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Tank Tractor Becomes Earth Digger

“Sword Beaten into Plowshare” as Artillery Machine Is Converted into Lightning Excavator and Automatic Loader

THE snorting steam shovel now has a successful rival—the army artillery tractor that once plowed through barbed wire and crawled on its continuous tread over seemingly impassable obstacles.

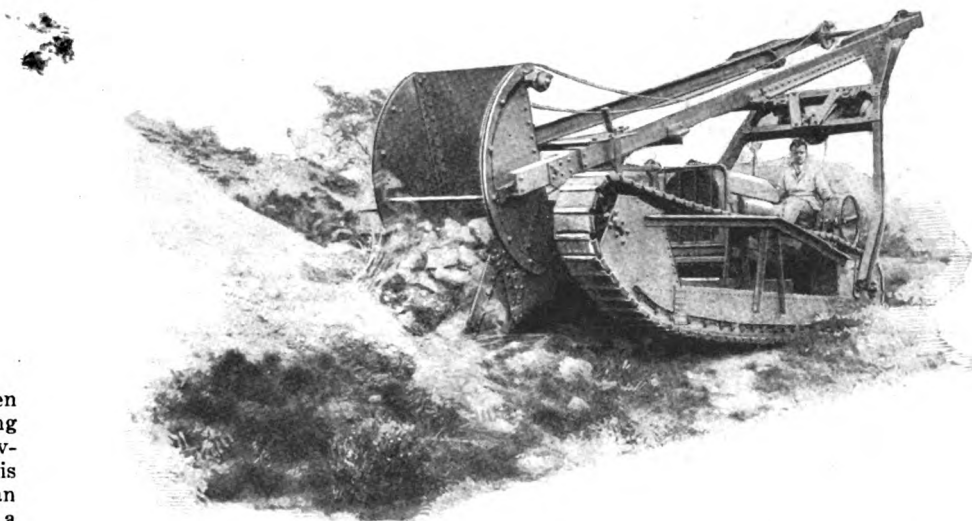
The unhalting tank has been converted into a versatile tractor excavator that will “buck” any hill of soft earth and load the dirt automatically into waiting trucks in less time and at lower cost of operation than its steam predecessor.

One Man Can Run It

One man can control the motor driven excavator, directing its course by throwing out and locking one of its tracks and driving on the other. So effective is this method of steering that the machine can practically turn a complete circle in a little more than its own length.

At the nose of the tank hangs the digging bucket, which buries its cutting lip and prongs into a pile of earth as the tractor bucks the material to be excavated. To dump its load, the bucket slides backward and upward along an inclined track of steel rails mounted above the tractor.

To raise the load in this manner, the operator starts a winch that hauls in a wire cable. This cable, attached to the upper end of the bucket, first rotates it half a



As the tank tractor “bucks” a hill, the digging bucket scoops up a load of earth, then is hauled up an incline to dump its contents

revolution, picking up a full load of earth, then drags it up the inclined track and dumps the contents automatically into a waiting truck by reversing the bucket at the upper end of the track.

The winch is then thrown out of gear, permitting the wire to unwind freely. The bucket falls back into position with its cutting ends forward, slides down the sloping rails, and strikes the pile again, picking up the next load.

Since the capacity of the bucket is one cubic yard, and a complete cycle of digging and unloading is performed in two minutes, the machine excavates very rapidly. Its output is said to be from 100 to 300 tons a day, depending on the nature

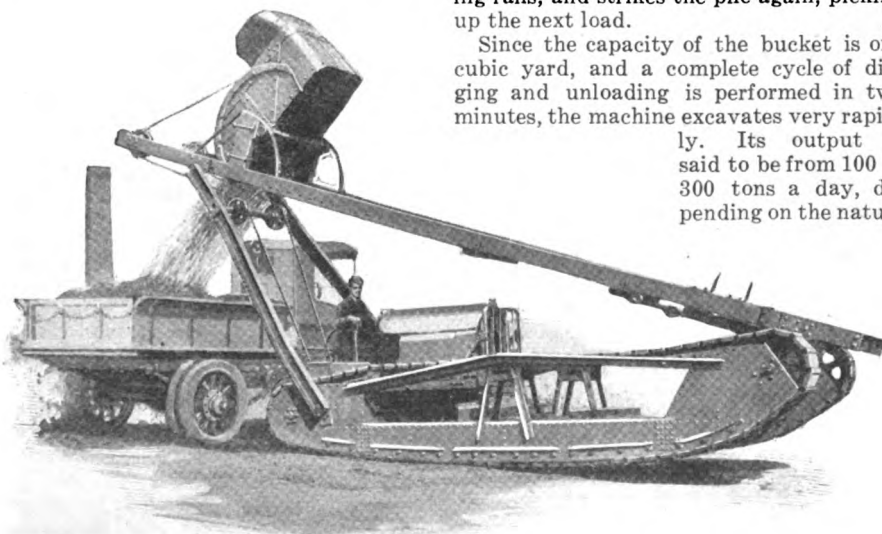
of the material that is being excavated.

Power is derived from a four cylinder gasoline engine of 35 brake horsepower. To protect the machine from falling stones and debris, the runway over the engine and the driver's seat is armed with steel plates one eighth of an inch thick. Side curtains can be fitted further to protect the driver against rain.

How Bucket Is Hoisted

The hoisting apparatus is driven from the engine by double roller chains and double friction clutches arranged directly on the barrel of the winch, permitting the barrel to revolve freely when the bucket is lowered. The hoisting ropes are arranged on each side of the bucket so that when the container is tipped and emptied, the material has an unobstructed path. These operating ropes run over segmental guides and under the bucket, equalizing the pull on each rope.

[The ingenious tank excavator described in the foregoing article is but one of many instances of the manner in which England has been salvaging her abandoned war material, converting it to peacetime use. Meanwhile, we have permitted thousands of war machines to rust away, or have disposed of them for a song. Perhaps it is not too late, even now, for American ingenuity to profit by this example.—*The Editor.*]



The bucket automatically empties its load into a waiting truck, then slides down the rails again to scoop up the next load