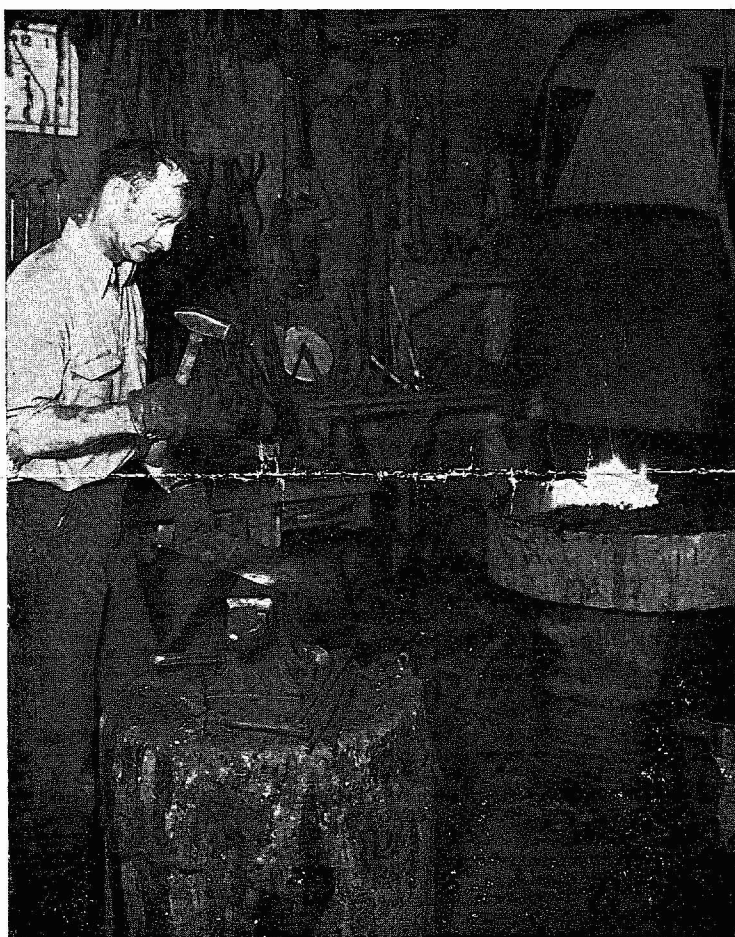


Labor Saving Equipment

By E. B. WILSON

Extension Agricultural Engineer



A TYPICAL FARM SHOP

(See inside front cover)

Montana Extension Service in Agriculture and Home Economics, R. B. Tootell Director.
Montana State College and United States Department of Agriculture Cooperating.
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Foreword

These pictures are brought together to stimulate the building of labor saving squipment. They are not complete details but merely suggestions which might be improved by the practical application of the builders' own ideas.

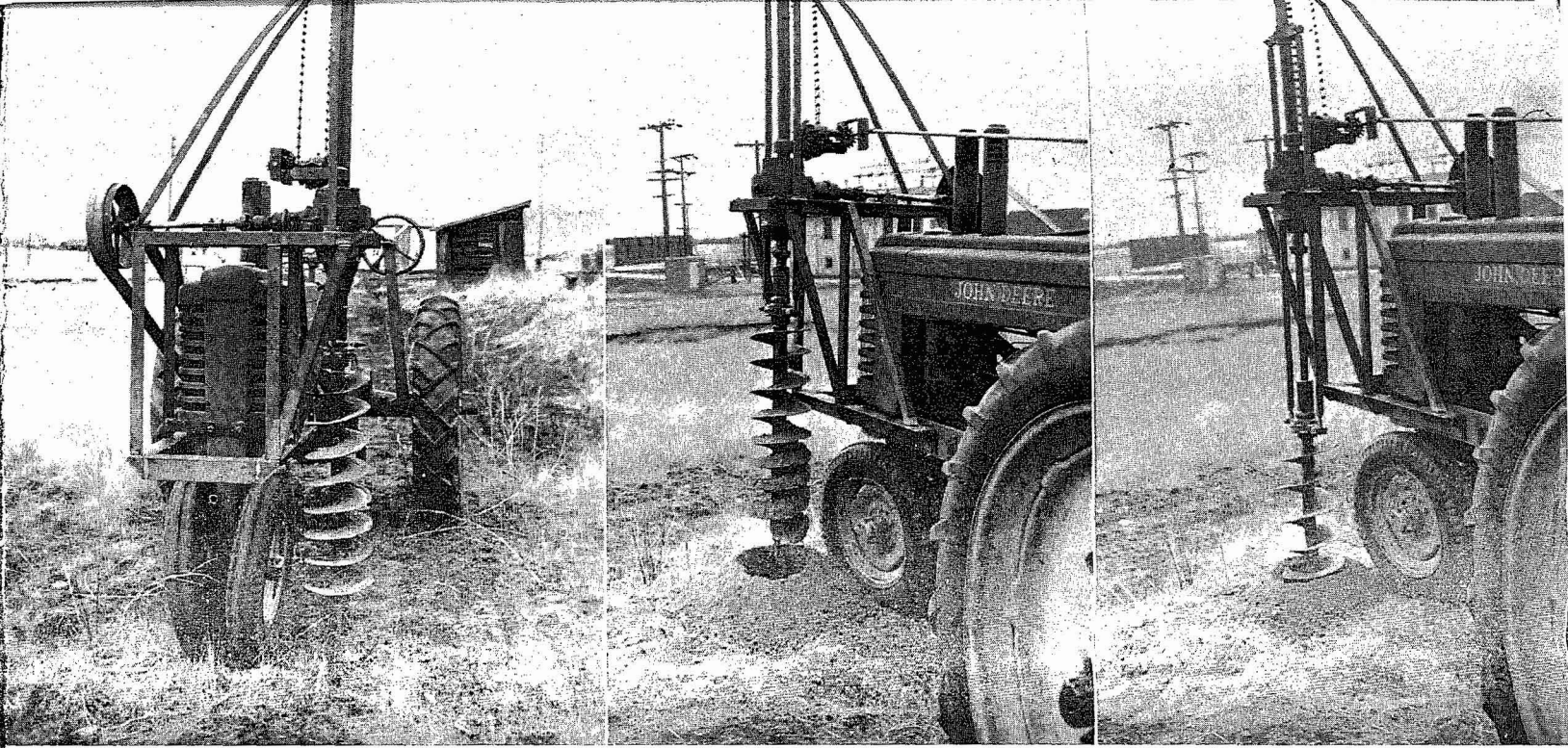
Many of the materials for building this equipment can be found discarded on machines around the place or at junk dealers. Most Montana farmers and ranchers have some extra time during the winter. With a good shop, a few hours work, when time is worth the least, can save considerable labor when time is very valuable.

The pictures collected here barely scratch the surface on labor saving equipment. Many of you have other ideas along this line. We would be very glad to hear about them. When we get enough new and practical ideas we would like to publish another pamphlet so that your ideas may benefit other farmers and ranchers.

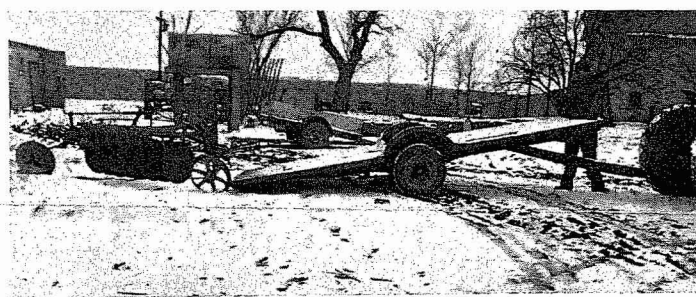
Please take your suggestions to the County Extension Agent or send them to the Rural Engineering Department, Montana State College, Bozeman, Montana.

COVER PICTURE

The cover picture shows Wesley Davis near Belgrade, Mont., at work in his farm shop which is well equipped with good equipment much of which is home made. Note the scrap metal which lines the shop walls where it can be found easily.

