(No Model.) 2 Sheets—Sheet 1.

C. E. MOSER.

MACHINE FOR PULLING COTTON STALKS.

No. 303,447. Patented Aug. 12, 1884.

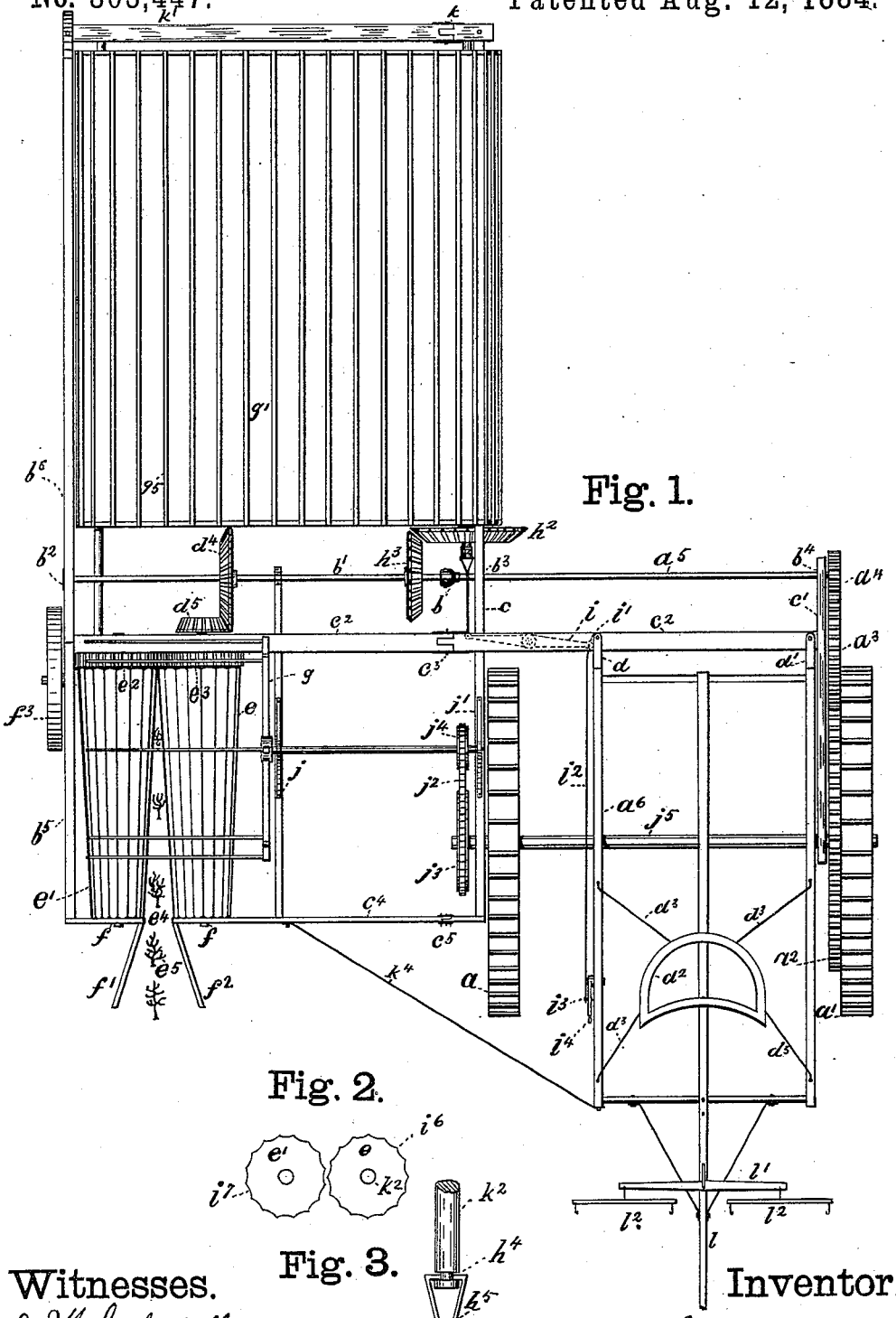

Fig. 1.

