

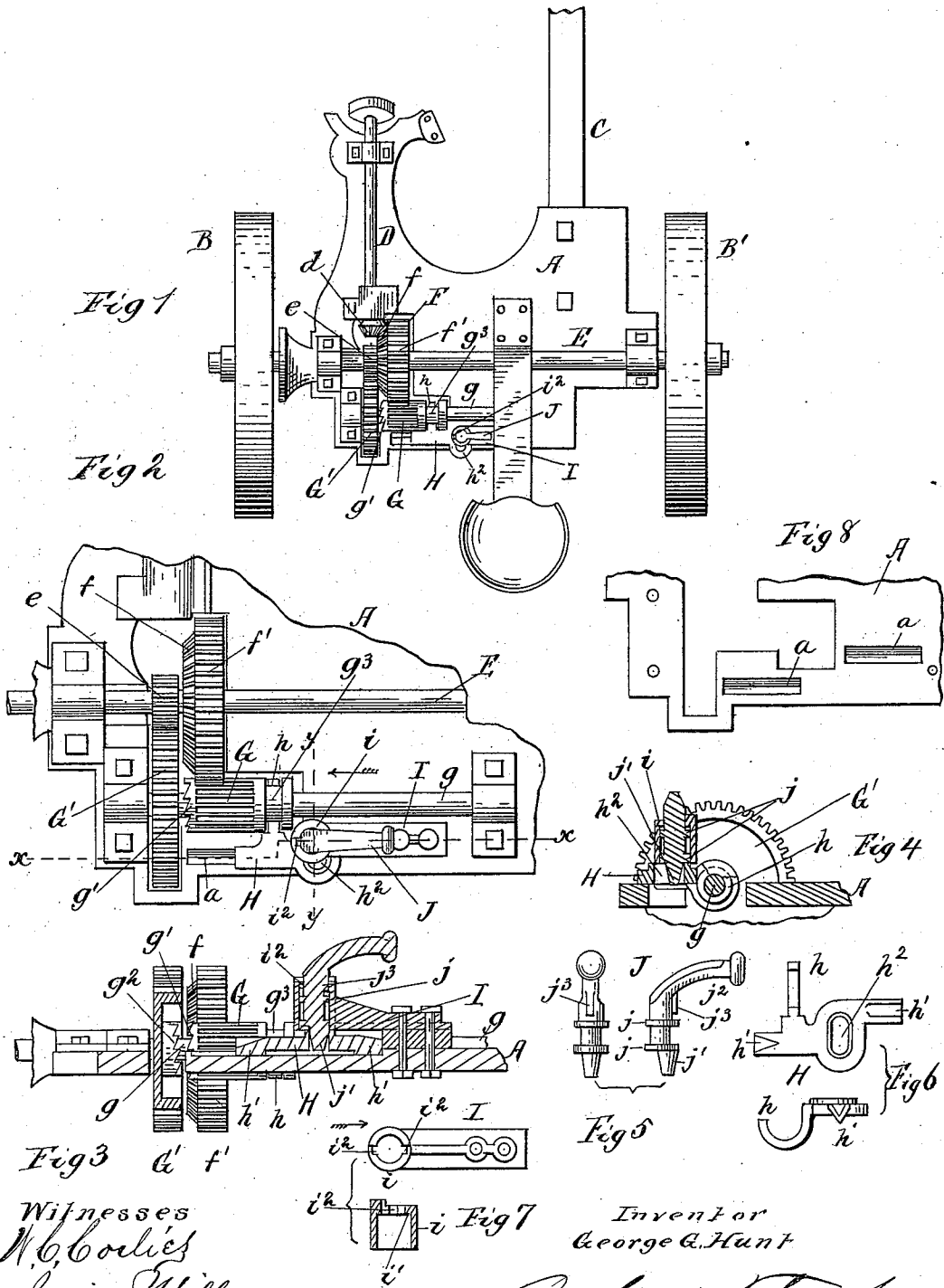
(No Model.)

G. G. HUNT.

CLUTCH MECHANISM FOR MOWING MACHINES.

No. 354,906.

Patented Dec. 28, 1886.



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CLUTCH MECHANISM FOR MOWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 354,906, dated December 28, 1886.

Application filed March 15, 1886. Serial No. 195,194. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. HUNT, a citizen of the United States, and residing at Bristol, in the county of Kendall and State of Illinois, have invented certain new and useful Improvements in Clutch Mechanism for Mowing-Machines, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of the carriage portion of a mowing-machine embodying my improvements; Fig. 2, a detail plan of the gearing and shipping mechanism for throwing the machine into and out of gear; Fig. 3, a section of the same, taken on the line *xx*, Fig. 2; Fig. 4, a cross-section of the same, taken on the line *yy*, Fig. 2; Fig. 5, elevations of the eccentric pin and handle detached and in different positions; Fig. 6, a plan and elevation of the clutch-slide; Fig. 7, a plan and section of the socket-bearing in which the clutch eccentric pin is mounted, and Fig. 8 a detail plan of the rear inner corner of the main frame.

The figures of the drawings from 2 to 8, inclusive, are upon the same scale, but Fig. 1 is on a different scale, somewhat reduced from that of the others.

My present invention relates to improvements in shipping mechanism for throwing the main gearing in and out of gear, whereby the movement of the apparatus may be stopped and started.

I will proceed to describe in detail the construction and operation of my invention as I have practically embodied it in one form, and will then point out definitely in the claims the special improvements which I believe to be new and wish to protect by Letters Patent.

The main features of the machine may be of any ordinary construction, and I shall not describe all the parts necessary to make a complete mowing-machine, as, for the proper understanding of my present invention, it is only necessary to describe those parts which relate to it particularly. Some of the main features of the machine will be barely mentioned, in order to briefly explain the drawings.

