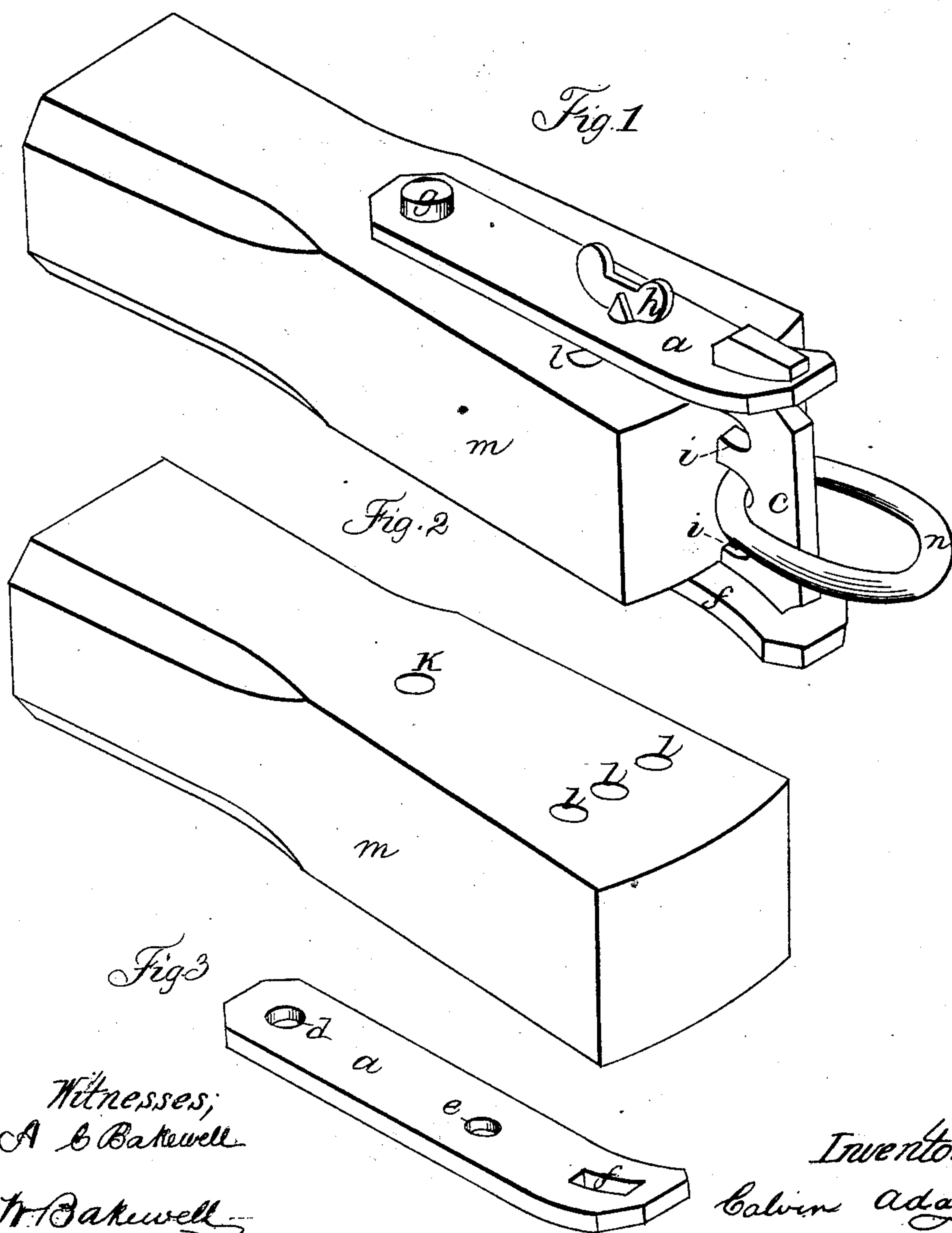


C. ADAMS.

Plow-Clevis.

No. 28,337

Patented May 22, 1860.