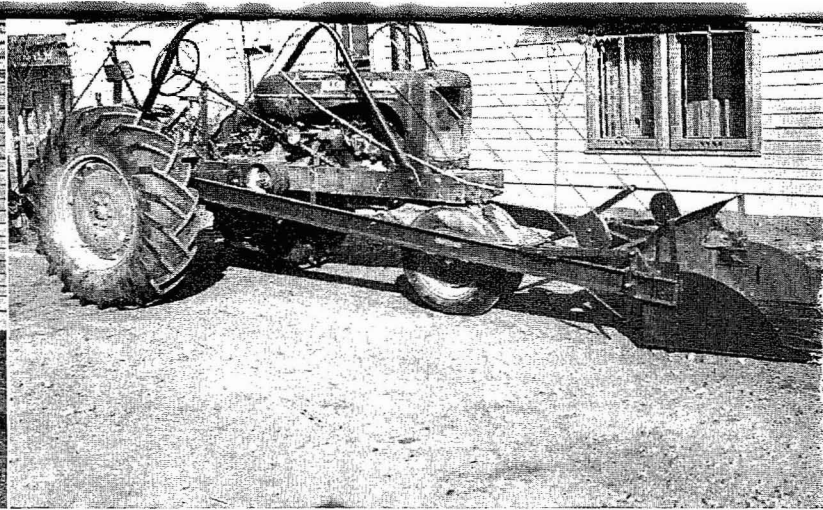
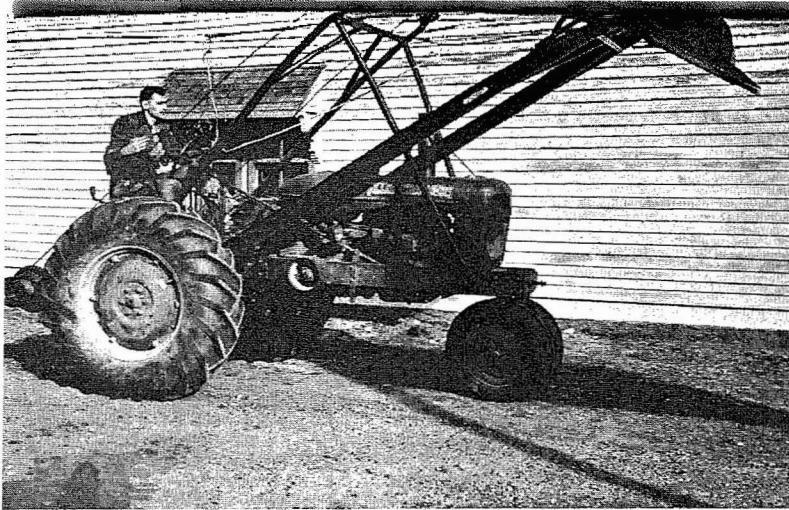


Tractor mounted post hole diggers are becoming very popular. Several of them are on the market. This one was built in the Rural Engineering shop, Montana State College and details for its construction are available in blue-print form. A small charge is made to cover cost of blueprinting.



A handy trailer for loading and transporting farm machinery between farms or on highways.

(Courtesy Kansas Extension Service)



Tractor mounted manure loaders are becoming very popular. Many good ones are on the market. Some handy men may wish to make their own. The one above was made by a Billings, Mont., garage.

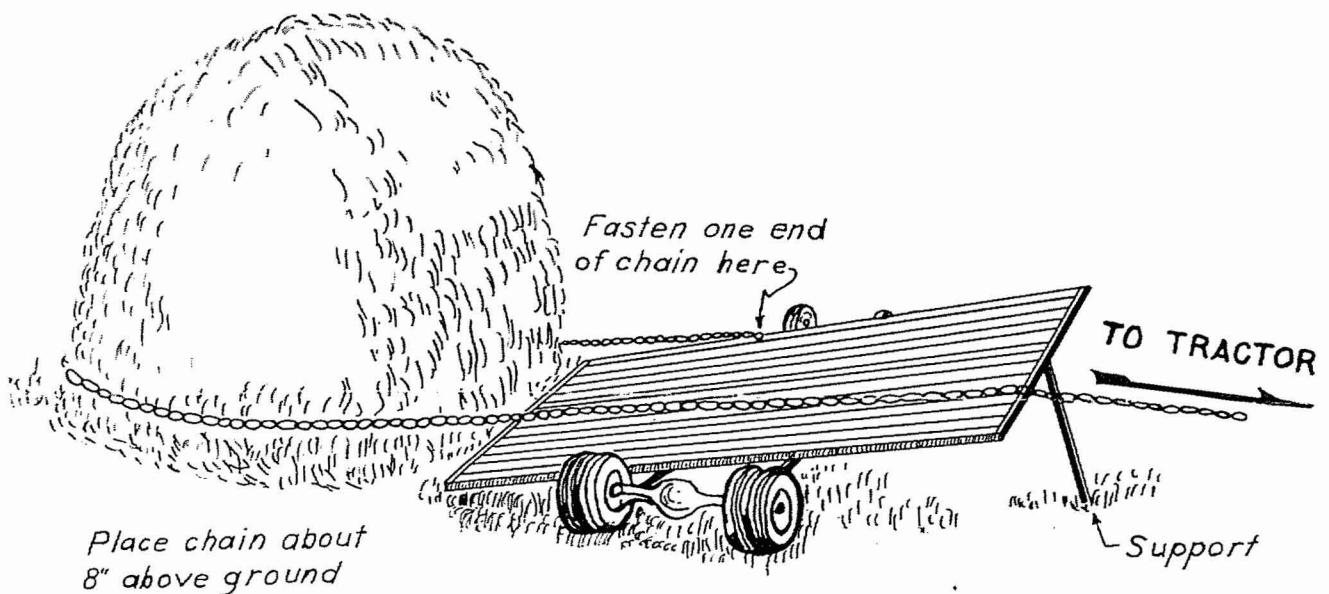


This manure loader is mounted on a Caterpillar tractor and is operated by the hydraulic system. It is on the Vern Lang farm in Gallatin county.

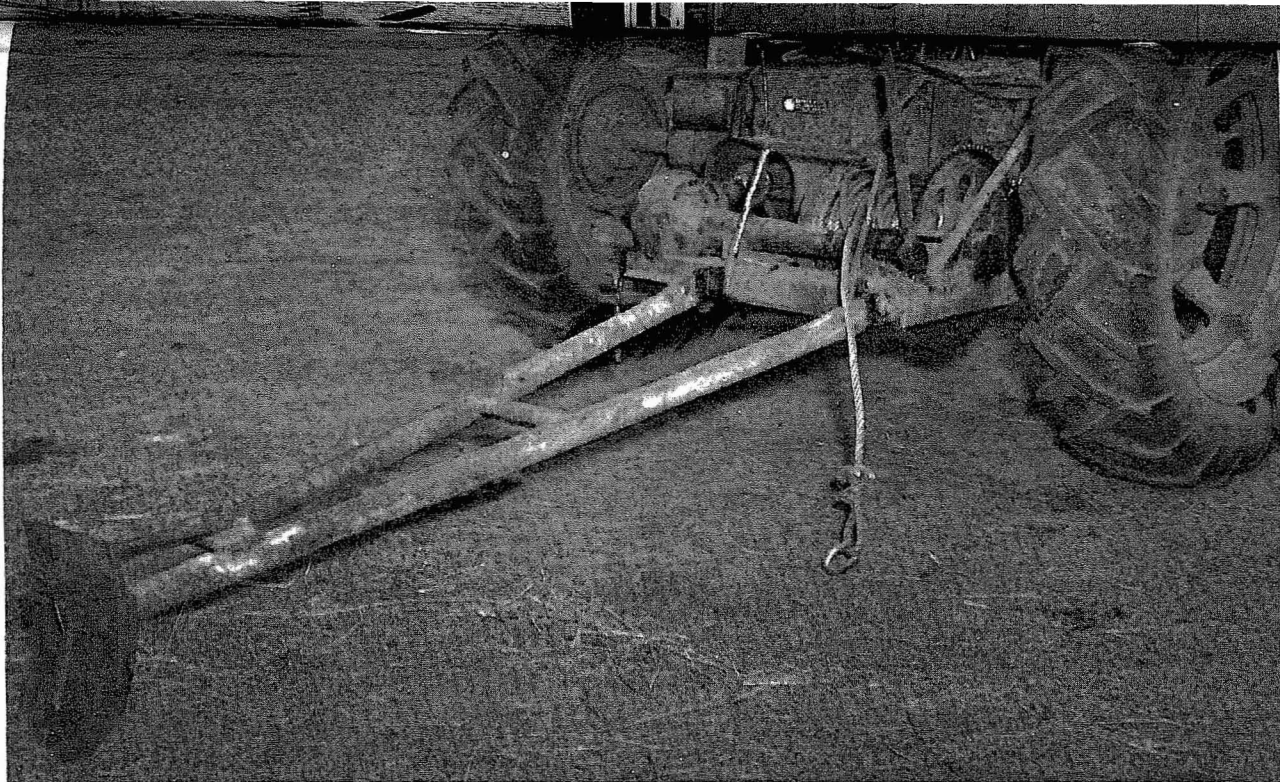


A cable rack or slip, hauling a small load of 2 or 3 tons for feeding. When the feeding grounds are reached the tractor steering gear is locked and transmission put in low gear. With motor idling two men strew hay on meadow from both sides of slip.

(Courtesy Nebraska Extension Service)



A sketch of the cable rack or slip above illustrating the method of loading 7 or 8 ton stack without pitching.