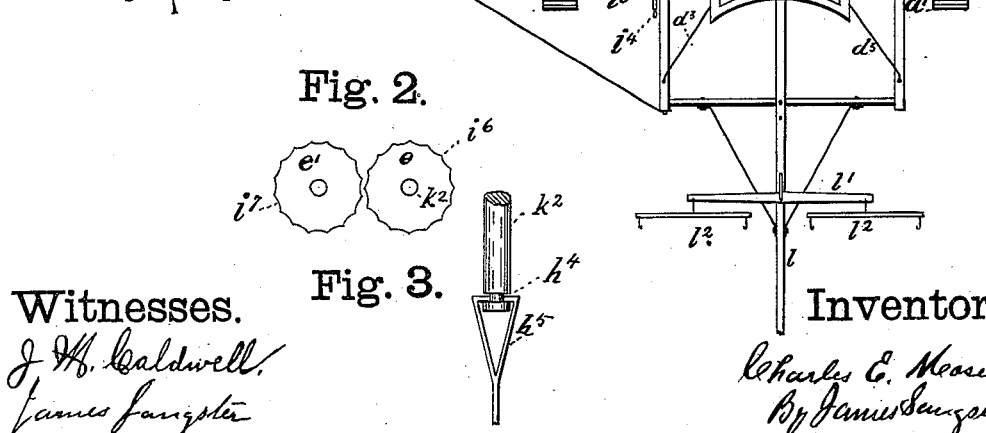

Fig. 2.

Fig. 3.

Witnesses.

J. H. Caldwell.

James Langster

Inventor.

Charles E. Moser.

By James Langster

Atty.

(No Model.) 2 Sheets—Sheet 2.

C. E. MOSER.

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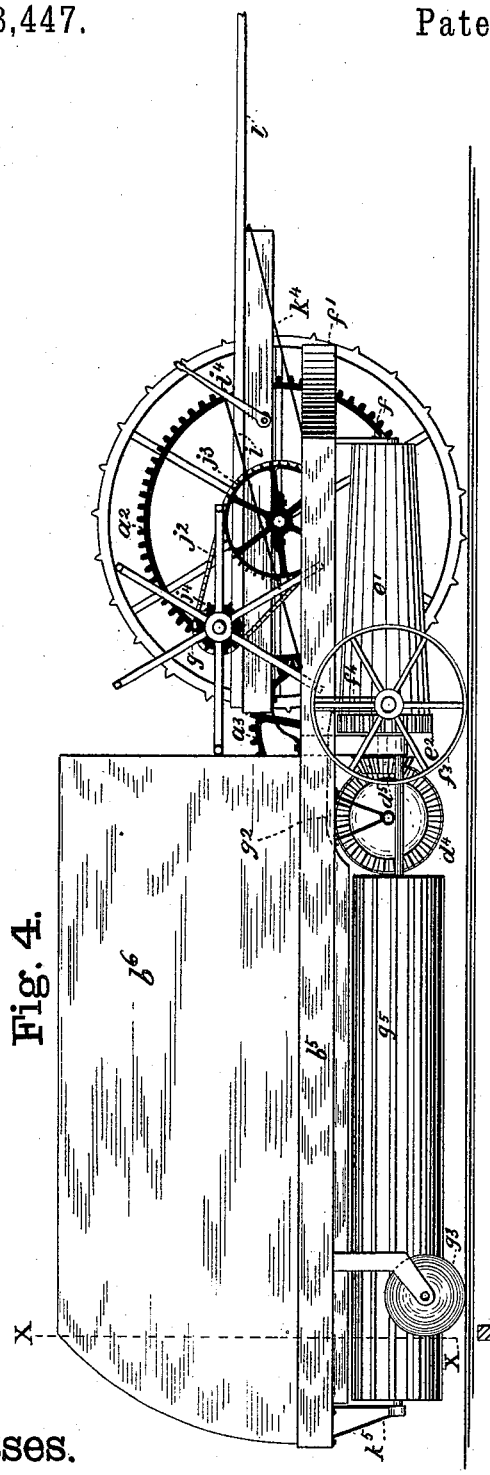

Fig. 4.

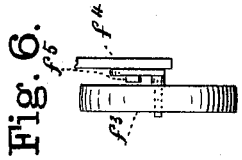

Fig. 6.

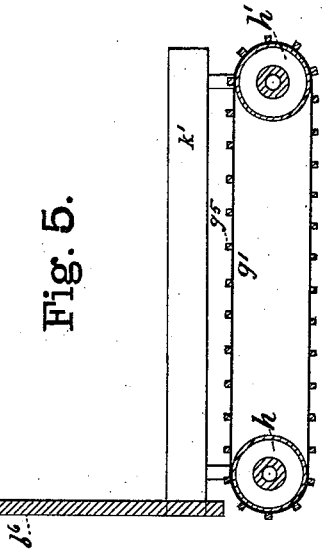

Fig. 5.

