

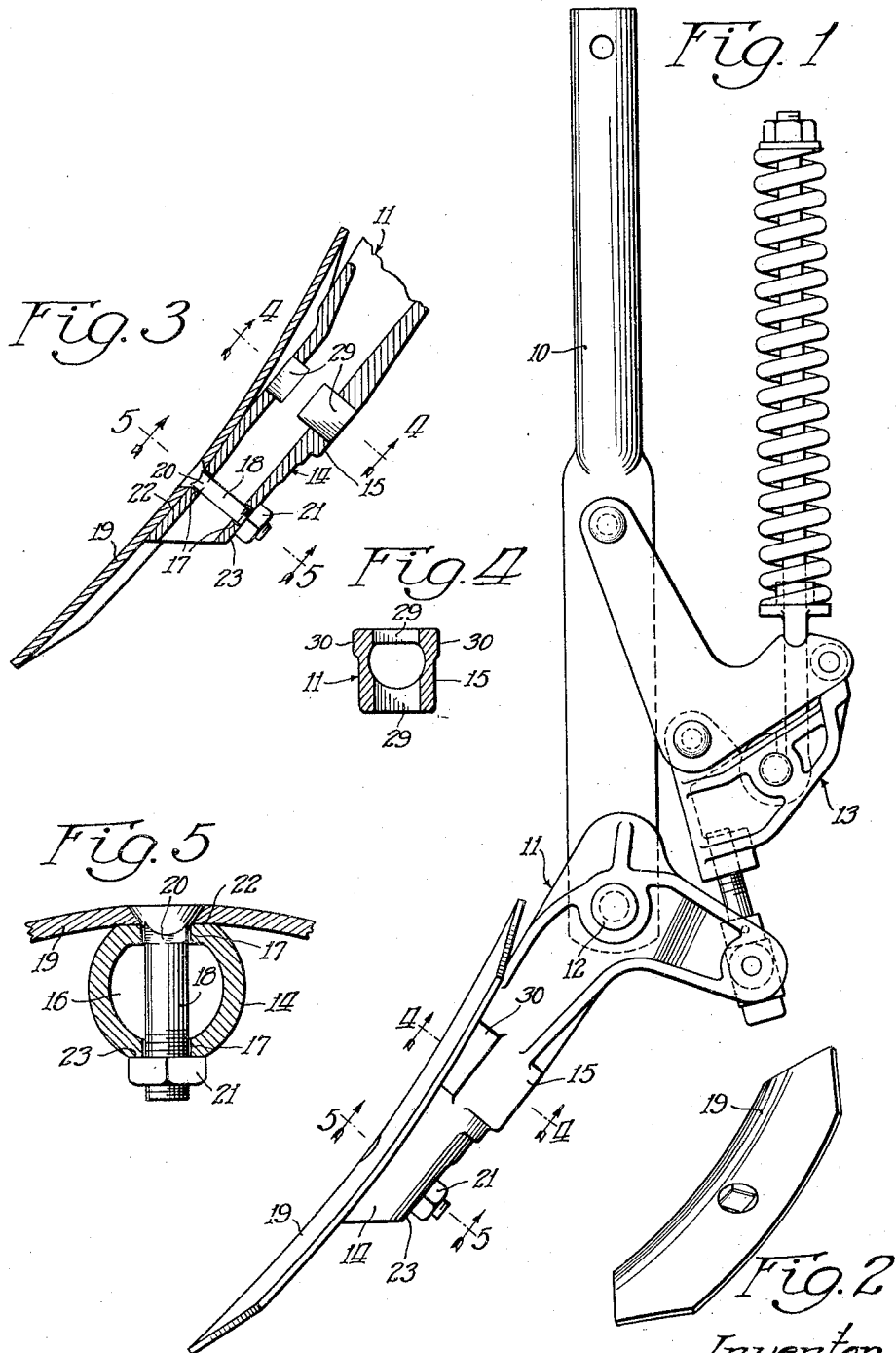
April 25, 1933.

