Tip Sheet

Material Handling with a 'Georgia Buggy'

Problem:	**One Solution:**
All too often, materials and equipment must be moved about the site for use by workers. Just as often fork lifts or other lifting equipment are not readily available and workers lift and move these things by hand. When materials and equipment are heavy and/or awkward, workers are at additional risk while performing these tasks.	A simple apparatus **Factors:** • Constructing a simple 2 wheeled buggy that can either straddle a long load or suspend a compact load combines both wheels and leverage to move/carry awkward heavy loads in tight quarters. • Using larger pneumatic tires makes rolling over uneven ground easier. • Using a telescoping handle allows for use in smaller areas. • Using the basic tools of leverage and wheels, the "Georgia Buggy's" efficiency is easily calculated by the formula $W_1 \times L_1 = W_2 \times L_2$

In this particular case the spool of wire weighs approx. 350 pounds.

The distance from the spool to the center of the wheels (Fulcrum L_1) is approximately 1.5 ft so that

350 x 1.5 = 525.

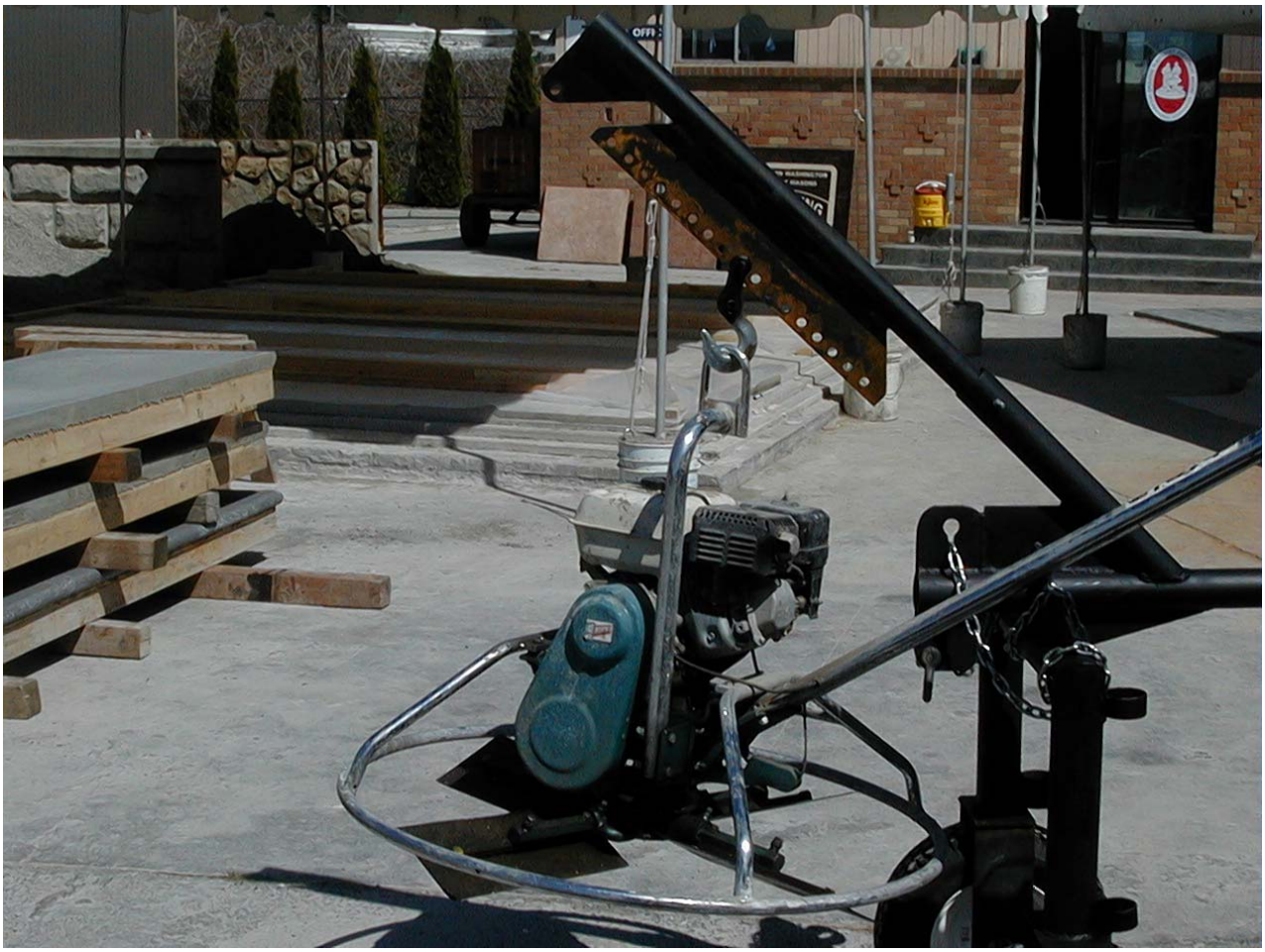
The Distance between the handle bar and the center of the wheels (Fulcrum L_2) is 8 ft. To determine the amount of force needed to balance the wt. of the spool (W_2) simply divide 525 by 8 and you will find that with the force of 66 pounds the spool can be balanced. When you estimate the handle to weigh approximately 20 pounds it ultimately requires about 46 pounds of down force on the handle to balance, move and manipulate the spool Because of the angle of the jib, the initial distance is increased, but once the lift has begun and the spool moves closer to the wheels, the above calculations are accurate.