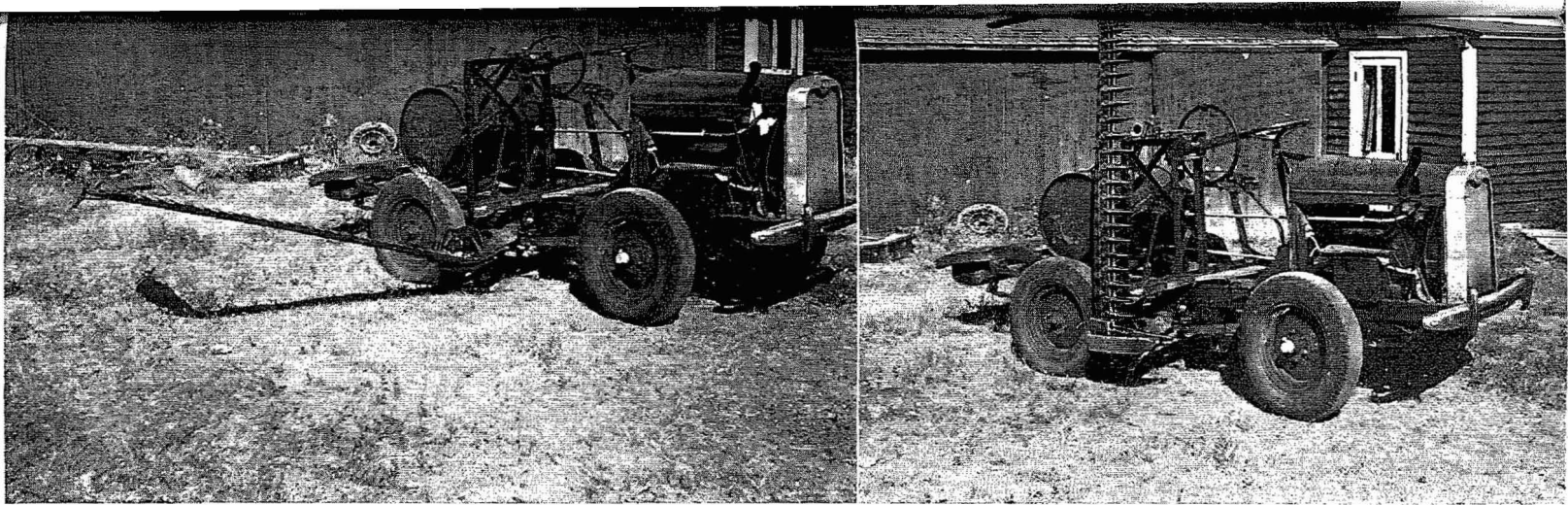
A home made winch and anchor used to wind entire stacks of hay onto a slip in Rock County, Nebr. Can easily be adapted to many uses of this type.

(Courtesy of Nebraska Extension Service)

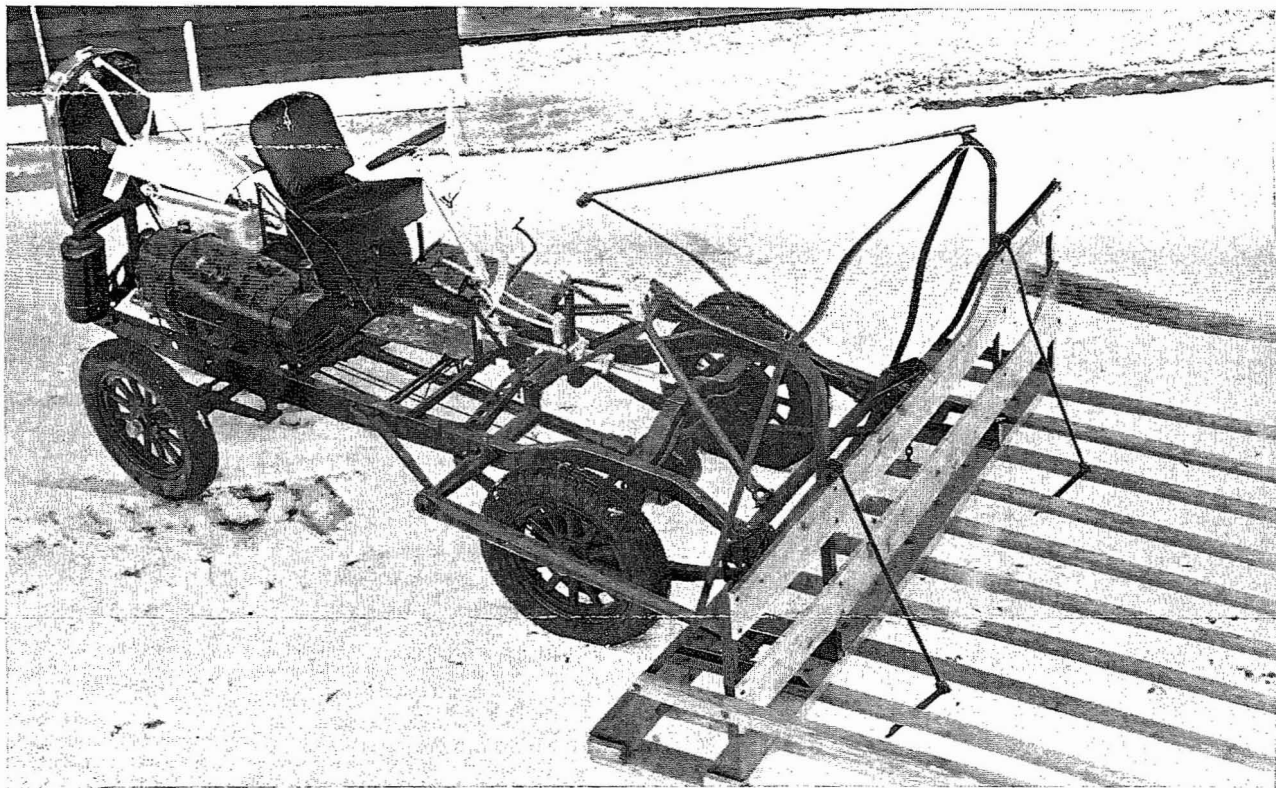


A home made winch attached to a crawler type tractor in Nebraska.

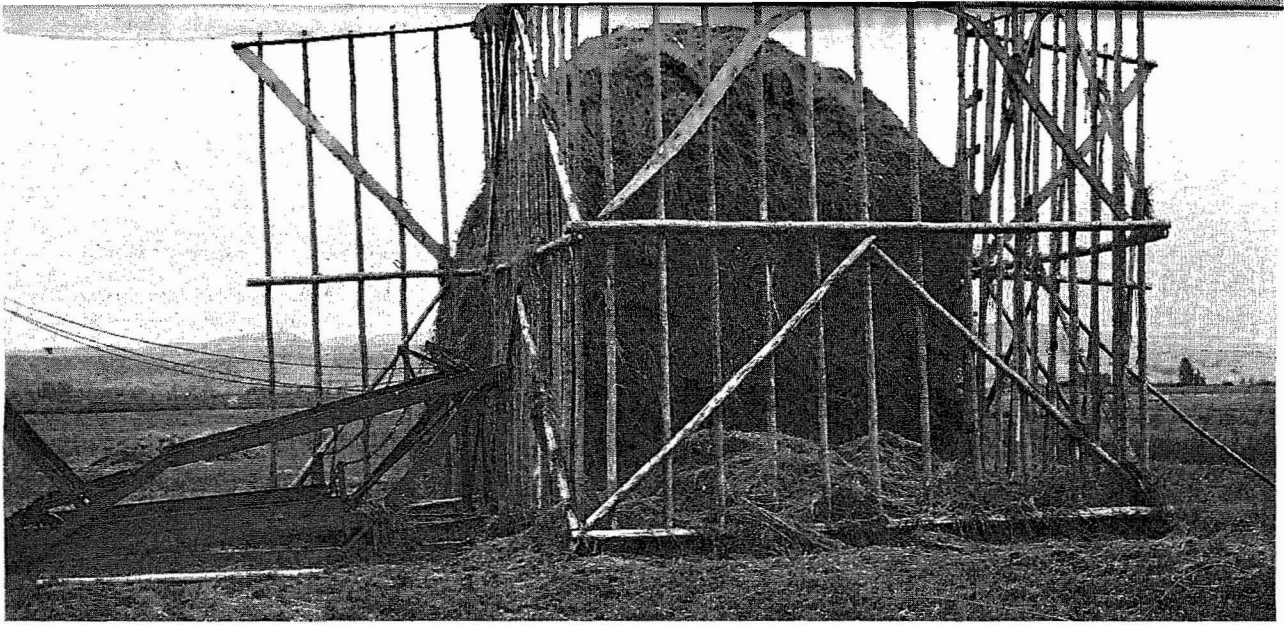
(Courtesy of Nebraska Extension Service)



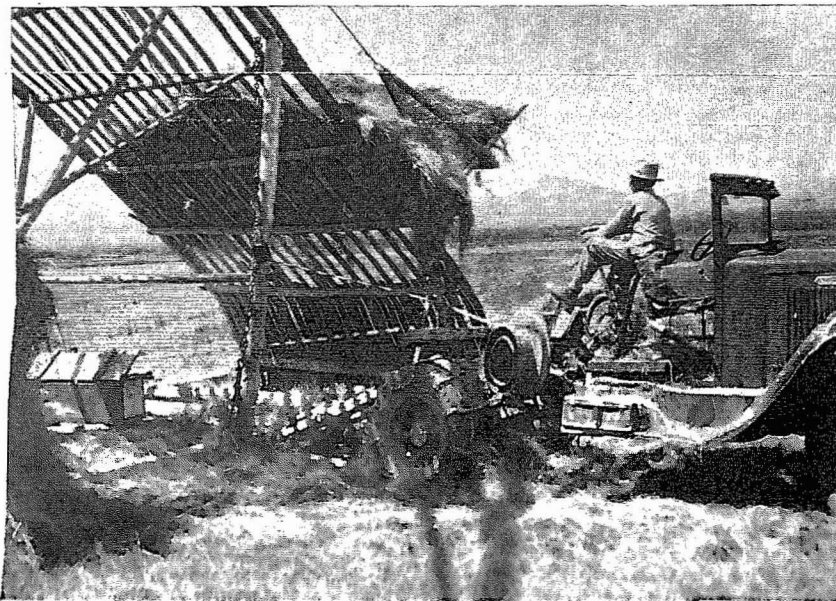
A short coupled automobile chassis, with barrel of water for added weight and cooling, operates a standard tractor mower attachment. Made by Kenneth Creveling of Cascade, Mont.



