

(No Model.)

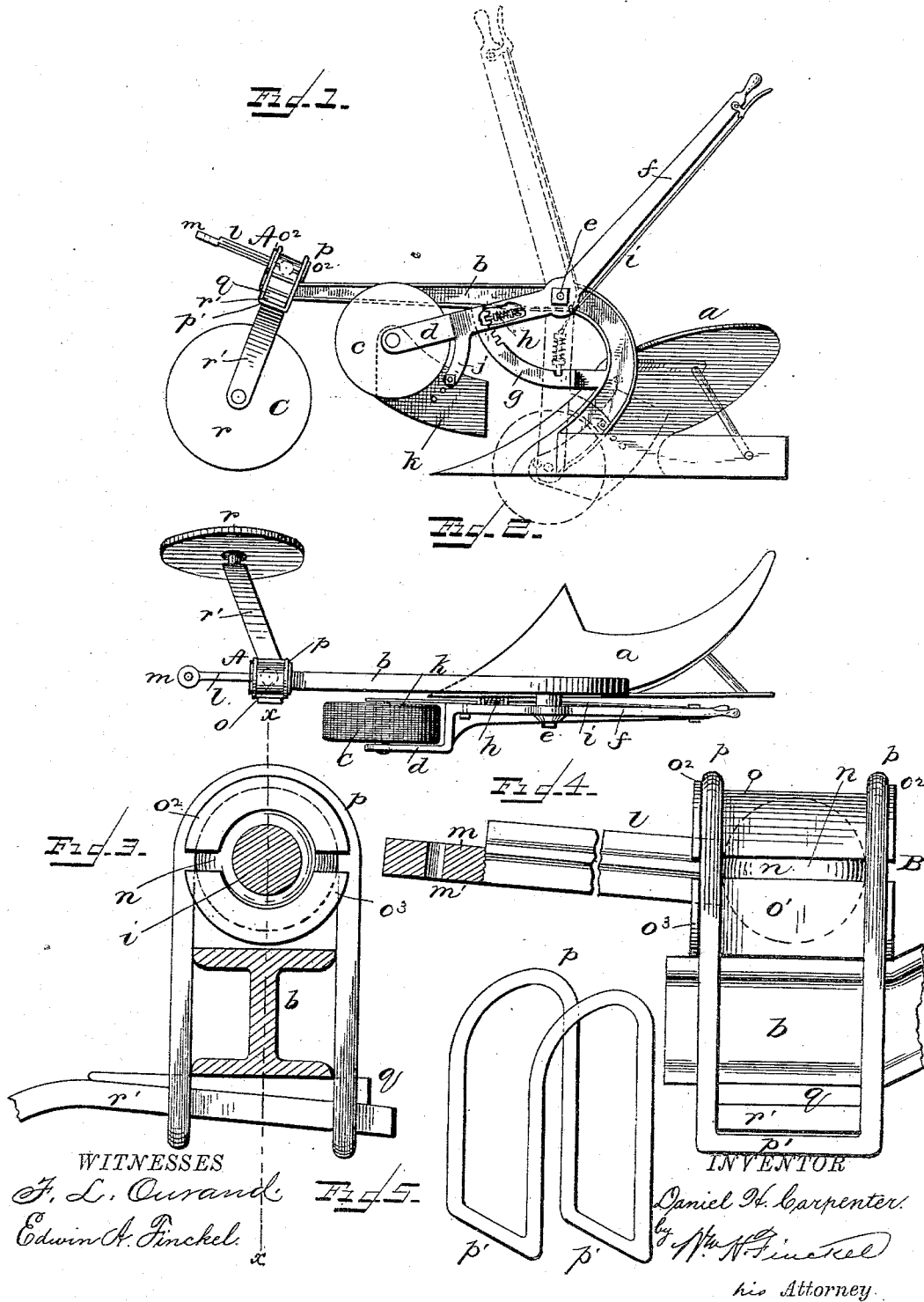
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D. H. CARPENTER.

PLOW.

No. 381,529.

Patented Apr. 24, 1888.



