

1,030,460.

C. C. BUTLER.
INTERMITTENT GRIP DEVICE.
APPLICATION FILED FEB. 29, 1908.

Patented June 25, 1912.

2 SHEETS-SHEET 1.

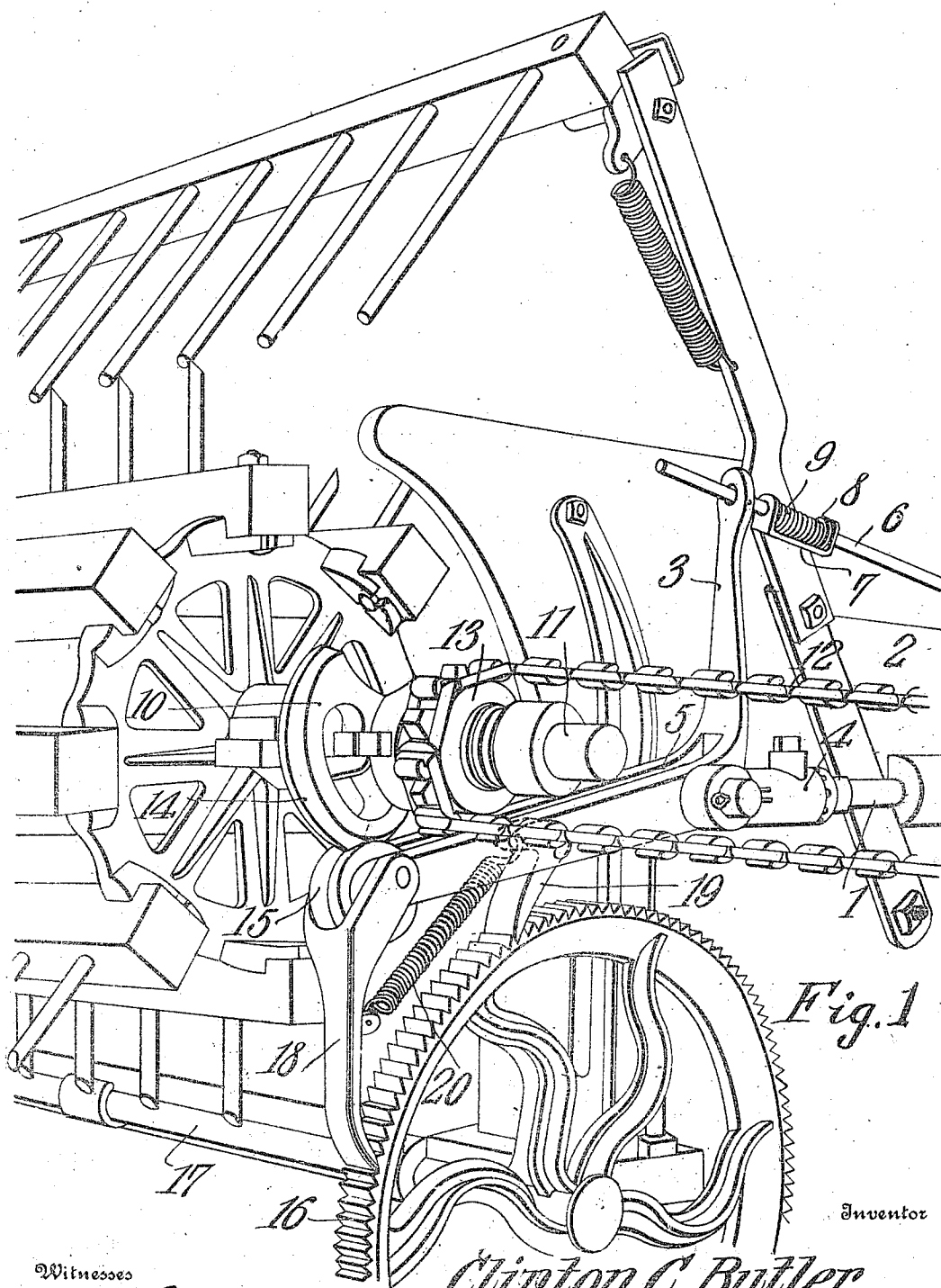


Fig. 1

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Witnesses

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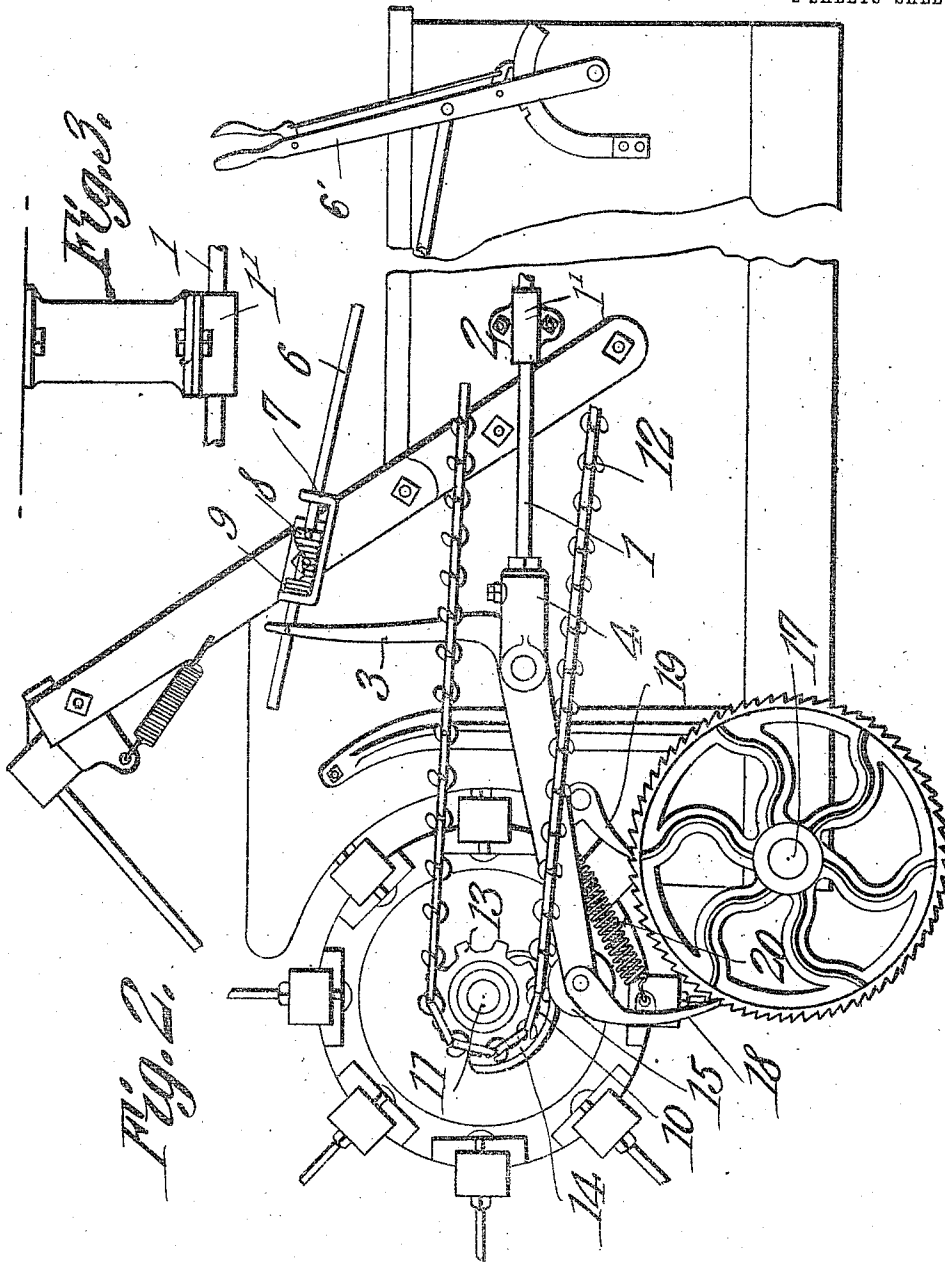
Attorneys

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UNITED STATES PATENT OFFICE.

CLINTON C. BUTLER, OF WATERLOO, IOWA.

INTERMITTENT-GRIP DEVICE.

1,030,460.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed February 29, 1908. Serial No. 418,501.

To all whom it may concern:

Be it known that I, CLINTON C. BUTLER, a citizen of the United States, residing at Waterloo, in the county of Blackhawk and State of Iowa, have invented a new and useful Intermittent-Grip Device, of which the following is a specification.

This invention relates to improvements in gripping devices and it is especially adapted for use upon and in connection with the apron shaft actuating mechanism for manure spreaders, and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide a simple and durable mechanism of the character indicated which is adapted to effectually operate the apron shaft at intervals and which may be manipulated so as to hold the said apron shaft at a state of rest.

The mechanism consists primarily of an angle lever which is swung upon its fulcrum through the instrumentality of a cam mounted upon the spreader shaft; said angle lever having a series of spring actuated pawls which engage a ratchet wheel mounted upon the apron shaft. Means is provided for manually swinging the angle lever whereby the said apron shaft may be thrown out of gear with the spreader shaft or will remain at a state of rest while the spreader shaft is revolving.

In the accompanying drawing, Figure 1 is a perspective view of the mechanism with parts broken away. Fig. 2 is a side elevation of a body with the apron shaft actuating mechanism located thereon. Fig. 3 is a top plan of the support for the supporting bar or rod of the mechanism.

