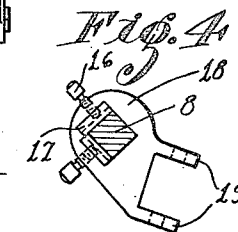
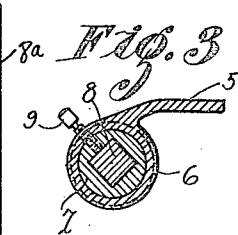
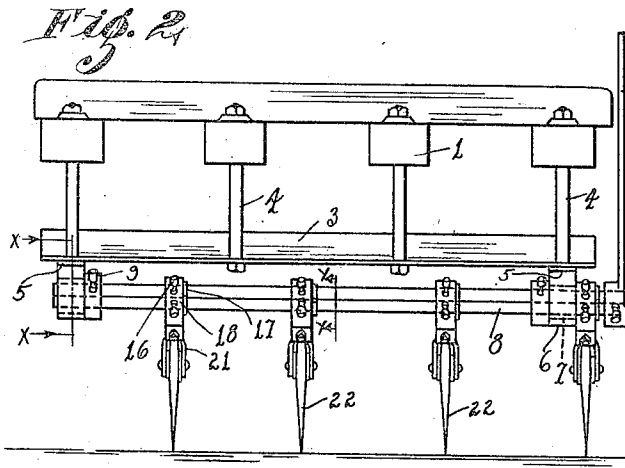
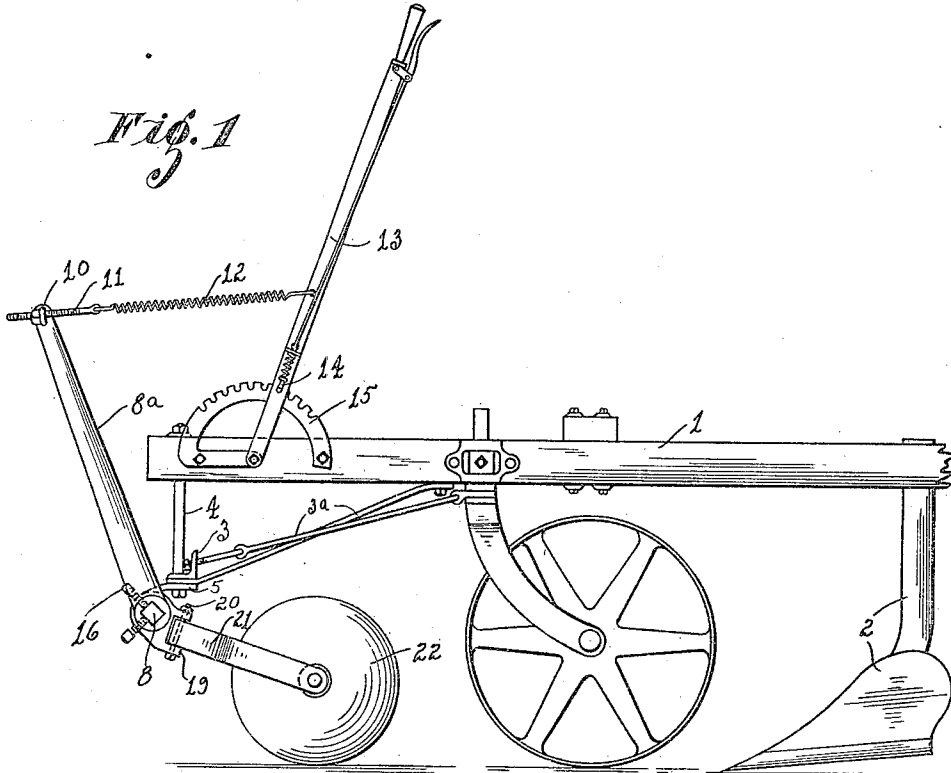


E. J. PATTERSON.
 SELF ADJUSTING COLTER WHEEL FOR PLOWS.
 APPLICATION FILED APR. 26, 1916.

1,220,449.

Patented Mar. 27, 1917.



WITNESS.

