

# "Magnetic Collector of Metallic Road Debris"

Phillips County District #3  
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**Problem:** Rural residents complaining of flat tires due to road maintenance.

**Solution:** Devised an automatic, trouble free magnet system. It is intended to remove nails, wires, screws, staples, and any other small metal pieces from the road surface while performing routine road maintenance without added operations. Magnet system raised by the Maintainers built in air system.

**Labor:** Two days in house labor.

**Equipment used:** Welder, Metal Saw, and Drill.

**Materials:** Miscellaneous square tubing and hardware, air cylinder, electric micro-switch, electric operated solenoid valve, 2 forty-eight in yard magnets.

<b>Cost:</b> Miscellaneous iron and hardware	\$40
Air Cylinder	\$80
Electric Micro-switch	\$38
Electric operated solenoid valve	\$55
Magnets	<u>\$535</u>
	<b>\$748 Total Cost</b>

No direct savings to Phillips County; however, indirect savings are seen in the motoring public spending less to repair flat tires that occur on Phillips County gravel roads.



**View #1** Shows Magnet in down position.



**View #2 Magnet shown in up position.**



**View #3 Magnet shown from behind, in down position.**





**View #4** Micro-switch that automatically raises and lowers the magnet as the operator raises and lowers the blade.



**View #5** Shows one days collection of nails, screws, and other miscellaneous metal

retrieved from the road surface. Approximately 10 lbs.