H. R. TRAPHAGEN

1,905,016

UNIVERSAL FOOTPIECE FOR CULTIVATOR SHOVELS AND THE LIKE

Original Filed Aug. 12, 1929 2 Sheets-Sheet 1



Inventor
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By Fisher, Clapp, Soans & Pond Attys

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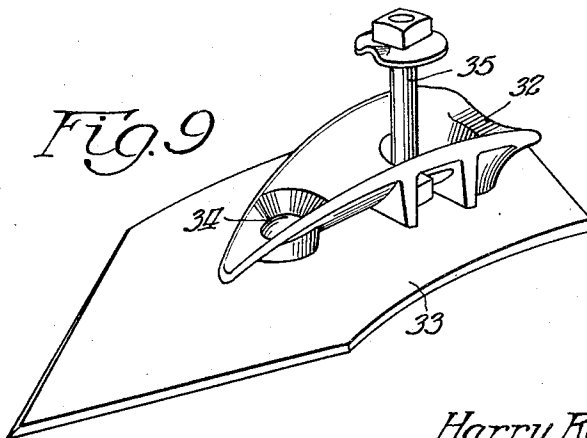
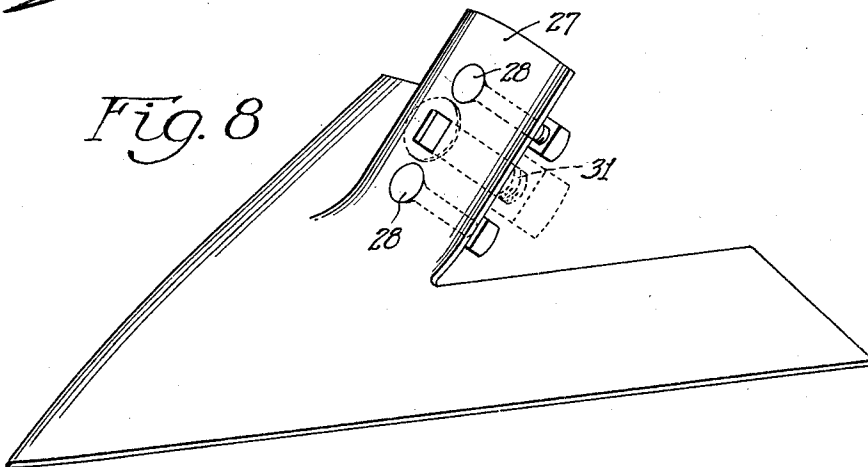
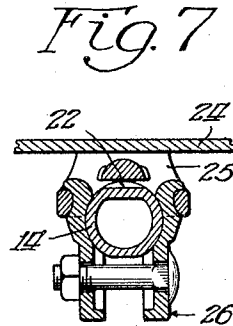
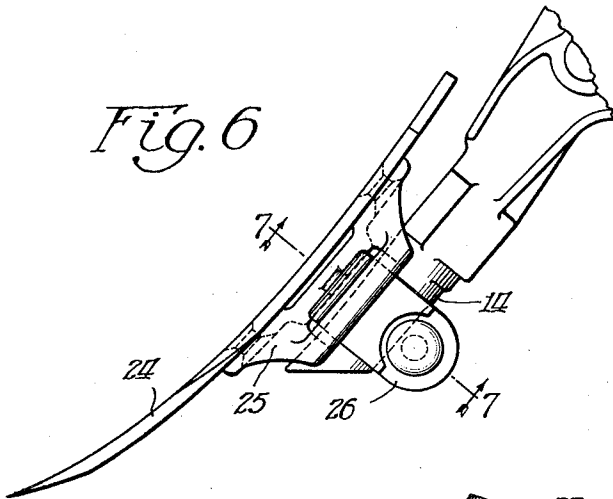
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UNIVERSAL FOOTPIECE FOR CULTIVATOR SHOVELS AND THE LIKE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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UNIVERSAL FOOTPIECE FOR CULTIVATOR SHOVELS AND THE LIKE

Original application filed August 12, 1929, Serial No. 385,283. Divided and this application filed March 20, 1931. Serial No. 524,046.

