

No. 694,931.

Patented Mar. 4, 1902.

G. A. KELLY.
PLOW.

(Application filed June 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

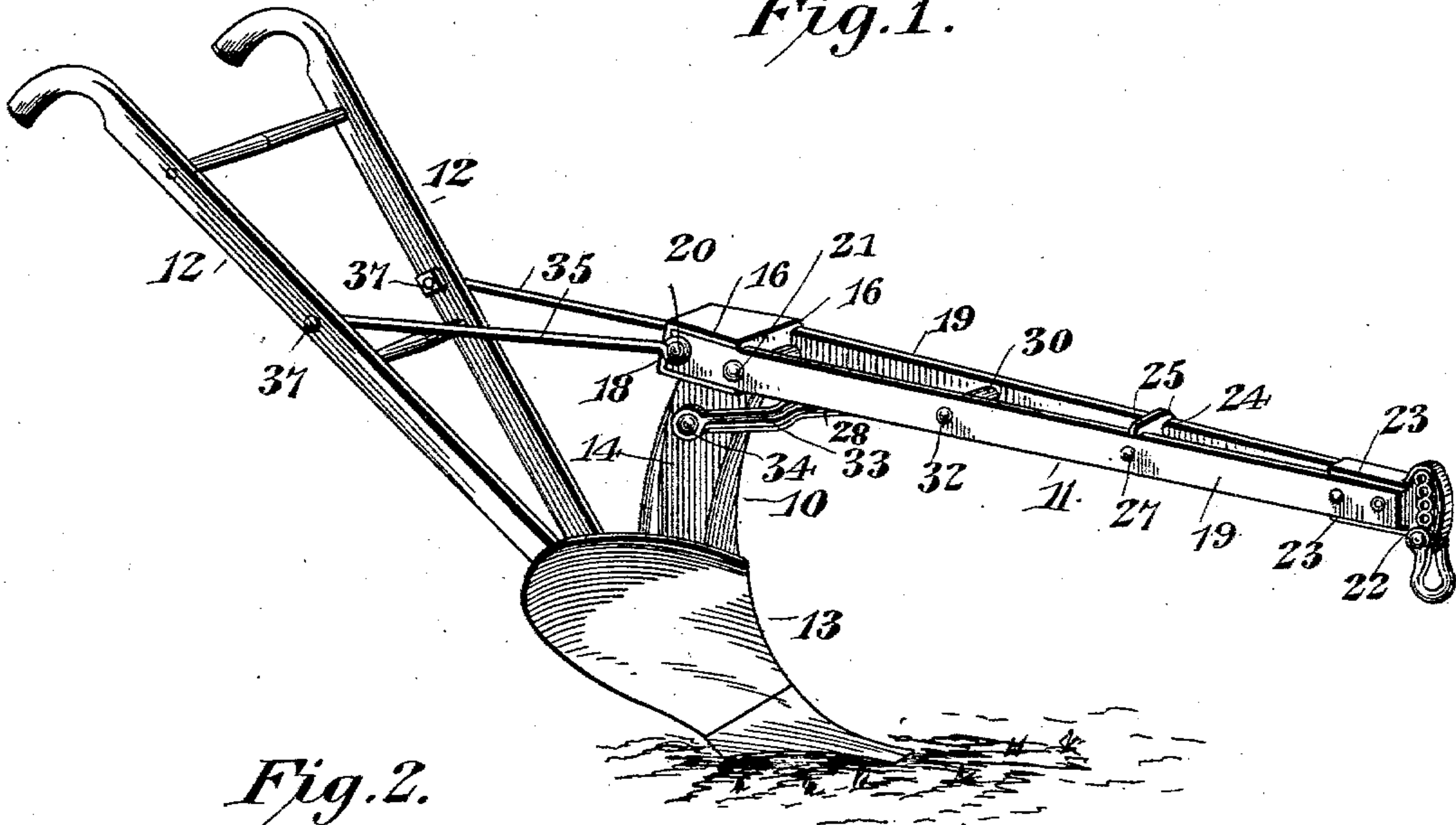


Fig. 2.

