July 30, 1963 T. P. AVERETTE 3,099,191

SHEEP FOOT TAMPER

Filed Jan. 25, 1960

Fig. 1

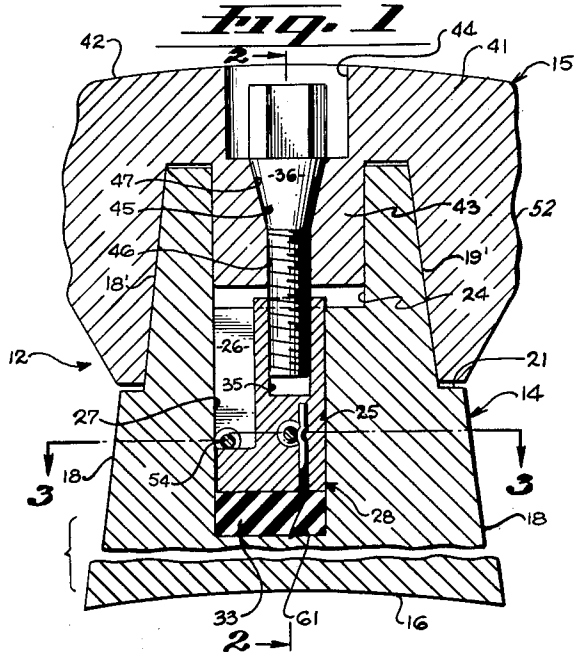


Fig. 2

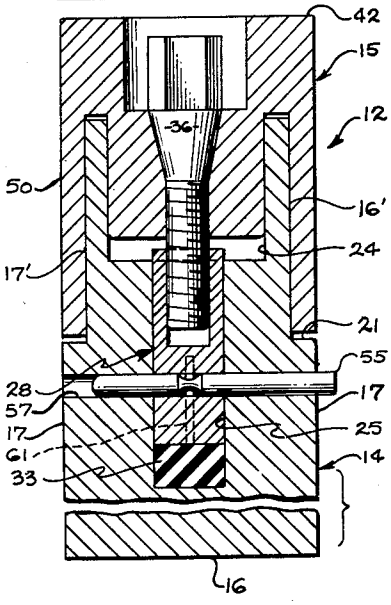


Fig. 3

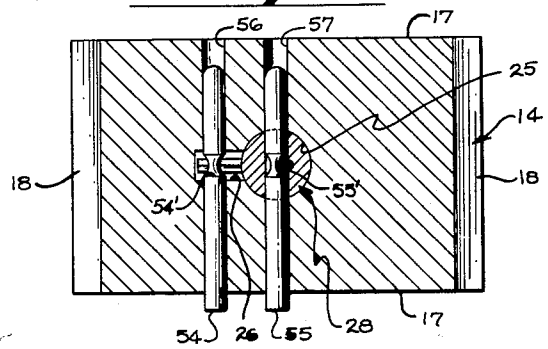


Fig. 4

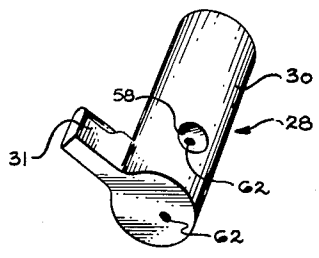
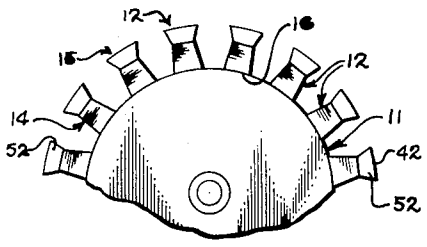


Fig. 5



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United States Patent Office 3,099,191 Patented July 30, 1963

3,099,191

SHEEP FOOT TAMPER

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Filed Jan. 25, 1960, Ser. No. 4,467
5 Claims. Cl. 94—48)

This invention has to do generally with the construction of sheep foot tamping equipment of the type embodying a cylindrical roller provided with a plurality of so-called sheep foot tampers welded to the periphery thereof.

In the use of tamping equipment for compacting earth, soil and rocks, the steel tamping feet, even though hardened on the end, become worn and must be replaced. Sheep foot tampers have been devised wherein the foot or ground-contacting end portion is made removable from the main body or shank of the tamper which in turn is welded to the surface of the roller or drum, and one such removable construction is shown in my Patent 2,893,298 issued July 7, 1959.