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SELF-ADJUSTING COLTER-WHEEL FOR PLOWS.

1,220,449.

Specification of Letters Patent.

Patented Mar. 27, 1917.

Application filed April 26, 1916. Serial No. 93,620.

To all whom it may concern:

Be it known that I, EDIE J. PATTERSON, a citizen of the United States, residing at Stockton, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Self-Adjusting Colter-Wheels for Plows; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in a colter wheel attachment for plows. In the present day form of commonly used colter wheels these are fixed stationary directly in advance of the plow. This structure has done very well heretofore in light plows drawn by horses; however, plows are now commonly drawn by tractors and are made very large and heavy and are arranged to plow deeper and through much heavier soils and over much more foul matter than was ever attempted with horses. For this reason the old style of colter wheel fixed as noted directly in front of the plow share is almost useless for the reason that in traveling through very foul stuff the same is very apt to be distorted or broken and the foul material such as grass, weeds, brush and the like accumulates between the colter wheel and plow shares causing the same to become clogged and congested so that the plows are unable to perform their functions.

I aim by my improved device to so arrange the colter wheel attachment that it will be carried directly at the front of the plow frames a considerable distance from the plows themselves and the colter wheels will be self adjusting so that when they encounter foul material which it is absolutely impossible to cut through they will not be distorted or broken but will merely lift themselves clear of the same. I also arrange the wheels to be adjusted to cut at different depths. I provide means for manually fixing this adjustment at the proper point and also the colter wheels will be well spaced from the plows thus lessening the chance for congestion and if any foul material should pile between the same it can readily be removed without interfering with the plowing operation.

A further object of the invention is to produce a simple and inexpensive device and

yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of the parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of one end of a plow frame showing my improved colter wheel attachment. I have not shown the adjusting levers for the other plow structure in order to allow my improved structure to stand out distinctly and be readily understood.

Fig. 2 is a front elevation of the subject matter shown in Fig. 2.

Fig. 3 is a sectional view taken on a line X—X of Fig. 2.

Fig. 4 is a sectional view taken on a line Y—Y of Fig. 2.

Referring now more particularly to the characters of reference on the drawings the numeral 1 designates the plow frame arranged to carry the plows 2 which of course can be arranged as desired or be of any suitable type. The several attachments for controlling the plows and furrow wheels and the like are not shown in order that my invention may stand out clearly.

My improved colter wheel attachment is secured directly to the front end of the plow beams 1 and consists primarily of a supporting frame 3 which may be of angle iron or other suitable material suitably secured to the beams 1 by bolts or other similar members 4.

Projecting outwardly from the supporting member 3 are a desired number of brackets 5 carrying circular bearings 6 in which fit round collars 7 fixed to a square shaft 8 by means of set screws 9. These collars 7 turn in the bearings 6 and the square shaft 8 turns with them as a unit.

Fixed at one end of the square shaft 8 is an arm 8^a extending upwardly, as shown, where it is provided with an adjustment nut 10 into which extends a threaded pin 11 connected by a spring 12 with an operating lever 13, the position of the lever 13 being fixed by means of a spring pressed dog 14 engageable in a quadrant rack 15 in the usual manner.

Fixed on the square shaft 8 by means of set screws 16 bearing against bearing plates

17 which in turn bear against the sides of the square shaft 8 are any desired number of brackets 18 each bracket having a pair of projecting finger members 19 in which, by means of pins 20, are swiveled the supporting bars 21 of the colter wheels 22. There will be one of the colter wheels 22 for each plow 2 and the colter wheels will be alined with the plows in the usual manner. By means of the adjustment pin 11 the tension of the spring 12 may be fixed at such normal tension as may be desired.

To fix the normal cutting depth of the colter wheels the lever 13 will be positioned at such point on the rack 15 as is proper. Then with the forward movement of the plows the colter wheels will cut into the ground in the usual manner. If the said wheels 22 encounter foul matter which it is impossible for them to cut through, then, instead of being distorted or broken they will ride over the same, this action turning the square shaft 8 and extending the arm 8^a to pull the spring 12. Upon the foul matter being passed the spring 12 will pull the parts back into normal cutting position. By means of the swiveled pins 20 the colter wheels 22 will readily follow any direction in which the plow frame 1 may be turned.