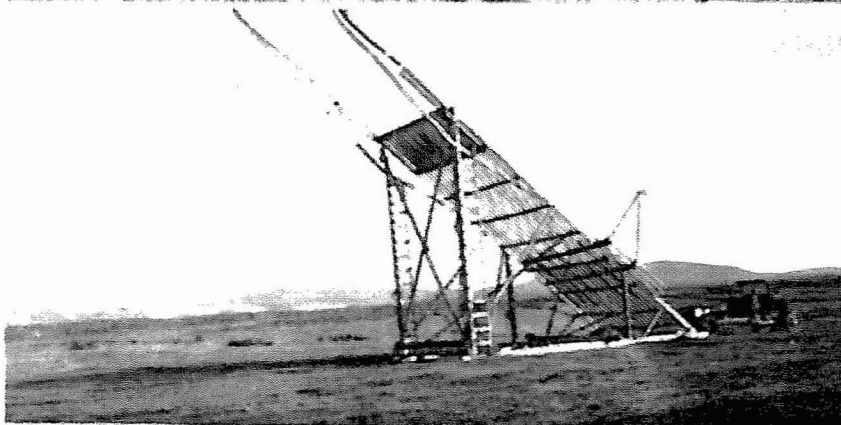
A homemade Auto Buck rake made in the Rural Engineering Shops, Montana State College. Details of construction are available free of charge in Montana Experiment Station Circular 172.



One man can stack a lot of hay in a crate such as this one on the farm of H. P. Smith at Central Park, Mont.



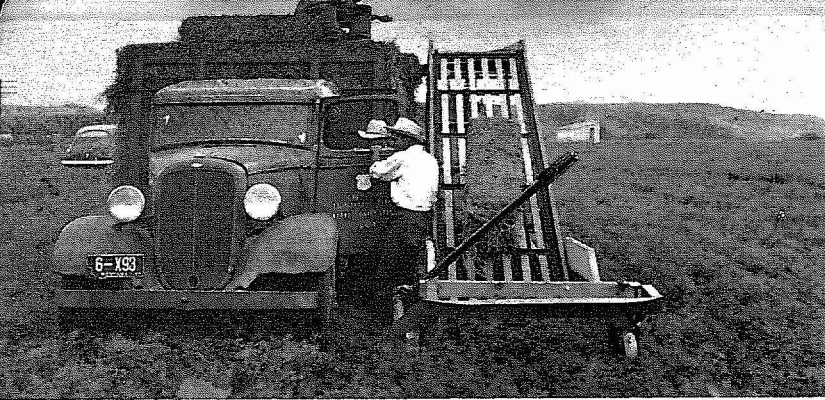
A Beaverslide stacker operated by a double drum hoist directly connected with truck clutch assembly. Beaverslides are comparatively easy to make from home grown timber and are very successful.



By switching drive shafts from hoist to regular rear-end the truck pulls Beaverslide to next location and is stacking hay again 15 minutes later. Pictures taken on the Clemo Brothers ranch at Jackson, Mont. Details of Beaverslide stackers are available from the Rural Engineering department, Montana State College. A small charge is made to cover cost of blueprinting.



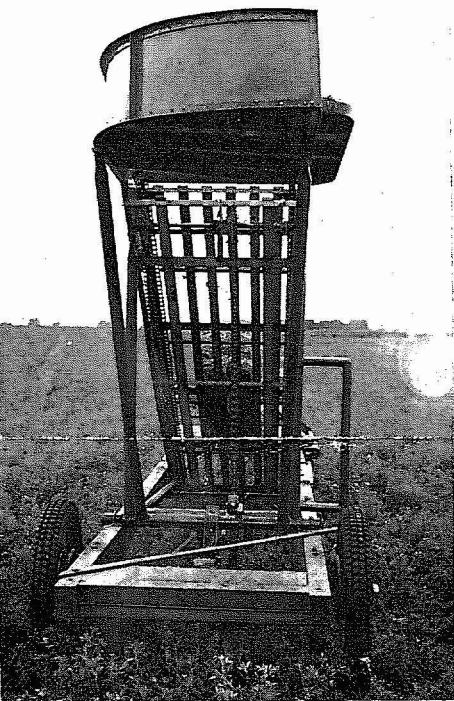
Hay stackers capable of picking up the hay in the field and putting it in the stack are becoming very popular. This one built on an old truck chassis by Wesley Davis near Belgrade, Mont., makes haying considerably faster and easier.



Baled Hay Loader developed by the U. S. Range Livestock Experiment Station, Miles, Mont.

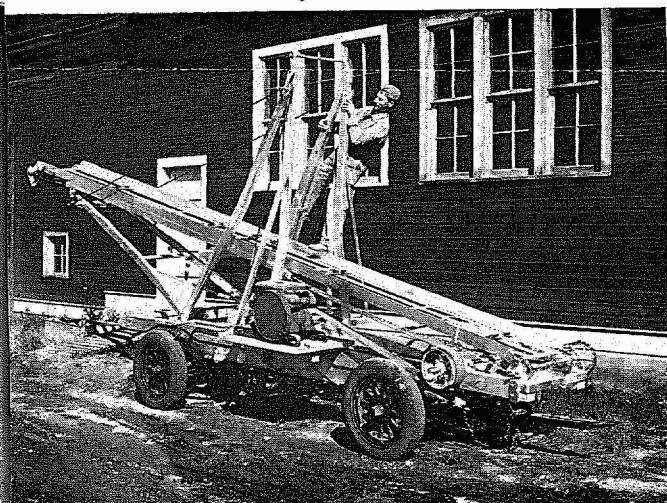
It is attached to the truck bumper and pulled with a chain fastened to the side of the truck. One man driving and one arranging the bales can load a truck in the field in a few minutes.

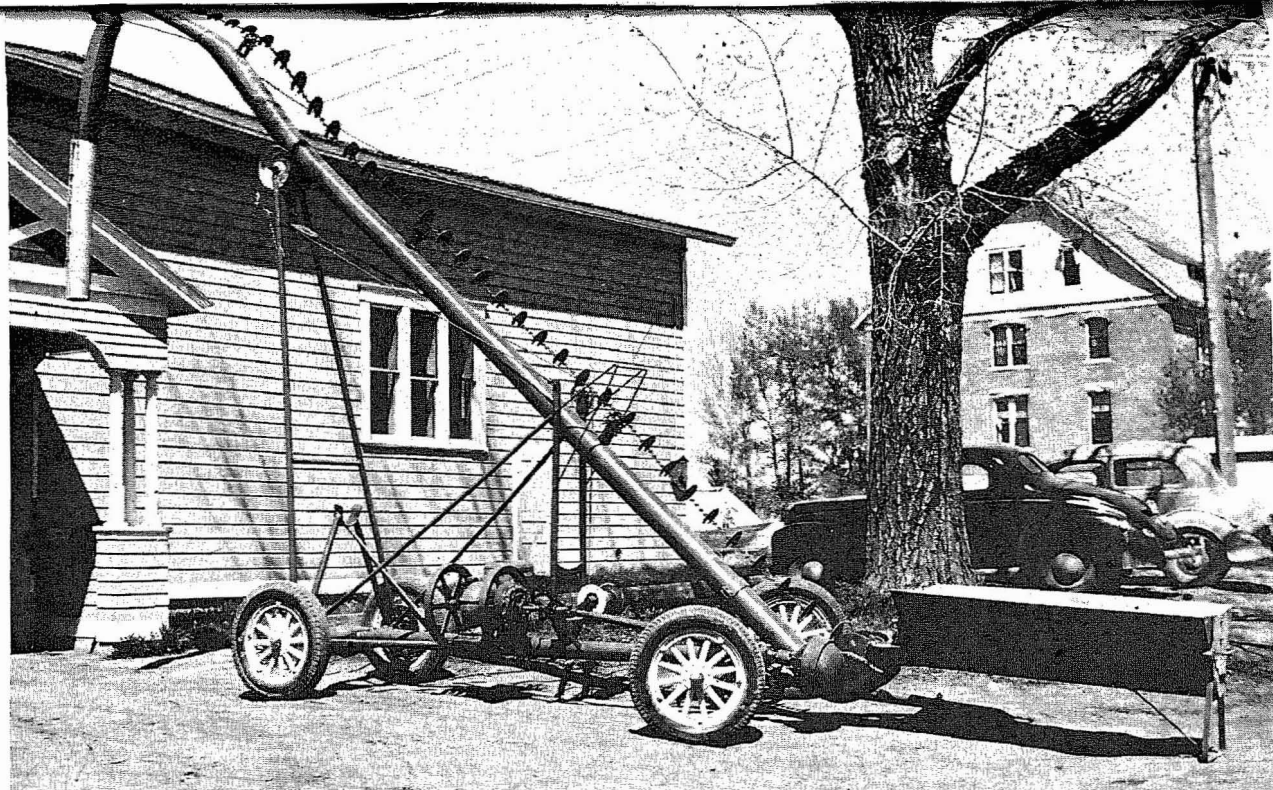
Detailed drawings are available from Rural Engineering Department, Montana State College. A charge is made to cover cost of blueprinting.