The mechanism consists of the bar or supporting rod 1 which is mounted in the support 1', connected to and at the side of the wagon box or body 2. The angle lever 3 is adjustably fulcrumed at the end of the bar 1 through the medium of the collar 4 which is adjustably mounted upon the end of the bar 1, thereby causing the fulcrum to be held nearer to or farther from the rigid mounting 1' of the bar 1.

One end of the lever 3 is bifurcated as at 5 and the other end of the said lever slidably receives the extreme end of rod 6 which passes through the stop 7 slidably mounted thereon. An ordinary lever 6' is mounted upon the body 2 for moving the rod 6 longitudinally. The collar 8 is fixed upon the

rod 6 and is located between the ends of the stop 7. The coil spring 9 bears at one end against the collar 8 and at its opposite end against one end of the stop 7. Said coil spring is under tension with a thrust tendency. The cam 10 is mounted upon the spreader shaft 11. Said shaft is rotated through the instrumentality of the sprocket chain 12 operating upon the sprocket wheel 13. The chain 12 derives its movement from one of the traction wheels of the spreader (not shown) in the usual manner. The cam 10 is provided with a convexed peripheral portion 14. The wheel 15 is journaled for rotation in the bifurcation 5 of the angle lever 3 and its axis is the axis of the pawl 18, and said wheel 15 normally is located in the path of the convex portion 14 of the cam 10. The wheel 15 is provided with a concaved or grooved periphery. The ratchet wheel 16 is fixed to the apron shaft 17. The pawl 18 is pivotally connected with the bifurcated end of the angle lever 3 and is adapted to operate upon the side of the wheel 16. The pawl 19 is pivotally mounted in the bifurcation 5 of the lever 3 intermediate of the pawl 18 and the fulcrum to collar 4, and is adapted to operate upon the top of the wheel 16. The coil spring 20 is connected at one end with the pawl 18 below its pivot and at its opposite end with an upward extension of the pawl 19. The said coil spring crosses or traverses the pivotal points of the pawls 18 and 19 and is under tension with a tendency to force the pawls against the periphery of the ratchet wheel 16.

From the foregoing description it is obvious that the lever 3 may be adjusted bodily with relation to the bar 1 by moving the collar 4 thereon so as to properly position the pawls 18 and 19 upon the wheel 16. As the shaft 11 rotates the cam 10 is carried around and at each revolution of the said cam the convexed peripheral portion 14 thereof engages the wheel 15 and depresses the bifurcated end of the lever 3 against the tension of the spring 9. Thus the pawl 18 is moved in a downward direction and the wheel 16 is turned a few degrees and the shaft 17 is turned correspondingly. When the convexed peripheral portion 14 of the cam 10 moves beyond the wheel 15 the tension of the spring 9 comes into play and the rod 6 is moved longitudinally which swings the lever 3 and elevates the bifurcated end

thereof. Thus the pawl 18 is moved up with relation to the wheel 16 while the spring 20 holds the pawl 19 in engagement with the ratchets at the top of the wheel 16 and prevents the said wheel from having reverse movement. Should it be desired to maintain the shaft 17 at a state of rest while the shaft 11 is rotating the rod 6 is moved manually whereby the stop 7 engages the lever 3, so that the lever 3 is swung whereby the bifurcated end is depressed and the wheel 15 is moved to a point below the path of the convexed peripheral portion of the cam 10. Thus as the said cam rotates it does not come in contact with the wheel 15 and the lever 3 is not operated. By reason of the fact that the peripheral portion 14 of the cam 10 is convexed and the periphery of the wheel 15 is concaved the said cam and wheel will occupy the same plane when in contact with each other and will not become displaced laterally with relation to each other.

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

1. In combination with a wagon body having a rotatable shaft journaled thereon and a cam mounted upon said shaft, a second shaft journaled upon said body, a ratchet wheel fixed to said second shaft, a bar mounted upon said body, a collar adjustably mounted upon said bar, a lever fulcrumed upon said collar and projecting between the cam and ratchet wheel, and adapted to be

operated by the cam, a pawl pivotally mounted upon the lever and engaging the ratchet wheel for actuating the same, a retrograde preventing pawl engaging the ratchet wheel for holding the ratchet wheel against reverse movement, said pawls being located at points upon the lever which have movements with relation to the fulcrum point of the lever and which movements differ in scope with relation to each other.

2. In combination, a ratchet wheel, a bell crank lever, an adjustable means to regulate the swing of said bell crank lever, a wheel carried in the extreme end of one of the arms of said bell crank lever, a cam in operable relation with said wheel of the bell crank lever for causing the same and the end of the bell crank lever to be dipped, a pawl pivotally connected to the bell crank lever and having the same axis as said wheel, the free end of said pawl being in operable relation with the ratchet wheel, a retrograde movement preventing pawl having its free end in engagement with the ratchet wheel, and a single spring for yieldingly holding said pawls upon the teeth of the ratchet wheel.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CLINTON C. BUTLER.

Witnesses:

ARTHUR W. LEE,
ARTHUR E. MANTLE.