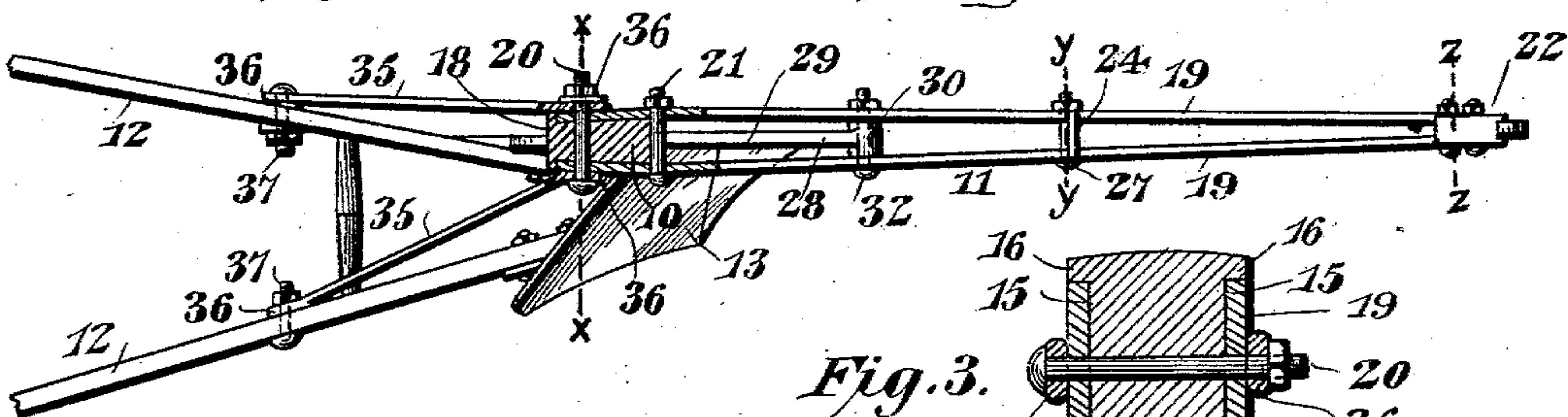


Fig. 3.

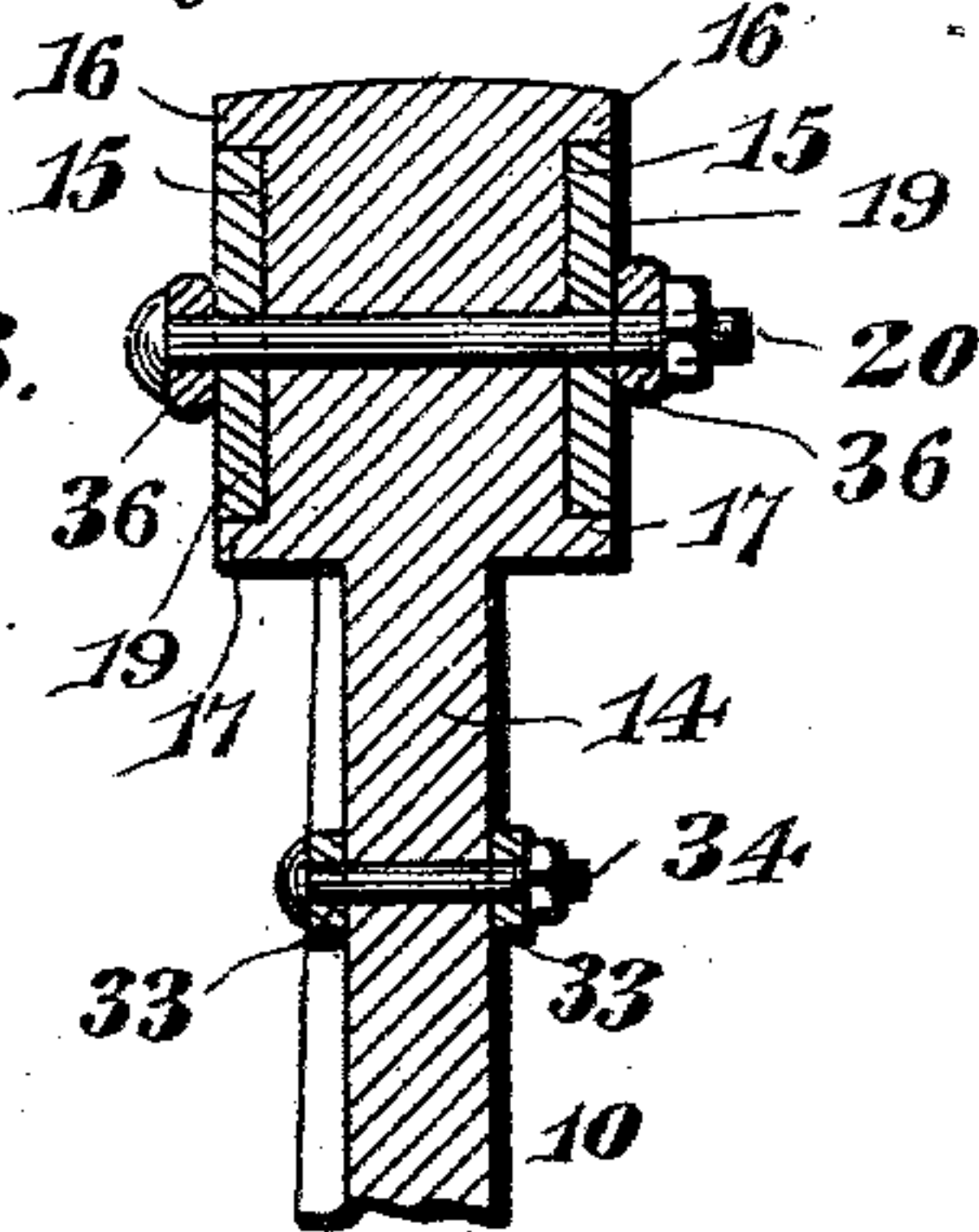


Fig. 5.

