

No. 659,197.

Patented Oct. 2, 1900.

F. E. ALLEN.
FRUIT PICKING MACHINE.

(Application filed Feb. 11, 1898.)

(No Model.)

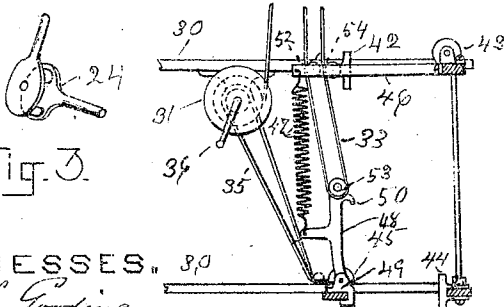
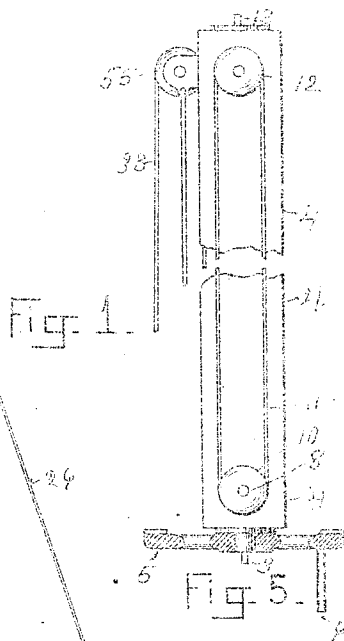
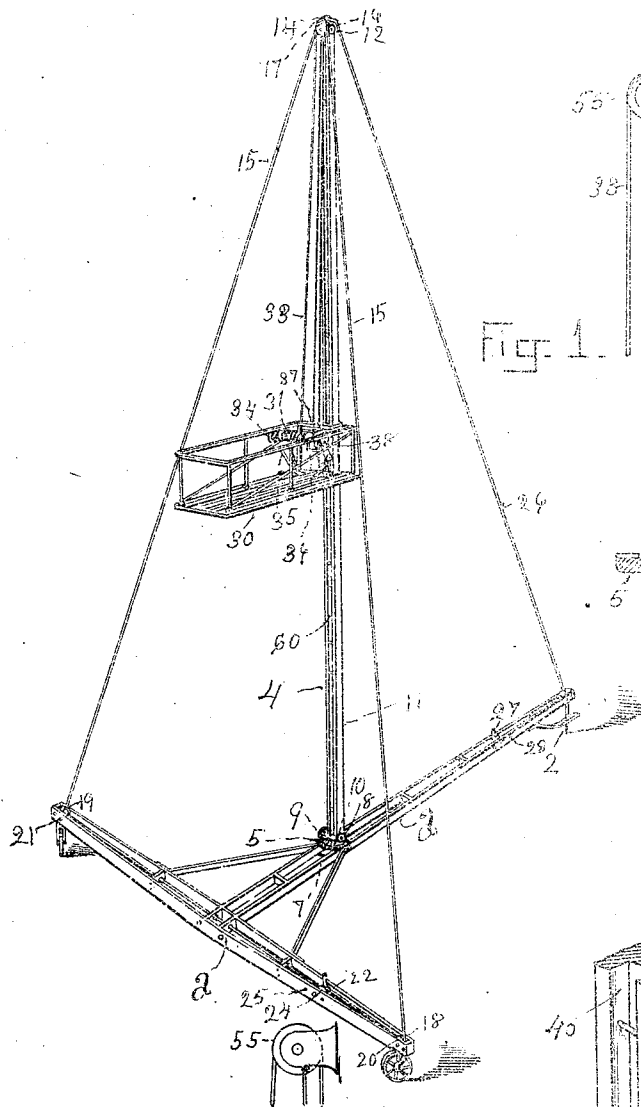


Fig. 3.

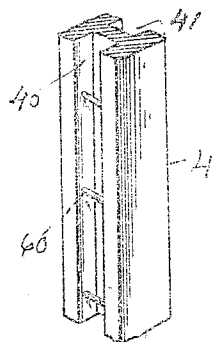


Fig. 4.