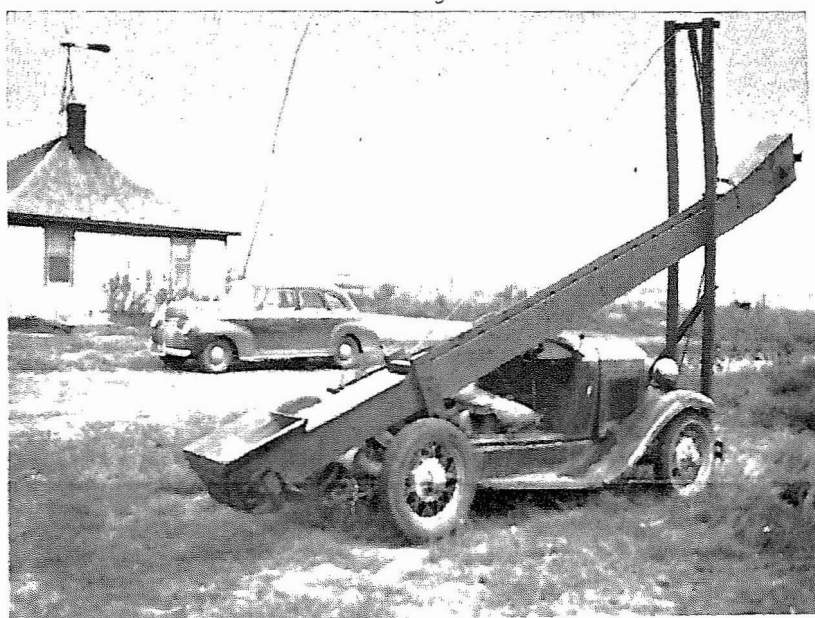
This Baled Hay Elevator is used to unload the truck and elevate bales into a barn or onto a stack. Developed by the Rural Engineering department, Montana State College.

Details are available from the Rural Engineering department at a small charge.

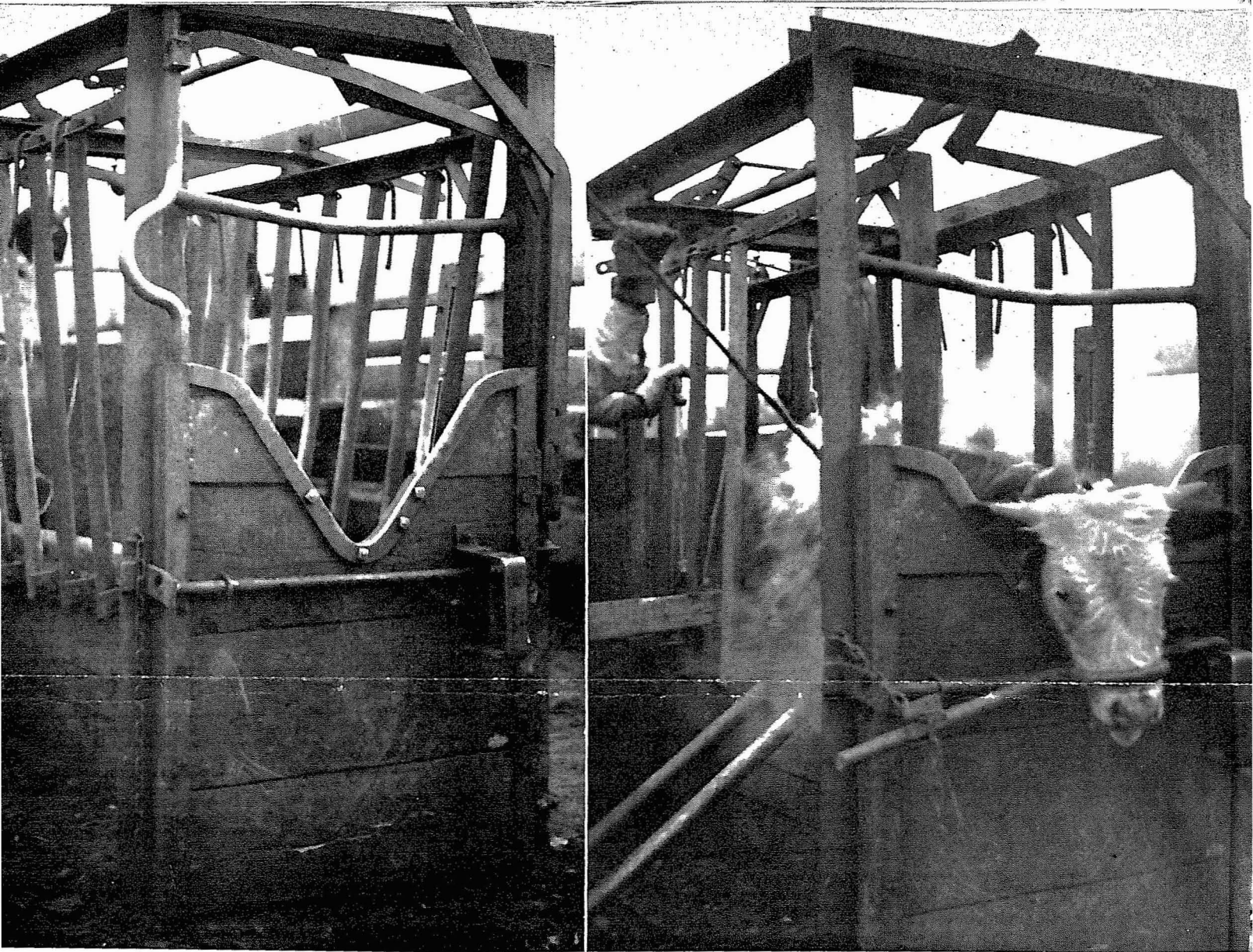




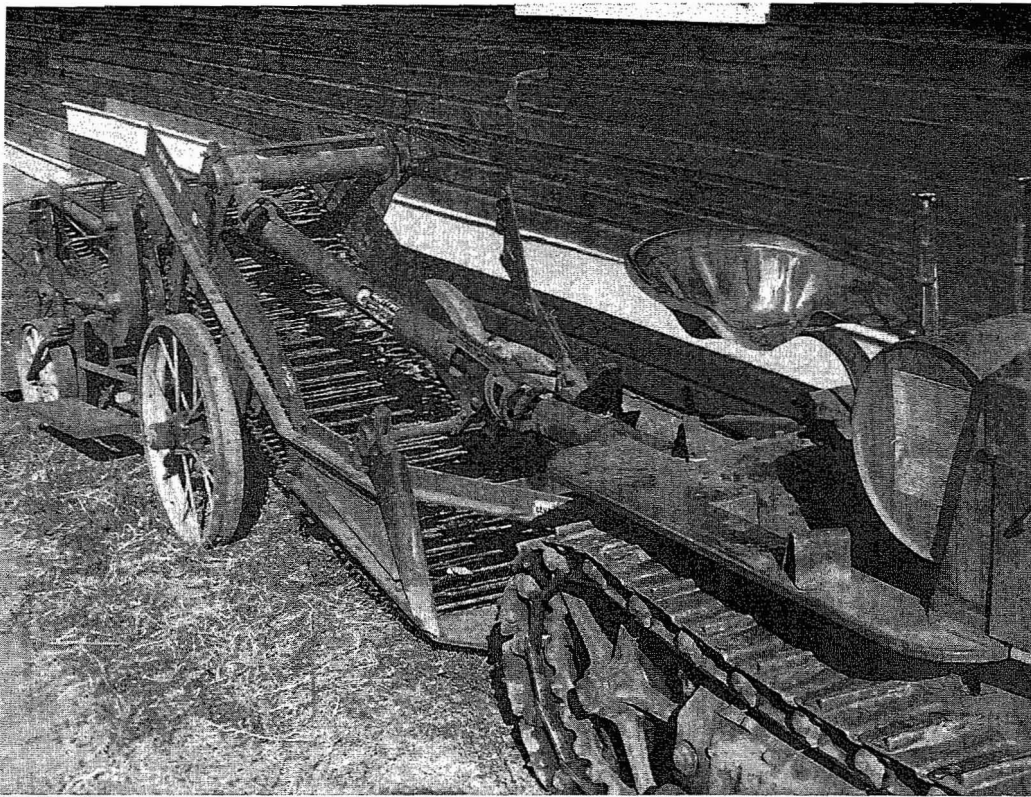
A portable grain elevator made by the Rural Engineering department, Montana State College. It makes good use of old automobile parts and saves a lot of labor on grain farms.



