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C. F. DREIER

RADIATOR PROTECTOR

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Fig. 1.

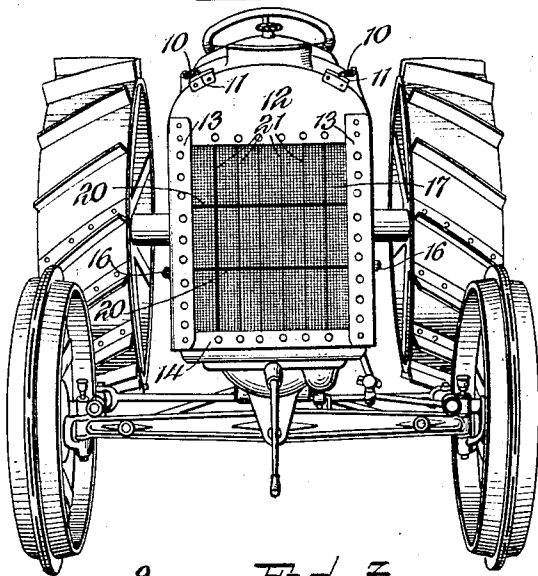


Fig. 2.

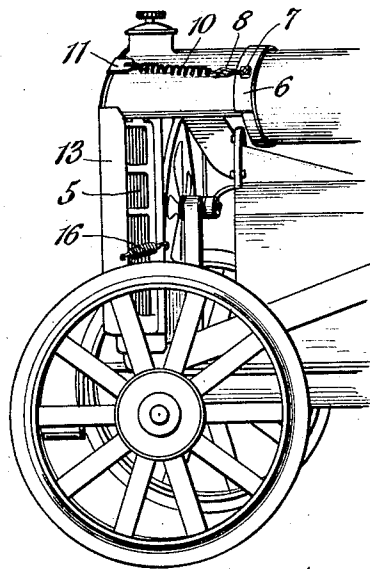


Fig. 3.

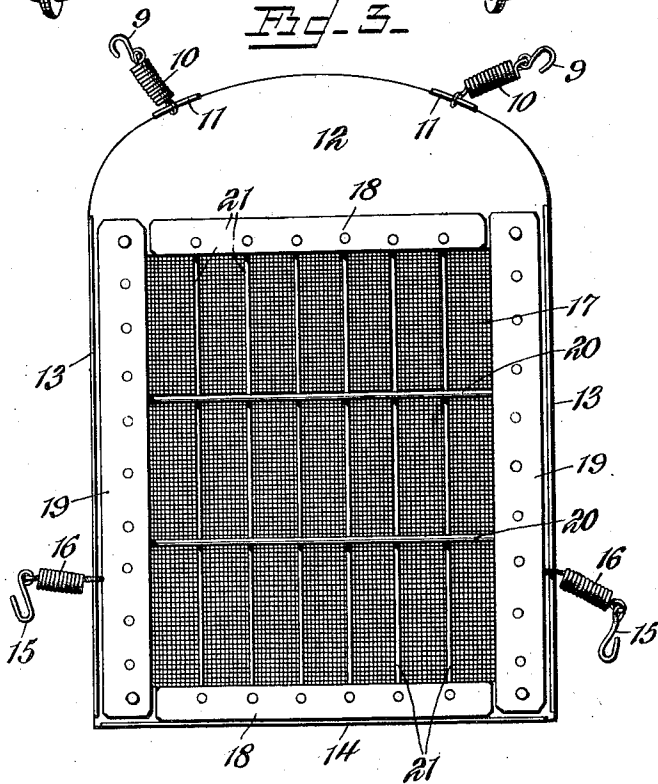
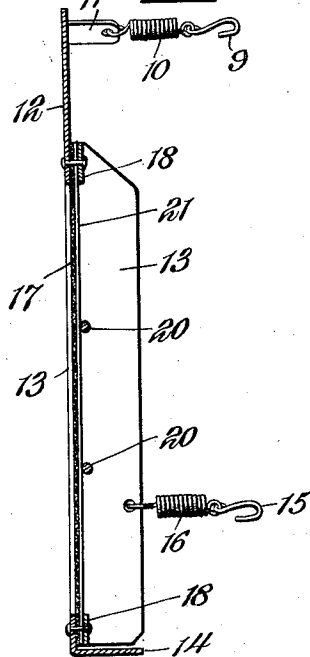


Fig. 4.



