J. W. KAUFMANN & E. M. KRAMER.

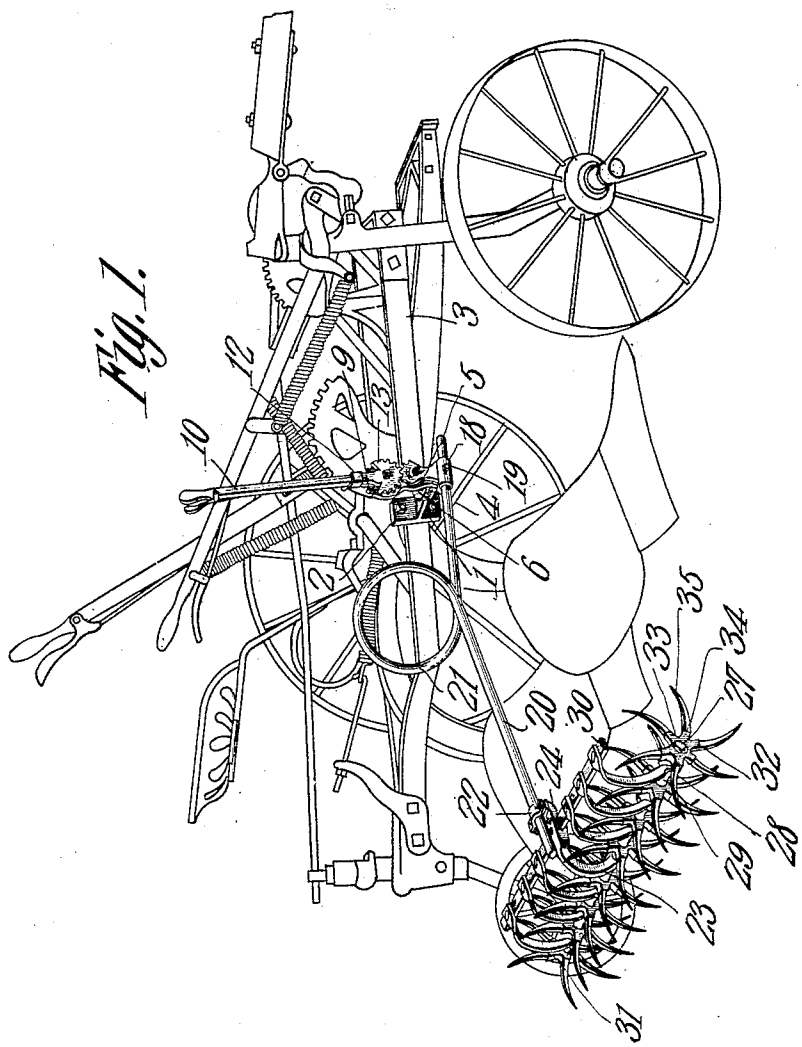
SOIL PULVERIZING ATTACHMENT FOR PLOWS.

APPLICATION FILED MAY 23, 1908.

907,505. Patented Dec. 22, 1908.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

E. J. Stewart

E. Daniels

John W. Kaufmann AND Emil M. Kramer Inventors

By C. A. Snow & Co.

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

J. W. KAUFMANN & E. M. KRAMER.

SOIL PULVERIZING ATTACHMENT FOR PLOWS.

APPLICATION FILED MAY 23, 1908.

907,505. Patented Dec. 22, 1908.

2 SHEETS—SHEET 2.

Fig. 2.

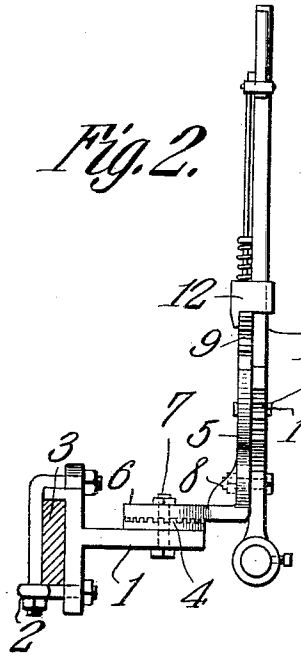
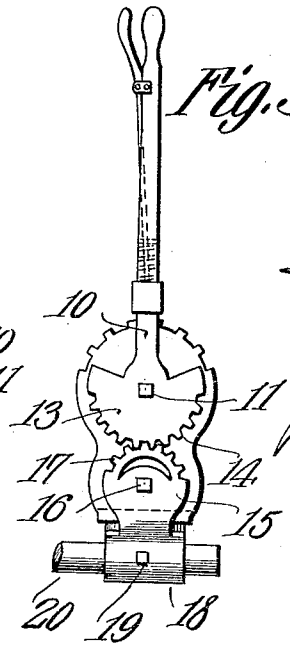


Fig. 3.



