

No. 630,680.

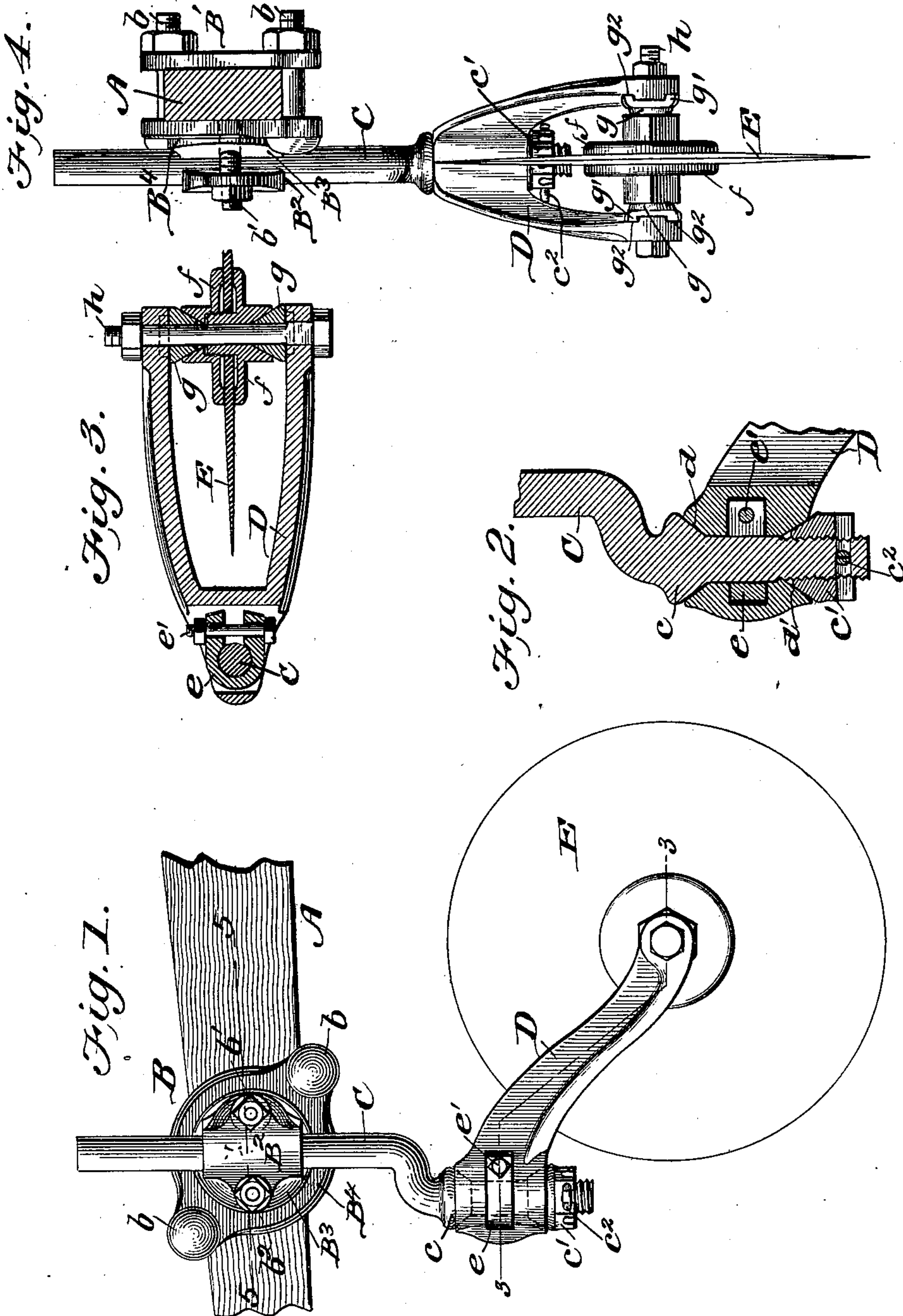
Patented Aug. 8, 1899.

