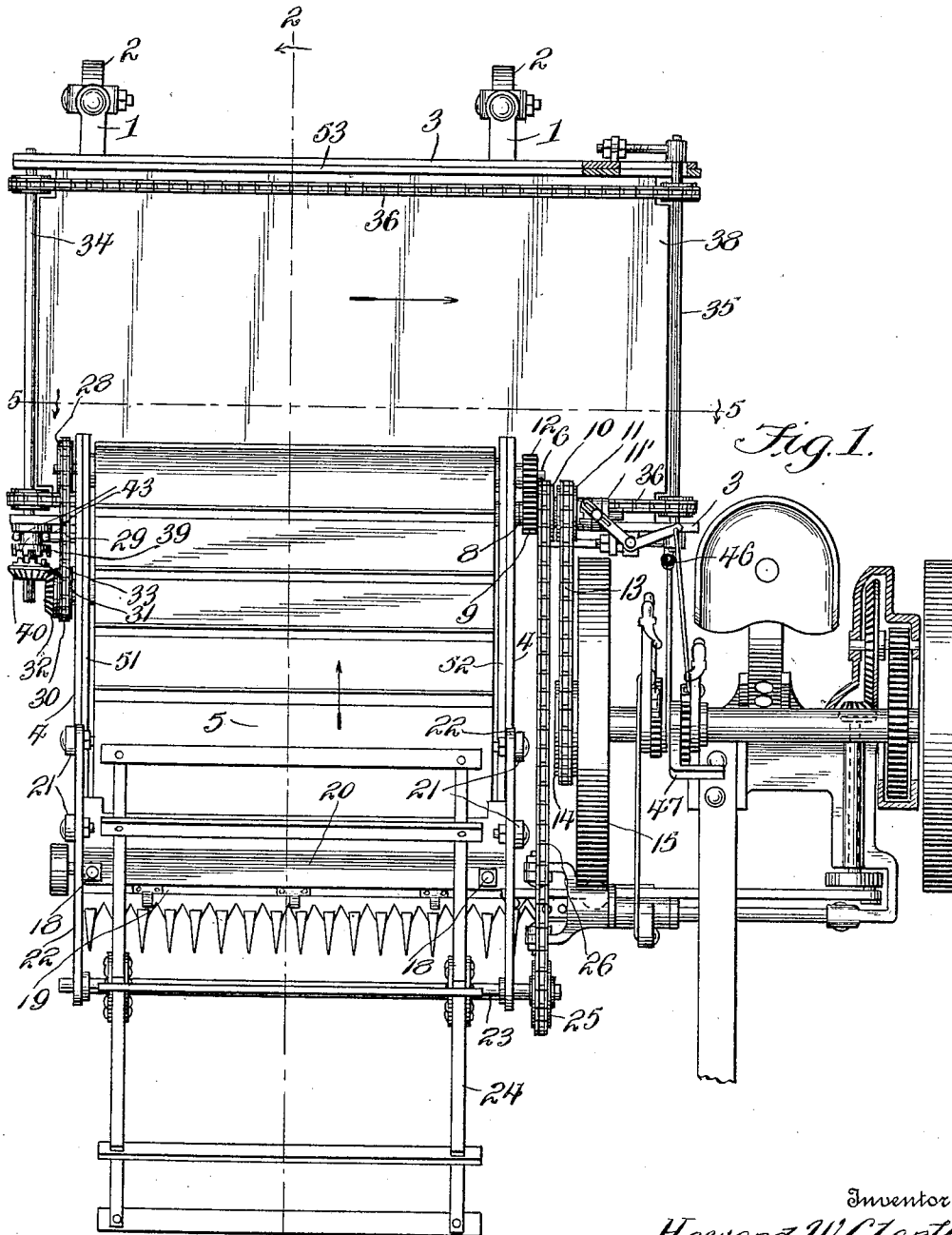


H. W. CLARK.
CLOVER BUNCHER.
APPLICATION FILED JUNE 27, 1911.

1,041,963.

Patented Oct. 22, 1912.

3 SHEETS-SHEET 1.



Witnesses.