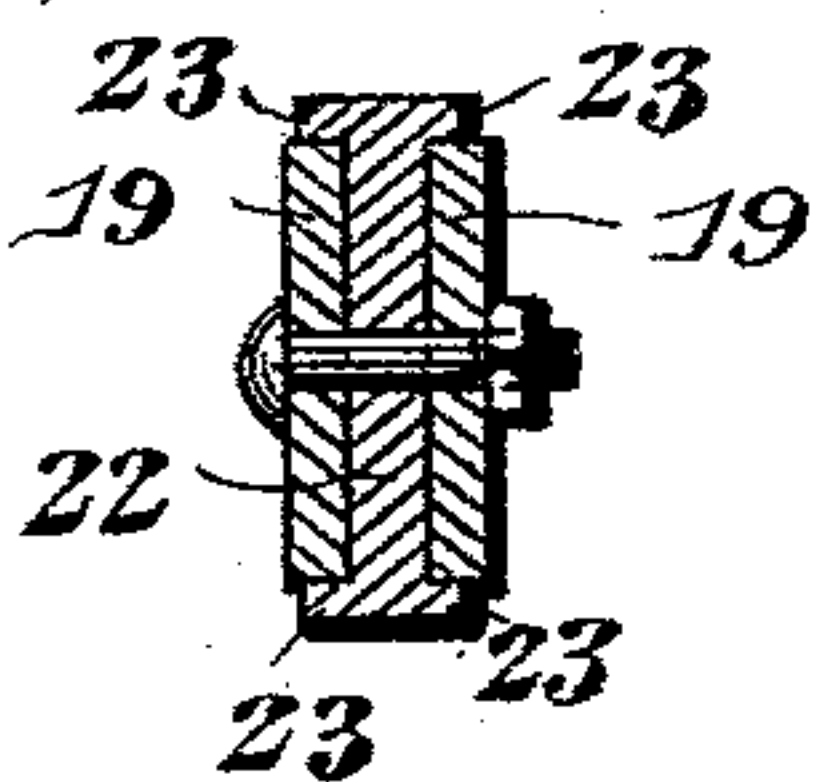
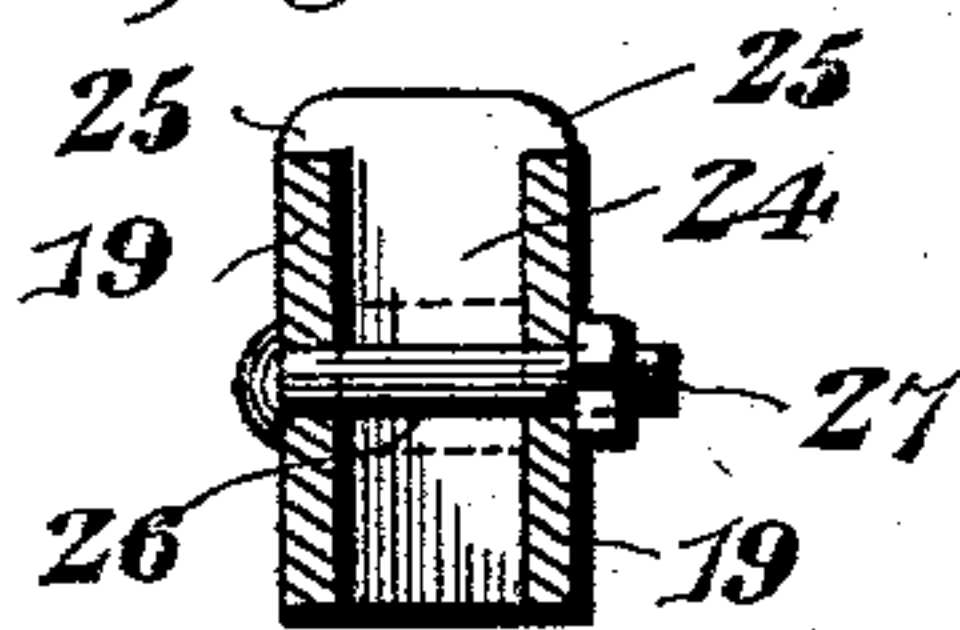


Fig. 4.



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Fig. 6.

