

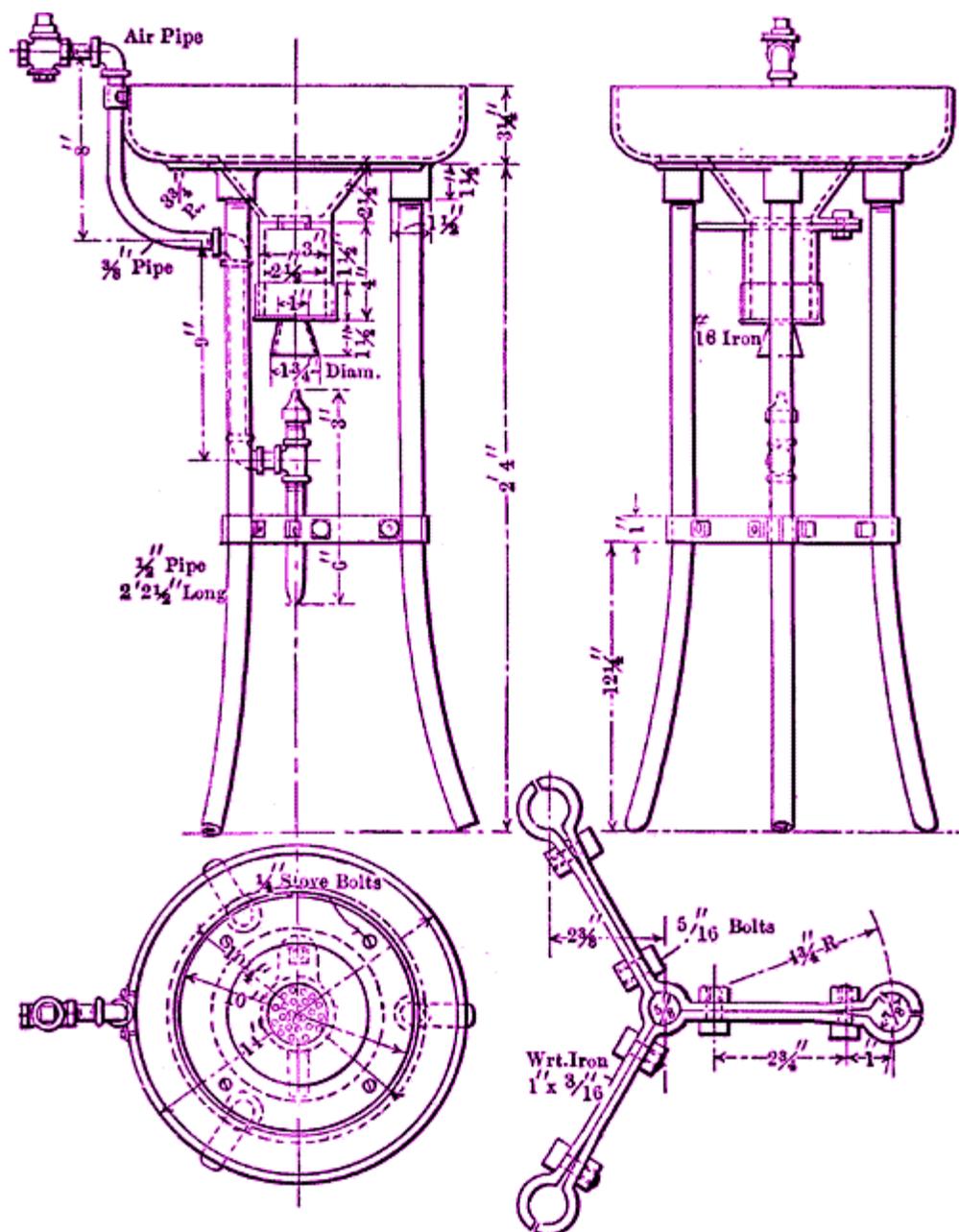
Lindsay's TECHNICAL ARCHIVE

Light Weight Compressed Air Forge

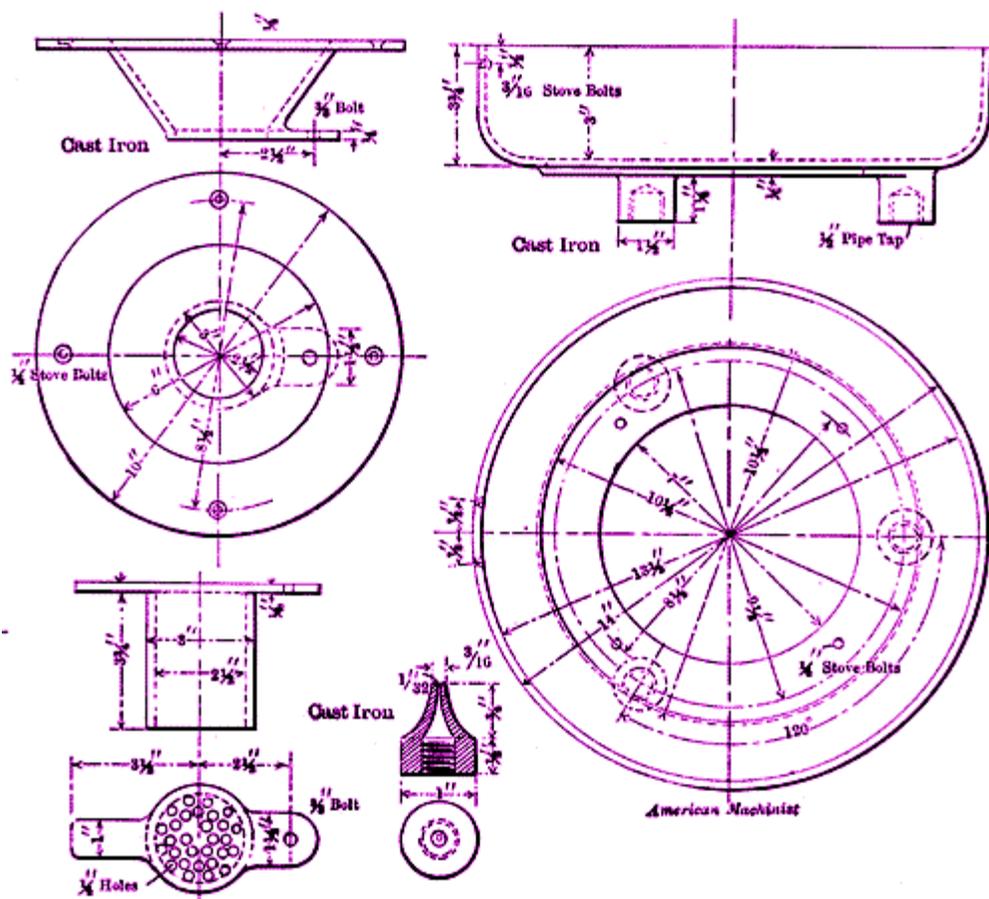
from American Machinist Magazine Jan 28, 1904

Editor American Machinist:

The drawing shows a portable forge, designed by me, that has proven very efficient in practical service. It is large enough for heating boiler and structural iron work rivets, and at the same is very light and durable. It is fitted with a compressed air blast inducer, the jet having an injector action on the surrounding free air, thus forcing it up into the fire. By means of the air cock shown, the blast can be regulated as desired, and a uniform pressure produced, thus insuring an even and steady heat.



The forge being light, weighing less than 40 pounds, is easily transported and is in no way clumsy, its three legs permit it to rest firmly on an uneven surface, the fire-pot is easily removed, and the grate or tuyere casting allows the fire to be cleaned from underneath. It is free from moving parts, ratchets, levers, etc., and is about as light as economical design will allow. Its construction requires 25 pounds of cast iron, 6 feet 7 1/2 inches of 1/2-inch pipe, 2 feet 6 inches of 3/8-inch pipe, three 3/8-inch elbows, one 3/8 inch T, one 3/8-inch stop cock, one brass air nozzle, 2 feet 9 1/2 inches of 1 x 7/16 inch wrought iron, seven 3/8-inch machine bolts, and six stove bolts.



When compared with the ordinary fan the air jet is about one-twenty-fifth as efficient for the production of blast at a given pressure. Experiments have shown that 1 cubic foot of compressed air will produce 6.53 cubic feet of blast at a pressure of 1.85 ounces, the air pressure being 100 pounds per square inch. This inefficiency of the air jet as a blast inducer is largely offset by the even blast maintained, thus increasing even heating and greater output over the hand operated/an blast forge. It is further offset by the resulting portability of the forge and a minimum cost for repairs. N.C.H.

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PO Box 538
BRADLEY IL 60915
FAX 815-935-5477
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