The average working tension of the spring 12 between the lever 13 and arm 8^a is adjusted by the adjusting screw 11. When in operation, however, it sometimes becomes necessary to vary this tension due to the fact that the colter wheels will move over different grades of ground, sometimes in heavy adobe soil and other times in light peat soil and in order that they will cut properly into the ground, the average working tension is therefore varied by shifting the lever 13 from one point to another. In this way the tension of the spring 12 can be quickly lessened when the colter wheels are moving in soft soil and likewise quickly increased when heavy soil is encountered. Also by throwing the lever 13 completely forward, this will relieve the tension of the spring 12 entirely and the colter wheels will then ride over the ground without cutting into the same in any appreciable manner.

From the foregoing description it can readily be seen that the said wheels 22 may be manually positioned to cut to the depth desired, and that in addition to this manual adjustment they are arranged to automatically adjust themselves to varying conditions so as to render them effective and at the same time prevent undue interference with the foul matter in such a way as might distort or break them. Also by carrying them directly at the front of the plow frames they will be well spaced from the plows so that if the foul matter should tend to accumulate between the wheels and plows

the same could readily be cleaned out without the necessity of stopping the plowing operation.

The member 3 may be suitably supported by means of braces 3^a or other suitable structure in order to give the necessary strength.

While I have particularly described the colter wheel supporting shaft 8 as being a square shaft, still in practice of course it can be made round or any other shape found desirable and the brackets for holding the colter wheels may be attached to the same in any suitable manner.

In addition to the many advantages already noted for my improved invention I wish also to call attention to the fact that the invention is especially adaptable for use in stony ground such as is often encountered in the fields of otherwise generally good soil.

When such rocky or stony ground is encountered by my improved arrangement the colter wheels can be lifted out of the ground entirely without having to stop the plowing operation merely by operating the lever 13. Then when the stony or rocky ground is passed the operation of the lever is reversed and the colter wheels are all replaced into operative position. This, as can be readily seen, will prevent the colter wheels from becoming dulled, distorted or broken by encountering such stony or rocky ground.

From the foregoing description it will readily be seen that I have produced such a device as substantially fulfils the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention as defined by the appended claims.

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

1. A colter wheel attachment for plows comprising the combination with a plow frame, of a shaft journaled on the frame, a plurality of colter wheels having supports fixed to the shaft whereby all the colter wheels can be moved as a unit with the movement of the shaft, and a resilient means normally acting against the shaft to hold all of the colter wheels yieldingly against the ground.

2. A colter wheel attachment for plows comprising the combination with a plow frame, of a shaft turnably mounted at the front end of the frame, colter wheels supported on the shaft, an arm on the shaft, a lever fulcrumed on the plow frame, and a resilient connection between the lever and arm.

3. A colter wheel attachment comprising the combination with a plow frame, of

brackets supported on the forward end of the plow frame, a shaft turnable in the brackets, a plurality of brackets mounted on the shaft, colter wheels swiveled in the
5 last named brackets, an arm on the shaft, an adjustable lever fulcrumed on the plow frame, and a resilient connecting means interposed between the lever and the arm.

4. A colter wheel attachment for plows
10 comprising the combination with a plow frame, of a shaft journaled on the frame, a plurality of colter wheels having supports fixed to the shaft whereby all the colter
11 wheels can be moved as a unit with the movement of the shaft, an arm fixed to the

shaft, a lever fulcrumed on the plow frame, and a resilient connection between the arm and the lever to hold the colter wheels yieldingly against the ground.

5. A colter wheel attachment comprising 20 the combination with a plow frame, a shaft journaled on the plow frame, a plurality of brackets fixed to the shaft, a colter wheel swiveled in each bracket, an arm fixed to the shaft, a lever fulcrumed on the plow 25 frame, and a spring interposed between the lever and the arm to hold the colter wheels yieldingly against the ground.

In testimony whereof I affix my signature.

EDIE J. PATTERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."