UNIVERSITY of IDAHO
A College of Agriculture Publication

IDAHO Agricultural Experiment Station
BULLETIN 203
MAY 1954

Idaho's PORTABLE SHEEP LOADER

saves time, labor, and stock

J. W. Martin, Agricultural Engineer; E. S. Craig, Instructor; L. M. Messersmith, Shop Instructor

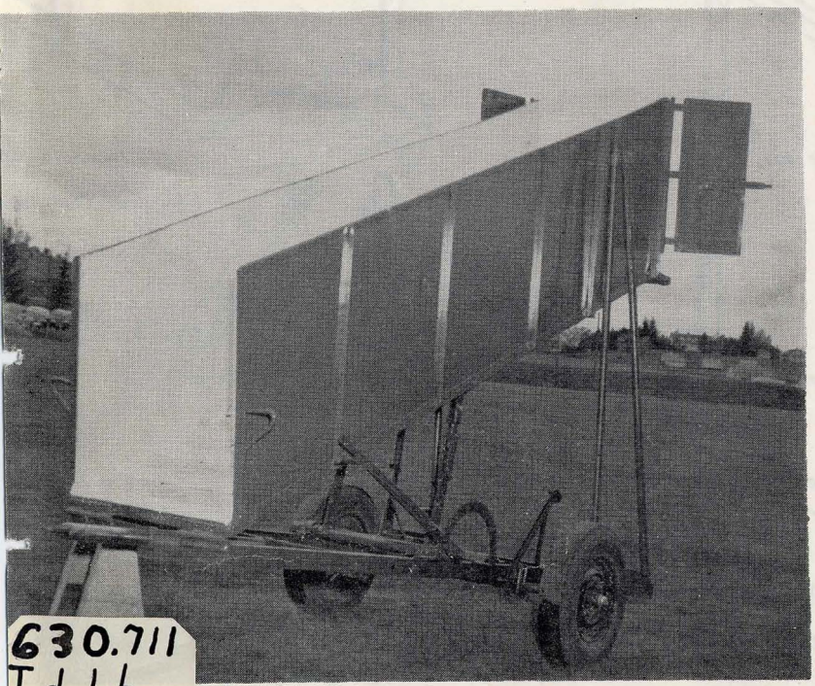


Figure 1—Loader in raised position.

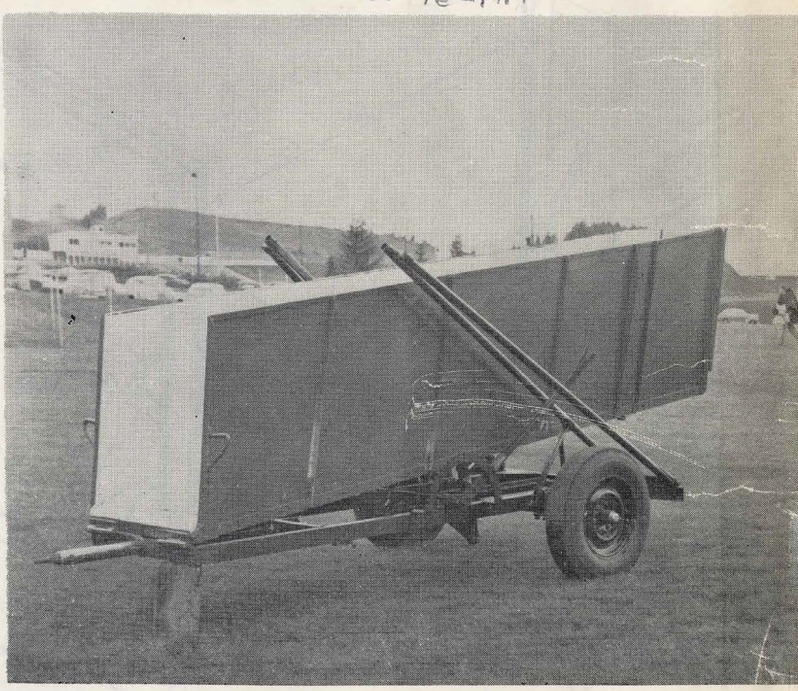


Figure 2—Loader ready for moving or storing.

