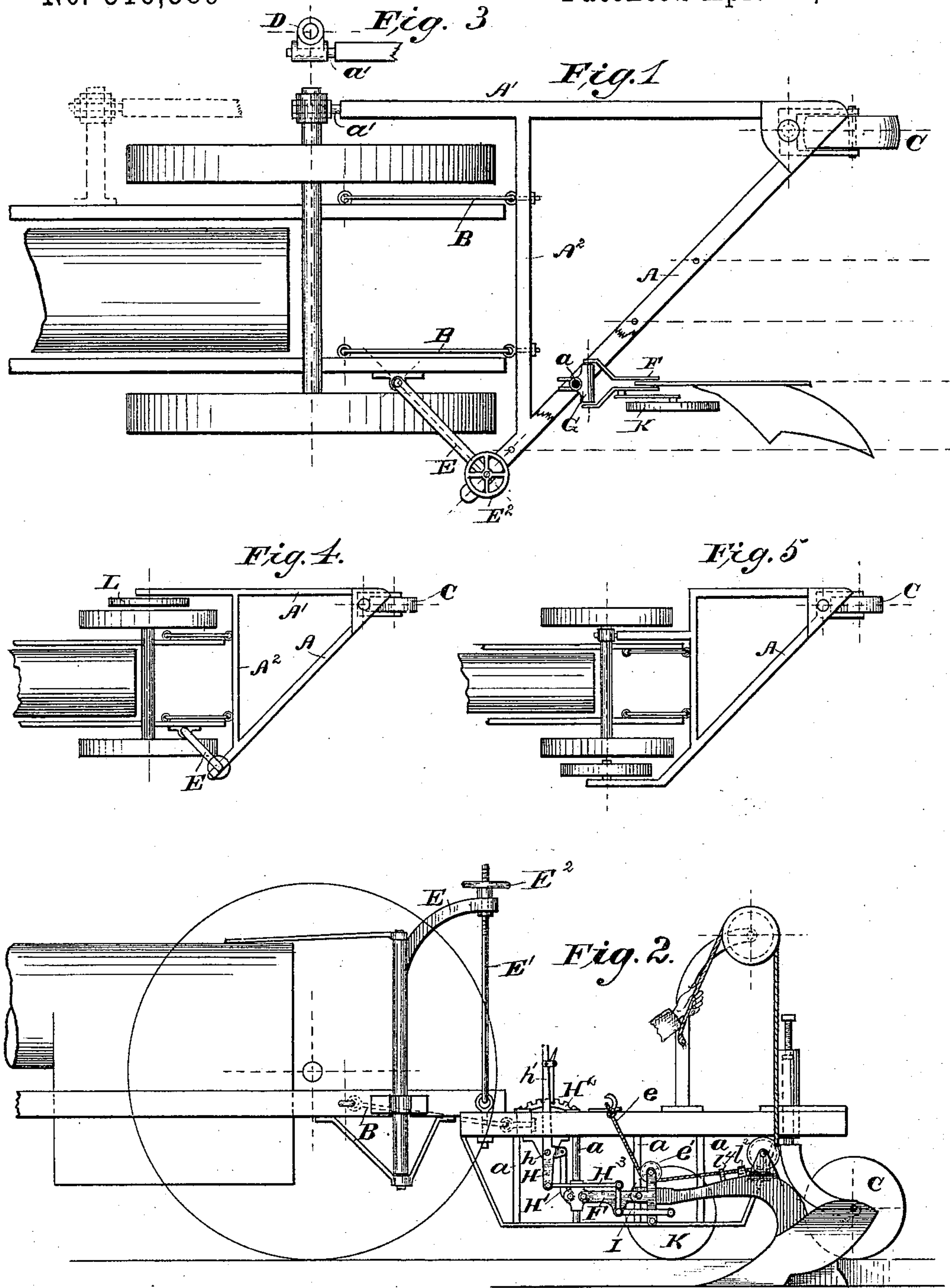


(No Model.)

E. PENNEY.
STEAM GANG PLOW.

No. 316,389

Patented Apr. 21, 1885.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDGAR PENNEY, OF WAYNESBOROUGH, PENNSYLVANIA.

STEAM GANG-PLOW.

SPECIFICATION forming part of Letters Patent No. 316,389, dated April 21, 1885.

Application filed October 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDGAR PENNEY, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Steam Gang-Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that type of steam gang-plows wherein a diagonal gang of plows is mounted on a separate frame, which frame is connected with a traction-engine.

My improvement consists of certain combinations of mechanical devices, which combinations are specifically pointed out in the claims at the close of this specification, and the practical application and *modus operandi* of which are clearly set forth in the following detailed description, aided by the annexed drawings.

Figure 1 is a plan view showing so much of the greater part of my improved steam gang-plow as will suffice to make plain the application of these parts of my invention. Fig. 2 is a side elevation of the same, showing some parts omitted from Fig. 1. Fig. 3 is a detail view of the loose hanger on the traction-engine and the forward portion of one of the beams of the plow-frame supported therein. Figs. 4 and 5 illustrate modifications of the manner of supporting the front end of the plow-frame, which modifications will be explained at the close of the description of the machine illustrated in the first three figures.

The same letters of reference indicate identical parts in all the figures.