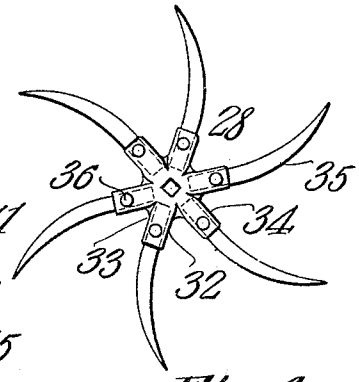


Fig. 4.

Fig. 6.

Fig. 5.

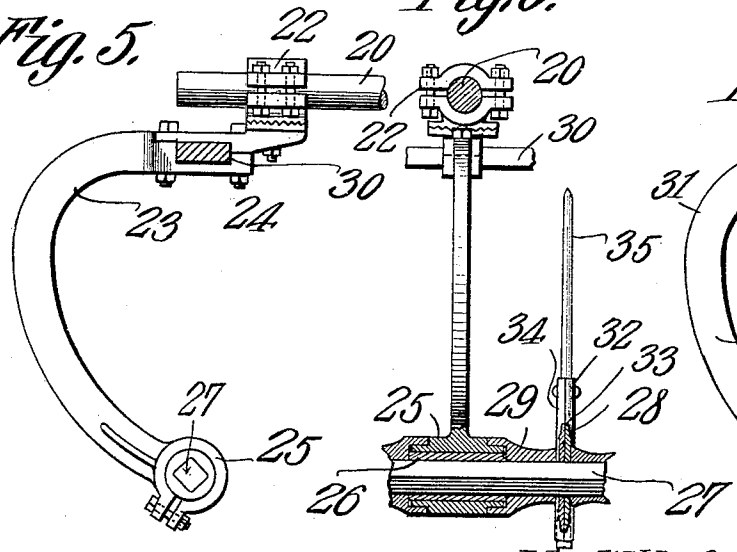
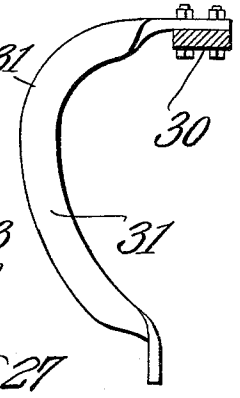


Fig. 7.



Witnesses

E. F. Stewart

C. David

Inventors

John W. Kaufmann AND

Emil M. Kramer

By C. A. Snow & Co.

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN W. KAUFMANN AND EMIL M. KRAMER, OF PAXTON, ILLINOIS.

SOIL-PULVERIZING ATTACHMENT FOR PLOWS.

No. 907,505. Specification of Letters Patent. Patented Dec. 22, 1908.

Application filed May 23, 1908. Serial No. 434,578.

To all whom it may concern:

Be it known that we, JOHN W. KAUFMANN and EMIL M. KRAMER, citizens of the United States, residing at Paxton, in the county of Ford, State of Illinois, have invented a new and useful Soil-Pulverizing Attachment for Plows, of which the following is a specification.

This invention has relation to soil pulverizing attachments for plows and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide an attachment of the character indicated which is adapted to be applied to the frame of a plow and which operates upon a furrow or furrows immediately after they are turned by the plows for the purpose of reducing the same before the moisture contained in the soil has had a chance to evaporate by being exposed to the air.

A further object of the invention is to provide an attachment of the character named which is of special construction and which is supported by a resilient arm having a helical section formed therein and which is adapted to hold the earth engaging members of the attachment in contact with the soil at uniform pressure and avoid the use of coil springs or their equivalents. The attachment is provided with means for adjusting the various parts and a lever mechanism for raising and lowering the same, whereby the earth engaging elements may be elevated above the surface of the soil when the implement to which the attachment is applied is making turns or is being transported along a road from place to place.

In the accompanying drawing:—Figure 1 is a perspective view of a gang-plow showing the pulverizing attachment applied thereto. Fig. 2 is an edge elevation of a lever mechanism used upon the attachment. Fig. 3 is a side elevation of said lever mechanism. Fig. 4 is a side elevation of a rotary earth engaging member used upon the attachment. Fig. 5 is a side elevation of a bracket arm used upon the attachment for supporting the earth engaging members. Fig. 6 is an edge elevation of said bracket arm showing parts thereof in section, and Fig. 7 is a side elevation of a fender rib used upon the attachment.