A. C. GAYLORD.
COLTER.

(Application filed May 25, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 5.

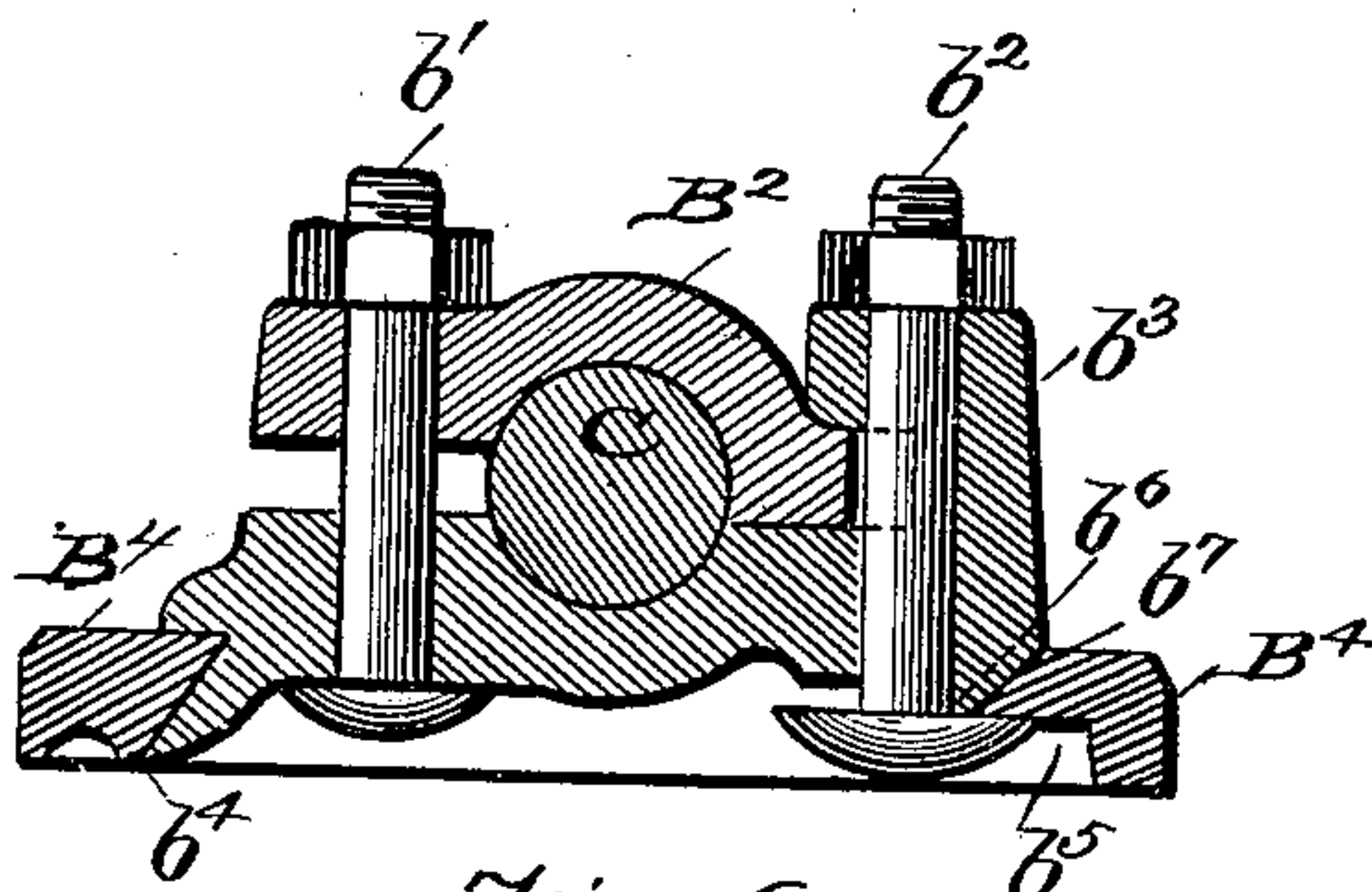


Fig. 6.