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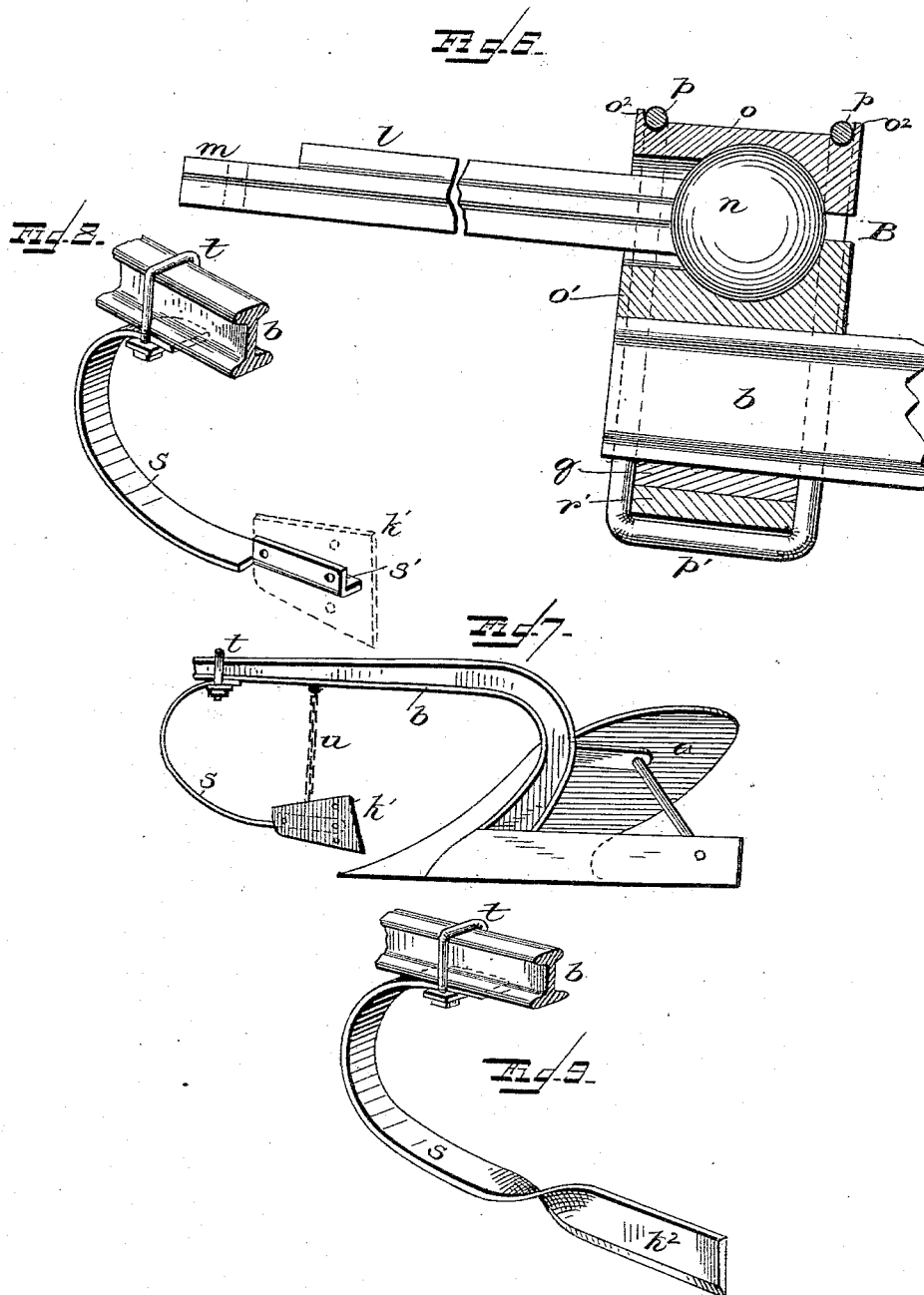
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UNITED STATES PATENT OFFICE.

DANIEL H. CARPENTER, OF ORLANDO, FLORIDA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 381,529, dated April 24, 1888.

Application filed January 23, 1888. Serial No. 261,660. (No model.)

To all whom it may concern:

Be it known that I, DANIEL H. CARPENTER, a citizen of the United States, residing at Orlando, in the county of Orange and State of Florida, have invented a certain new and useful Improvement in Plows, of which the following is a full, clear, and exact description.

The object of this invention is to regulate the depth of the plow with facility, clear or cut away stubble, govern the draft, and, as an incident of the construction, dispense with the ordinary plow-handles.

The invention consists in a depth-gage readily adjustable without stopping the plow or lifting it from the furrow, a knife-coltar arranged to have a draw-cut, and used in conjunction with the depth-gage wheel or shoe or not, as desired, not only to open the sod, but also to cut the stubble, and a clevis constructed with a universal joint, and adjustable vertically and laterally, clamped to the plow-beam by a yoke.

The invention consists, further, in the details of construction, combination, and arrangement of parts, substantially as I will proceed now to particularly set forth and claim.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation, and Fig. 2 a top plan view, of the preferred form of my plow. Fig. 3 is a vertical sectional front view, on a larger scale, of the clevis; Fig. 4, a side elevation with the clevis-arm broken in two to accommodate the drawing sheet, and having its whiffletree-receiving end in section. Fig. 5 is a perspective view of the clamping-yoke. Fig. 6 is a vertical section of the clevis. Fig. 7 is a side view of a drag-coltar, and Fig. 8 a perspective view of the same on a larger scale. Fig. 9 is a perspective view of another form of drag-coltar.