WITNESSES

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## UNITED STATES PATENT OFFICE.

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RADIATOR PROTECTOR.

Application filed October 27, 1920. Serial No. 419,904.

*To all whom it may concern:*

Be it known that I, CHRISTIAN F. DREIER, a citizen of the United States, residing at Portsmouth, in the county of Shelby and State of Iowa, have invented new and useful Improvements in Radiator Protectors, of which the following is a specification.

This invention relates to means for protecting radiators of tractors.

Most tractors on the market today have radiators similar to the radiators of automobiles and motor trucks at the front end of the machine. If such tractors are used to haul harrows or other farming implements through fields having corn stalks or high weeds, these stalks, by constant striking against the radiator, will rapidly wear away the same causing leaks; furthermore the stalks will soon clog the radiator, whereupon the latter will lose much of its cooling capacity.

Now these tractors usually employ kerosene for a fuel. The engines, because of the relatively high carbon content of kerosene, are easily overheated. Unless the radiator works at its maximum efficiency, overheating cannot be prevented. This state, if allowed to continue for some time, will ruin the engine.

It is an object of the present invention to provide an attachment for the radiators of tractors which will cause the stalks to glance off from the radiator without actually striking the grid thereof, so that the radiator is not subjected to the slightest wear, cannot be clogged up, and at the same time retains its maximum cooling capacity.

It is a further object to provide a protector for radiators which is easily applied and detached, and which necessitates no change in the construction of the tractor in order to be held firmly in position.

The present invention has for further objects the provision of a protector which is strong, durable, and economical to manufacture.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing in the drawing, but may be changed and modified so long as such changes and modifications mark no material departure from

the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a front elevation of a well known type of tractor, showing the invention in position;

Fig. 2 is a side elevation of the same, showing the front end only;

Fig. 3 is an elevation of the protector, looking from the inside thereof; and

Fig. 4 is a vertical cross section of the same.

The drawing, in Figures 1 and 2, depicts a tractor of such well known construction that no description of any of the parts thereof need be attempted. This tractor has a radiator 5. The fuel and water tanks are united by a band 6 and upon this band, at suitable intervals, bolts are provided having nuts 7. A loop 8, which may be of wire, is held upon each bolt by means of corresponding nuts 7. Each loop is adapted to be engaged by a hook 9, which hook is united to a coil spring 10. The opposite end of each coil spring is secured to an ear 11 made fast to a plate 12.

The plate 12 has an outline conforming to the upper part of the radiator, to which the protector is adapted to be secured. To this plate a pair of angle bars 13 is secured as by rivets. — These two angle bars are secured parallel to each other and united at the ends remote from plate 12 by a lower angle bar 14. These three angle bars with the plate 12 provide a rectangular structure with the three flanges 13 and 14 of the angle bar projecting from one face of the same. The dimensions of this structure are such that the radiator of the tractor may be enclosed on three sides by these flanges.

Each angle bar 13 is connected with a hook 15 by means of a coil spring 16. The hooks 15 are designed to engage with the radiator 5 on that side thereof adjacent the fan of the tractor. The hooks 9 pass over the top of the radiator tank when engaged with the loops 8. Thus the protector is held rigidly in position, while at the same time its detachment is made easy.