J. L. Wright.
Wm. Dagg.

Inventor
Howard W. Clark

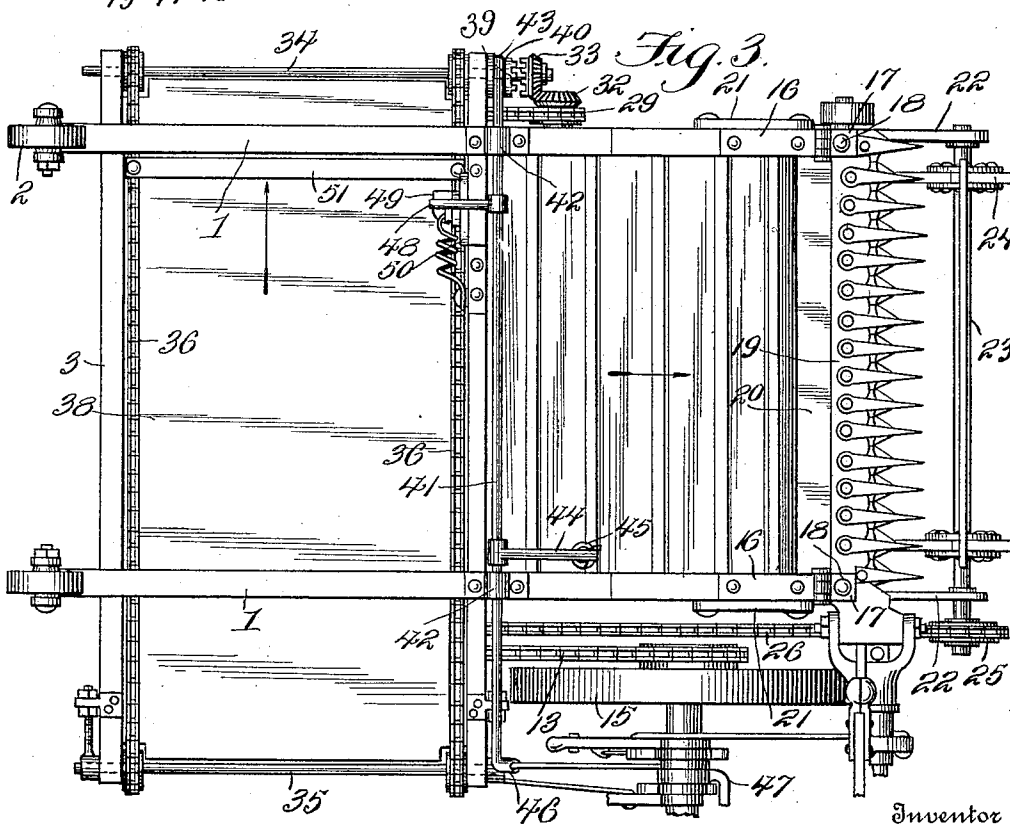
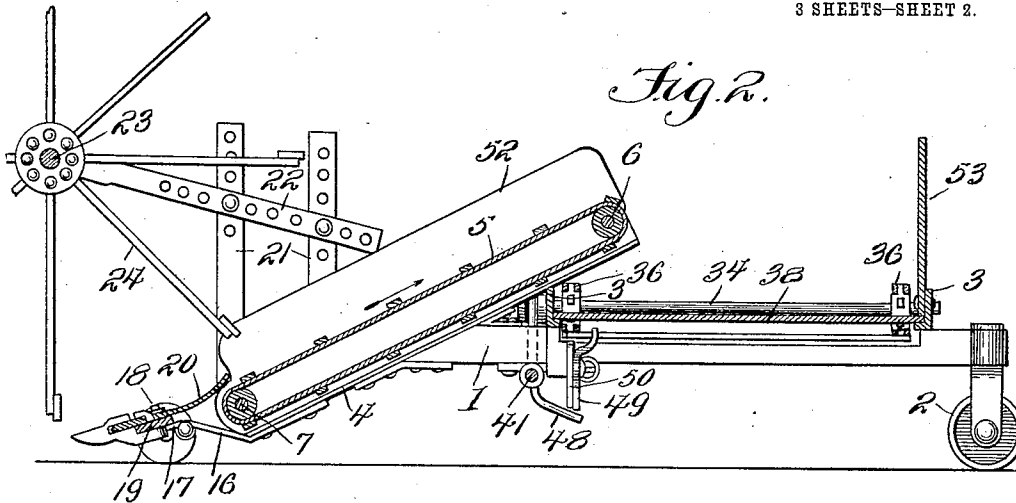
By *Victor J. Evans,*
Attorney

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3 SHEETS-SHEET 2.