An object of the present invention is to provide a new and improved construction for sheep foot tampers of the type embodying a shank or main body and a removable foot.

More particularly it is an object to provide novel improved means for detachably securing the foot to the shank, which means is designed to withstand the ordinary use and abuse to which tampers are subjected.

Another object is to provide a unique construction for a sheep foot tamper whereby different types of feet can be attached to the shank of the device, and in this connection it is an object to provide an improved interfitting construction which secures the parts together against rotation irrespective of the uneven loading of the foot portion, as where crushed rock or the like is being compacted.

A further object of the invention is to provide unique cushion means for resiliently mounting a retainer in the body of the shank, together with means for detachably securing the foot to the retainer.

Another object is to provide, in a construction of the type indicated, novel securing means embodying pins, together with novel means for retaining the pins in place.

These and other objects will be apparent from the drawing and the following description. Referring to the drawing:

FIG. 1 is a fragmentary central longitudinal sectional view through a sheep foot tamper embodying the invention;

FIG. 2 is a sectional view on line 2—2 of FIG. 1;

FIG. 3 is a cross sectional view on line 3—3 of FIG. 1;

FIG. 4 is an isometric view of a retainer member; and

FIG. 5 is a fragmentary end elevational view of a tamping roller embodying sheep foot tampers of the type disclosed herein.

More particularly describing the invention, the tamping roller designated **11** shown in FIG. 5 is normally constructed of metal and includes a plurality of the sheep foot tampers **12** on its periphery, the tampers **12** being welded to the roller.

Referring particularly to FIGURES 1–4, numeral **14** generally indicates the main body or what will be termed the shank, and **15** designates the foot. The shank is provided with a somewhat concave base surface **16** which is secured against the periphery of the roller by being welded thereto. The shank is shown as a tapering body of rectangular cross section with parallel side surfaces **17** and converging end surfaces **18**. The aforementioned side surfaces **17** and end surfaces **18** are stepped in a common plane to provide the shoulder **21** which extends completely around the shank, and to form the recessed upper or side surfaces **17'** and recessed upper end surfaces **18'**.

The interior of the shank **14** is formed to provide a

cylindrical socket **24** and inwardly beyond this, a bore **25**. The shank is also provided with an axial slot **26** which extends radially from bore **25**. The bore **25** and slot **26** form a cavity or recess **27** for the reception of a retainer **28**. The latter has a cylindrical body **30** with a short, radially extending arm **31** at its inner end. The body **30** is received in bore **25** with the arm **31** received in the slot **26**. Beneath the retainer **28** I provide a stiffly resilient cushion **33** which may be formed of rubber or plastic. The cushion is appropriately shaped to be received in the cavity **27**.

The retainer **28** is provided at its upper end with a threaded bore **35** for the reception of a bolt **36** the purpose of which is to securely fasten the tamping foot **15**. The latter includes a body **41** which is shown as provided with a convex, ground-engaging end surface **42**. However, feet of various shapes may be used in place of the one shown. Depending from the body of the foot is a centrally disposed stem **43** which is received in the socket **24** of the shank. The outer surface of the body is provided with a recess **44** to receive the head of the bolt and beyond that with a bolt-receiving opening or passage **45** which includes a cylindrical section **36** and frusto-conical section **47**.

The foot **15** is formed to provide a skirt formed by the parallel side walls **50** and end walls **52**. This fits over the outer or upper end portion of the shank to engage the recessed side and end walls of the shank, as best shown in FIGS. 1 and 2.

The retainer **28**, and hence the foot **15**, are secured to the shank by means of two pins designated **54** and **55** which are mounted in bores **56** and **57** provided in the shank. These pins are grooved peripherally at **54'** and **55'**, respectively, intermediate their ends for a purpose which will become apparent. The pin **54** is positioned over the arm **31** of the retainer with the arm partially received in the groove **54'** of the pin. The other pin is received in a transverse bore **58** in the retainer. To insert the pins into place it is necessary that the retainer be pressed down to compress the cushion **33** sufficiently to align bores **57** and **58**, the cushion being shown so compressed in the drawings. Thus the cushion maintains a constant resilient upward pressure against the retainer which is pressed against the pins, thereby locking the parts in place.