Witnesses;
A. C. Bakewell
W. Bakewell

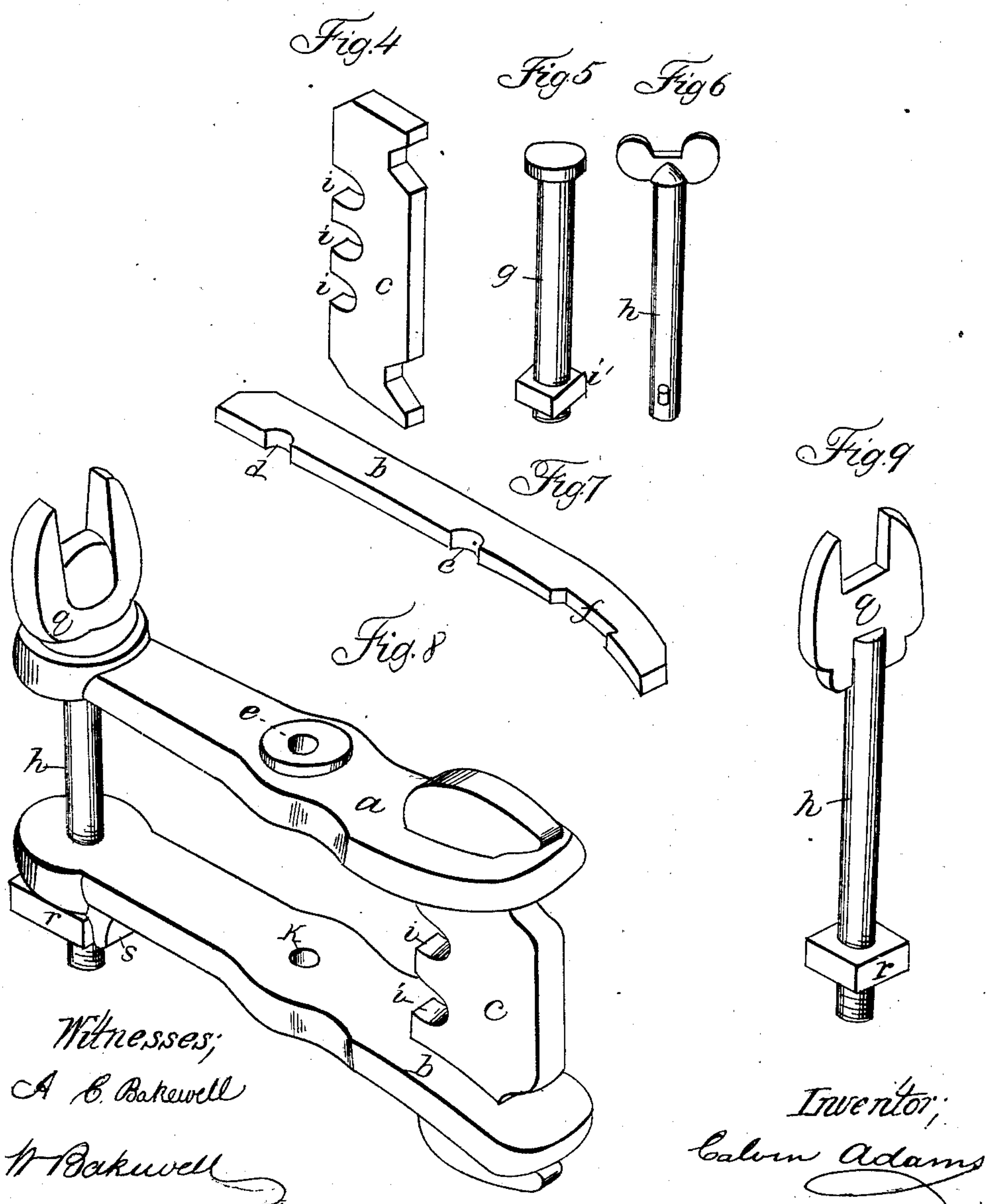
Inventor;
Calvin Adams

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UNITED STATES PATENT OFFICE.