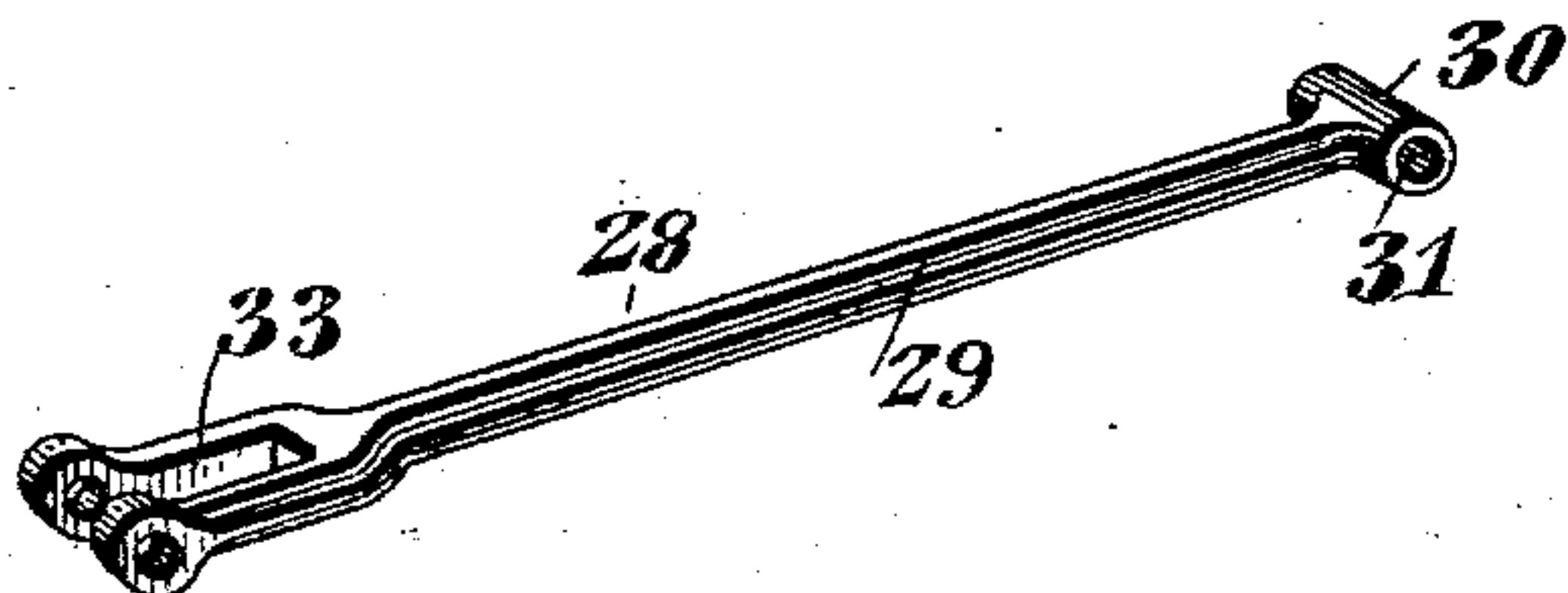


Fig. 7.

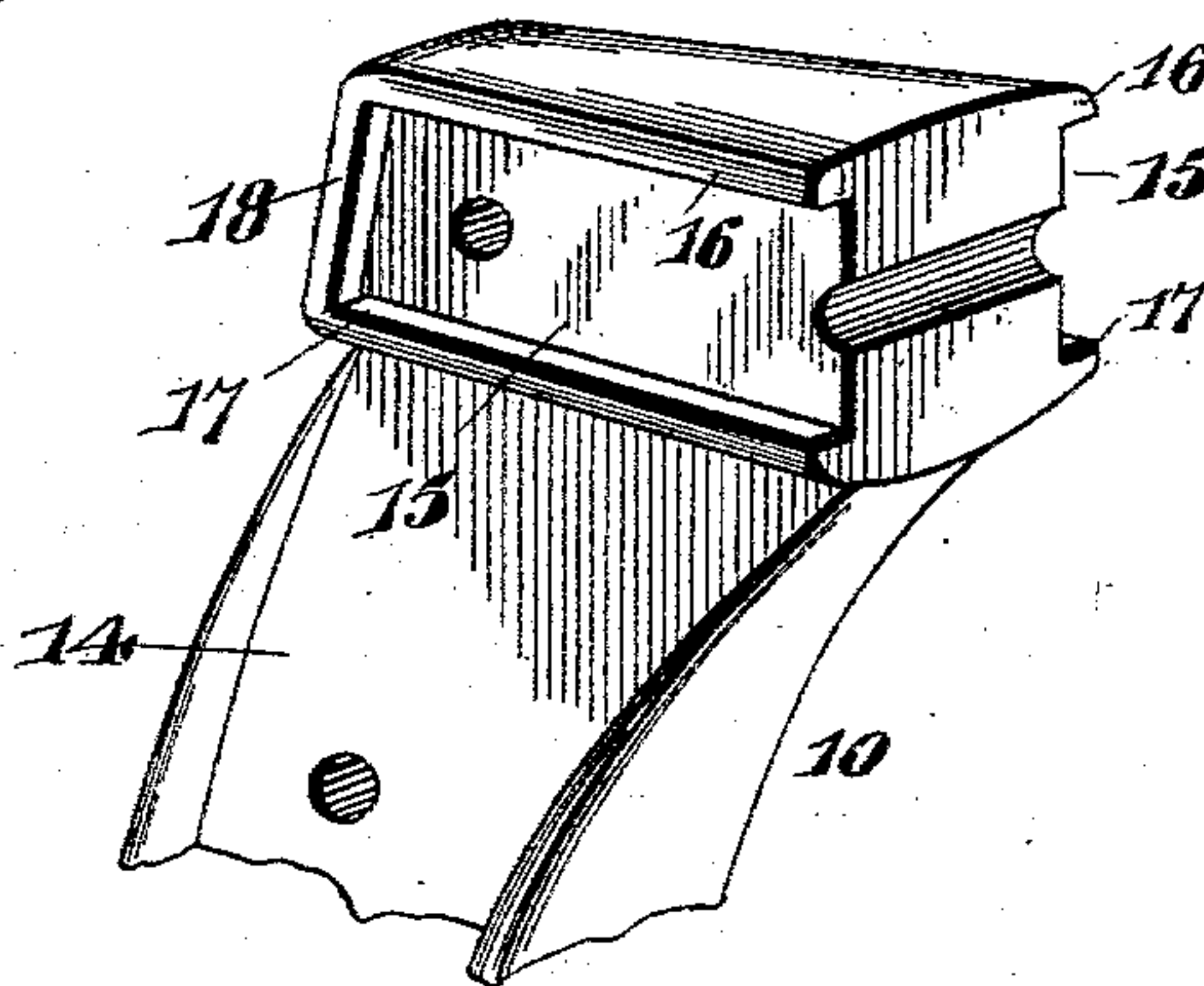


Fig. 8.