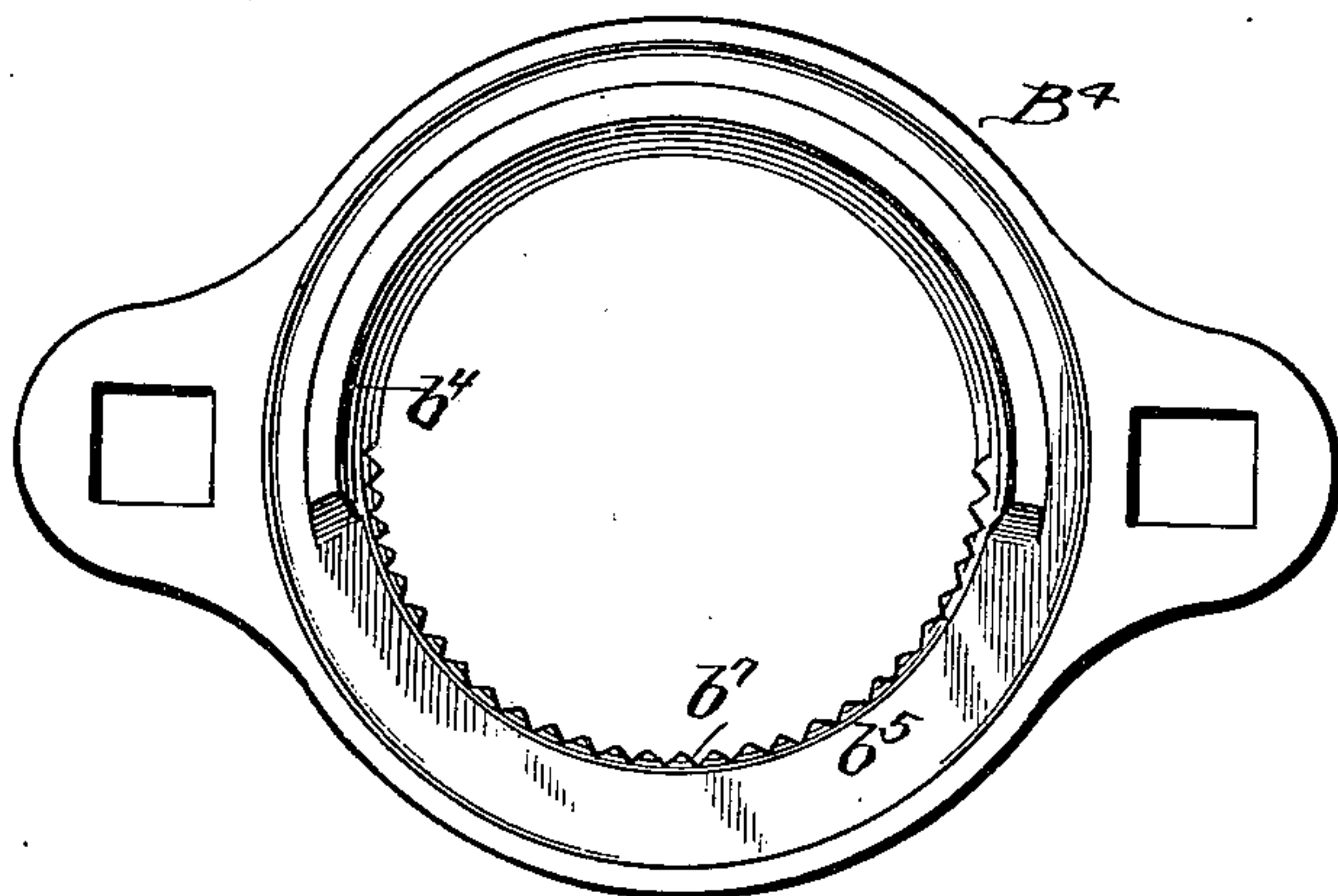


Fig. 8.