This invention relates to a universal foot piece for cultivator shovels and the like; that is to say, a foot piece to which cultivator shovels having various types of attaching means may be secured.

Heretofore, it has been the practice of various cultivator manufacturers to supply either a so-called open sleeve, or a so-called round sleeve, foot piece to which the shovels furnished with the implement might be attached. The open-sleeve-type foot piece is not adapted to receive shovels provided with means for attachment to a round-sleeve-type foot piece, and the round sleeve type foot piece was not adapted to receive shovels provided with means for attachment to the open-sleeve-type foot piece. Hence, it has heretofore been necessary to manufacture and carry in stock both types of foot pieces and shovels having both types of mounting means.

The main object of the present invention is to eliminate the necessity for handling more than one type of foot piece, and this object is accomplished by providing a foot piece so arranged as to be capable of receiving all of the more or less standardized types of shovel-attaching means.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying two sheets of drawings, in which a selected form of the improved foot piece and various types of shovel-attaching means are illustrated.

In the drawings:

Fig. 1 is a side elevation;

Fig. 2 is a perspective illustrating the type of shovel shown in Figs. 1, 3 and 5;

Fig. 3 is a longitudinal section through the universal foot piece and the shovel mounted thereon;

Figs. 4 and 5 are sections on the lines 4—4 and 5—5, respectively, of Fig. 3, the locations of these sections being similarly indicated on Fig. 1;

Fig. 6 is a side elevation illustrating a shovel similar to that of Fig. 2, mounted on the improved foot piece by a different type of attaching means;

Fig. 7 is a section on the line 7—7 of Fig. 6;

Fig. 8 is a perspective of a type of shovel sometimes called a sweep, two forms of mounting means being shown in connection with this shovel, and

Fig. 9 is a perspective of the bottom of another shovel embodying still another type of mounting.

This application is a division of my copending application Serial No. 385,283, filed August 12, 1929, for "mounting for cultivator shovels and the like".

Referring now to the drawings, I have illustrated in Fig. 1 a depending post or bracket 10, which, it will be understood, is a part secured in any suitable manner to the framework of a cultivator or like implement. The bracket 10 is a normally fixed or stationary member, although the same may be mounted for vertical or other adjustment in accordance with well known practice.

The foot piece 11, which I have termed a universal foot piece, is pivotally mounted, as indicated at 12, to the lower end of the bracket 10, and mechanism designated 13 is provided for yieldably and adjustably maintaining the foot piece 11 in predetermined angular relation to the post or bracket 10.

The details of construction and operation of the mechanism designated 13 are fully described in my copending application. Inasmuch as the present application is not concerned with said yielding mechanism 13, further description thereof appears unnecessary in this application.

The foot piece 11 has its front arm portion provided with a substantially cylindrical lower end portion 14 and a transversely enlarged portion 15 adjacent the upper end of said cylindrical portion 14. The foot piece may conveniently be formed of cast metal and hollow, as indicated at 16, the upper portion being, in effect, bifurcated to straddle the lower end of the post 10 so as to facilitate the formation of a durable and firm pivotal connection between the foot piece and bracket.

The lower cylindrical end portion 14 is provided with transversely extending, axially aligned openings designated 17 for receiving an attaching bolt such as 18 of a

cultivator shovel 19. The forward opening 17 is preferably of square formation so as to receive the square shoulder portion 20 of the attaching bolt 18 to prevent turning thereof when the nut 21 is screwed into place. The forwardly presented surface of the cylindrical lower end portion 14 is preferably concavely arched longitudinally of the foot piece, as indicated at 22, so as to provide a seat for receiving the shovel 19. As indicated in Fig. 5, the seat 22 is also more or less flat transversely of the foot piece. The rear surface of the cylindrical portion 14 may also be slightly flattened, as indicated at 23, to provide a seat for the fastening nut 21.