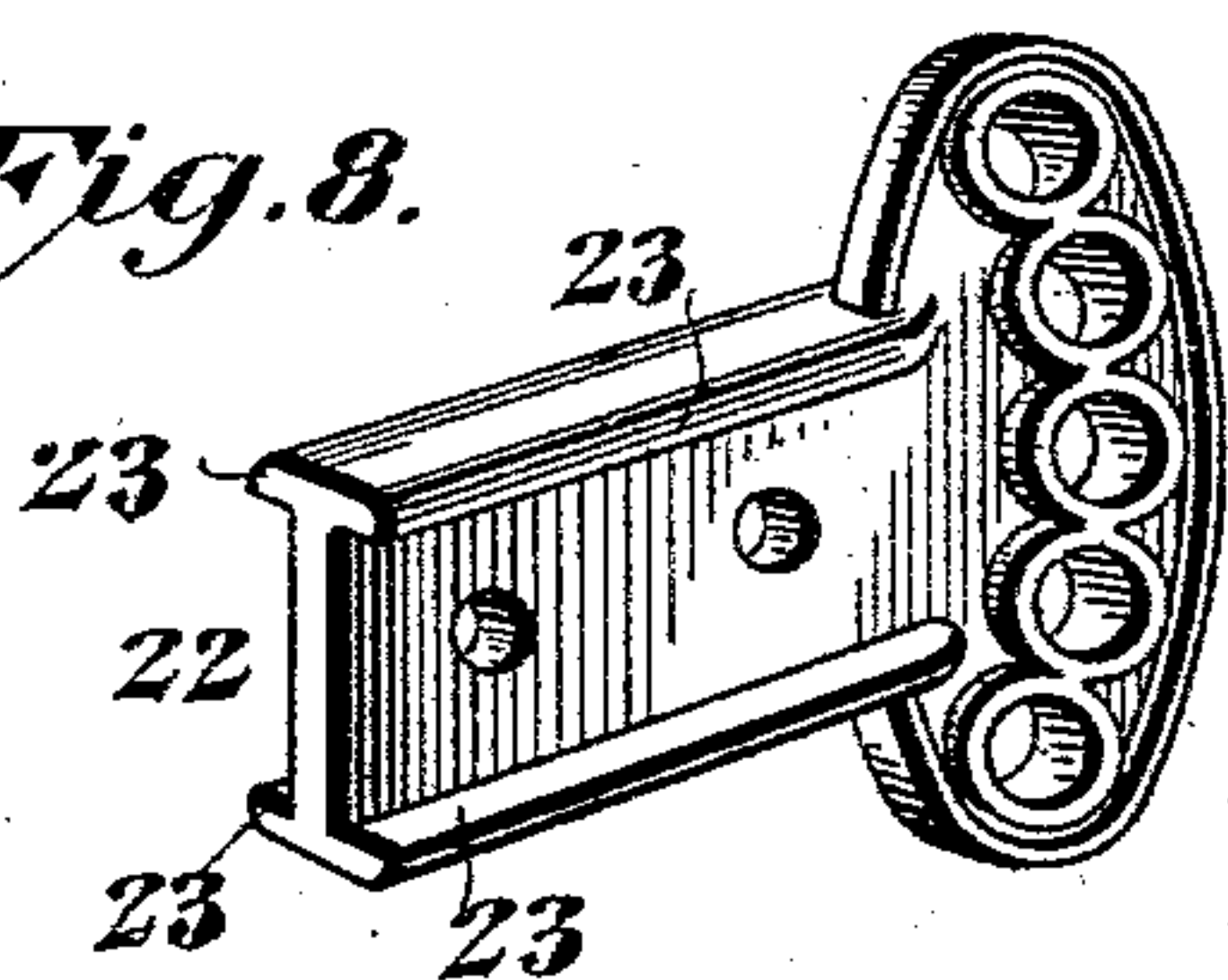


Fig. 9.