The plow *a* may be of any approved construction. I prefer to employ a curved beam, *b*, cast of soft steel or malleable metal in the form of an H-bar for strength and economy, the standard being integral with the beam. The depth-gage consists of a wheel, *c*, pivoted to the end of a lever, *d*, which is, by preference, made with an L for this purpose. This lever is pivoted at *e* to the plow-beam, so as to balance the plow on the depth-gage when it is arranged perpendicularly, as indicated in dot-

ted lines, Fig. 1, to admit of the raising of the plow out of the furrow and turning it without stopping the team, and also adapt the depth-gage wheel as a trundling-wheel for running the plow to or off the field. The lever *d* terminates in a handle, *f*, arranged at an obtuse angle, by which said lever may be readily operated. A toothed rack-bar, *g*, describing an arc of a circle from the pivot *e* as a center, is projected from the straight portion of the beam to its curved heel alongside the lever *d*, and a spring bolt or dog, *h*, co-operates with this rack-bar, and is operated by a hand-piece, *i*, arranged on the handle *f*, to hold the depth-gage in any position in which it may be desirable to place it. The rack-bar may be attached to or cast with the beam, and this latter construction I prefer.

The parts just described are arranged upon that side of the plow on which the landside comes.

A bracket, *j*, projects from the lower portion of the lever *d* downwardly. A piece of steel, *k*, brought to an edge on its lower edge, and of substantially the shape shown in Fig. 1, is secured to the pivot of the wheel *c*, and is then rigidly bolted to the bracket *j*, and is adjustable upon such bracket to vary its projection below the depth-gage to suit the altitude of the depth-gage and the work to be done by the colter. I have shown a series of bolt-holes in said part *k*, whereby in connection with the bolt such adjustment may be effected, though a slot may be substituted for the individual holes. As will presently appear, the part *k* serves as a colter and stubble-cutter, and is referred to under such titles herein.

In this connection I desire to state that the depth-gage wheel, while subserving its functions as such, in addition, when conjoined with the colter *k*, serves to turn down weeds and stubble and hold them in position to be cut by the colter. The colter by its arrangement has a drag-cut, and thus most efficiently clears the way for the entrance into the earth of the plow-point.

The description of the modifications of the colter shown in Figs. 7, 8, and 9 of the annexed drawings will appear farther on in this specification.

The clevis, designated in a general way by

the letter A, is composed of an arm, *l*, terminating at one end in a seat, *m*, for the whiffletree, which has a bolt-hole, *m'*, for the reception of a king-bolt or pin for attaching the whiffletree, and provided at its other end with a solid or hollow spherical knob, *n*. A box, B, for receiving this knob, is composed of two sections, *o o'*, substantially alike, and each section has in it a recess described on an arc of a circle, so that the said sections, when their recessed surfaces are applied to the knob *n* of the arm *l*, will truly fit said knob. One of these sections is adapted to fit the plow-beam, and when applied thereto, as in Figs. 1 to 6, the box will rest firmly on the beam. The box, with the knob therein, is secured to the beam by a yoke, *p*, composed of four parallel legs arranged in pairs and united at their lower ends by cross-bars *p'*. This yoke straddles the box B, and its lower ends project below the beam. One leg of each pair on the same side is longer than the others, so that the yoke projects farther below the beam on one side than on the other, to thereby adapt the yoke to receive a wedge, *q*, driven therein transversely of the beam to draw the yoke tightly about the box, and thereby firmly clamp the knob in the box against movement, and also at the same time clamp and secure the clevis to the beam. By loosening the wedge the knob may be turned in any direction within the box in order to govern the draft of the team. In furtherance of this same object, the tip of the beam may be made at an angle, so as to throw up normally the clevis, as shown in Fig. 1, and to project forward the width-gage C.

The sections *o* and *o'* of the box B may be grooved to receive the yoke, (see Figs. 3 and 6,) and are preferably provided with end flanges, *o² o³*, respectively, to prevent the yoke from slipping off the box, or, in other words, preclude the box from being pulled out of the yoke.

The clevis thus constructed is in operation and effect a universal joint, and thus it is capable of being set at any possible position needed in plowing.

The width-gage is a wheel, *r*, journaled to one end of a bracket, *r'*, whose other end is slipped through the yoke *p*, rests upon the cross-bars *p' p'*, and is held in place by the wedge *q*. This width-gage extends out from the mold-board side of the plow, and runs against the landside of the last-formed furrow to properly space the furrows and secure their parallelism.

