C. KEARIN.

PRESSURE REGULATING MECHANISM FOR GRAIN DRILLS.

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945,098. Patented Jan. 4, 1910.

Fig. 1.

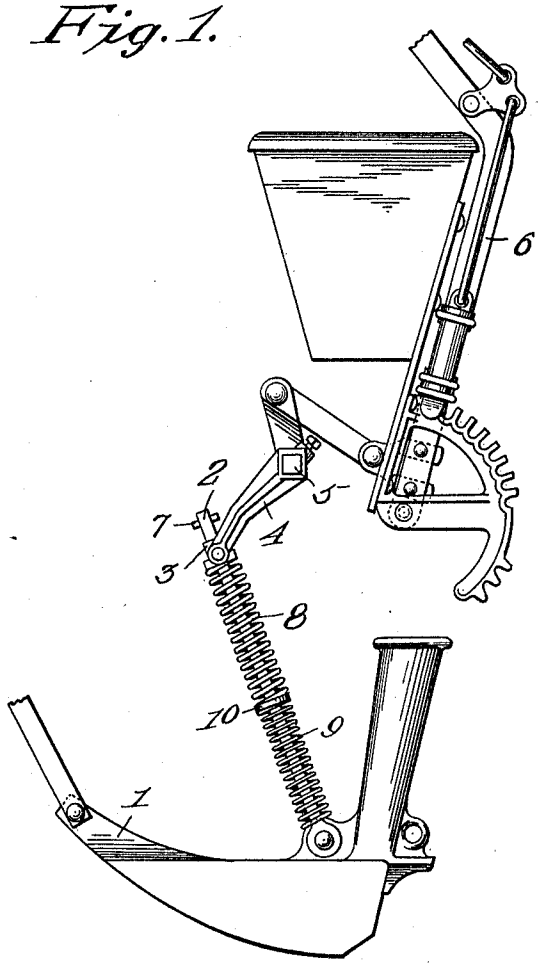


Fig. 2.

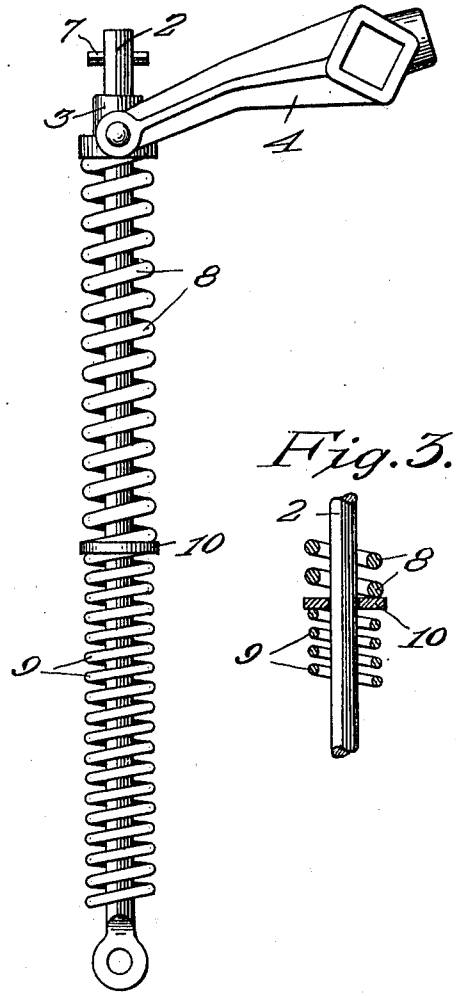


Fig. 3.

Inventor

Cornelius Kearin

Witnesses

James F. Brown

E. M. Ricketts

By Walton E. Coleman

Attorney

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CORNELIUS KEARIN, OF RAMONA, SOUTH DAKOTA.

PRESSURE-REGULATING MECHANISM FOR GRAIN-DRILLS.

945,098. Specification of Letters Patent. Patented Jan. 4, 1910.

Application filed February 25, 1909. Serial No. 480,004.

