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## Improvement in Grape Frames.

The annexed figures represent the grape frame, for which a patent was granted to S. Oscar Cross, of Sandy Hill, Washington Co., N. Y., on the 27th of June last.

Fig. 1 is a perspective view, and fig. 2 is a vertical section, showing how the frame can be bent down so as to expose the grapes in a horizontal position.

The nature of the invention consists in an adjustable elevating and depressing grape frame for the better cultivation of the grape. The grape frame is constructed of wall strips, two by four inches, cut to any desirable length, say ten or twelve feet; and slats or cross pieces of about an inch in thickness and three in width, and six or seven feet long, are fastened about two feet apart to one edge of the wall strips. The vine is now placed upon the frame and slats fastened to the other side, thus securing the vine within the frame, as represented in the figure, B. The frame can be supported in any position by the legs attached to it, and can be fastened there by driving pins or stakes through holes in the foot pieces, or it can be fastened in various ways; the vine itself will secure the foot of the frame. The advantages of the invention are stated to be as follows, viz. The fruit is more easily gathered, as it can be brought to a convenient altitude, and the vine conveniently lowered to the ground when it can be covered with straw or otherwise to protect it from winter killing. The size of the fruit is increased by allowing the frame to lie on or near the ground, which secures to the vine a greater amount of heat as it receives warmth from the earth as well as from the sun, and is not exposed to cold winds as much as those on elevated frames; the quantity is also increased as it sets abundantly and grows larger on or near the ground. The grape beetles and insects are not as destructive to buds and foliage on or near the ground as on elevated frames. Care should be had not to expose the fruit to too much sun during the early stages of ripening, but the process should be completed by giving it a full exposure, as frame A; the fruit is readily protected from light frosts, as it can be lowered to the ground, where it is less exposed, as in fig. 2, and if necessary can be easily covered; or if the ground had been sown with corn or oats, as soon as the fruit was sufficiently advanced to admit of elevating the frame, it would form a mat in which the fruit would be imbedded so as to protect it from light frosts, and would be of service to protect the vine from winter killing. Thus, by this adjustable frame and method of managing it, tender and choice varieties can be raised and ripened in northern latitudes with less trouble and a better prospect of success. The invention is adapted to a variety of forms and can be used in several ways: a frame can be so constructed as to turn back against buildings, fences, &c., and dispense with legs and foot pieces attached, prop legs (fig. 2) being used instead, or a row of posts set north and south will support two rows of frames, one on each side,

made so as to turn back like a trap door, as in fig. 1, being held in any position by means of supporters attached to the frame on the upper side, the other end being held to the posts by pins passing through both; the frame can be elevated or depressed by a series of holes in the supporters.

The claim is for an Adjustable Elevating and Depressing Grape Frame, with or without supporters attached, and made of any known material.

It therefore embraces a variety of modifications not represented in the annexed figures. The benefits of such a grape frame appear to be of great importance and value. They deserve general attention. Every farmer should have a good vinery, and pay attention to the proper cultivation of the grape.

More information respecting it may be obtained by letter addressed to Mr. Cross, directed as above set forth.

## CROSS' GRAPE FRAME.

Fig. 1.

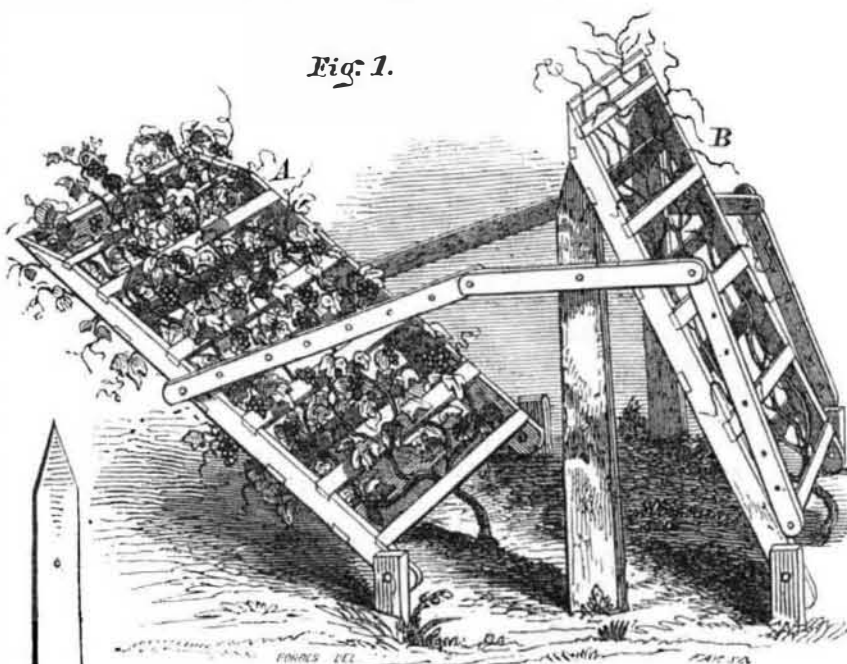
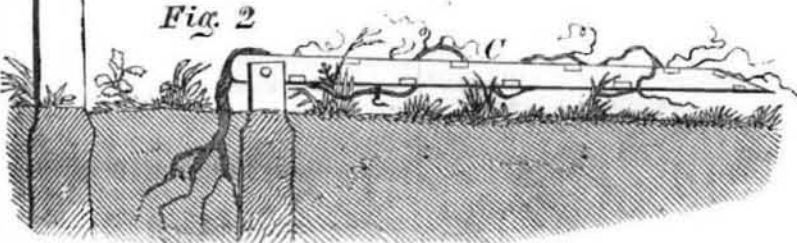
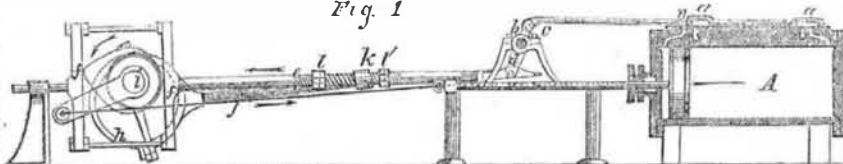


Fig. 2.