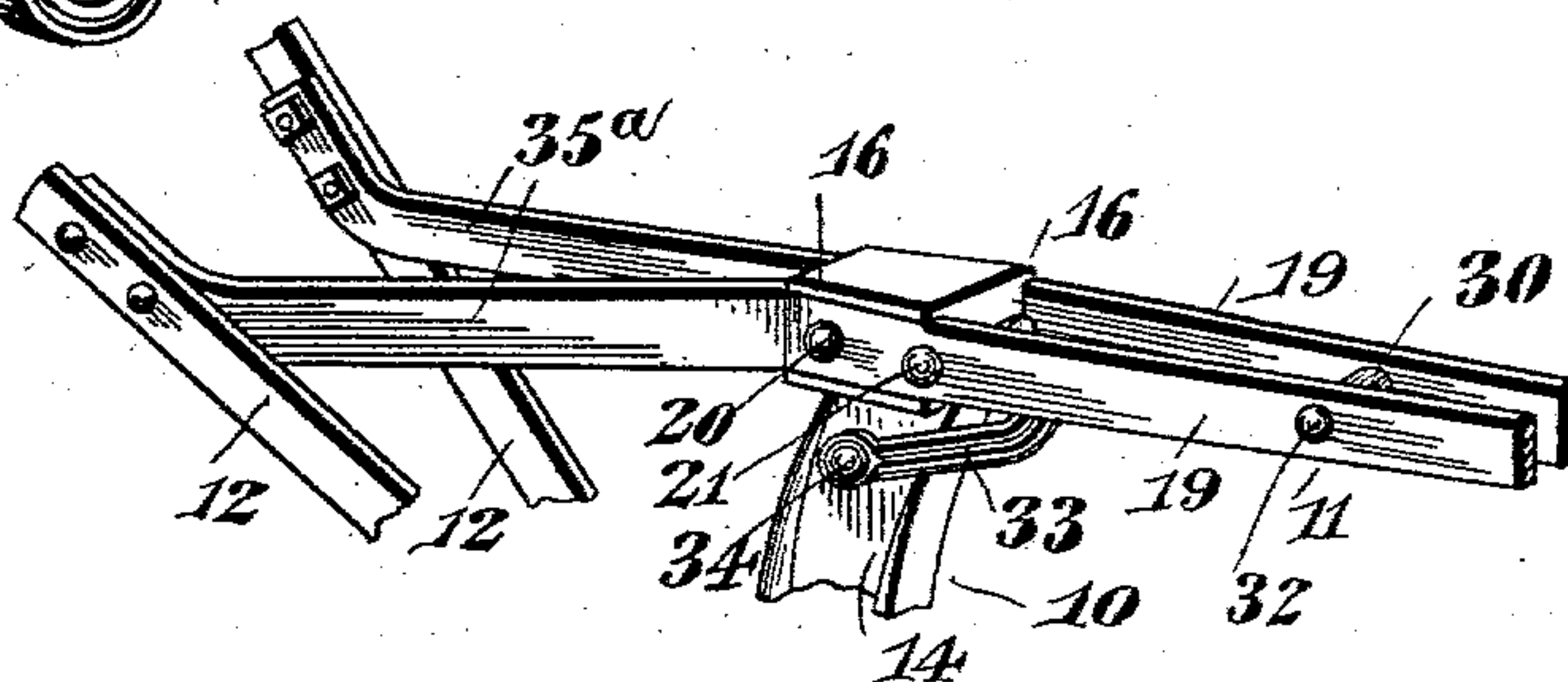


Fig. 10.

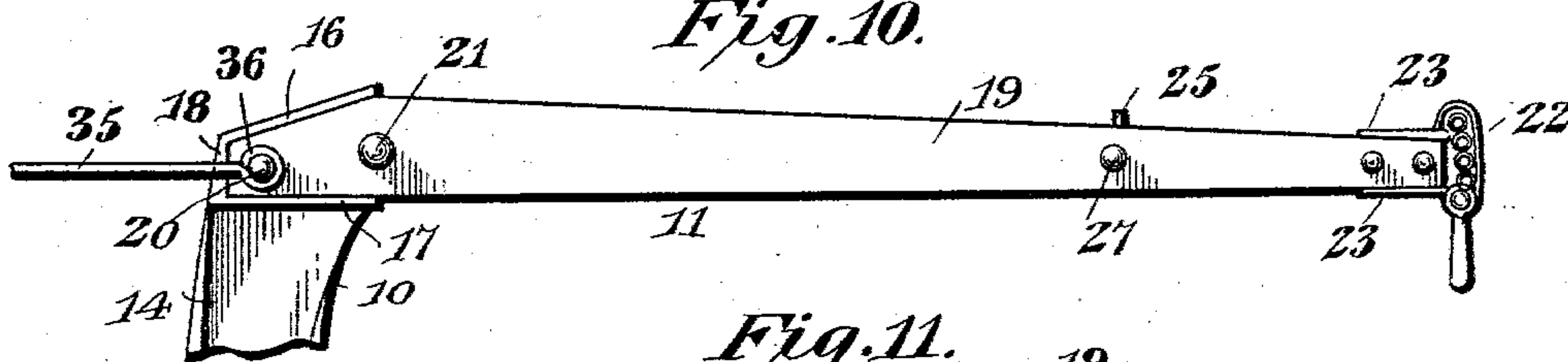
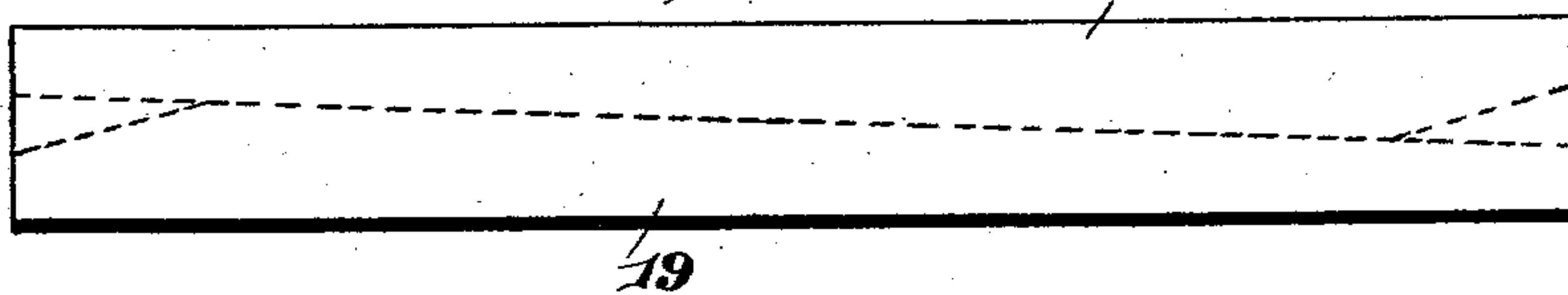


Fig. 11.