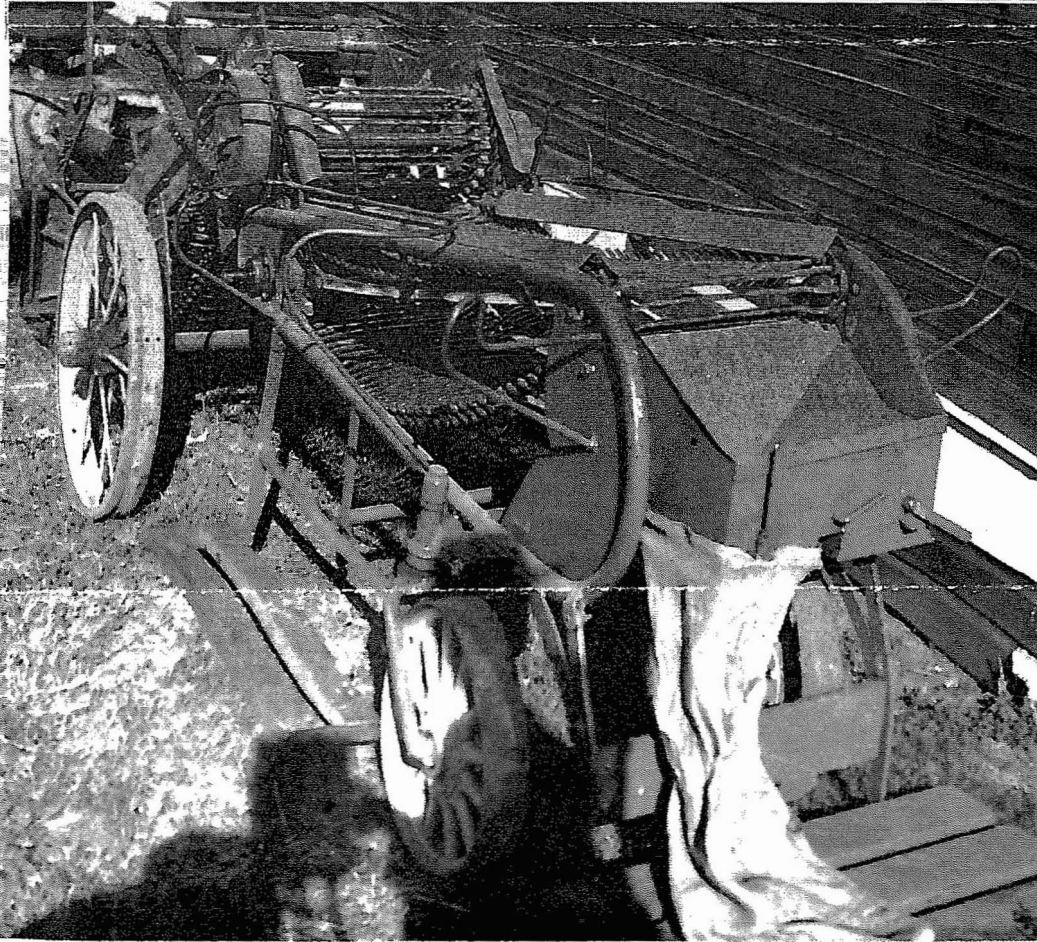
A handy homemade portable elevator that can be moved under its own power. To operate jack up a rear wheel and connect with a belt to the elevator pulley. Photographed in Fallon County, Mont.



A handy Squeeze Gate used by the Billings Public stockyards, Billings, Mont. One lever operates the squeeze mechanism. Another lever clamps the curved bar over the animal's neck. To hold the head rigid for dehorning or other operation a curved bar clamps over the nose as shown. Any of the side bars can be let down for branding.

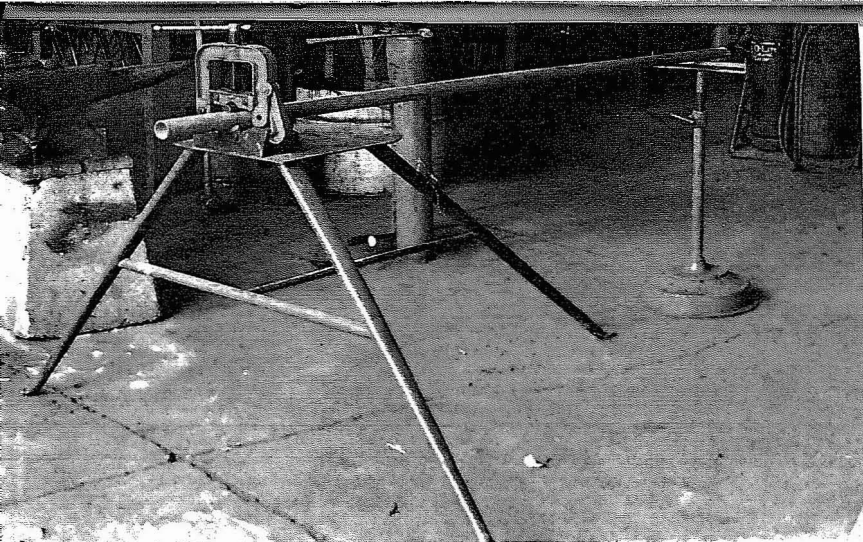


Sacker Attachment for Potato Digger. Developed by the Rural Engineering department, Montana State College.



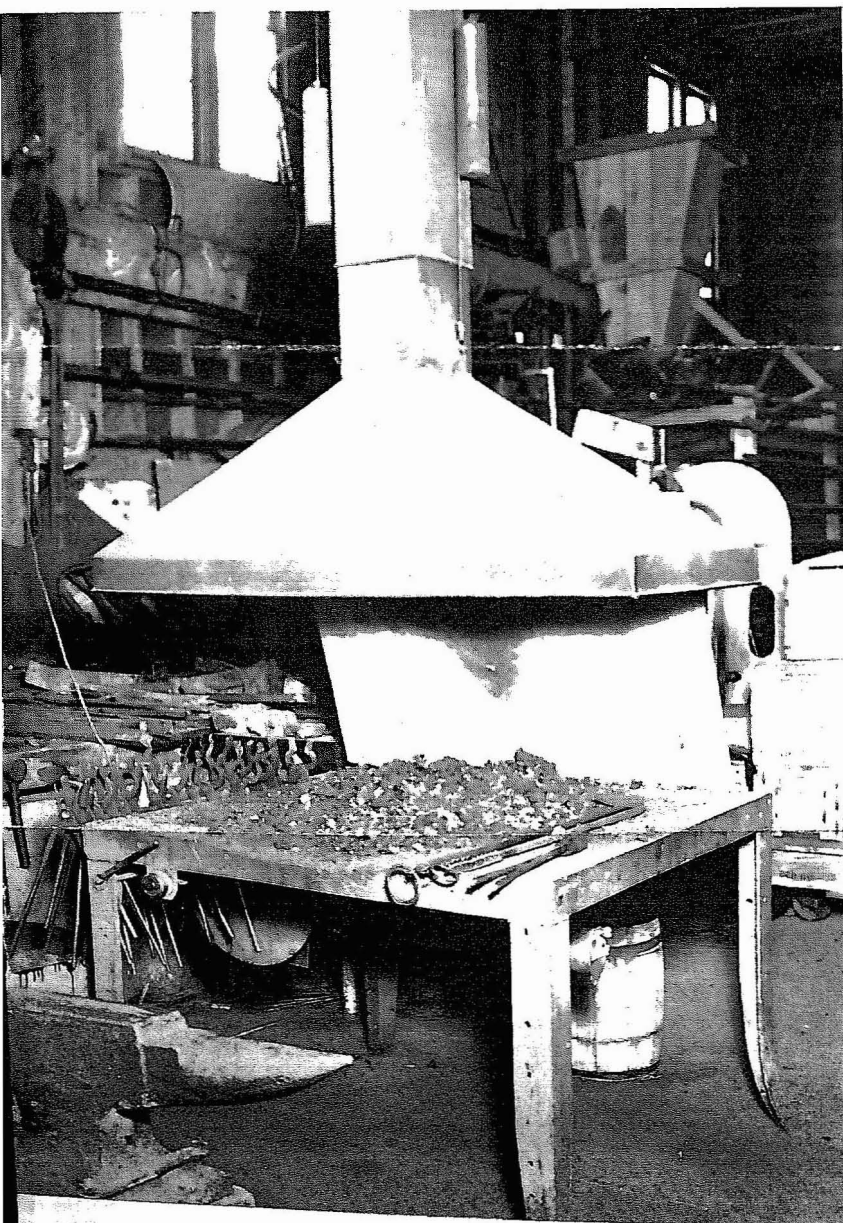
The sacker attachment cost about \$290.00 to build. It will save about one-half the hand labor of harvesting potatoes. This machine was built to fit a John Deere level bed, power-driven potato digger. With minor changes in dimensions it can be adapted to any other make of power-driven digger.