Idaho sheepmen have long expressed a need for a portable sheep loader. Even where ranchers and farmers have built stationary loaders, they still have need for a loader they could take to the flocks. Driving to loaders and pens from distant points on range is often costly in terms of walked-off flesh which both lambs and ewes lose on long drives. Other uses of the loader appeal to both large and small operators.

Necessary features of a suitable loader were easy to name from the first. It had to be on rubber tires for quick and easy moving. It had to be quickly and easily adjustable to loading heights ranging from the low bed of a pickup truck to the top deck of a sheep transport.

And from the first, animal husbandmen at the University of Idaho had three other important features of the loader in mind. It had to be light in weight if it was to trail easily behind pickups or cars. At the same time, it would have to be sturdy enough to withstand trailing and to give good service when in use. A third requirement for the loader was that any high supporting device must fold up for ease of transportation and storage.

Figures 1 and 2 show the loader built to these specifica-

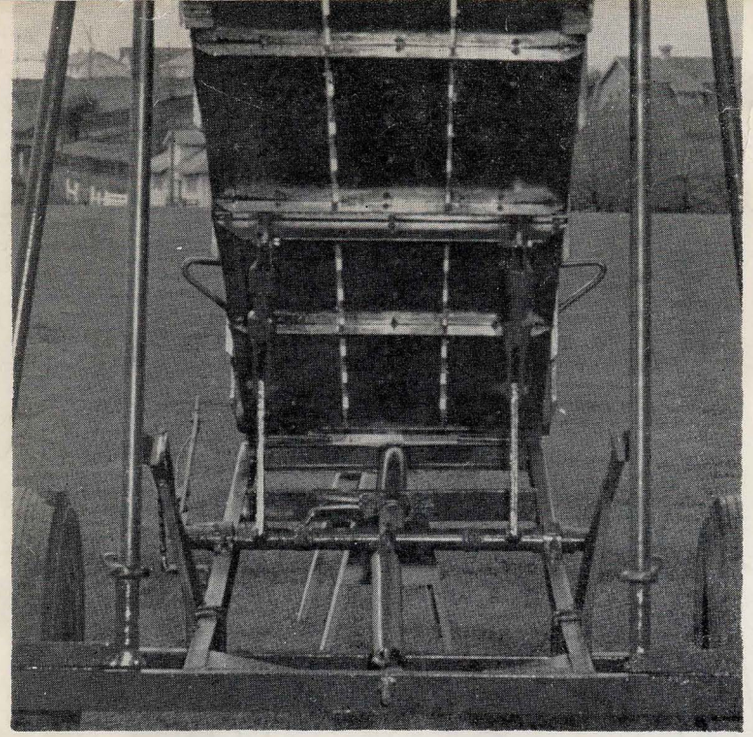


Figure 4—Lifting Mechanism.

tions. The construction is light but sturdy. The portable loader was built so there would be little chance for tipping or shifting of the loader bed from weight and movement of the animals. To make the framework as rigid as possible, welded joints were used throughout the construction.

Raising or lowering the chute to meet the level of the truck floor is easy in the loader. A 2-inch coil spring 36 inches long does most of the lifting, and the weight of the chute actually balances against this spring. There is no winch, pulley, or cable. The operator adjusts the spring tension by using the eye-bolt extending through the rear of the frame. A 48-inch lever arm and quadrant turns the lifting shaft. Notches of the quadrant are one per inch. Figures 4 and 5 show details of the lifting mechanism.

Vertical supports at the rear of the lower frame are of 1½-inch pipe bolted together at the top. The sliding collars or guides for the chute fasten to the bed by a bolt and cotter key. The holding dogs are assembled on the supports and move up under the chute to take the weight from the lifting arms when the chute is at loading height. The dogs lock on the pipe because they are slightly oversize. We recommend hardening the hole in the dog after drilling. Pins under the dogs and through holes in the pipe would hold them in place.

Angle irons form the framework of the entire chute. This allows for necessary bolts to hold the wooden floor and sides. The chute connects with the front of the frame by hinges made of ¾-inch pipe.