Witnesses.
J. M. Caldwell,
James Langster

Inventor.
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UNITED STATES PATENT OFFICE.

CHARLES E. MOSER, OF HEALDSBURG, CALIFORNIA.

MACHINE FOR PULLING COTTON-STALKS.

SPECIFICATION forming part of Letters Patent No. 303,447, dated August 12, 1884.

Application filed December 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. MOSER, a citizen of the United States, residing at Healdsburg, in the county of Sonoma and State of California, have invented certain new and useful Improvements in Machines for Pulling Cotton-Stalks, of which the following is a specification.

The object of my invention is to produce the means for pulling up cotton-stalks by the roots and piling them into heaps large enough to burn; and it consists of a certain means for pulling up the stalks, a means for gathering them onto the platform, and a certain means for throwing them off into heaps sufficiently large to burn when enough has accumulated on the platform, all of which will be fully and clearly hereinafter shown, reference being had to the accompanying drawings, in which—

Figure 1 is a plan or top view of the machine. Fig. 2 is an end view of the pulling-rollers. Fig. 3 is a detached elevation of a portion of the mechanism for throwing the stalks off into piles. Fig. 4 is a side elevation. Fig. 5 represents a section through line X X, Fig. 4, and Fig. 6 is a face view of one of the supporting-wheels and the device for raising and lowering it.

The two driving-wheels a a' are similar to the mowing-machine wheels, and are about thirty-four inches in diameter. The wheel a' is provided with the main gear-wheel a^2. It is about twenty-four inches in diameter, and gears into the wheel a^3, which is in gear with the pinion a^4. The wheel a^3 should be about twelve inches diameter and the pinion about three inches; but of course these sizes may be varied. The pinion a^4 is keyed or otherwise rigidly secured to the line-shaft a^5. The shaft a^5 is connected by a universal joint, b, made in any well-known way, to the shaft b', which is a continuation of the line-shaft a^5. It is set in the usual bearings, b^2 b^3 b^4, in the frame-pieces b^5 c c'. The frame-piece c^2, that runs parallel with the line-shaft, is provided with a joint, c^3. The iron bar or frame-piece c^4 is also provided with a joint, c^5. The joints just mentioned are all in a line with each other, and are for the purpose of allowing the machinery to adjust itself to the lay of the ground. The timber a^6 for the frame-work between the driving-wheels extends over as far as the gear-wheel a^3, and is supported by iron braces d d' to the frame c^2. To the forward part the seat d^2 is attached, and is supported in the usual way by braces d^3, or in any other well-known way.

To the shaft b' is connected a bevel gear-wheel, d^4, which gears into the bevel-wheel d^5. The wheel d^5 is rigidly secured to the shaft on the pulling-roller e, which roller is geared to the other roller, e', by the gear-wheels e^2 e^3. These gear-wheels e^2 e^3 are about ten inches in diameter, and are provided with long teeth about one inch long, so that one roller can be made adjustable (at the large end) to adjust itself to the thickness of different stalks. This is done by a spiral or other spring arranged in any well-known way behind the box of the roller in the beam c^2, or between the ends of the shaft of the rollers. These pulling-rollers are about eight inches in diameter at the large end and six inches at the small end, and are about two feet long. They are each provided with twelve flutes, (but the number may be more or less.) Each flute is about one-quarter of an inch deep and nearly two inches wide at the large end and proportionately smaller at the small end. The rollers are made tapering, so as to leave an opening, e^4, at the small ends, so that the stalks pass between them as the machine advances. (See Fig. 1, in which e^5 represents the stalks.) The front or small ends of the rollers are mounted in bearings f in the frame or bar c^4.

f' f^2 are two outwardly-projecting bars, each attached to the bar c^4 and made to spread apart, so as to be sure and take in the stalks as the machine advances.

f^3 is a supporting-wheel on the side of the machine next to the rollers. It is made adjustable vertically by means of the slotted bar f^4 and bolt and nut f^5, made in the usual way for such purposes.

g represents the reel for throwing the stalks (as they are pulled up) back onto the platform g'. The space over the gearing should be covered with sheet metal, as shown by the dotted lines g^2 in Fig. 4, so as to prevent the stalks or dirt from getting into the gearing and to insure its passage over to and on the platform.