Inventor

Howard W. Clark,

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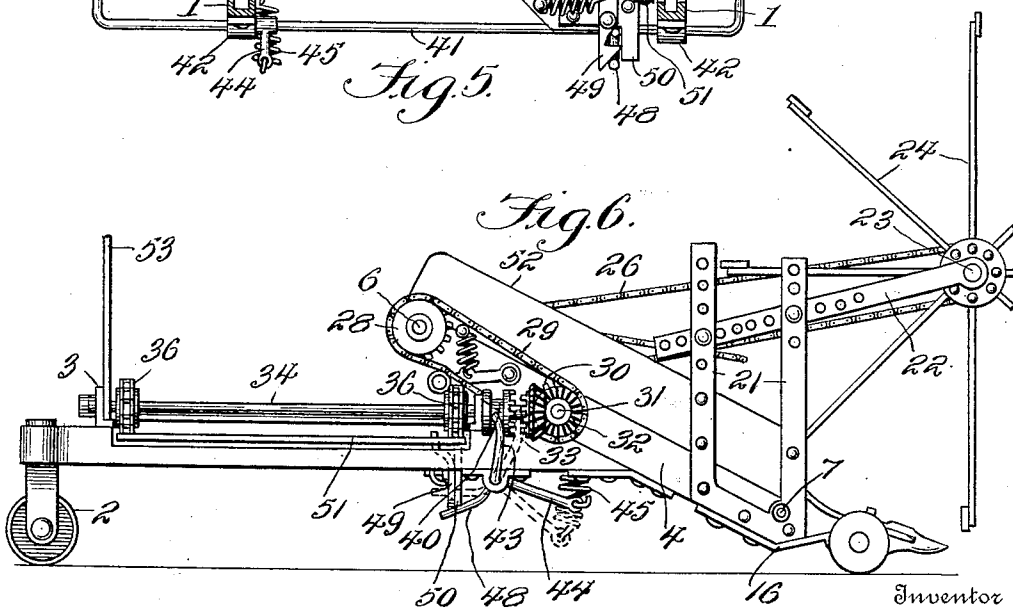
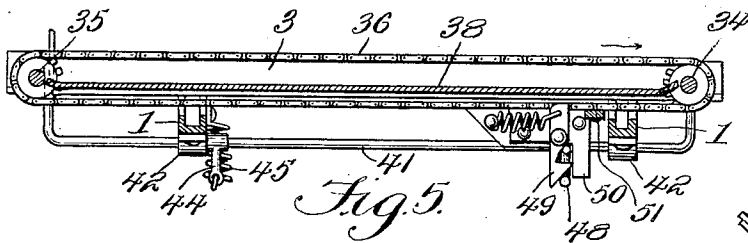
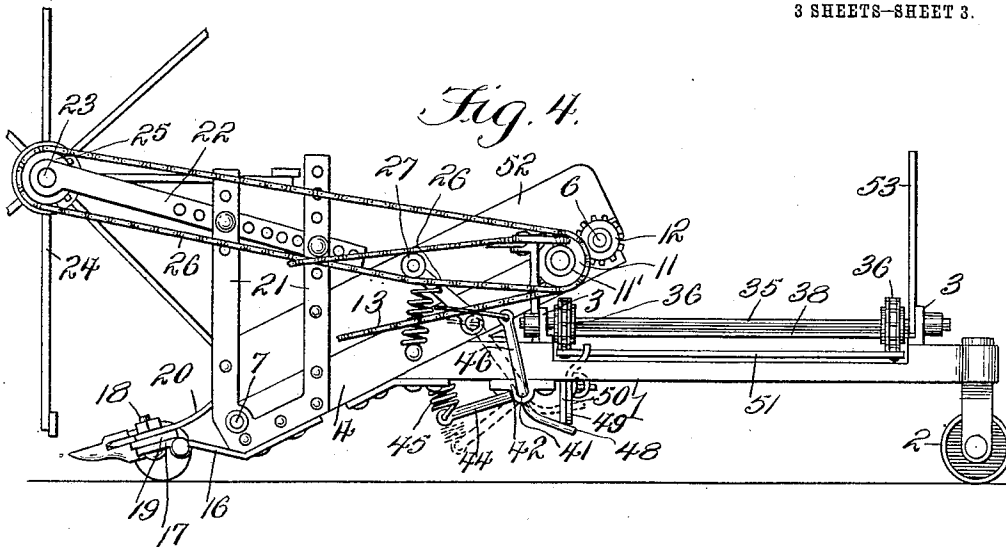
Witnesses
J. L. Wright,
Am. Bagger