A glance at the plans in Figure 3 shows that the chute is 30 inches wide inside measure. Although this is wide enough for a non-cooperating lamb to turn around, it is about right for an adult ewe in good flesh and wool. For loading both lambs and ewes, it is probably the best width.

To avoid any possible gap between the floor of the truck and the upper end of the loading chute, there is a board hinged to the lip of the loader floor. This provides a continuous floor into the truck. Gates at the end of the loader swing out to close the gap between the loader sides and sides of the truck. When the loader is not in use, both gates and hinged floor board fold back into the loader. The gates close firmly to give added support when the loader is moving.

Sheepmen long ago found that sheep go more readily up a loading chute with solid sides. Because of this fact solid plywood panels were used for the siding. Plywood gives strength without adding appreciably to the weight of the loader and will probably last longer than light metal. Weather-proof "Exterior" plywood should be used if the loader is subjected to the weather. Bolts hold the plywood firmly in place, and two coats of paint give it weather resistance.

The telescoping tongue of the loader is a labor-saving device that sheepmen will find worthwhile. It is made by fitting a 2-inch pipe into a section of 2½-inch pipe so that it can slide forward to meet the trailer hitch of the truck or car. When the loader is in use, the smaller section telescopes into the larger pipe where it is conveniently out of the way. This allows the front or lower end of the loader to reach the ground where animals more readily take their first steps up the chute. A spring-loaded catch holds the tongue in place when the loader is moving.

In making the loader it was found that the all-steel frame and welded construction were a great time saver. Most parts of the loader are material you will find in or around the average farm shop or at your scrap dealer's. Sizes of the framing members can vary, but the stability, sturdiness, and long life of the loader demand that the frame be not lighter than 3-inch channel iron. Use heavier irons if they are available. Be sure to use them if you intend using the chute for loading heavier animals. Greater width in the chute itself will also be necessary to accommodate cattle or horses.

For the welder beginning the loader's construction, it will save time to know that most of the joints can be down-hand welded. A 180 amp farm welder will do the welding nicely, and any average welder will find that he can do the work. A 5/32-inch rod marked E-6013 is right for welds of this kind. A cutting torch and blacksmith's forge are convenient but not essential tools of the construction.

BILL OF MATERIALS

Item	Number	Length	Size
Channel Iron	2	16′	Standard 3″
Angle Iron	4	20′	1″x1″x3/16″
	3	18′	2″x2″x7/16″
	1		2″x2″x7/8″
Bar Stock	1	24′	3/8″x2″
	1	8′	3/8″x1 1/2″
	1	1′	1/4″x6″
	1	5′	1/2″x6″
Rod	1	3½′	2″
	1	5′	3/8″
	1	11′	1/2″
Pipe	1	32″	2 1/2″ ID
	1	4″	
		26′	1 1/2″ ID
	1	2½′	3/4″ ID
	1	11′	1/2″ ID
Bolts	150	¾″	1/4″ carriage
	50	3″	3/8″ carriage
Lumber	3	16′	2″x4″
	3	12′	2″x10″
	1	2½′	2″x12″
	1		1/2″x30″x36″ Plywood
	1		1/2″x4′x8′ Plywood