WITNESSES.
Charles S. Gooding.
Harry W. Keigg.

Fig. 2.

INVENTOR:
Frederick E. Allen.
By his Attorney,
Robt. J. Jones

UNITED STATES PATENT OFFICE.

FREDERICK E. ALLEN, OF LYNN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO THE IMPROVEMENTS MANUFACTURING COMPANY, OF BOSTON, MAS-
SACHUSETTS.

FRUIT-PICKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 659,197, dated October 2, 1900.

Application filed February 11, 1898. Serial No. 689,890. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. ALLEN, of Lynn, county of Essex, and Commonwealth of Massachusetts, have invented certain Improvements in Fruit-Picking Machines, of which the following, read in connection with the accompanying drawings, is a specification.

In the accompanying drawings, Figure 1 shows in perspective the machine embodying this invention. Fig. 2 is an elevation in section enlarged. Fig. 3 shows in perspective the guy-winding device detached. Fig. 4 shows in perspective a section of the shaft. Fig. 5 shows in elevation the shaft and detail enlarged.

This invention comprises three legs or points of bearing, which are connected by an intermediate framework *a*, hereinafter called the "base-frame." Two of these legs are provided with wheels, whereon the machine may be moved about, and the other leg is made to operate for a handle in moving the machine about and for holding it against movement whenever it is temporarily located for use. To this end such leg is provided with an approximately-sharp iron 2 for penetrating the ground. At the central part of the base-frame is an opening wherethrough may be socketed the pin 3, which pin is firmly secured in the end of the shaft 4 and operates when in the socket for holding the base end of the shaft in place. On the pin 3 is a pinion 5, adapted for independent rotation, which pinion carries an arm 6 to engage with a stop 7 on the base-frame for holding the pinion from turning relatively to the base-frame. In the base end of the shaft 4 is journaled the horizontal shaft 8, which carries a fixed gear 9 on one end in mesh with the pinion 5 and on the other end has a fixed sheave 10, whereon is a cord-belt 11, which also has engagement with the sheave 12 on the top end of shaft 4, and by moving the cord while the pinion 5 is held stationary the shaft 4 may be turned about for shifting the position of the picker, as further specified hereinafter.

In the top end of shaft 4 is a fixed pin 13, whereon is set the cap 14. The guy-rope 15 has one end attached to the cap 14 at the point 16, its opposite end being engaged with the cap at the point 17, and from these points its intermediate part is extended to the points

18 19 on the base-frame, where it passes over the fixed sheaves 20 21 and along the channel of the base-frame. At the point 22 it is connected with a winder 24, (shown detached in Fig. 3,) and by turning this winder the cord may be accumulated or let off in both directions for tightening and loosening the tension on cap 14, and by a pin 25 the winder may be set against movement when so desired. The other guy-rope 26 has one end fixed to the cap 14 and its opposite end fixed on the base-frame, with its intermediate part engaged by the winder 27, which may be operated for taking up and letting out the rope and may be locked whenever so desired by the pin 28. This arrangement insures the ends of the said guy-ropes from entanglement and keeps the whole gear well regulated for packing or transportation and ready use. It will now be understood that the shaft is first set in position, with the pin 3 socketed in the base-frame, as shown in Fig. 1, and thereupon the cap 14 is lifted to its position on the pin 13. The winders may then be turned for accumulating the guy-rope, and consequently firmly holding the shaft 4 in vertical position, as shown, and reversing these operations will loosen the shaft 4 to permit its removal for purposes of storage in times of disuse or convenience in cases of transportations.

On the picker's carriage 30, which may be of any suitable size, is a winding-drum 31, having connection with the cord 33, which cord is made fast at the top of shaft 4 and may be taken on and let off by suitably turning the drum 31 for lifting and lowering the picker's carriage, and connected with the winding-drum shaft is a drum 34, on which is arranged the strap 35 as a brake, whereby the workman can hold and regulate the unwinding of the drum, and thereby control the speed of the descending movement without hands on the arm 36. Said arm 36 carries a ratchet-wheel 37, located for engagement by the pawl 38, whereby the drum may be locked against movement whenever the carriage is to be retained for work at a given altitude.