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3 SHEETS-SHEET 3.



Inventor
Howard W. Clark.

Witnesses

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UNITED STATES PATENT OFFICE.

HOWARD W. CLARK, OF DAVISON, MICHIGAN.

CLOVER-BUNCHER.

1,041,963.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed June 27, 1911. Serial No. 635,614.

To all whom it may concern:

Be it known that I, HOWARD W. CLARK, a citizen of the United States, residing at Davison, in the county of Genesee and State of Michigan, have invented new and useful Improvements in Clover-Bunchers, of which the following is a specification.

This invention relates to clover bunchers in general, and the main object of the present invention is to produce a simple and efficient clover bunching attachment which may be readily applied to and used in connection with an ordinary mowing machine.

A further object of the invention is to produce a clover bunching device consisting of a few and simple parts which may be readily applied to and used in connection with a mowing machine, the moving parts of the clover buncher being driven from the mowing machine.

A further object of the invention is to produce a simple and improved clover buncher having a dropping device which may be readily thrown into gear when a sufficient quantity of material has been accumulated, said device being equipped with means whereby it is automatically thrown out of gear after the dumping operation has been performed, after which it remains stationary until another bunch has been accumulated.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings,—Figure 1 is a top plan view showing the improved device applied to an ordinary mowing machine of any conventional type. Fig. 2 is a longitudinal vertical sectional view taken on the line 2—2 in Fig. 1. Fig. 3 is a bottom plan view. Fig. 4 is a side elevation showing the outer or grain side of the attachment. Fig. 5 is a vertical transverse sectional view taken on the line 5—5 in Fig. 1. Fig. 6 is a side ele-

vation showing the inner side of the attachment.

Corresponding parts in the several figures are denoted by like characters of reference.

The frame of the improved attachment comprises a pair of longitudinal frame bars or sills 1, 1 supported at their rear ends by caster wheels 2, 2, said frame bars or sills serving to separate the side members 3, 3 which constitute the frame structure of the bunching carrier. The forward frame bar 3 serves in conjunction with the front ends of the sills 1, 1 to support the inclined bars 4, 4 which constitute the frame of the endless carrier 5, the latter being supported upon shafts 6 and 7 which are mounted for rotation, respectively, at the rear and front ends of the frame bars 4. One of the frame bars 4 supports a journal 8 carrying a spur wheel 9 and sprocket wheels 10, 11, said spur wheel and sprocket wheels being connected together by a clutch 11' of ordinary construction. The spur wheel 9 meshes with a spur wheel 12 upon the shaft 6. One of the sprocket wheels, 11, is adapted to be connected by a chain 13 with a sprocket wheel 14 associated with the wheel 15 of the mower in connection with which the device is used and upon which the bunching device is mounted in a manner which will be presently more fully described.

The frame bars 4 are provided at their lower front ends with forwardly extending brackets 16 carrying hinged arms 17 which are adapted to be connected by means of bolts 18 with the cutter bar 19 of the mowing machine, said cutter bar being provided with apertures for the passage of the bolts 18. The cutter bar and cutting mechanism of the mower is left unchanged in order to coöperate with the bunching device. A shield 20, which is mounted upon the bolts 18, extends rearwardly above the lower end of the endless carrier 5 in order that the clover heads may be guided on to said carrier when the machine is in operation.