Miscellaneous Axle, Wheels, Lever, and quadrant

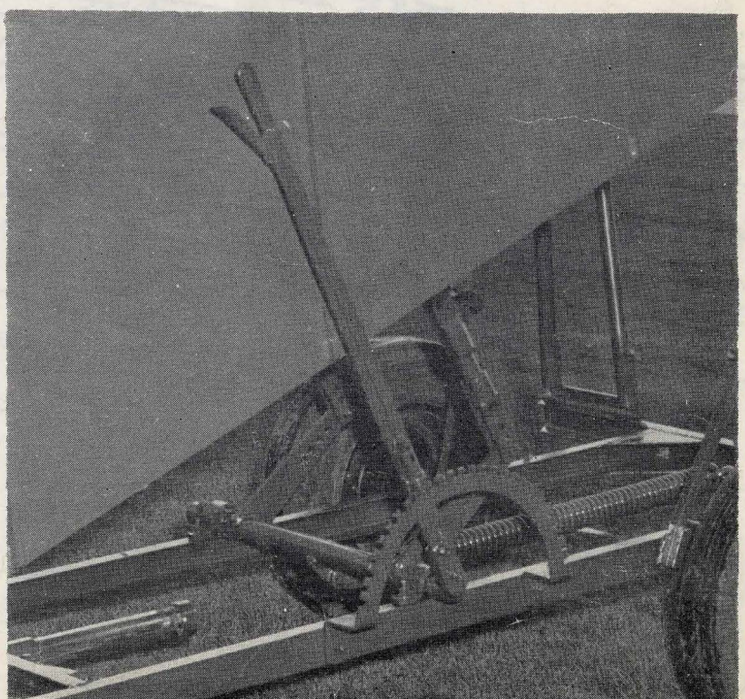
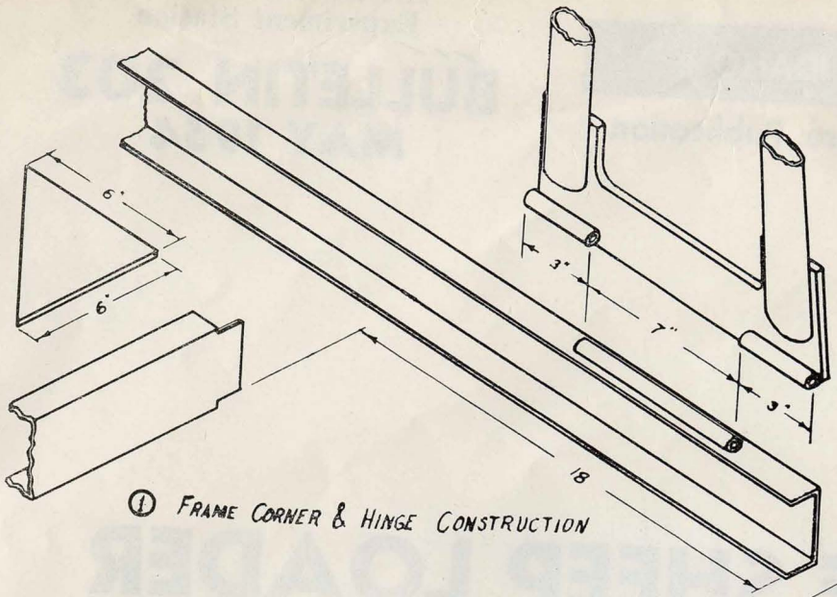
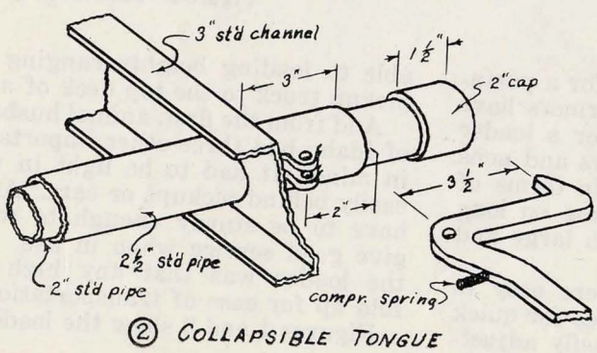


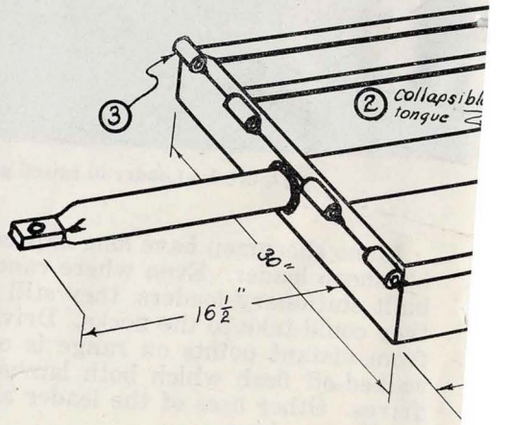
Figure 5—Lifting lever and spring.



