Nov. 27, 1928. 1,693,467

G. W. SCHULZ

HARROW DRAWBAR

Filed July 21, 1927

FIG. 1

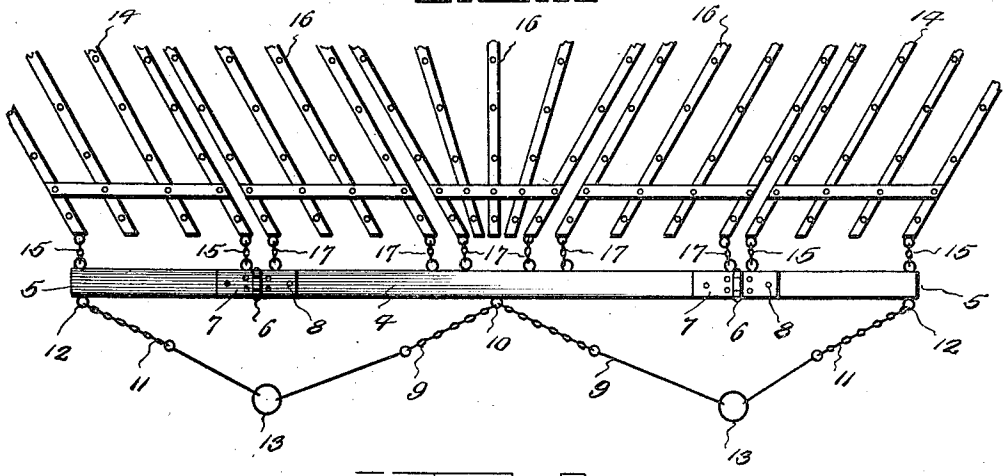


FIG. 2

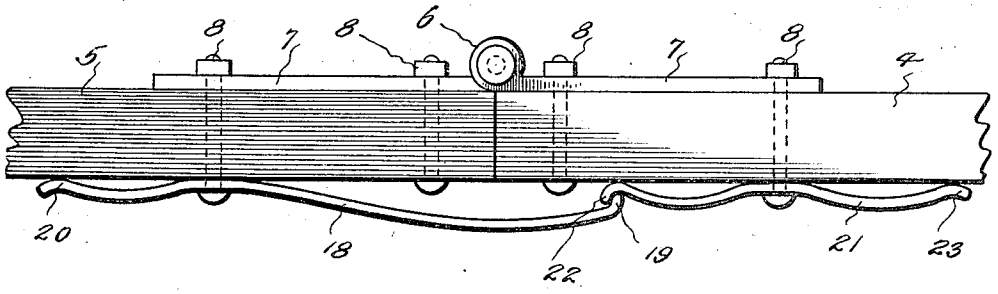
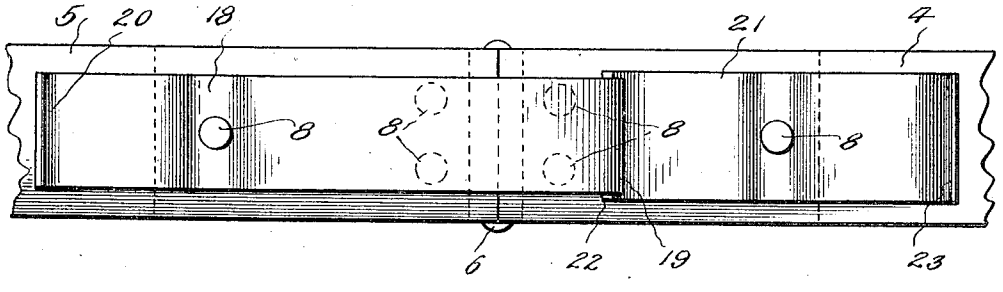


FIG. 3



Inventor

G. W. Schulz.

Witness
J. R. Pierce.

By A. R. Williamson & Co.

Attorneys

Patented Nov. 27, 1928. 1,693,467

UNITED STATES PATENT OFFICE.

GEORGE W. SCHULZ, OF CLARK, SOUTH DAKOTA.

HARROW DRAWBAR.

Application filed July 21, 1927. Serial No. 207,416.

The invention aims to provide a new and improved draw-bar for relatively wide harrows of the type consisting of a plurality of separate sections disposed side by side and all connected with a draw-bar disposed transversely of the line of travel of the implement. When such harrows are to be taken through gates, it is customary to disconnect their sections from the draw-bar and carry or drag them through one or more at a time, and the width of such harrows is also such that it greatly interferes with transportation thereof from one point to another, for instance, along a highway, a lane, driveway or the like. My invention, however, provides a draw-bar consisting of a main central section and two end sections hinged thereto, together with means for normally holding the three sections in rigid relation with each other. This means may be released when desired and the end sections folded over upon the intermediate section, at which time the end sections of the harrow are similarly folded. Thus, the width of the harrow is greatly reduced and it may pass through gates with ease and may be otherwise handled much more conveniently than is now possible. In devising the improved draw-bar, it has been my aim to provide one which is rather simple and inexpensive, yet will be efficient and desirable and will embody unique and effective means for normally holding the intermediate and the end sections of the draw-bar normally in rigid relation.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing.

Fig. 1 is a plan view showing the improved draw-bar connected with a multiple section harrow.

Fig. 2 is an enlarged front elevation of a portion of the draw-bar.

Fig. 3 is a bottom plan view of the parts shown in Fig. 2.

The numeral 4 denotes a main intermediate section of the improved draw-bar and the numerals 5 have reference to a pair of relatively short end sections connected by hinges 6 with the ends of said intermediate section, the leaves 7 of the hinges being secured to the upper sides of the draw-bar sections 4 and 5, by bolts 8.