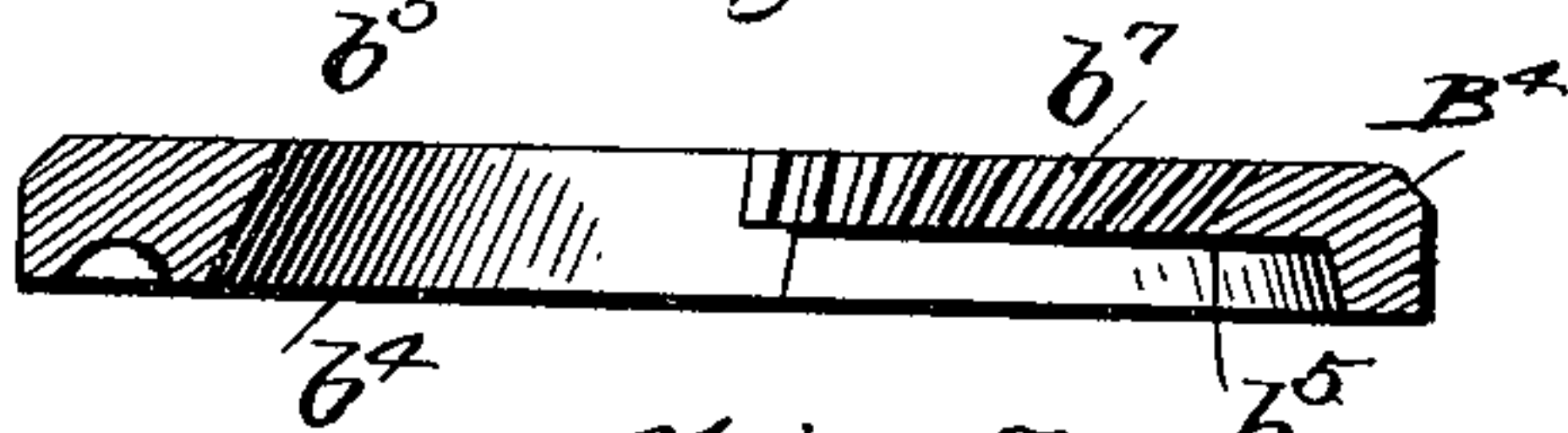
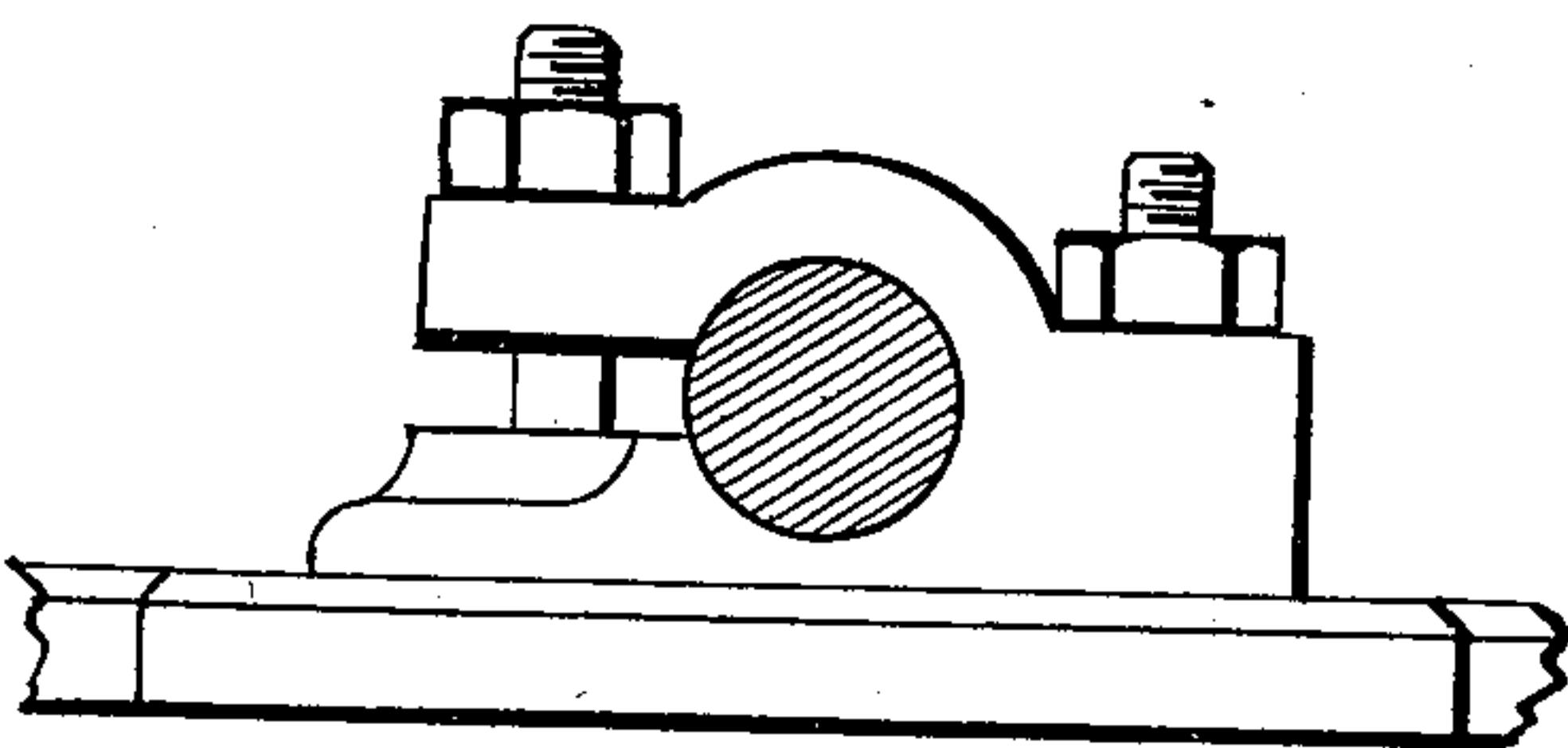