① FRAME CORNER & HINGE CONSTRUCTION



② COLLAPSIBLE TONGUE



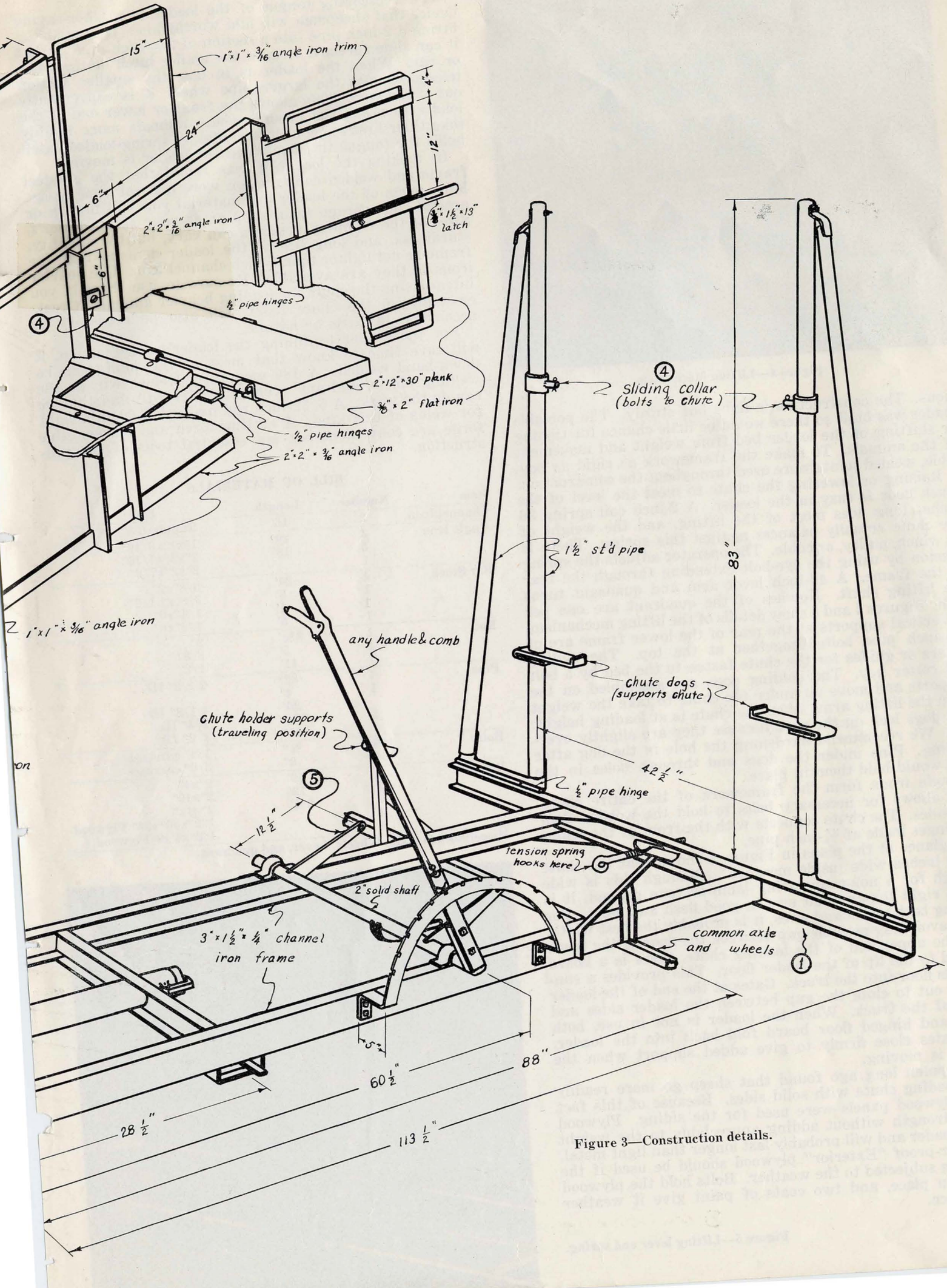


Figure 3—Construction details.