The shaft 4 has in one side thereof a longitudinal groove 40, and in the opposite side thereof is a similar groove 41, wherein are designed for travel the guide members 42 43 44 45, which guide members are mounted in

suitable frame or bracket parts on the picker's carriage and are carried up and down thereby. The guide members 43 45, it will be observed, are to sustain the strain in part which results from the offsetting position of the picker's carriage with relation to the shaft 4, as shown, and to this end said members 43 45 are journaled for rotative movement in the respective supporting parts and preferably are also provided with faces to bear upon the shaft 4 outside of the said grooves, whereby to have broader bearing and consequently easier action. In the up and down movements of the carriage these guide members serve to hold and guide it along the shaft 4. The spring 47, connecting by its top end with the bracket 46, has its bottom end engaged to the horizontal arm of lever 48, which lever 48 has its bottom end supported for rocking movement on the bracket 49 and carries at or near the top end thereof a horn 50. Said horn 50, projecting from the lever 48, entering the groove 40 of shaft 4, under the normal action of spring 47 is drawn backwardly and withheld from the groove by tension applied through the cord 33, which to that end is connected with the top end of lever 48, as shown. Now this cord 33, it will be noted, is the cord from the winding-drum 31, which cord, having its end fast at the top of shaft 4, runs first downwardly through guide-hole 52 in bracket 46, around the sheave 53 in end of lever 48, thence upwardly through guide-hole 54, around the sheave 55, and thence downwardly again to the winding-drum 31. It will now be understood that the operation of the drum 31 for lifting and lowering the picker's carriage will first strain the cord 33, whereby the lever 48 is drawn backwardly against the tension of spring 47 into vertical alinement with the guide-holes 52 54. This operates to withdraw the horn 50 from groove 40 during such time as the tension is applied through cord 33; but let this tension cease for any cause, and especially in case of unexpected parting of the cord, then the spring 47 operates immediately, and thereby the horn 50 is thrown forwardly into the groove 40 to engage with some one of a series of pins 60, which, it will be understood, operates for holding the picker's carriage from dropping to the ground. In operation the picker, having entered the

picker's carriage, will operate the drum 31 to attain the altitude which may be desired and may while at this altitude operate the cord 11 for turning the shaft 4 and consequently swinging the picker's carriage about from side to side as may be desired.

I claim—

1. In a machine of the character indicated, the combination with a shaft, a picker's carriage, a base-frame, and means consisting of a horn, and mechanism for operating the latter for lifting and lowering the picker's carriage.

2. In a machine of the character indicated, the combination with a shaft, a picker's carriage, a base-frame, and means consisting of a horn and cord, and mechanism for operating the latter for lifting and lowering the picker's carriage.

3. In a machine of the character indicated, the combination with a shaft, a picker's carriage, a base-frame, and means consisting of a horn, cord and drum, and mechanism for operating the latter for lifting and lowering the picker's carriage.

4. In a machine of the character indicated, the combination with a shaft, a picker's carriage, a base-frame, and means consisting of a horn, cord, springs 47, and drum and mechanism for operating the latter for lifting and lowering the picker's carriage.

5. In a machine of the character indicated, the combination with a shaft, a picker's carriage, a base-frame, and means consisting of a horn, cord, spring, drum, and devices 42 and 44 for lifting and lowering the picker's carriage.

6. In a machine of the character indicated, in combination, the base-frame, the shaft, 4, having its bottom end seated in the base-frame, the cap, 14, mounted on the top of said shaft, the guy-cords 15, 26, intermediate said cap and the base-frame, and the winders 24, 27, for adjusting the guy-cords, all substantially as described.

Signed at Lynn, Massachusetts, this 27th day of January, A. D. 1898.

FREDERICK E. ALLEN.

Witnesses:

A. M. TUTTLE,
C. B. TUTTLE.