Fig. 7.



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UNITED STATES PATENT OFFICE.

ARTHUR COWLES GAYLORD, OF SANDOVAL, ILLINOIS.

COLTER.

SPECIFICATION forming part of Letters Patent No. 630,680, dated August 8, 1899.

Application filed May 25, 1899. Serial No. 718,226. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR COWLES GAYLORD, of Sandoval, in the county of Marion and State of Illinois, have invented a new and useful Improvement in Colters, of which the following is a specification.

My invention relates to colters for plows; and it consists in the peculiar construction and arrangement of clamp and the parts forming the vertical joint between the standard and the fork of the colter and also the horizontal bearing for connecting the lower ends of the fork to the colter-disk, as will be hereinafter more fully described with reference to the drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a longitudinal section through the joint between the standard and the fork. Fig. 3 is a horizontal section passing through broken line 3 3 of Fig. 1 and cutting through both the joint between the fork and standard and also the center of the colter-disk. Fig. 4 is a rear elevation. Fig. 5 is a section through the clamp on line 5 5 of Fig. 1. Fig. 6 is an inner face view of ring B⁴. Fig. 7 is a modification of the clamp, and Fig. 8 is a cross-section of ring B⁴.

In the drawings, A represents the plow-beam, having attached to it a colter-clamp B. C is the standard, bent or offset at its lower end and having a swiveling vertical joint connecting it to the fork D, which carries on the lower ends of its branches the rotating disk-shaped colter E.