A pair of uprights 21 which are bolted upon the frame members 4 are provided at their upper ends with pivoted arms 22 serving to support the shaft 23 of a reel 24, which latter may be of any suitable construction. The reel carrying shaft 23 has a sprocket wheel 25 which is connected by a chain 26 with the sprocket wheel 10 which derives motion from the mowing machine, thus serving to drive the reel. The wings

or blades of the latter are so proportioned that they will barely clear the cutting mechanism, and for this purpose the said wings or blades may be adjusted, but as this construction is well known in reels, it has been considered unnecessary to particularly illustrate the same. The reel is intended to be supported in position for operation by suitably arranged braces and it is driven by means of the driving chain 26 which is kept tensioned by the weight of the reel, although a chain tightener 27 of suitable construction may be employed for the purpose of assisting in supporting the weight of the chain. Suitable means may be employed for the purpose of effecting any desired adjustment of the reel.

The shaft 6, which supports the upper end of the endless carrier 5, is provided adjacent to its outer end, at the grain side of the device, with a sprocket 28 which is connected by a chain 29 with a sprocket 30 upon a journal 31 extending from the outer frame bar 4. Associated with the sprocket 30 is a bevel gear 32 meshing with a bevel gear 33 upon a shaft 34 which is journaled for rotation adjacent to the outer ends of the frame bars 3, and which serves to support one end of the bunching carrier, the other end of which is supported upon a shaft 35 supported for rotation adjacent to the inner ends of the frame bars 3 which latter, when the device is in operation, extends in rear of the mowing machine frame, as will be best seen in Fig. 1 of the drawings. The bunching carrier may consist of chains 36 engaging sprockets upon the shafts 34, 35, which move over the floor 38 which is secured between the frame bars 3, 3 and which support the load that is being moved by the raddle.

The bevel gear 33 is mounted loosely upon the shaft 34 so as to rotate idly upon said shaft except when operatively connected therewith by means of a clutch 39, which latter is slidably mounted upon the shaft 34, said clutch member being provided with an annular groove 40.

A rock shaft 41, which is supported in bearings 42 upon the undersides of the sills 1, is provided at one end with a bifurcated arm 43 engaging the annular groove 40 in the clutch member 39. Said rock shaft also has a forwardly extending arm 44 which is connected with one of the sills 1 by means of a spring 45 whereby the rock shaft is normally actuated to hold the clutch member 39 out of engagement with the bevel gear 33. The rock shaft 41 also has an arm 46 adapted to be engaged and actuated by a foot lever 47 associated with the mowing machine so that the operator by pressing said foot lever may oscillate the rock shaft against the tension of the spring 45 to place the clutch member 39 in engagement with

the bevel gear 33, thus causing motion to be transmitted to the shaft 34 from the shaft 6 through the medium of the chain 29, bevel gear 32 and associated parts. The rock shaft 41 is also provided with a rearwardly extending arm 48 adapted to engage a pivotally supported spring actuated catch or trigger member 49 lying in the path of said arm 48. A guard or guide member 50 is supported adjacent to the trigger member 49 to guide the arm 48 into engagement with said trigger member. It will be seen that when the rock shaft is oscillated to place the clutch 39 in engagement with the bevel gear 33, the arm 48 will be engaged and retained by the trigger member, thus retaining the clutch member in engagement with the bevel gear and causing the mechanism actuated thereby to continue in operation until the arm 48 shall be released from the trigger member. This is effected automatically by means of a cleat or slat 51 secured upon the chains of the bunching carrier, said slat being so arranged as to contact with the upper end of the spring actuated trigger which is extended so as to lie in the path thereof. Thus, after the bunching carrier has completed a circuit, the movement thereof will be automatically stopped by the action of the slat 51 which constitutes a trip to release the trigger 49, thereby causing the rock shaft to be oscillated by the spring actuated arm 44 to throw the clutch member 39 out of engagement with the bevel gear 33, thus permitting the latter to rotate idly upon the shaft 34.

