Railway Mechanical Methods and Devices.

Air Press at Grand Trunk Pacific Railway Shops

As mentioned on previous occasions, the G.T.P.R. shops at Rivers, Man., have been operating under peculiar conditions, from the fact that the work of a large system has been handled at a plant originally equipped for divisional work only. This has, however, been remedied, as the mechanical department of the railway has been removed from Rivers to the new shops at Transcona, near Winnipeg, which were described in Canadian Railway and Marine World for Feb., 1912.

The machine shop of the Rivers plant occupies the divisional machine and blacksmith shop space, crowding out all other departments. The blacksmith shop is housed in a temporary building alongside, of frame construction of the lightest and cheapest type compatible with accommodating the work with a fair degree of efficiency. As a result the interior arrangement is very cramped, requiring many makeshifts.

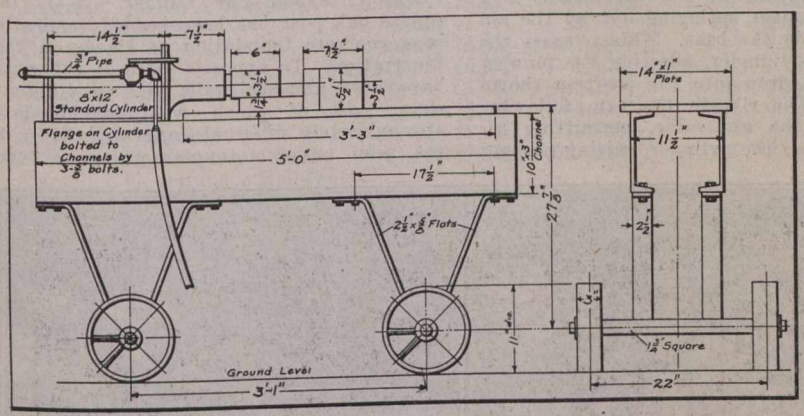

Fig. 1.—Portable Air Press for Light Bulldozer Work.

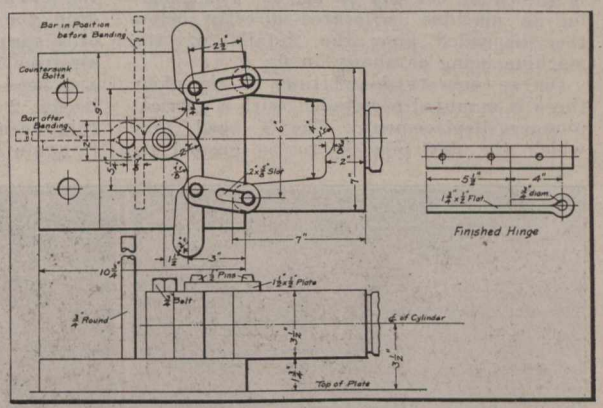

Fig. 2.—Hinge Forming Blocks for Dump Car Aprons.

Figs. 2, 3 and 4 show die blocks used in conjunction with the air press. Those in fig. 2 are for making hinges for Hart dump car aprons, the finished hinge being as shown on the right of the blocks. The stationary part of the mechanism is a cast iron block, in the centre of which is a vertical pin, the diameter of the hinge end loop. This stationary block is secured to the plate of the air press by two countersunk bolts. The movable block is of the collapsible type, comprising several parts that close together over the stock being worked. Two formed arms are pinned to the top of the stationary block, directly to the rear of the vertical pin in that block, with just sufficient intervening space to accommodate the stock when in position for bending. Two slotted links connect these arms to the body of the movable block, and as the latter moves forward, the pinned arms are forced in a circular direction, closing the stock around the vertical pin, completing the job in a single stroke.