Instead of making one side of the yoke longer than the other in order to render available a wedge having only one side beveled—that is to say, one which is a right-angled triangle in outline—the under side of the beam might be beveled and the sides of the yoke made of the same length, or the yoke might have sides of unequal length and the beam be beveled and a wedge employed, which in out-

line would be an isosceles triangle—that is to say, beveled on both sides. Ordinarily the construction of yoke and wedge first described and as most clearly shown in Fig. 3 will be preferred.

The clevis-arm *l* may be made as a cross in cross-section for purposes of lightness, economy of metal, and bracing, as shown in Figs. 1, 4, and 6, or it may be round, as in Fig. 3. The advantages of angle shapes, particularly in castings, are well known, and need no further statement to show why I prefer them. The clevis being rigid, the whiffletree is held up, cannot drop and wobble, and thus is retained in the desired position and at the right elevation, thereby making sure the line of draft of the team. The plow thus constructed with the depth-gage on one side and the width-gage on the other, and having a rigid connection of the whiffletree, and the whiffletree, as just stated, maintained at the desired elevation, possesses practically all the elements of a wheel-plow, and so obviates the necessity of plow-handles. The lever-handle *f* in an emergency may be utilized as a substitute for plow-handles. I have practically demonstrated the efficiency of the plow in this respect, and while I claim the plow without handles I do not exclude the use of handles in connection therewith, as these may have to be supplied at the purchaser's desire.

With respect to the drag-coltter, I desire to say that it is within my invention to use it in conjunction with the depth-gage or not, and on a plow of my construction or not, and therefore, so far as this coltter is concerned, I lay claim to it in the form heretofore and as hereinafter set forth; and with this statement I will proceed to describe the coltters shown in Figs. 7, 8, and 9.

I prefer to construct the coltter shank or bracket *s* of a piece of spring-steel about two inches wide and one-eighth of an inch thick, curved substantially to the shape shown, and clamped by an ordinary yoke or clip, *t*, to the beam. The free end of this spring has a lip, *s'*, turned up at right angles to it and provided with bolt-holes whereby the sheet-steel coltter *k* is adjustably attached thereto. The coltter may be made reversible also, so that should its cutting-edge be dulled or fouled in the field it may be turned upside down to present the fresh edge without stopping to sharpen the dulled one. The shank, being bent low, will turn down the grass and stubble and hold them firmly to the coltter to be cut thereby.

As shown in Fig. 9, the steel shank *s* itself may have a portion of its free end twisted up at right angles and sharpened to form the coltter *k²*. The twist in the shank will materially assist in turning under the grass and stubble to the knife. Either of these coltters may be connected to the beam, as by a chain, *u*, to regulate the descent of the coltter.

It is true of all the several forms of coltters herein specified that they cut the grass or

stubble and sod by a draw-cut in the direction of the draft of the plow, and not in opposition to it, as heretofore common.

It will be observed that in all the forms shown of my drag-colter the effective cutting-edge thereof is hung very close to the earth, and is approximately horizontal or at a slight acute angle to the plane of the earth, and this arrangement gives to my colter its efficiency and superiority over other forms of colters to me known, for it will be perceived that it is impossible for the grass or stubble to escape uncut from it. The drag-colter might be used in conjunction with a shoe for turning over and holding the stubble, &c., and, again, it might have a wheel on each side of it. The drag-colter might also be combined with a stationary or unadjustable wheel, which would serve mainly to turn and hold down the grass for the action of the colter. All these modifications I deem within my invention.

What I claim is—

1. The clevis A, having the capacity of movement of a universal joint, and composed of a draft arm, *l*, a knob, *n*, on one end of said arm, and a box, B, for receiving the knob on said arm, and a yoke, *p*, and wedge *q*, for securing the arm and box together and in position for use, substantially as described.

2. The plow-beam, a bracket, *r'*, for the width-gage, and a clevis having a universal joint combined with a yoke and wedge engaging the beam, bracket, and clevis-joint for uniting these parts, substantially as described.

3. The plow-beam combined with a clevis provided with a universal joint and rigidly fixable to the beam in any desired position, and having an angular seat for the whiffletree, so as to maintain the whiffletree at any elevation at which it may be placed, substantially as described.

4. A drag-colter hung low from the beam with its effective cutting-edge in proximity to the earth, and approximately horizontal or at a slight acute angle to the earth, combined with a wheel, or its described equivalent, to turn over and hold down the stubble or grass for the action of the colter, substantially as described.

In testimony whereof I have hereunto set my hand this 19th day of January, A. D. 1888.

DANIEL H. CARPENTER.

Witnesses:

R. T. WAY,
FRED CURTIS.