In Fig. 6, I have illustrated a shovel designated 24, provided with a bracket piece 25 secured to its rear face. The clamping device designated 26 in its entirety co-operates with the bracket element 25 and is designed to be clamped on the cylindrical portion 14 of the foot piece. This type of clasp-on or clamping mechanism is one form of more or less standard means for attaching shovels to foot pieces. This form of mounting has some advantages which are considered important by certain purchasers and hence cannot, as a practical matter, be entirely discarded by the manufacturer.

In Fig. 8, the sweep illustrated is provided with a stem part 27 having longitudinally spaced openings through which bolts 28 pass. This type of shovel mounting may be attached to my improved foot piece by passing one of the bolts 28 through the openings 17 and the other bolt through the aligned openings 29 which extend transversely through the enlarged portion 15 of the foot piece. As indicated in Fig. 4, the enlarged portion is provided with reinforcing rib-like formations 30, 30 on its opposite sides adjacent the top of the foot piece, and the transverse dimension from top to bottom is somewhat increased so as to provide lengthened bearing surfaces.

In some cases, shovels or sweeps such as illustrated in Fig. 8 are provided with a single fastening bolt of larger size, as indicated in dotted lines at 31 in Fig. 8. When the sweep is provided with this type of fastening means, the large bolt may be passed through the aligned openings 29, 29 in the enlarged foot piece portion and the nut screwed against the bottom thereof. The elongated bearing provided by the enlarged foot piece portion affords ample support for the type of mounting just described.

In Fig. 9, still another type of shovel mounting is illustrated. This mounting includes a supporting block 32 which is riveted or otherwise secured to the shovel 33 as indicated at 34, a bolt 35 being provided and detachably secured to the block 32 in any approved manner. The bolt 35 may be passed through either the openings 17 or 29, but preferably

the latter, so as to cause the block 32 to bear substantially throughout its length on the top surface of the foot piece.

The foot piece construction thus described is capable of receiving most, if not all, of the more or less standardized forms of shovel attachment means and thus eliminates the necessity for manufacturing and supplying distinct types of foot pieces for the various types of shovel-mounting means.

I am aware that changes may be made in the described construction without departing from the spirit of my invention, the scope of which should be determined by reference to the following claims, the same being construed as broadly as possible consistent with the state of the art.

I claim as my invention:

1. A universal foot piece for cultivators and the like, comprising an elongated bar having a substantially cylindrical lower end portion provided with an aperture extending transversely therethrough intermediate the length thereof, said cylindrical portion having a shovel-back-fitting seat on its forwardly presented surface the bar also having a transversely apertured and transversely enlarged portion adjacent the upper end of said cylindrical portion.
2. A universal foot piece for cultivator shovels and the like, comprising an elongated bar having a substantially cylindrical lower end portion provided with an aperture extending transversely therethrough intermediate its length, the forwardly presented surface of said cylindrical portion being concavely arched longitudinally so as to fit certain shovels adapted to be attached to the bar, the bar also having a transversely apertured and transversely enlarged portion adjacent the upper end of said cylindrical portion.

3. A universal foot piece for cultivators or the like, comprising an arm having a substantially cylindrical portion provided with an opening extending transversely therethrough for receiving a shovel attachment bolt, the cylindrical portion of the arm being also adapted to have a shovel secured thereto by clamping means adapted to embrace said cylindrical portion, said cylindrical portion being provided with a flattened seat on its forwardly presented surface, said seat corresponding to a rear surface portion of a bolt-on shovel and serving to receive such rear surface portion to effectively hold the shovel against turning movement about the fastening bolt as a pivot.

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