The stalk-carrier is supported at the rear end by two six-inch caster-wheels, g^3—one on each side—one of which is shown in Fig. 4, the other being directly opposite on the other side. The platform g', for carrying the stalks, is made similar to a straw-carrier of a thrashing-machine. It consists of an endless apron of any well-known material, having a series of transverse strips or slats, g^5, and is supported upon rollers h h'. (See Fig. 5.) The roller h is provided with a bevel gear-wheel, h^2, rigidly secured to a shaft on the roller. h^3 represents a bevel gear-wheel which is rigidly fixed onto the shaft b'. The end of the shaft that carries the roller h' is turned with a groove, h^4, and a clasp, h^5, is fitted to it (see Fig. 3) and secured to arm i, which is jointed to the lower part of the frame c^2, its opposite end being jointed by a joint, i', to a rod, i^2, which is jointed by a pin, i^3, to the lever or arm i^4. It will now be seen that by moving the hand-lever i^4 the gear-wheel h^2 may be brought either into or out of gear. The stalk-carrier should be covered with canvas or other suitable material to prevent the branches of the stalks or other matter from getting down between or through the slats.

b^6 represents a side board arranged on the side beam, b^5, to prevent the stalks from falling off until a sufficient quantity are gathered together to form a pile for burning when thrown off. The reel g, for throwing the stalks onto the platform, is supported in bearings j j', and receives its movements from the chain j^2 and chain-gearing j^3 j^4. The wheel j^3, being rigidly secured to the driving-shaft j^5, either by a key or in any well-known way, receives its movements therefrom. The reel is made in the ordinary way, and therefore requires no further description here.

The operation of my invention will be readily understood from the foregoing description and drawings. The machine being drawn along in a line with the drill or row of stalks, they pass in between the pulling-rollers, (both of which receive a rapid rotary movement by means of the connecting gearing heretofore described,) and the stalks are pulled up one at a time and thrown over onto the platform by the action of the reel. When a sufficient quantity has been gathered onto the platform, the hand-lever (which is placed at a convenient point near the seat of the driver) is moved so as to bring the gear-wheels h^2 h^3 into gear, and is so held long enough to move the endless apron or platform along far enough to carry the stalks and throw them off into a pile sufficiently large to burn. By this arrangement it will be noticed that the endless carrier is stationary or does not move, and is not intended to move until a sufficient number of stalks have been gathered to form a pile of sufficient size, when it is brought into action just long enough to throw off the pile of stalks. By this means the ground is cleared and ready for a new crop.

The letters l l' l^2 represent the tongue, whiffletrees, &c., for drawing the machine; but as these are all well-known devices a description of them here is unnecessary.

I have shown the best form for the pulling-rollers—that is, a tapering form, so as to leave an opening to receive the stalks while the machine is operating; but an equivalent would be to make the rollers of the same diameter throughout and set them at an angle, so as to leave the required opening to allow the stalks to enter as the machine moved forward. In this case the gear-wheels e^2 e^3 would have to be bevel-gear, and some other mechanical changes would have to be made; but the change would not alter the principle of the invention, although I do not think it would answer the purpose as well, and in some cases the joints b c^3 c^5 may be dispensed with without changing the nature of my invention.

I claim—

1. In a cotton-stalk-pulling machine, the combination, substantially as hereinbefore described, of the driving-wheels and gearing for operating the main shaft and its gearing, the fluted pulling-rollers, constructed so as to have an opening to receive and pull the stalks, a reel for moving the stalks toward the rear of the machine, and an endless carrier constructed to move at right angles to the movement of the reel for receiving and throwing the stalks off, and their operating mechanism, substantially as described, the whole being combined and arranged for joint operation, as and for the purposes specified.

2. In a cotton-stalk-pulling machine, the combination, substantially as hereinbefore set forth, of the driving-wheels, and mechanism for operating the pulling-rollers, the reel, and the endless carrier, and their operating mechanism, substantially as specified, and the lever i^4 and operating connections for pulling the stalks, throwing them onto an endless carrier, and then when a sufficient quantity has been gathered throwing them off from the carrier into piles, substantially as and for the purposes described.

CHARLES E. MOSER.

Witnesses:
JOHN MORRISON,
E. J. WAGGONER.