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UNITED STATES PATENT OFFICE.

GEORGE A. KELLY, OF LONGVIEW, TEXAS, ASSIGNOR TO THE GEORGE A. KELLY PLOW COMPANY, OF LONGVIEW, TEXAS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 694,931, dated March 4, 1902.

Application filed June 29, 1901. Serial No. 66,531. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. KELLY, a citizen of the United States, residing at Longview, in the county of Gregg and State of Texas, have invented a new and useful Plow, of which the following is a specification.

The present invention relates to plows; and the object thereof is to provide a novel construction whereby articles of this character will be much lighter in weight without the sacrifice of any necessary strength of rigidity.

More particularly, the feature of this invention resides in a skeleton beam, combined with the novel manner in which the several elements are secured thereto, so that the connection will be rigid and will also serve as braces for the beam. The result is a plow embodying all the advantages of the ordinary construction and the further features of lightness in weight and inexpensiveness of construction.

In the embodiment of the invention a turning-plow is illustrated; but it will be readily seen that many features pointed out and claimed herein are clearly applicable to shovel and other plows. Furthermore, although the construction is set forth with minuteness it is to be understood that the invention is not to be limited to the same, but that such changes and modifications may be made therefrom as are within the scope of the appended claims.

In the drawings, Figure 1 is a perspective view of the preferred embodiment of the invention as applied to a turning-plow. Fig. 2 is a horizontal longitudinal section through the same. Fig. 3 is a cross-section taken on the line X X of Fig. 2. Fig. 4 is a cross-section on the line Y Y of Fig. 2. Fig. 5 is a cross-section taken on the line Z Z of Fig. 2. Fig. 6 is a detail perspective view of the tension-brace, and Fig. 7 is a detail perspective view of the upper end of the standard. Fig. 8 is a detail perspective view of the clevis employed. Fig. 9 is a perspective view of a construction showing a slightly-modified form of connection between the standard and the handles. Fig. 10 is a side elevation of another modification, illustrating a construction that will obviate the necessity of a tension-

brace. Fig. 11 is a plan view of a blank, showing one manner of cutting out the beam-bars illustrated in Fig. 8.

Similar numerals of reference designate like and corresponding parts in all the figures of the drawings.

In the construction illustrated in Figs. 1 to 8 a plow is shown, comprising a standard 10, having a beam 11, secured to its upper end, and handles 12, which are fastened at their lower ends to the lower portion of the plow-body 13 in any desirable manner. The standard 10 has an upstanding shank 14, provided on its opposite side faces with sockets 15, formed by spaced transverse lips 16 and 17, which lips are connected at their rear ends by an upright outstanding flange 18. By referring to Fig. 2 it will be observed that the upper portion of the standard tapers from its front toward its rear edge, so that said sockets will thus be inclined toward each other.

The beam 11 comprises a pair of spaced side bars 19, the rear ends of which are located, respectively, in the sockets 15 of the standards and are secured therein by fastening-bolts 20 and 21. A clevis 22 is secured between the front ends of the side bar and is provided along its upper and lower edges with outstanding lips 23, that respectively engage over the upper and under edges of the side bar. Arranged between the beam-bars 19 at a point intermediate their connections with the standard and clevis is a spacing-block 24, which is provided, preferably, at its upper end with outstanding lugs 25, that engage over the upper edges of the side bars. This block furthermore has a transverse groove 26, in which fits a tie-bolt 27, that passes through the beam-bars and bridges the space between them. The spacing-block is thus held rigidly in place and holds the bars at a suitable distance apart. In practice it has been found that a beam as thus constructed is liable to bend immediately in front of its connection with the standard, and in order to overcome this weak point a tension-brace 28 is employed. This brace consists of a shank 29, having at its forward end a cross-head 30, which is located between the beam-bars 19 and has a bolt-receiving opening 31.

A fastening-bolt 32 is passed through the bars and cross-head, thus securing them rigidly together. At the same time the cross-head also forms a spacing-block to hold the bars a suitable distance apart. The rear end of the tension-brace is bifurcated to form a yoke, the arms 33 of which embrace the standard at a point below its connection with the beam, and is secured thereto by a suitable bolt 34.

In order that the handles 12 may be rigidly secured to the plow, connections are made between the upper end of the standard and the same. In the construction shown in the first two figures of the drawings this connection consists of brace-rods 35, having eyes 36 in their opposite ends. One end of each rod is secured by a bolt 37 to one of the handles, while the other ends of said rods are arranged on opposite sides of the standard and against the rear ends of the respective beam-bars. One of the bolts 20, which serve to fasten said bars to the standard, also passes through the eyes 36 of the brace-rod, and thus serves the further function of fastening the rods in place. In Fig. 8 a slightly-modified form of the connections between the standard and the handles is illustrated. In this modification the braces comprise integral extensions 35^a of the beam-bars, said extensions projecting beyond the rear of the standard and being turned upwardly and outwardly at proper angles, so that the handles secured thereto will be located at the proper inclination. While it is the intention to cover this feature broadly, in the present case no claim is made to this specific construction, as it is claimed in the application filed simultaneously with this one and numbered 66,532.