To all whom it may concern:

Be it known that I, CORNELIUS KEARIN, a citizen of the United States, residing at Ramona, in the county of Lake and State of South Dakota, have invented certain new and useful Improvements in Pressure-Regulating Mechanism for Grain-Drills, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in pressure regulating mechanism for grain drills and more particularly to an improved spring device for maintaining the shoe, disk, hoe or the like of a grain drill in proper contact with the ground.

The object of the invention is to provide an improved pressure regulating device which will render the shoe more sensitive and allow it to operate more effectively on uneven ground and to pass over stalks and other obstructions without clogging the machine and which will also permit the shoe to be set to operate deeper in the ground without increasing the load upon the team of draft animals.

With this object in view, the invention consists in the use of two springs of unequal tension or strength to control each shoe, disk or equivalent hoeing element.

The invention further consists in the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation showing the application of the invention to a grain drill having a shoe or hoe; Fig. 2 is an enlarged side elevation of the lifting rod, the pressure regulating arm or member and my improved spring device; and Fig. 3 is a detail section through the washer and the adjacent ends of the two springs.

In the drawings 1 denotes a shoe or equivalent earth opening device of a grain drill mounted for vertical swinging movement in the usual manner and having pivotally connected to it a lifting rod 2. The latter slides through a collar 3 pivotally mounted in a crank arm 4 or any equivalent pressure regulating member. As illustrated, said arm 4 is fixed to a shaft 5, the movement of which is controlled by an adjustable hand lever 6. The lifting rod 2 is pivoted at its lower end to the shoe 1 and in its upper end is a transverse pin 7 which serves as a stop to prevent the rod from dropping out of the collar 3. The parts just described are old and well known.

In applying my invention to a grain drill of the form above described, I provide two coil springs 8, 9 of unequal tension or strength, one being preferably about half as strong as the other and I arrange them upon the lifting rod 2 between the shoe 1 and collar 3 and separate them by a perforated plate or washer 10, which latter is adapted to slide freely upon the lifting rod. The weaker spring 9 is preferably arranged beneath the stronger one 8 and is of such tension that it maintains the shoe 1 in proper contact with the ground and at the same time allows the shoe to readily pass over stalks or other obstructions or raised places and to also operate on low places. The stronger spring 8 is of such tension that it will quickly return the shoe to the ground when the shoe passes over a very high obstruction. The provision of these two springs of unequal tension therefore enables the operator to set the drill to operate a little deeper without increasing the load upon the draft animals and it further effectively prevents the machine from becoming clogged up and allows it to effectively operate upon very uneven ground.

While I have shown and described the preferred embodiment of the invention arranged upon a well known form of grain drill, it will be understood that changes in the form, proportion, arrangement and details of construction may be made within the spirit and scope of the invention to adapt it for use on different styles and kinds of drills.

Having thus described the invention what is claimed is:

1. A pressure regulating mechanism comprising, in combination with a shoe, of a movable pressure regulating arm, a collar carried by said arm, a lifting rod pivoted to the shoe and slidable in said collar, two coil springs arranged upon the lifting rod between the collar and shoe, said springs being of unequal strength and both being adapted to press downwardly upon the shoe and a slidable spacing washer upon the lifting rod between said springs.

2. A pressure regulating mechanism of the character described comprising, in combination with a vertically swinging grain drill shoe, of a vertically swinging pressure regulating arm, means for adjusting said

arm, a guide collar pivoted to said arm, a lifting rod slidable in said guide collar and having its lower end pivoted to said shoe, a stop at the upper end of said rod, a washer slidable upon the intermediate portion of said rod, a relatively strong coil spring arranged on the upper portion of the rod between said washer and said coil and a relatively weak coil spring arranged on the lower portion of said rod between said washer and said shoe, both of said coil springs being adapted to press the shoe downwardly toward the ground, whereby the shoe is rendered more sensitive and allowed to pass over stalks and other obstructions without clogging the machine.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CORNELIUS KEARIN.

Witnesses:
H. B. BRUGMAN,
J. A. DERAGISCH, Jr.