The clamp B is designed to provide an improved means for securing a colter-standard to the plow-beam, by which the colter can be adjusted vertically, laterally, and angularly with relation to the plow-beam without loosening the clamp from the beam or disturbing any other adjustment when making one, also enabling the colter to be used either on small narrow steel beams or large wide wood beams and be reversible for either left or right hand plows.

B⁴, Figs. 5, 6, and 8, is a base-ring having perforated ears connected by bolts *b b* to a cross-bar B' on the opposite side of the plow-beam. The ring B⁴ is beveled or undercut about half of its circumference at *b⁴*, Fig. 8. The other half of the circle is beveled the other way or outwardly, and upon this outward

bevel are notches or serrations *b⁷*, while the under half is recessed from the inner face of circle about five-sixteenths of an inch at *b⁵*.

The base portion B³ of the clamp locks under the overhanging edge of ring B⁴ on one side, while it fits into the sloping portion and notches *b⁷* on the other side in such a manner that when the bolt *b²* is inserted and its head engages the cut-away portion *b⁵* of ring the act of tightening the nut of bolt not only draws the sloping portion of clamp down onto that of the ring, but also engages the notches *b⁶* of base B³ with notches *b⁷* of the base-ring B⁴ and also forces the base of clamp into locking connection with the undercut of the ring on the opposite side.

The upper jaw B² of clamp I make separate, and one end locks under a recess in the hollow stud *b³*, projecting from base portion B³ of clamp, while the other side is secured with a bolt *b¹*. The jaws B² B³ may be made all in one piece, as in Fig. 7.

By loosening bolt *b¹* the standard may be raised or lowered or turned axially. By loosening bolt *b²* the whole clamp may be rotated in the base-ring B⁴.

The standard C, Figs. 1 and 2, is formed below its offset with a conical enlargement *c*, tapering downwardly, and between this enlargement and its lower end is screw-threaded to receive a nut *c'*, which is conical on its upper surface and tapers upwardly and has a series of notches or serrations on its lower edge to receive a split spring-pin or cotter *c²*, which passes through diametrical notches in the lower edge of the nut and also through a transverse perforation in the lower end of the standard. This locks the conical nut in position on the lower end of the standard and yet allows it to be raised to bring the two cone-surfaces *c* and *c'* closer together. On the upper end of the fork there is formed a hub-like formation having a horizontal slot through it that divides it into an upper conical bearing *d* and a lower hollow conical bearing *d'*, that receive, respectively, the conical projection *c* on the standard and the conical upper surface of the nut *c'*. Within the slot between the upper and lower parts *d d'* of the hub there is a clamp-collar *e*, Fig. 3, whose two ends are perforated to receive a bolt *e'*, by tightening which the clamp-collar

is made to grip the standard and hold it rigidly, so that the fork cannot turn all the way around the standard in normal action, but said collar forms stops that allow a slight play
5 to the fork about the standard, and when the clamp-collar is loosened by relaxing its bolt e' it can be turned around to adjust the colter-blade sidewise and yet keep it parallel with the furrow when the standard is adjusted
10 axially in its clamp above and the offset below is made to adjust the colter sidewise.

It is important when wear occurs to take up loose play at the vertical joint between the standard and fork in such a manner as to
15 always keep the fork in proper position or alinement and prevent its tilting sidewise or becoming loose vertically. This is accomplished by adjusting the cone-bearings c c' close together, which is done by removing
20 the cotter or spring-key, turning the nut c' up so as to bring the cone-bearings close together, and then reinserting and locking the nut by the cotter again, which passes through a new set of notches in the nut. The horizontal bearing between the colter-disk and
25 the lower ends of the fork is also constructed with cone-bearings to keep the colter in central position as it wears. For this purpose clamp-plates f f , Figs. 3 and 4, are arranged
30 on opposite sides of the colter-blade and have a screw-threaded connection with each other, which when turned up clamps the colter-blade. The outer ends of the openings through these clamp-plates are hollowed out in conical shape
35 to receive conical bushings g g , which are arranged between the branches of the fork and the colter-plates f f . These conical bushings have each two diametrical lugs g' g' , that fit into corresponding recesses g^2 g^2 in the lower
40 ends of the fork branches, so that they may be rigidly locked to the said branches of the fork. All these parts are securely connected by an axial bolt h , which passes through the perforated ends of the fork, through the conical bushings g g , and through the colter-plates f f . When so connected, it will be seen
45 that the colter with its hollow conical plates revolves freely upon the conical and stationary bushings at the lower ends of the fork branches, which causes the colter to remain
50 always properly centered as it wears.