CALVIN ADAMS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN CLEVISES FOR PLOWS.

Specification forming part of Letters Patent No. 28,337, dated May 22, 1860.

To all whom it may concern:

Be it known that I, CALVIN ADAMS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Clevises for Plows; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my improved clevis as made of wrought-iron attached to the end of plow-beam. Fig. 2 shows the end of the plow-beam with the position of the holes for the bolts by which the clevis is attached to the beam. Fig. 3 is a perspective representation of the upper shank of the clevis. Fig. 4 is a perspective representation of the end piece of the clevis. Fig. 5 is the screw-bolt by which the clevis is attached to the plow-beam. Fig. 6 is the pin by which the clevis is set at the required angle to the plow-beam. Fig. 7 is a sectional perspective representation of the lower shank of the clevis divided longitudinally. Fig. 8 represents my improved clevis as made of cast-iron with the parts united but detached from the plow-beam. Fig. 9 represents my improved wrench-bolt for plow-clevis, showing the head of the wrench in section.

My improvements consist in making the end piece of a clevis constructed in separate pieces with hooked or curved ends fitting into suitable slots or openings at or near the outer extremity of the shanks, so as to form a connection between them, and at the same time sustain the end piece in its proper place without any other fastening, so that while the clevis is as firm and strong as one made of a single piece it also has sufficient yield at the joints formed by the hooks and slots to prevent its being easily broken; also, in the use of a projection or lug on the under shank with a plow-clevis, constructed as hereinafter described, for the purpose of preventing the nut at the end of the wrench-bolt from working off accidentally and also for facilitating the removal of the wrench when desired by holding the nut while the wrench-bolt is turned by hand.

It has been usual heretofore to make clevises for plows either of wrought-iron or of cast-iron in one piece in the shape of a letter U.

These clevises are, however, especially when of cast-iron, very liable to break, owing to the strain on them at the point where the curve commences. This strain is increased greatly if the plow-beam is not of the exact thickness of the distance between the legs of the clevis, in which case the legs have to be either drawn together or pushed apart to adjust them to the beam. These clevises are also liable to break, because of their rigidity, there being no yielding at the point of curvature, where the strain is the greatest, and if the clevis breaks an entire new one must be made. As plow-beams are made of various sizes it is impossible to furnish clevises ready made which will be sure to fit all the various plows, and hence it is not usual to make clevises in large quantities ready for sale, as the clevises made by one plow manufacturer will not be likely to fit other plows. These difficulties are overcome by my improvements, as my clevis is self-adjusting and will fit various thicknesses of plow-beams without alteration and without any strain on the clevis itself. They are also more cheaply made, and if one part breaks it may be supplied without renewing the entire clevis.

To enable others skilled in the art to make and use my improved clevis, I will proceed to describe its construction and operation.

I make my improved clevis either of wrought-iron or of cast-iron, one great advantage of my improvement being that a cast-iron clevis so constructed is fully as strong and less liable to break than a wrought-iron clevis of equal weight when made in one piece, as has been usual heretofore.

My clevis consists of three pieces—two shanks, *a b*, and an end piece, *c*. When made of cast-iron, as shown in Figs. 1, 3, and 4, the shanks are strips of iron of uniform thickness and width, straight for about three quarters of their length, and then curving outward to the outer extremity. Each of these shanks is perforated by two round holes—one, *d*, near the rear end, through which the bolt *g* passes, by which the shanks *a* and *b* are attached to the plow-beam *m*. The other hole, *e*, (which is a little nearer the front extremity of the shank than the rear end,) is for the pin *h*, which serves to keep the clevis steady and regulates its po-