The attachment consists of the shelf member 1 which is provided with a U-shaped clamp bolt 2 which is adapted to receive one of the side portions 3 of the frame of the plow to which the attachment is applied. The shelf member 1 is provided at the upper side of its outer end portion with a circular toothed rosette 4. The standard plate 5 is angular in configuration and is provided at its lower end with a toothed rosette 6 which is adapted to engage the rosette 4 and is held in fixed relation thereto by means of the bolt 7 which passes transversely through the rosettes of the standard and the shelf member. The upper and lower portions of the standard 5 are braced with relation to each other by the vertically disposed ribs 8. The upper end portion of the standard 5 is circular in configuration and is provided with the teeth 9. The lever 10 is fulcrumed upon the pin 11 which passes transversely through the upper portion of the standard 5. Said lever is provided with a spring actuated pawl 12 which is adapted to engage the teeth 9 at the upper end of the said standard 5. The lower end of the lever 10 is provided with a semi-circular head 13 which is provided with gear teeth 14. The disk 15 is pivotally mounted upon the pin 16 which also passes transversely through the standard 5. The said disk is provided at its periphery with the teeth 17 which mesh with the teeth 14 of the lever 10. The disk 15 is provided at its lower portion with a sleeve 18 which is opened at both ends and is provided at an intermediate point with a set screw 19. The spring steel arm 20 is in the form of a rod and lies at one end in the sleeve 18 and is held adjustably therein by means of the set screw 19. The helix 21 is formed in the rod 20 at a point intermediate of the ends thereof. The said helix is upwardly disposed with relation to the end portions of the said arm. The upper and lower clamp plates 22 are adjustably mounted upon the rear end portion of the arm 20 and the upper end of the bracket 23 is attached to the lower clamp plate 22 by means of the bolts 24. The said bracket 23 is rearwardly curved or bowed and is provided at its lower end with a bearing box 25. The sleeve 26 is located in the box 25 and projects at its end portions slightly beyond the ends of the said bearing box as illustrated in Fig. 6 of the drawing. The shaft passes through the sleeve 26 and the rotating earth engaging members 28 are mounted upon the said shaft at regular intervals. The members 28 are held in proper relation to each other by means of the sleeves

29 which bear against the hubs or center portions of the said earth engaging members. The bar 30 is attached to the upper portion of the bracket 23 and lies parallel with the shaft 27. The fender ribs 31 are attached at their upper ends to the bar 30 and bear at their lower ends against the sleeves 29. The said fender ribs are located between the earth engaging member 28 and are rearwardly bowed at their intermediate portions and are adapted to prevent trash from accumulating upon the said earth engaging members as they rotate when in contact with the soil.

The earth engaging member 28 consists of the hub plates 32 which are scalloped out at their peripheries as at 33 and which are provided with the channel arms 34 which receive between them the butt ends of the blades 35. The said blades may be any desired configuration but preferably of the shape as shown in Fig. 4 in which case they are long and narrow. The rivets 36 hold the hub plates together and also retain the blades 35 in position between the channel arms 34 of the opposed hub plates.

From the foregoing description it is obvious that when the shelf member 1 is attached to the side rail 3 of the frame of a plow or similar implement that the standard 5 may be adjusted upon the outer end portion of the said shelf member 1 and secured in such adjusted position by means of the bolt 7. Thus the arm 20 may be positioned in the line of draft of the implement or in a line parallel with such a line or the said arm 20 may be pitched at an angle to the line of draft. By manipulating the lever 10 the disk 15 may be swung so that the arm 20 may be raised or lowered. The arm 20 may be raised to such an extent as to lift the earth engaging members 28 above the surface of the ground or the said arm 20 may be elevated so that the pointed ends of the blades 35 will enter to any desired depth in the surface of the soil. By reason of the fact that the arm 20 is resilient, it being made of spring steel, and by reason of helix 21 formed in the said arm the earth engaging members 28 will be held resiliently in contact with the soil and consequently they may ride over obstructions such as stones or stumps. At the same time the resiliency of the said arm 20 will hold the earth engaging members in contact with the soil under a uniform tension and small coil springs are dispensed with for the purpose of resiliently holding the said members against the soil. It is also obvious that as the earth engaging members 28 rotate upon or with the shaft 27 that the blades 35 will enter the soil and cleave the same. The said blades are of such configuration as to avoid a tendency to spade the soil but simply cleave into the soil and reduce the clogs into fine pulverized material thus preparing the ground for planting.

Having described our invention what we claim as new and desire to secure by Letters Patent is:—

A plow attachment consisting of a resilient arm, adapted to carry earth-engaging members, means for attaching the arm to the frame of a plow, said arm being provided, at an intermediate point, with a spiral portion, with relation to which the end portions are tangentially disposed.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JOHN W. KAUFMANN.
EMIL M. KRAMER.

Witnesses:
SUSIE I. STITES,
AMANDA V. ROZENE.