The rectangular frame provided by the three angle bars and the plate 12 holds a screen 17 of reticulated material. Flat strips 18 and 19 are provided at each end and at the sides of the frame so that by means of rivets or the like the screen is united to the frame. The screen has a back-

ing or reinforcement consisting of a plurality of upright rods 21 and a lesser number of heavy horizontal rods 20. The ends of the rods 21 are secured in place by means of rivets or similar fastening elements. The rods 20 are held between the strips 19 and the frame. The rods collectively form a backing for the screen provided on the inside of the protector and preventing the screen from being driven or forced inwardly against the grid of the radiator. The mesh of the screen 17 is such that free circulation of air through the radiator is for all practical purposes not interfered with. This is highly important in order that the cooling capacity of the radiator may not be diminished. At the same time, the screen is heavy gage metal wire so that it will yield a maximum of service.

It has been proposed to employ radiator guards for the purpose of protecting automobile or motor truck radiators against damage from collision. Such guards are not adapted to be fastened to the radiator of tractors and necessitate change in the construction of the tractor in order to be fixed in position. Furthermore, such guards are of little or no use for the purposes of the present invention. My protector guards a radiator against damage and wear, while at the same time allows free circulation of air through the radiator. It is not adapted to guard against collisions with other motor driven vehicles.

What is claimed is:—

1. A radiator protector for tractors comprising a substantially rectangular frame of a size to fit about and partly enclose the tractor radiator, a reticulated member fast to the frame and having a mesh of a size to allow free circulation of air through the grid of the radiator at all times and yet prevent the passage of corn stalks, trash, etc., and means for detachably holding the protector upon the outside of the radiator in juxtaposition to the grid thereof.

2. A radiator protector for tractors, comprising a substantially rectangular frame of a size to fit about and partially enclose the tractor radiator, said frame having inwardly-extending flanges at the bottom and two sides thereof to engage with the bottom and sides of the radiator, a screen provided in said frame, and means provided at the top and both sides of the frame to engage with a fixed part of the tractor to detachably hold the frame in position, said screen allowing free circulation of air through the grid of the radiator at all times but preventing debris directed towards the radiator from injuring the radiator.

3. A radiator protector for tractors comprising a frame, a screen secured within the frame, a reinforcement for the screen comprising a plurality of vertically

and horizontally extending rods, each secured at each end to the frame and extending in juxtaposition to the screen, and means for holding the protector in position.

4. A radiator protector for tractors including a frame adapted to fit about and partly enclose the tractor radiator, said frame comprising a plate shaped to lie against the upper part of the outside of the radiator, and angle bars secured to the plate and to each other to form a substantially rectangular structure, the flanges of said angle bars extending from one side of the protector so as to fit about the corresponding sides of the radiator, a reticulated member fast to the frame and having a mesh sufficiently large to allow free circulation of air through the grid of the radiator, and means for detachably holding the protector upon the outside of the radiator in juxtaposition to the grid thereof.

5. A radiator protector for tractors comprising a frame adapted to fit about and partly enclose the tractor radiator, a reticulated member fast to the frame and of a mesh sufficiently large to allow free circulation of air through the grid of the radiator, a plurality of bars crossing each other at right angles and secured at their ends to the frame to provide a backing or reinforcement for the screen upon the inside thereof, and means for detachably holding the protector upon the outside of the radiator in juxtaposition to the grid thereof.

6. A radiator protector for tractors comprising a frame, a screen secured to the frame, and means for detachably securing the protector to the outside of the tractor radiator mounted upon the frame, said frame comprising a rectangular structure including angle bars, one of the flanges of each angle bar extending at right angles to the main body of the frame, the flanges of the angle bars enclosing the sides and bottom of the radiator, and a reinforcement formed of a plurality of rods secured to the frame and extending from side to side thereof in juxtaposition to the screen.

7. A radiator protector for tractors, comprising a substantially rectangular frame, a screen bounded on all sides by said frame and secured thereto, said frame having a plate at its upper side shaped to lie against the upper part of the front wall of the radiator and having ears extending rearwardly and adapted to rest against the top edge of the radiator, a plurality of springs attached at one end to the side bars of the frame and to said ears respectively, and hooks attached to the free ends of the springs and adapted to hold the protector on the radiator.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

CHRISTIAN F. DREIER.