Other forging jobs require more than one operation, as for example, the blocks for making hinges for end sill aprons on Hart box cars, as shown in fig. 3. The two operations are performed in the same blocks by moving from one position to another. The stationary block has a cutout in line with the direction of motion of the movable block, a tilt on the latter entering therein with the necessary stock clearance. The stock placed across the face of the stationary die is formed into a deep U, the diameter of which is slightly greater than that of the finished hinge pin. The U bent stock is then placed over a vertical pin in the stationary block, and the short end of the U flattened down on the other arm by properly formed recesses in the two blocks.

The operation of the blocks shown in fig. 4 is somewhat similar to the last example. The articles being made are corner brackets for box cars, and require two operations, both in the same pair of blocks. The bar stock, placed across the face of the movable die, is forced into a cutout in the latter by a correspondingly shaped triangular tit, leaving the bar with an initial double bend, approximately 90 and 180 degrees, with regard to the unbent end of the stock. This end is then placed in a groove in the movable block, and coming in contact with the face of the stationary block, becomes flattened to its final shape.

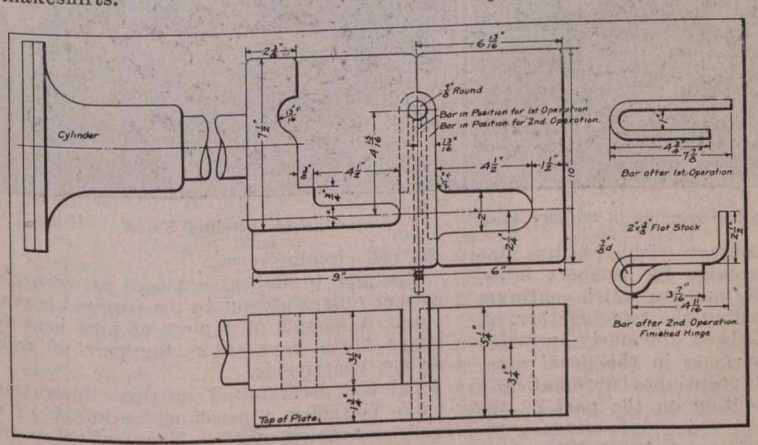

Fig. 3.—Hinge Forming Blocks for End Sill Aprons.

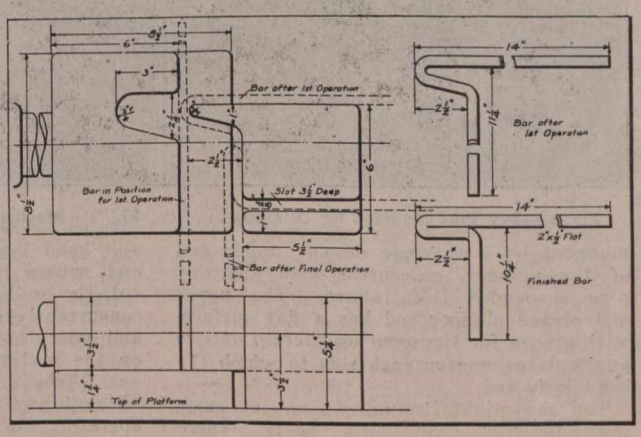

Fig. 4.—Box Car Corner Bracket Forming Blocks.

It was in consequence of this crowded condition that when it became necessary to build an air press as a substitute for a larger bulldozer, it was decided to make it portable, resulting in the press illustrated in fig. 1, which shows it mounted on a type of track. On two 5 ft. lengths of 10 x 3 in. channels is mounted a standard 8 x 12 in. air cylinder, bolted by its flanges to the flanges of the channels. On the other end of the channels is secured a flat plate, on the top of which are mounted the forging and bending dies or blocks. The air plunger is the actuating medium, controlled by a handle on the side of the

The Cost of Freight Car Maintenance on steam railways in the United States was reported at a meeting of the American Railway Association recently to have been 24.75 cents a car per day during 1911. This was divided between repairs, replacements and taxes, repairs costing 16.87c., replacements, including the charges which were made to renewals and depreciation, 6.78c., and taxes 1.10c.