The plow-frame consists of the rear diagonal hitching-beam, A, the side beam, A', and the cross-beam A². It is designed to be drawn by the traction-engine, through the medium of suitable draw-bars or chains, B B, connecting the cross-beam A² with fixed parts of such engine. The rearmost end, at the junction of the hitching-beam and side beam, is supported upon a caster-wheel, C. The forward end of the plow-frame is supported on the traction-engine in the following manner: The side beam, A',

projects beyond the cross-beam A², outside of the adjacent traction-wheel of the engine, and terminates with a round metal bar, a', which enters a bearing of a hanger, D, mounted loose either on the outer end of the rear axle of the traction-engine, as shown by full lines in Fig. 1, or on a fixed stud projecting from the frame of such engine, as shown by dotted lines in Fig. 1. The forward end of the hitching-beam A is suspended from the lower end of a suspension-rod, E', hung on a crane-post, E, which reaches from the frame of the traction-engine, to which it is properly secured, over the adjacent traction-wheel thereof, as clearly shown. The suspension-rod E' is screw-threaded at its upper end for the reception of the internally-screw-threaded hub of a hand-wheel, E², by which it may be adjusted on the crane-post so as to raise or lower this side of the plow-frame, as may be required.

The hitching-beam A is trussed, substantially as described and claimed in my application for United States Patent filed October 14, 1884, bearing Serial number 145,491. Each one of the diagonal gang of plows is hitched to this trussed diagonal hitching-beam in the following manner: The forward end of the plow-beam is pivoted to a draw-head, F, which maybe constructed of two bars suitably united, so as to form a head at the rear end for receiving and guiding the plow-beam between its cheeks, and spread apart at the forward end to form a forked shank for embracing the cross-head of a sleeve, G, which is so mounted on a strut, a, of the trussed hitching-beam that it may be slid up and down thereon, and to the cross-head of which sleeve the shank of the draw-head is pivoted. Sleeve G is connected by a vertical link, H', to the horizontal arm of an elbow-lever, H, fulcrumed by a pin, h, on a bracket on the hitching-beam A, and provided with an upright handle, h', and a spring-latch for locking it to a rack, H², on said hitching-beam. By turning this lever in one direction or the other the sleeve G may be slid up or down on struts a for vertical adjustment. The downwardly-projecting arm of lever H is connected by a horizontal link, H³, with the upright arm of an elbow-lever, I, which is fulcrumed on the shank of draw-head F. The horizontal arm of this el-

bow-lever I carries a wheel, K, designed to run on the ground and act as a gage-wheel for the forward end of the plow.

The arms of levers H and I are so proportioned as to relative lengths that the front ends of the plows may be adjusted up and down, while the position of the gage-wheel K with reference to the main frame or plow frame is maintained unchanged. I prefer to use a separate lever, H, and train of adjusting devices for each plow, so that each plow may be adjusted independently; but where a simultaneous adjustment of the plows is deemed sufficient the levers H may all be secured to a single shaft, taking the place of the separate fulcrum-pins *h*, and the shaft operated by a single handle, *h'*.

Any suitable hoist and tackle may be applied to afford means for lifting the plows clear of the ground; but the individual ropes or chains connected directly with the plows or their adjuncts are applied in the following manner: The individual rope or chain *l* of each plow is fastened at one end to the hitching-beam A, from which it passes under a sheave-pulley, *l'*, mounted on the draw-head F, through a guide-eye, *l''*, on the plow-beam, under a sheave-pulley, *l'''*, on the rear end of the plow-beam, and finally up to the hoisting-rig that may be used. The rope is provided with a knot or stop-collar, *l''''*, between the sheave-pulley *l'* and guide-eye *l''*. In hoisting the plows out of the ground the ropes *l* will render through guide-eyes *l''* and be shortened up between said eyes and their points of attachment to the hitching-beam, so as to tilt up the front ends of the plows until the stop-collar *l''''* strikes the eye *l''*. After that the rope *l* will lift the rear ends of the plows. It will be understood that the preliminary lifting of the front ends of the plows has the effect of giving their shares an upward pitch, causing them to run out of the soil as the plows are drawn forward.

In the modification shown in Fig. 4 the side bar, A', is supported upon a wheel, L, disconnected from the traction-engine, substantially as described in my application for United States Patent filed October 14, 1884, Serial number 145,486; and in the modification shown in Fig. 5 such a supporting-wheel mounted on an extension of the hitching-beam A is substituted from the crane-post E and its hanger E'.

I regard the use of a single wheel, as L, for supporting the forward end of the plow-frame, otherwise coupled to the traction-engine, as an equivalent of the use of two such wheels, in the broad sense, as set forth and claimed in the aforesaid application No. 145,486.

I claim as my invention—

1. The combination, substantially as before set forth, of a traction-engine, the plow-frame of a gang-plow, and the loose hanger for suspending the forward end of said plow-frame at one side from said engine.

2. The combination, substantially as before set forth, of a traction-engine, the plow-frame of a gang-plow, and a crane-post and suspension-rod for suspending the forward end of said plow-frame at one side from said engine.

3. The combination, substantially as before set forth, of a traction-engine, the plow-frame of a gang-plow supported at its rear end on a caster-wheel, the loose hanger for suspending the forward end of said plow-frame at one side from said engine, and the crane-post and suspension-rod for suspending said forward end of the plow-frame at the other side from said engine.

4. The combination, substantially as before set forth, of the trussed hitching-beam, the sleeve on a strut thereof, the draw-head for coupling a plow-beam to said sleeve, and the hand-lever for adjusting the sleeve on the strut.

5. The combination, substantially as before set forth, of the trussed hitching-beam, the sleeve on a strut thereof, the draw-head for coupling a plow-beam to said sleeve, the elbow-lever fulcrumed on the draw-head and carrying a gage-wheel, and the hand-lever connected with the sleeve as well as with the said elbow-lever.

6. The combination, substantially as before set forth, of a plow hitched to the hitching-beam, the lifting rope or chain fastened at one end to the plow-frame and provided with a stop-collar, the sheave-pulleys on the hitched plow, and the guide-eye on the plow-beam.

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

EDGAR PENNEY.

Witnesses:

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A. H. CAMPBELL.