Two flexible draft members 9 are connected at 10 to the center of the draw-bar section 4, two additional draft members 11 are connected at 12 with the outer ends of the sections 5, and the two sets of draft members 9—11, converge forwardly and are connected by rings or the like 13, to which the power is hitched for pulling the harrow.

The end sections 14 of the harrow are connected by chains or the like 15 with the end sections 5 of the draw-bar and the intermediate sections 16 of the harrow are similarly connected at 17 with the intermediate section 4 of the draw-bar. When the end sections 14 are folded over upon the adjacent intermediate sections 16, the end sections 5 of the draw-bar are also folded over onto the intermediate section 4 and it will be seen that the flexible draft members 9—11, readily permit such movement. These draft members, however, when the draw-bar is extended for use, uniformly transmit pull to the ends and the intermediate portion of the draw-bar and hence relieve the hinges 6 of strain which they would otherwise encounter.

For rigidly holding the sections 4—5 of the draw-bar in abutting end to end relation for use, novel provision is made and as such provision is duplicated at opposite ends of the draw-bar section 4, a showing and description in connection with one end of said section 4 and the adjacent end section 5, will suffice.

18 denotes a horizontally elongated steel spring which underlies the end section 5 and the adjacent end of the section 4, the inner end of said spring being curved upwardly at 19 to provide a hook, while its outer end is curved or bowed downwardly at 20 providing a friction shoe for contact with the end section 5 of the draw-bar. Between its ends, the spring 18 is secured against the lower side of the draw-bar section 5, preferably by one of the bolts 8, and between this bolt and the ends of the spring, the latter bows downwardly. Another and relatively short steel spring 21 underlies the end section 4 and is secured between its ends against the lower side of the latter, preferably by one of the bolts 8. The inner end of spring 21 is curved downwardly providing a hook 22 for coaction with the hook 19 and also providing a friction shoe 23 for contact with the lower side of the draw-bar section 4. The outer end of spring 21 is also curved downwardly as at 23 and provides a second friction shoe for contact with the section 4, and between its central and end portions, the spring is downwardly bowed as shown in Fig. 2.

The hooks 19—22 are held normally in en-

gagement with each other by the resiliency of the spring 18 and when the end section 5 is forcibly jerked upwardly, hook 19 snaps out of engagement with hook 22 and permits free folding of said section 5 upon the section 4. When the sections 4—5 are returned into rectilinear relation with each other, spring 18 may either be pried downwardly until its hook 19 will engage the hook 22, or by means of a suitable tool or possibly a rock, one or the other of the springs 18—21 may be knocked out of its normal position, that is, swung laterally about the spring-attaching bolt. Thus, the inner ends of the springs may be made to somewhat overlap each other in edge to edge relation, after which the spring which has been turned from its normal position, may be driven back into place, causing effective inter-engagement of the hooks 19—22, to maintain the draw-bar sections in rigid relation with each other.

Excellent results are obtainable from the details disclosed, and such details are therefore by preference followed. However, within the scope of the invention as claimed, variations may be made.

I claim:—

1. In a draft device including two draw-bar sections disposed in end to end relation, and means at the upper sides of said sections hinging them together and permitting folding of one section onto the other; a spring underlying one section and the adjacent end of the other section, one end of said spring having an upwardly directed hook while the opposite end of said spring is provided with a shoe to contact with the lower side of one of the draw-bar sections, means between the ends of said spring securing it for lateral swinging movement to said one draw-bar section, said spring being downwardly bowed between said means and its ends, and means pivoted on the other draw-bar sections co-operable with said hook for normally holding the two sections in alinement with each other.

2. In a draft device including two draw-bar sections disposed in end to end relation, and means at the upper sides of said sections hinging them together and permitting folding of one section onto the other; a spring underlying one section and the adjacent end of the other section, one end of said spring having an upwardly directed hook while the opposite end of said spring is provided with a shoe to contact with the lower side of one of the draw-bar sections, means between the ends of said spring securing it to said one draw-bar section, said spring being downwardly bowed between said means and its ends, a second spring underlying the other draw-bar section and secured to the latter between its ends, the inner end of said second spring having a downwardly directed hook inter-engaged with the first named hook while the outer end of said second spring is provided with a shoe to bear against the lower side of said other draw-bar section, the portions of the second spring between its ends and its intermediate portion being downwardly bowed.

3. In a draft device including two draw-bar sections disposed in end to end relation, and means at the upper sides of said sections hinging them together and permitting folding of one section onto the other; a spring at the lower side of one section connected between its ends with the latter, the inner end of said spring having a downwardly directed hook while the outer end thereof is provided with a friction shoe engaging the lower side of said one section, the portions of the spring between its ends and intermediate portion being downwardly bowed, and means connected to the other draw-bar section and co-operable with said hook for holding the two draw-bar sections normally in alinement.

4. In a draft device including two draw-bar sections disposed in end to end relation, and means at the upper sides of said sections hingedly connecting them and permitting folding of one onto the other; springs underlying the adjacent ends of the two draw-bar sections and having inter-engaged hooks at their inner ends, means between the ends of one spring pivoting it on a vertical axis to one draw-bar section, means between the ends of the other spring pivoting it on a vertical axis to the other draw-bar section, the outer ends of both springs having friction shoes contacting with the draw-bar sections respectively, the portions of said springs between their ends and intermediate portions being downwardly bowed.

5. In a draft device including two draw-bar sections disposed in end to end relation, and means at the upper sides of said sections hingedly connecting them with each other and permitting folding of one upon the other; releasably engaged spring devices underlying said draw-bar sections respectively and bearing frictionally against said sections, and means pivoting said spring devices to said draw-bar sections respectively on vertical axes.

In testimony whereof I have hereunto affixed my signature.

GEORGE W. SCHULZ.