As an additional means for releasably securing pin **55**, I provide a resilient keeper member **61** in a bore **62** in the member **28**. The bore **62** extends axially of the body **30** and intersects the transverse, pin-receiving bore **58** at one side thereof, terminating a short distance therebeyond, as best shown in FIG. 1. Member **61** is made slightly longer than the bore **62** and consequently when the parts are assembled, it is forced upwardly in the bore **62** and compressed so that a portion of it flexes into the bore **58** and into groove **55'** to tightly engage the pin **55** and retain it.

It will be apparent that the embodiment of the invention described provides a strong construction by means of which a tamping foot can be detachably secured to the shank. In assembling the parts, the cunshion **33** and retainer **28** are placed in the cavity **27** in the shank. The retainer is then forced against the cushion **33** to compress the same and permit of the insertion of the pins **54** and **55**. The foot **15** can then be placed over the shank and the bolt **36** inserted and secured tight to complete the assembly. The resilient mounting of the retainer **28** also makes it possible to remove the entire assembly from the shank should the bolt **36** become frozen in place.

Although I have illustrated and described preferred forms of my invention, I contemplate that various changes and modifications can be made therein without departing from the invention, the scope of which is indicated by the following claims.

I claim:

1. A sheep foot tamper structure, comprising a metal shank having an inner end adapted for welding to the periphery of a metal roller, said shank having a socket in its outer end, a tamping foot having a stem received in said socket, said shank having a cavity extending toward said inner end from said socket, an internally threaded retainer in said cavity, a bolt seated against said foot and threadedly mounted in said retainer, and means detachably securing said retainer in said shank, said means including a removable pin extending transversely of said shank and engaging said retainer and a resilient pad between the retainer and the bottom of said cavity serving to yieldably urge said retainer against said pin.

2. A sheep foot tamper structure, comprising a metal shank having an inner end adapted for welding to the periphery of a metal roller, said shank having a socket in its outer end, a tamping foot having a stem received in said socket, said shank having a cavity extending toward said inner end from said socket, said cavity including a bore extending longitudinally of the shank and a slot extending axially of the bore and radially therefrom, an internally threaded retainer in said cavity, said retainer having a cylindrical body and a radial arm extending therefrom and received in said slot, a bolt seated against said foot and threadedly mounted in said retainer, and a crosspin in said shank overlying the arm of said retainer.

3. A sheep foot tamper as set forth in claim 2 in which a resilient pad is provided between said retainer and the bottom of said cavity serving to urge said retainer against said pin.

4. In a sheep foot tamper structure including a shank having a socket and a cavity extending inwardly of the inner end of the socket and having a tamping foot with a stem received in said socket, means for releasably securing said foot and shank together, comprising an internally threaded retainer in the socket of said shank, a cushion between said retainer and the bottom of the cavity, said retainer having a transverse bore and a longitudinal bore extending from its lower end and intersecting said transverse bore and terminating therebeyond, an elongated resilient member in said longitudinal bore having a normal length greater than that of the bore, a crosspin mounted in said shank and extending through said transverse bore, said pin having a peripheral groove intermediate its ends positioned at the region of intersection of said transverse and longitudinal bores, said pin serving to hold said retainer tightly against said cushion with said cushion compressed and with said elongated resilient member compressed axially in said longitudinal bore whereby the same tends to emerge from the bore in the region of intersection thereof with said transverse bore to tightly engage said pin and thereby resist accidental dislodgement of the pin, and a bolt seated against said foot and threadedly mounted in said retainer.

5. A sheep foot tamper structure, comprising a metal shank having an inner end adapted for welding to the periphery of a metal roller, said shank having a centrally disposed socket in its outer end, a tamping foot having a stem received in said socket and having a skirt receiving said shank, said skirt and said shank having interfitting portions provided with interengaging means preventing relative rotation thereof, said shank having a cavity extending toward said inner end from said socket, an internally threaded retainer in said cavity, releasable means mounted in said shank securing said retainer, and a bolt seated against said foot extending centrally through said stem and threadedly mounted in said retainer.

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