Montana Experiment Station Circular 180 is available free to describe the attachment in detail. Blue prints are also available at cost of printing.



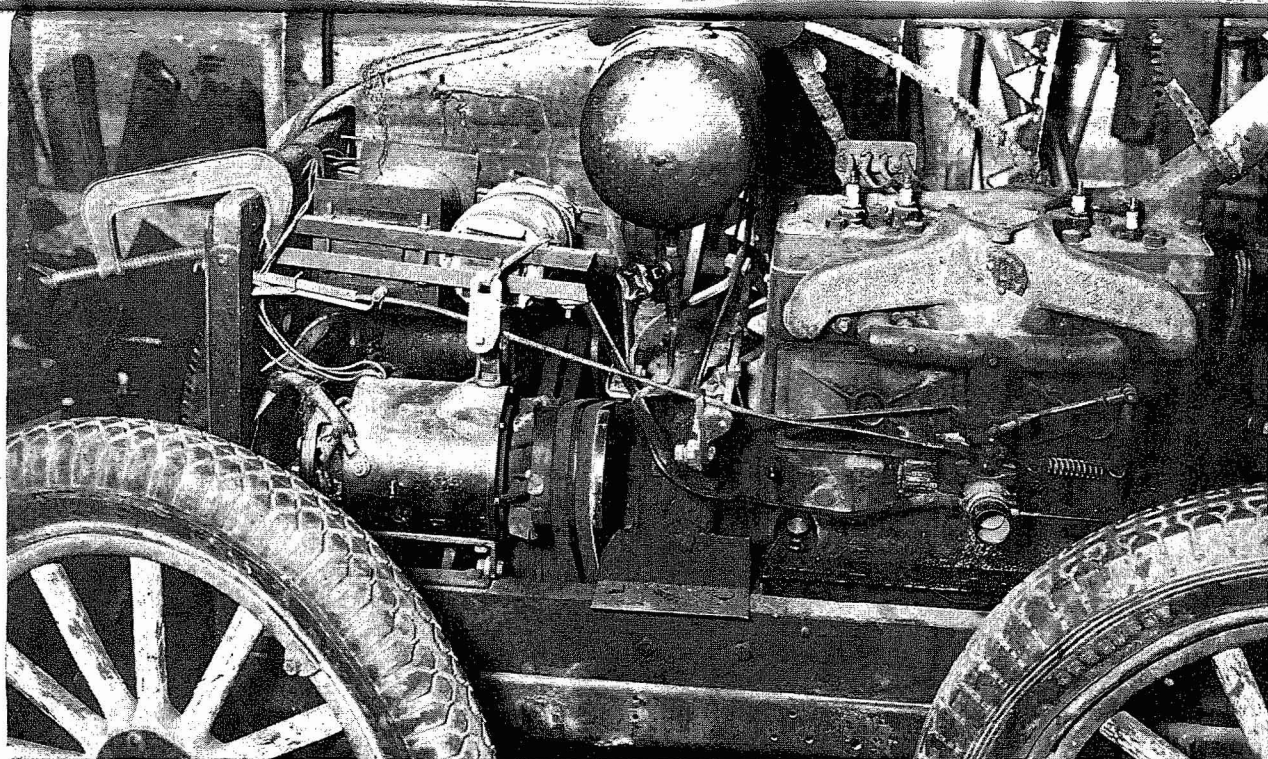
Pipe vise stand and adjustable height stand both made in the Rural Engineering shop at Montana State College.

The adjustable height stand has been dubbed the "Hired Girl."

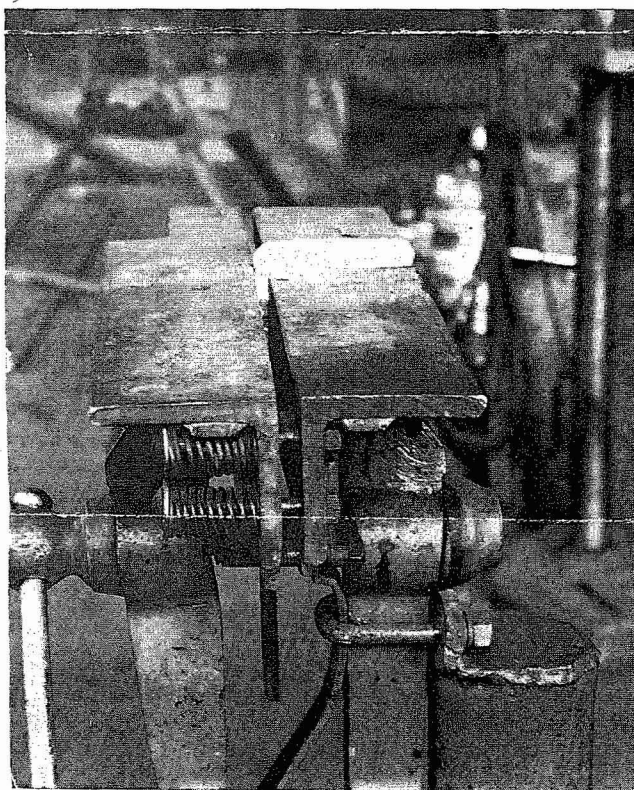


All metal farm forge made and used in the Rural Engineering shop at Montana State College.

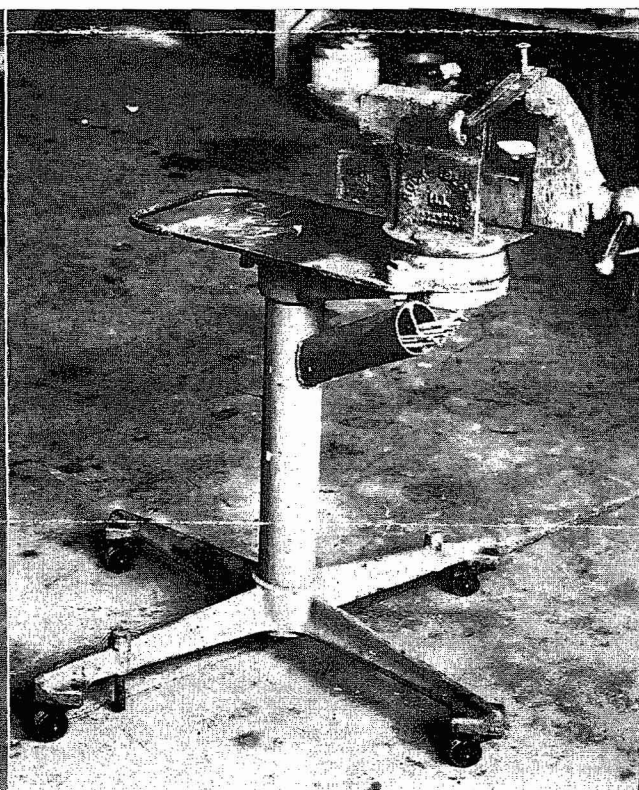
Details of construction are available in blueprint form at a small cost to cover blueprinting.



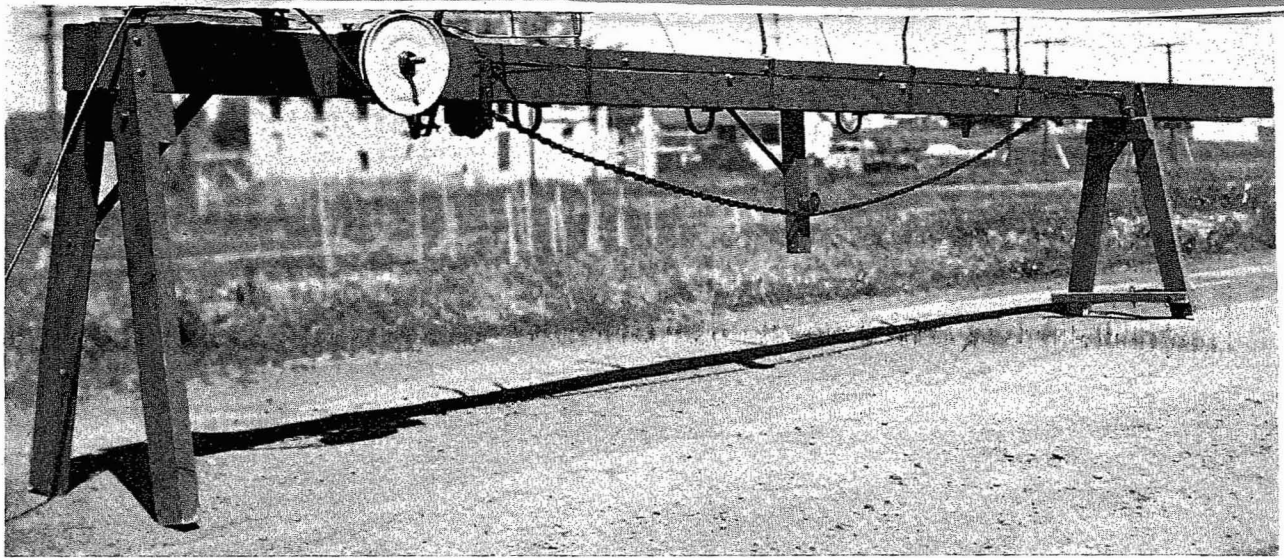
A homemade arc welder using 12 volt automobile generators, on the Wesley Davis farm near Belgrade, Mont.