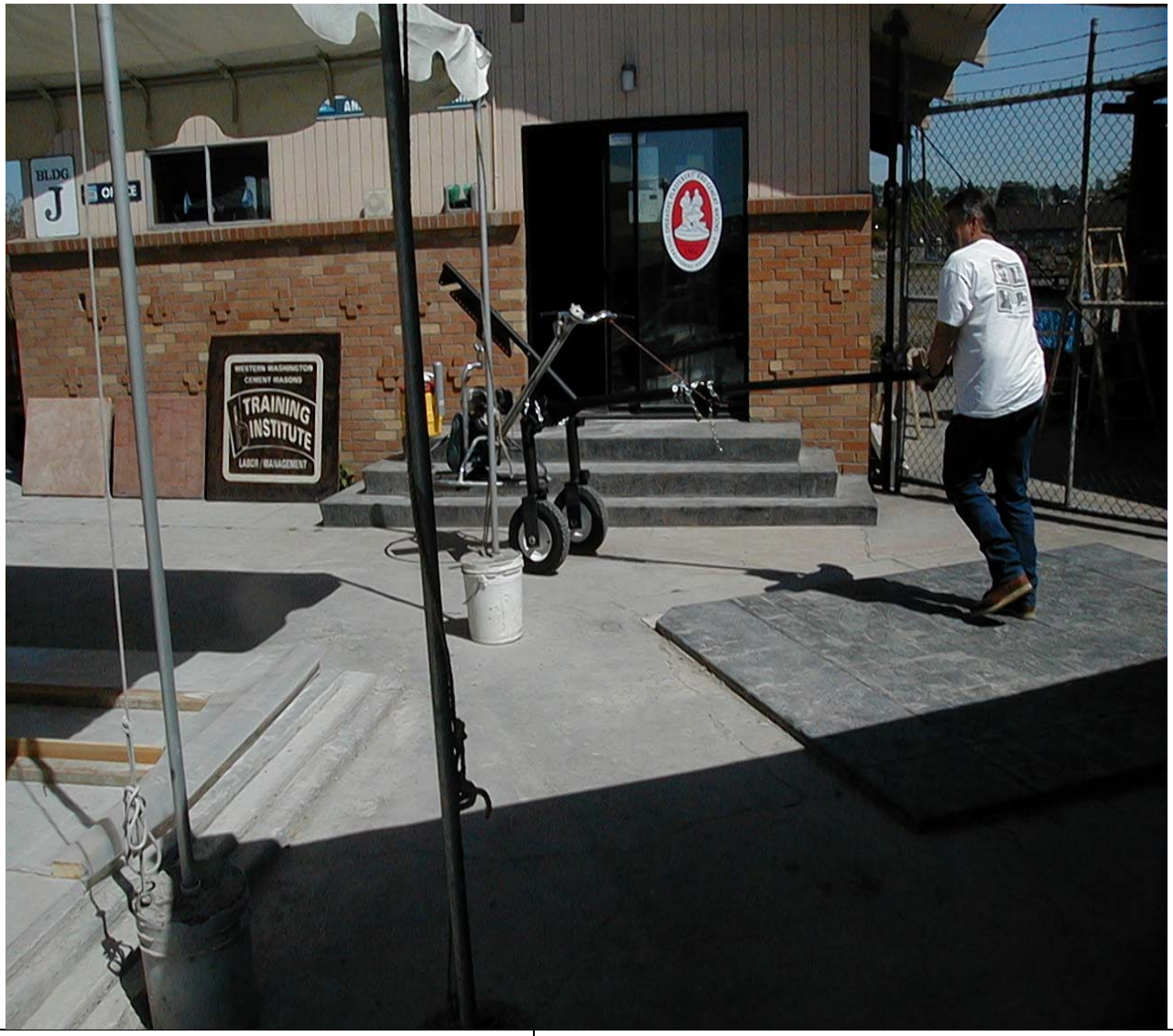
Shown below is an example of using the buggy for carrying longer objects. In this case, a piece of 4" rigid conduit. (The buggy could easily handle 6 to 8 pieces) (Also shown is wire spool being transported.)

Shown next is the buggy being used to lift and transport a Walk-Behind Power Trowel used for finishing concrete. The combination of weight, (machines vary from 200 to 300 pounds depending on size) and the awkward shape for manual handling, make this type of task ideal for the buggy's intervention.

NOTE

We found that there was an immediate aversion to using the buggy when 2 or 3 workers could perform the desired task with brute strength rather than taking the time to get and use the equipment. To make this intervention effective will require support and encouragement of its use by supervisors and workers alike. Many workers and supervisors reported that taking the time to go get a hand truck or pallet jack is often weighed against its use when just grabbing the item and carrying it to its destination would be quicker. Thinking about a possible sprain, strain or other injury is not usually part of the decision making.





How Much Will it Cost?

Depending on the amount of scrap pipe, chain and flat bar available at site, the cost for materials can run between $75.00 to $125.00. This particular version required about 3 ¼ hours of labor to complete.

How does Intervention Affect Productivity?

Once workers decide to use the buggy, significant production increases can occur.

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