In Fig. 10 of the drawings there is shown a beam constructed in a slightly-different manner and designed to obviate the use or the necessity of the tension-brace 28. In this form the beam-bars are made heavier at their rear than at their front ends and preferably taper gradually toward said rear end. The increased body thus constituted will give the desired strength at the point where most of the strain comes, and all liability of buckling or bending is obviated. This form may be constructed in a very inexpensive manner, as shown in Fig. 11. An ordinary steel plate of the desired width is sheared into two sections, the cut being made at a slight angle to the side edges, so that the necessary taper will be formed.

By this construction it will be seen that a plow is provided which comprehends many mechanical advantages over those known to the art. Because of the lips of the standard engaging over the upper and under edges of the beam-bars there is no chance of any pivotal play between the same. The same advantage resides in the connection between the clevis and the beam-bars. Another advantage resides in the direct connection between the upper end of the standards at the point of attachment of the beam and the handle,

which thus affords a rigid brace and simplifies the construction by employing the beam-fastening bolt for connecting the braces. By means of the specific form of spacing-blocks not only are the bars held the proper distance apart, but said blocks are securely held against accidental displacement.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In a plow, the combination with a standard having sockets in its opposite side faces, the bottoms of said sockets being disposed in convergent relation toward their rear ends, of a beam comprising spaced bars that fit in the sockets, handles located in rear of the standard, and brace connections between the handles and standards, said connections extending from the points of attachment of the beam-bars to the standard.

2. In a plow, the combination with a beam comprising bars, of a standard located between the beam-bars and being provided with a portion that tapers from its front toward its rear edge, said standard having outstanding lips on its opposite side faces contiguous to its tapering portion that engage over the upper edges of the beam-bar.

3. In a plow, the combination with a beam comprising bars, of a standard located between the bars and being provided with a portion that tapers from its front toward its rear edge, said standard having outstanding lips on its opposite side faces contiguous to its tapering portion that engage under the lower edges of the beam-bar.

4. In a plow, the combination with a standard having sockets in its opposite side faces, the bottoms of said sockets being arranged in convergent relation toward their rear ends, of a beam comprising spaced bars that embrace the standard and fit respectively in the sockets thereof.

5. In a plow, the combination with a standard having sockets in its opposite side faces, of a beam comprising spaced bars that embrace the standard and fit respectively in the sockets thereof with their upper and under edges resting against the inner edges of the sockets, handles located in rear of the standards, braces extending from the handles to the socketed portions of the beam-bars, and means for fastening the beam-bars and braces to the standards.

6. In a plow, the combination with a beam comprising spaced bars, of a standard secured between the bars, a tension-brace secured at

one end to the standard and having its other end located between the bars, and means for securing the bars and brace together.

7. In a plow, the combination with a beam, 5 comprising spaced bars, of a standard secured between said bars, a brace fastened at one end to the standard below its connection with the beam, said brace extending in front of the standard and having its other end located between the beam-bars, and means passing 10 through said bars and brace for securing them together.

8. In a plow, the combination with a beam comprising spaced bars, of a standard secured 15 between the bars, a brace having a yoke at one end that embraces and is fastened to the standard, the other end of said brace being secured to the beam.

9. In a plow, the combination with a beam 20 comprising spaced bars, of a standard secured between the bars, a brace having a yoke at one end that embraces and is fastened to the standard, the other end of said brace being provided with a spacing cross-head that is 25 located between the bars, and a bolt passing through said bars and cross-head for securing them together.

10. In a plow, the combination with a standard, of a beam secured to the standard and 30 comprising spaced bars, and a space-block located between and having lips that engage over the edges of the bars.

11. In a plow, the combination with a standard, of a beam secured to the standard and 35 comprising spaced bars, a space-block lo-

cated between and having lips that engage over the edges of the bars, and a clamping-bolt passing through the bars and engaging the block.

12. In a plow, the combination with a beam 40 comprising spaced bars, of a standard secured between the bars, a clevis located at the front end of the beam and provided in its opposite side face with sockets in which the front ends of the beam-bars engage, and means for 45 securing the bars in said sockets.

13. In a plow, the combination with a beam comprising spaced bars, of a standard secured between the bars at the rear ends thereof, a 50 clevis located between the front ends of the bars, and a spacing-block arranged between the bars at a point intermediate the standard and clevis.

14. In a plow, the combination with a beam comprising spaced bars, of a standard secured 55 between the bars at the rear ends thereof, a clevis fastened between the front ends of the bars, a spacing-block arranged between the bars at a point intermediate the standard and clevis, handles located in rear of the stand- 60 ards, and connections extending from the standard at the point of attachment of the beam-bars and secured to the handles.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 65 the presence of two witnesses.

GEORGE A. KELLY.

Witnesses:

R. M. KELLY,

GEO. B. McDONALD.