In the drawings, A represents the main frame of a mowing-machine; B the inner and B' the

outer main or supporting wheels, and C the tongue or pole. The crank-shaft D is mounted in any suitable manner on the main frame, and at its upper end is provided with a bevel-pinion, *d*. The main or supporting wheels are mounted on a main axle, E, in any well-known way, and this axle is provided with a pinion, *e*, which is fixed thereon. At one side of this pinion is a gear-wheel, F, mounted loosely on the main axle, and provided with a bevel-gear, *f*, which engages with the bevel-pinion on the crank-shaft, and a crown gear, *f'*, which engages with a gear-pinion, G, arranged on a counter-shaft, *g*, in rear of the main axle, and mounted loosely on its shaft and connected thereto, so as to permit movement lengthwise. A gear-wheel, G', is also mounted loosely on the counter-shaft *g*, and is arranged to engage with the pinion *e* on the main axle.

The pinion G is provided with a clutch, *g'*, on one of its faces, which is adapted to engage with a similar clutch, *g''*, on the adjacent face of the gear-wheel G', so that by sliding the pinion G on its shaft it may be engaged with and disengaged from the wheel G', thereby connecting the latter to the counter-shaft or disconnecting it therefrom, the pinion G being feathered to its shaft or connected thereto in some other like manner. The shipping mechanism for this gearing consists of a sliding plate, H, which is of the form shown in Fig. 6 of the drawings, being provided at one end with a curved arm, *h*, adapted to embrace the extension of the pinion G at one side thereof, which is provided with an annular groove or depression, *g''*, to receive this curved arm. This plate is also provided on its under side with V-shaped ridges *h'*, which are received by similar-shaped grooves, *a*, in the rear portion of the main frame, (shown in Fig. 8 of the drawings,) so that the clutch-plate H is held and guided in suitable ways. In the central portion of the plate a transverse slot, *h''*, is provided, and the plate is left free to slide in the ways which are mentioned above. A socket-plate, I, is arranged above this sliding plate, which is secured to the main frame at one end, while the other extends over the sliding plate and is provided with an upright tubular socket, *i*, as shown in Fig. 3 of the drawings. At the

upper end of this socket is an inwardly-projecting flange, i' , in which two notches, i'' , are cut on opposite sides of the socket, and one-half of which (the front portion, as shown in the drawings) is raised slightly above the other, this raised portion extending around from one notch to the other. An eccentric pin, J, is mounted in this socket. The main body of the pin is provided with two collars, j , which fit the interior of larger portion of the socket; or the pin may be cast of such size as to fill the socket. On the lower end of the pin is a stud or projection, j' , which is eccentric to the main body. This eccentric projection j' is arranged to enter the transverse slot h' in the sliding clutch-plate, and, obviously, as the pin is turned around in its socket the clutch-plate will be moved back and forth by the action of the eccentric in the slot.

The eccentric pin is provided with a handle, j'' , at its upper end and above the socket, which may be made by casting in one piece with the pin, if desired, and is preferably bent downward, as shown in the drawings, for convenience of operation. The upper portion of the pin above the collars fits the smaller socket within the flange at the upper end of the latter, while the collars on the pin fit the larger portion below. Evidently, then, the pin will be held in place in the socket, being introduced through the lower end of the same before it is fastened to the frame.

Above the upper collar is a short spline, j^3 , on one side of the pin, which starts a little distance above the collar, so as to leave space between the two about equal to the thickness of the flange on the socket. This spline is adapted to fit the notches in the inner edge of the flange i' , and when the spline is in one of these notches the eccentric pin will of course be held from rotation, and so the sliding clutch plate will be fastened in position, and with it the sliding gear-pinion to which the said plate is connected.

As already described, the rotation of the eccentric pin will move the sliding clutch-plate on its ways, and this movement will necessarily slide the pinion G on its shaft. The movement of the clutch-plate is parallel to the counter-shaft, and the parts are so arranged and adjusted that the turn of the eccentric pin in one direction will throw the clutch on the pinion into engagement with the clutch on the gear-wheel G', and when turned in the opposite direction will disengage these clutch-faces, and also so that when the spline on the pin

is in one of the notches in the socket-flange the gear-pinion will be disengaged from the wheel, but when the spline is turned and set in the other notch the pinion will be engaged with the same.

In order to change from one position to the other, the eccentric pin is pulled up in its socket until the spline is above the flange i' , when obviously the pin may be turned in its socket, the edge of the flange entering the space between the spline and upper collar on the pin, and the pin may be thrown around to bring the spline to one notch or the other, as may be desired, when the pin drops slightly, the spline passing down into the notch in the flange. The pinion and gear-wheel by this operation are clutched or unclutched and secured in either adjustment.

It is obvious that this shipping mechanism may be applied to a different arrangement of gearing; hence I do not wish to be understood as limiting my improvements to the precise arrangement of the gearing here shown and described; nor do I limit myself to the precise details of construction of all the several parts herein described and shown, for modifications may be made in some of the mechanical details and still retain the essential features of my invention.

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

1. In a mowing-machine, the sliding gear-pinion provided with a clutch face, in combination with the sliding clutch plate having a transverse slot, and the eccentric pin arranged to work in said slot, substantially as and for the purposes set forth.

2. The sliding clutch-plate provided with ridges on its under side, in combination with the cross-piece of the main frame of the machine, provided with grooves corresponding to the said ridges, the eccentric pin, and the sliding clutch pinion, substantially as and for the purposes set forth.

3. The sliding clutch plate, in combination with the eccentric pin provided with a spline, the pin-socket provided with the flange having notches therein, and the sliding clutch-pinion, substantially as and for the purposes set forth.

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