spring about the clutch serving, however, to hold the clutch normally in engagement with the ratchet-teeth M.

The two sprocket-wheels K and M' are connected by sprocket-chain S, and when the clutch is in engaging position with the teeth of the wheel M' the two pairs of sprocket-wheels K and M' rotate together and an increased motion is imparted to the large sprocket-wheel E, which rotates with wheel K, and as the speed of the large sprocket-wheel E increases the pawl D will ride over the teeth on the ratchet-wheel B.

By the construction shown and described it will be noted that the clutch mechanism and extra sprocket-wheels may be easily removed and applied to the ordinary binder-driving mechanism, accordingly as it may or may not be desired to use the same.

Having thus described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. A changeable gear for binder driving and other mechanisms, comprising in combination with the driving-shaft, the sprocket-wheel mounted on and keyed to rotate in one direction therewith, a stub-shaft, a second sprocket-wheel thereon a sprocket-chain connecting said wheels, a second set of sprocket-wheels mounted respectively on said shafts, a chain connecting said second set of wheels a spring-actuated clutch mounted in the driving-shaft, and means for actuating same to cause the two sets of sprocket-wheels to rotate, as set forth.

2. A changeable gear for binder and other driving mechanism, comprising in combination with the frame the driving-shaft and sprocket-wheel keyed to rotate in one direction therewith, a second shaft a sprocket-wheel mounted thereon, sprocket-chain connection between said wheels, a loosely-mounted sprocket-wheel on the driving-shaft, provided with a series of ratchet-teeth, a spring-actuated clutch carried in the driving-shaft and designed to engage said ratchet-teeth, a sprocket-wheel mounted to rotate with said second shaft in one direction and sprocket-chain connection with the clutch-driven wheel, and means for throwing the clutch, as set forth.

3. A changeable gear for binder and other driving mechanism, comprising in combination with the frame, the driving-shaft and sprocket-wheel keyed to rotate therewith, a stub-shaft, a sprocket-wheel mounted on and rotating therewith, sprocket-chain connection between said wheels, a second set of sprocket-wheels mounted on said shafts, and chain

connection between said second set of wheels, a clutch mounted in the slotted end of the driving-shaft a spring for normally holding the clutch in engagement with ratchet-teeth for driving the second set of sprocket-wheels, and an operating-lever for actuating the clutch, as set forth.

4. In combination with the driving-shaft, the sprocket-wheel mounted on and keyed to rotate with said shaft, a stub-shaft a second sprocket-wheel mounted on and rotating with the latter, sprocket-chain connections between said wheels, a second set of sprocket-wheels one being mounted on and rotating with the wheel on the stub-shaft, the other loosely mounted on the driving-shaft, a chain connecting said second set of wheels a spring-actuated clutch mounted in a slot in the driving-shaft, and having laterally-extending wings normally engaging with the ratchet-teeth on said loosely-mounted ratchet-wheel, a knob on the end of the clutch, and a sliding rod fulcrumed to the frame and having connection with said clutch whereby the second set of sprocket-wheels may be thrown into or out of gear with the first set of wheels, as set forth.

5. In combination with the main driving-shaft the clutch in the slotted end thereof, the sprocket-wheel keyed to rotate in one direction with said shaft, a stub-shaft the second sprocket-wheel rotating with the latter, chain connections between said wheels, a sprocket-wheel loosely mounted on the driving-shaft and designed to be driven by said clutch, a sprocket-wheel, mounted on said stub-shaft, of smaller diameter than the first-mentioned wheel mounted on the stub-shaft, and sprocket-chain connection between the second set of sprocket-wheels, and means for operating the clutch, as set forth.

6. In combination with the main driving-shaft, the ratchet-wheel keyed thereto, the sprocket-wheel with spring-actuated pawl mounted to rotate with said ratchet-wheel, the wheel E and shaft carrying same, chain connections between said sprocket-wheel and wheel E, the wheel M' loosely mounted on the driving-shaft and having ratchet-teeth M about its central aperture, the clutch mounted in a slot in the driving-shaft and engaging said ratchet-teeth on wheel M, the sprocket-wheel K recessed and provided with a pawl, the ratchet-wheel G', the ring H, sprocket connection between said wheels M' and K, and clutch-operating mechanism, as set forth.

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

THEODORE MEYERHOFF.

Witnesses:

JOHN MEYERHOFF,
JOHN P. DE NEUI.