The side bars 4 constituting the frame of the elevating carrier 5 are preferably provided with sideboards 52 constituting guards to prevent the clover heads from dropping off the sides of the frame. For a like purpose a shield or guard of suitable dimensions, as shown at 53, is preferably erected upon the rear bar 3 of the frame of the bunching carrier.

In the operation of this device, it will be understood that rotary motion is transmitted from the mowing machine with which the device is connected to the reel, whereby the clover heads that are severed by the cutting mechanism are thrown back over the shield 20 upon the carrier 5, whereby the heads are deposited upon the normally stationary bunching carrier. When a sufficient quantity has been accumulated, the operator by actuating the foot lever 47 rocks the shaft 44, thereby placing the clutch member 39 in engagement with the bevel gear 33 and starting the bunching carrier in motion in the direction indicated by an arrow in Fig. 1 of the drawings. After the bunching carrier has completed a circuit, thereby dropping the load in rear of the mowing machine, the slat or strip member 51 en-

gages the trigger 49, thereby throwing the actuating mechanism of the bunching raddle out of gear and causing said raddle to remain stationary until it shall be time to
5 dump another load.

As will be seen, the improved clover buncher is extremely simple in construction and capable of being quickly attached to or detached from an ordinary mowing
10 machine. The forward end of the device is supported by the cutter bar, as shown, while the weight of the rear portion of the device is supported by the caster wheels or trailers 2.

15 Having thus described the invention, what is claimed as new, is:—

1. In a clover buncher, a longitudinally disposed inclined elevating carrier, a cutter bar, means for connecting the carrier with
20 the cutter bar, a transversely disposed bunching carrier supported below and adjacent to the discharge end of the elevating carrier, uprights associated with the elevating carrier, reel carrying arms pivoted on the up-
25 rights, means for constantly driving the elevating carrier, means for transmitting motion from the driving means of the elevating carrier to the reel, means including a clutch for intermittently driving the
30 bunching carrier, lever means for setting the clutch, means including a trigger for retaining the clutch when set, and means carried by the bunching carrier for actuating the trigger to release the clutch.

35 2. In a clover buncher, the combination with suitable cutting apparatus of an elevating carrier, a bunching carrier disposed transversely below and adjacent to the discharge end of the carrier, said bunching
40 carrier including an endless carrying member and a transverse slat associated therewith, a shaft supporting one end of the carrier, a gear wheel loose upon said shaft, a clutch member slidable upon the shaft and
45 adapted to engage the gear wheel to lock the latter upon the shaft, a rock shaft having a bifurcated arm engaging the clutch member, a spring actuated arm extending from the rock shaft to hold the clutch mem-
50 ber normally in non-engaging position,

means for actuating the rock shaft against the tension of the spring actuated arm, a spring actuated trigger lying in the path of the transverse slat associated with the
endless carrier, and an arm extending from 55 the rock shaft and adapted to engage the trigger to be retained by said trigger against the tension of the spring actuated arm extending from said rock shaft.

3. In a clover buncher, a bunching carrier, supporting shafts for said bunching
60 carrier, one of said shafts being provided with a loose gear wheel and with a clutch member adapted to lock said gear wheel upon the shaft for rotation therewith, 65 spring means to normally hold the clutch member out of engagement with the gear wheel, means for actuating the clutch member against the tension of the aforesaid spring means to engage the gear wheel, a
70 spring actuated trigger to retain the clutch member in engagement with the gear wheel, and trip means associated with the bunching carrier to trip the trigger.

4. The combination with a mowing ma- 75 chine having a cutter bar, of a clover buncher, said clover buncher including a longitudinally disposed elevating carrier, means for connecting the same with the cutter bar, a shield mounted upon the con- 80 necting means above and adjacent to the cutter bar, a reel associated with the carrier, means for constantly driving the carrier and the reel, a bunching carrier disposed trans- 85 versely in rear of the elevating carrier and below the discharge end thereof, means including a clutch for actuating the bunching carrier, means for throwing the clutch into action, trigger means for retaining the
clutch in action, trip means associated with 90 the raddle to release the trigger, and spring means for restoring the clutch to non-engaging position.

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

HOWARD W. CLARK.

Witnesses:

ALVY W. ALGER,

WILLIAM H. BRYANT.