Auxiliary vise jaws which assure better right-angle bends. Rural Engineering department Montana State College.



A portable welding vise providing a handy welding rod holder and tool shelf anywhere in the shop. Rural Engineering department, Montana State College.



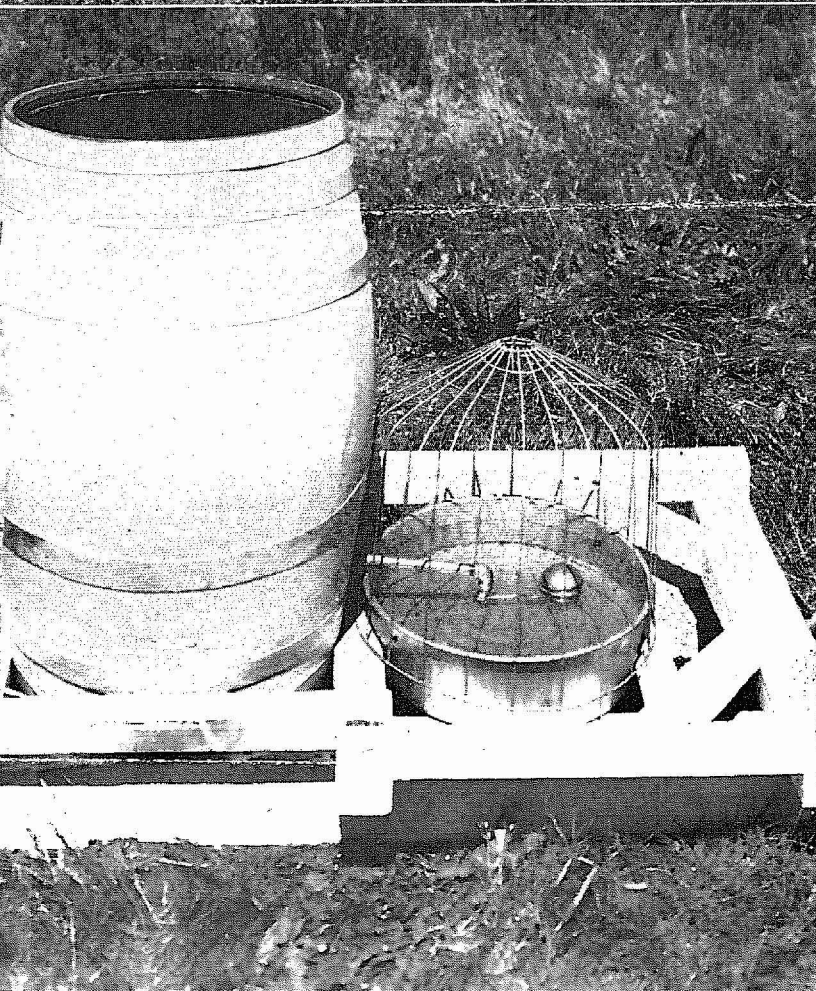
A mechanical device to reclaim used baling wire. A good remedy for the tangled mass of wire so frequently found. Wire may be reused for bale tying. Details of construction are available from Rural Engineering department, Montana State College. A small charge is made to cover blueprinting.



One corner of the Wesley Davis shop near Belgrade, Mont., showing handy home-made drill press with electric drill removable by simply unscrewing one handle.

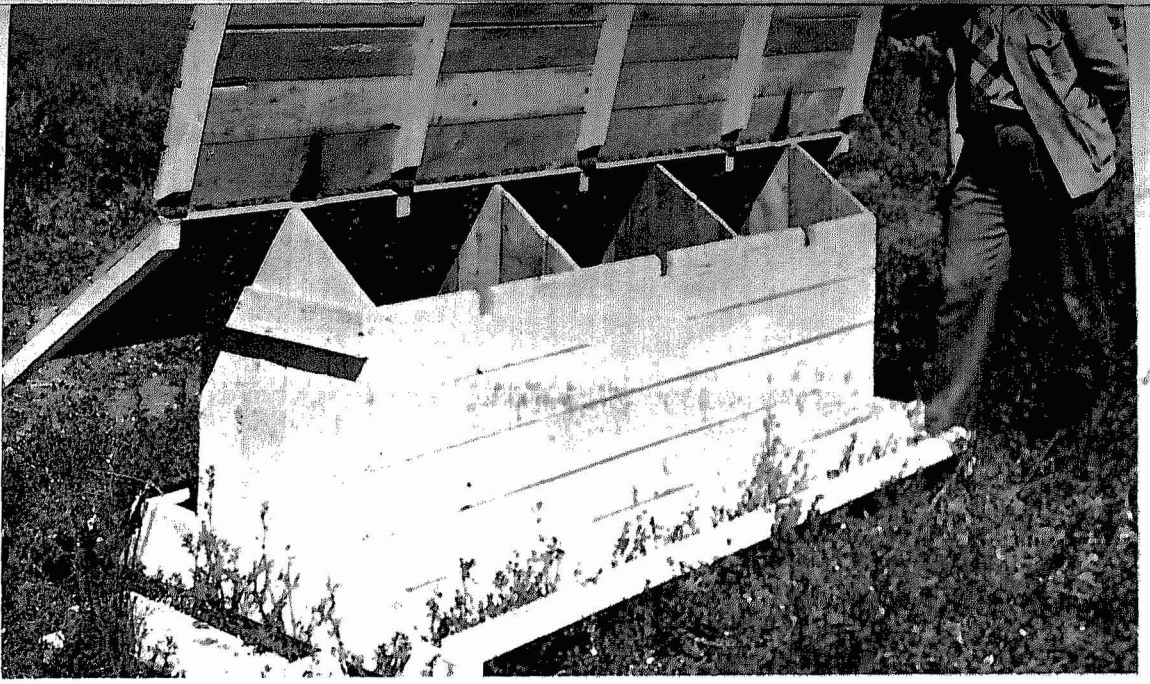


Portable feed storage for poultry on range. The old barrels are mounted on skids so they can be easily moved when the range is changed.

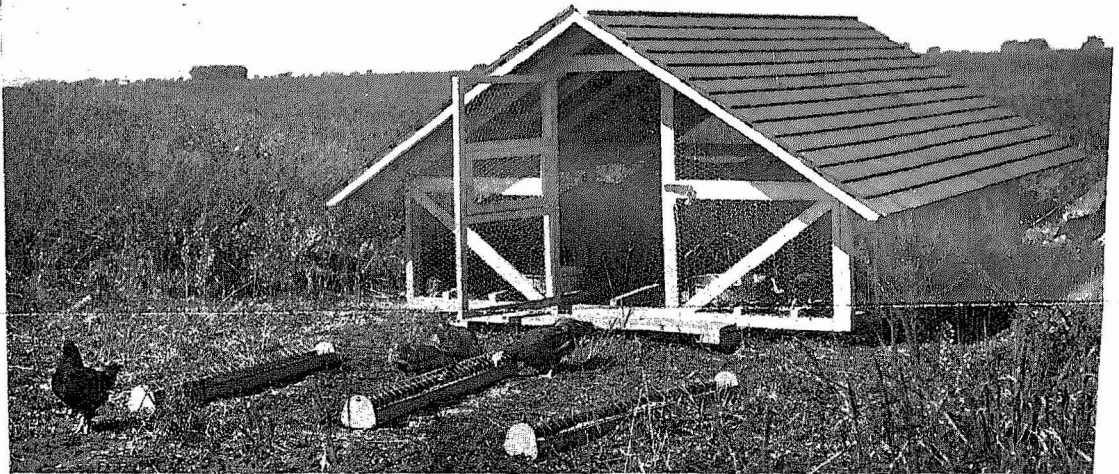


Portable automatic waterer simplifies the task of keeping plenty water available for poultry on range.

Poultry Range Equipment
Poultry Experimental Farm
Montana State College, Bozeman, Mont.



Portable self-feeder and feed storage for poultry on range.



Portable range shelter has a wire mesh floor off the ground and is moved frequently to assure sanitary conditions. Poultry Experimental farm, Montana State College.