In making use of my invention I may use any form of jam-nut or lock-nut in the place of the notched nut and cotter, and instead of
55 the split clamp-collar for locking the standard I may use the well-known expedient of a continuous ring-collar and a set-screw.

In defining my invention with regard to the conical bearings between the standard and
60 fork and also between the fork and colter-blade I would state that I do not confine myself to the particular form and arrangement shown and described, as various modifications thereof may be employed without departing
65 from the spirit of my invention. My invention consists, broadly, in providing conical bearings at these points and in providing

means for adjusting the conical bearings toward each other to take up wear.

Having thus described my invention, what
I claim as new, and desire to secure by Letters
Patent, is—

1. The standard-clamp comprising a base-ring having teeth on one side and undercut on the other, clamping-jaws for the standard,
75 having corresponding surfaces to fit the undercut and teeth of the ring, and a clamping-bolt arranged to clamp the jaws to the ring and to engage the teeth and undercut surfaces substantially as shown and described. 80

2. The standard-clamp comprising a base-ring having teeth on one side and undercut on the other, the clamping-jaws B^2 B^3 , the jaw B^3 having corresponding parts to fit the base-ring and also a recessed stud b^3 , the
85 clamping-bolt b^2 , the jaw B^2 fitting in the recess of the stud, and the bolt b' clamping the two jaws together substantially as and for the purpose described.

3. In a plow-colter, the combination of a
90 vertical standard and fork the two being connected by a swiveling joint and having conical bearings and means for adjusting them toward each other to take up wear substantially as described. 95

4. A connection between the standard and a fork of a colter having conical bearings, means for adjusting one of them toward the other, and a stop device for limiting the play
100 of the fork about the standard substantially as described.

5. A connection between the standard and fork of a colter comprising two conical bearings on the standard, one fixed and the other adjustable, and a hub on the fork having
105 conical hollow bearings substantially as described.

6. A fork-joint for a colter-standard, consisting of a standard having a conical enlargement and a screw-threaded and perforated
110 end below said enlargement, a nut having a conical upper surface and locking devices arranged on said threaded end of the standard; in combination with a fork having a hub with hollow conical bearings above and below, and
115 a horizontal slot across its middle, and a locking-collar arranged in said slot and provided with means for locking it to the standard substantially as shown and described.

7. A fork-joint for a colter-standard, consisting of a standard having a conical enlargement, and a screw-threaded and perforated end below said enlargement, a nut arranged on said screw-threaded end and having a conical upper surface, and a notched
125 lower surface, a spring-cotter passing through said notch, and the perforation in the standard; in combination with a fork having a hub with hollow conical bearings above and below and a horizontal slot across its middle, and a
130 split clamp-collar with locking-bolt for clamping the standard substantially as described.

8. In a plow-colter the combination of a disk-colter, its supporting-fork and a hub-

bearing carried by said fork and having conical wearing-surfaces substantially as described.

9. The combination with a disk-colter, of
5 two clamp-plates arranged on opposite sides thereof, and having a screw-threaded connection with each other and conical outer openings, the fork with branches having perforated lower ends and locking-recesses, perfo-

rated conical bushings with locking-lugs, and to an axial bolt passing through all these parts substantially as and for the purpose described.

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Witnesses:

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