## DARLING'S VALVE MOTION.

Fig. 1.



On the 11th of last month a patent was issued to Martin V. B. Darling, of Providence, R. I., for an improvement in the valve motion of steam engines, which is represented by the annexed engraving—a longitudinal section of a cylinder and slide valve of an engine, and side view of the valve motion.

The invention consists in a certain mode of combining together and applying to the valve a cam and eccentric, the former for moving the valve to open the steam ports and the latter to close them, whereby the ports are opened and closed with sufficient rapidity to enable the steam to be admitted full on the piston, and cut off at any point between about one-fourth or even less, of the stroke of the piston, and the end of said stroke. A, is the steam cylinder, which is represented with a separate exhaust port for each steam port, and fitted with two valves, a a, but this is not essential to the invention, as it is well understood that the operation of the single short slide is the same as that of the two valves, as represented. b is the way shaft, carrying the arm, c, to which the valve rod is attached, and the arm, d, which connects the rod, e, from a yoke, f, f,

which surrounds the cam, g, on the crank shaft, i. This cam is of such form, and so arranged upon the shaft, that it will give the proper length of stroke to the valve for opening first one, and then the other of the steam ports, and that it will open the ports wide very early in the stroke of the piston. It fits to the yoke in such a way, that very soon after it has passed the position at which it arrives to open the port wide, it will allow the yoke to receive such a movement independently of it, as would cause the valve to close the port. At the side of the cam, g, is placed the eccentric, h, which is made capable of giving about twice the amount of motion given by the cam, g, in order that it may be capable of giving the valve a quicker motion than the cam. The eccentric rod, j, which receives the motion of the eccentric, has an eye, K, rigidly attached to its end, and this eye is of such size internally, as to be capable of sliding freely on the yoke rod, e, or of allowing the said rod to slide freely through it, and the yoke rod, e, is furnished with two fixed stops or tappet pieces, l l, one on each side of the eye, K, to control the sliding motion of the eye and the rod, the one up-

on or within the other. The eccentric requires to be set in such relation to the crank as the desired point of cutting off may require. If it be desired to cut off at half stroke, the eccentric is set one quarter of a revolution in the rear of the crank; if at one quarter of the stroke, one-eighth of a revolution—if at three quarters of the stroke, three-eighths of a revolution, and so on. The above rule applies only when the valve receives its motion directly from the shaft, but when a counter motion is used, as represented, the eccentric requires to be in a position diametrically opposite to those described, as an illustration of which, see the figure where the steam is intended to be cut off just after half stroke, and the eccentric is set a little less than half a revolution in advance of the crank. The distance between the stops, l l, on the yoke rod should be equal to the length of motion given by the eccentric, h, plus the depth of the eye, k, and the position of the stops on the yoke rod will depend upon the length of the eccentric rod, which may be about half that of the yoke rod. The operation of the cam and eccentric on the valve are explained by the figure, where the direction of the revolution of the crank and the motion of the piston, are indicated by arrows, the cam has nearly arrived on its center and the steam port, n, is nearly wide open.—The yoke rod is now moving in the direction of the top arrow, but the eccentric rod is moving in the opposite direction, as indicated by the under arrow. As soon as the cam arrives on its center, the port will be full open, and will remain so as the cam continues its movement, owing to the shape of the cam not being such as to return the yoke rod at once. The eccentric, as it continues moving in the same direction, will bring the eye, k, in contact with the stop, l', and move the rod, e, along with it, until by the time the eccentric is on its center, the valve has moved back far enough to close the port, n. It will be understood that a similar action takes place during the movement of the piston in the opposite direction, the eccentric always leaving the valve or valves in proper position to be operated upon by the cam when it comes round.

The patentee does not confine himself to an eccentric to close the valve, as a cam would effect the same result, but an eccentric works and wears more smoothly; the cam is only used to open the valve, for the sake of opening the port fully, very early in the stroke of the piston. The improvement appears to be a very excellent one indeed.

More information may be obtained by letter addressed to Mr. Darling.

## Death of an Astronomer and Mechanician.

The English papers announce the death of John Fulton, a self-taught astronomer and skillful mechanician. He was a native of Fenwick, Scotland, and first made himself known by constructing an orrery, which excited much admiration wherever it was exhibited. He was a working shoemaker in his native village, of scanty means and education. He went to London, and was employed as a mathematical instrument maker, and exhibited great ingenuity and skill in making theodolites for the Pacha of Egypt, and balances for the Mint in London.

## Enclosing the Track.

The Philadelphia, Wilmington, and Baltimore Railroad company, it is stated, are actively engaged in collecting material along the line of their road, preparatory to enclosing the same with a substantial fence. This is fight. We have recommended this a number of times for all our railroads.