sitions on the beam by means of the holes *l l l* near the end of the plow-beam. Near the front end of each of the shanks is a slot, *f*, or rectangular hole of the same width as the thickness of the end piece, *c*, the hooked end of which it is intended to receive. The end piece, *c*, of the shape shown in Fig. 4, serves to unite the forward extremities of the shanks *a* and *b* by means of its two hooked ends, which, when inserted point foremost, will enter the groove *f* in the shanks, filling up the grooves and yet allowing the shanks to have sufficient play to adjust themselves to various thicknesses of plow-beams, while the end piece is held by the shanks firmly in its place and proper position, as seen in Fig. 1. On the inner edge of the end piece there are, as usual, three or more notches, *i i i*, to receive the ring *n* by which the harness of the horse is hitched to the plow, the inner edge of the end piece, *c*, coming so close to the end of the beam as to keep the hook in place in its notch. Now, as there is a little play to the end piece, *c*, in the slots *f f* of the shanks there can be no undue strain on the clevis at the point of junction of the end piece and shanks, as there would be if the plow-beam were either a little thicker or thinner than the distance between the legs of the clevis if made in one piece, the hooked ends of the end piece, *c*, forming a joint with the shanks *a* and *b*. If any part of the clevis should break, it immediately separates and no further damage is done, and the broken piece can be easily replaced without renewing the entire clevis.

The mode of attaching my clevis to the plow-beam is very simple, and will be readily understood by reference to the drawing Fig. 1. One shank, *a*, is placed on the top and the other shank, *b*, on the bottom of the beam, and the end piece inserted into the slots *f f* before the shanks are secured to the beam by the screw-bolt *g* and pin *h*.

The shape and conformation of my clevis, when made of cast-iron, are substantially the same as those of the wrought-iron clevis. The wrought-iron clevis may be readily made by dies from plates of iron without heating, and the cast-iron clevis cast in molds without separate cores for the holes in the shanks, as each piece forms its own core when molded.

In the cast-iron clevis seen in Fig. 8 I cast on the under shank, *b*, near to the hole *d*, through which the wrench-bolt passes, a lug, *s*, which projects from the outer face or side of the lower shank. This lug is set at right angles to a central line passing through the bolt-

holes *d* and *e*, and the distance of the inner face of the lug *s* from the center of the wrench-bolt hole *d* is about equal to one-half of the width of the nut *r*, used to screw on the end of the wrench-bolt *p* to hold it in place and fasten on the shanks to the plow-beam *m*. When the bolt *p* is screwed up tight (which is done by placing the nut *r*, with one edge pressing against the lug *s*, and turning the wrench-bolt *p* by hand) it is plain that the nut cannot turn on the bolt, and therefore will not become loose, which is apt to be the case with nuts on screw-bolts.

If it is desired to remove the wrench-bolts, it is only necessary to turn the bolt by hand or by inserting a stick, as a lever, in the jaw of the wrench-head *q* of the bolt *p*, and the lug *s* holds the nut *r*, and thus permits it to be unscrewed. If the nut *r* were not thus held, it would often be necessary to have a wrench to hold the nut *r* while the bolt *p* was turned to detach it. Such a lug may, if desired, be made on the wrought-iron clevis by turning down square the end of the lower shank, *b*.

The wrench-bolt *p*, I make with a cast-iron head, *q*, the bolt itself being a rod of wrought-iron. This is made by simply placing one end of the bolt in the mold in which the wrench-head *q* is made and casting the metal around it. Such a wrench is sufficiently strong for use about a plow, and is much more cheaply made than a wrench entirely formed of wrought-iron, and is, I believe, entirely new.

Having thus described my improvement in clevises for plows, what I claim as my invention, and desire to secure by Letters Patent, is—

1. Constructing the loose end piece of the clevis with hooked ends fitting into suitable slots in the shanks for the purpose of forming a connection between the outer extremities of the shanks and at the same time sustaining the end piece in its proper position without any bolt or other fastening for that purpose.

2. Combining with a plow-clevis constructed as hereinbefore described a projection or lug on one of the shanks, in the manner and for the purpose hereinbefore set forth.

In testimony whereof I, the said CALVIN ADAMS, have hereunto set my hand in presence of two witnesses.

CALVIN ADAMS.

Witnesses:

W. BANEWELL,

A. S. NICHOLSON.