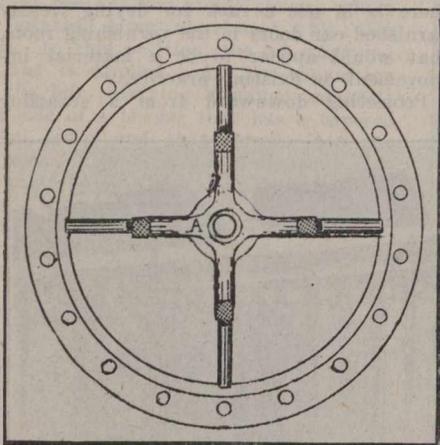


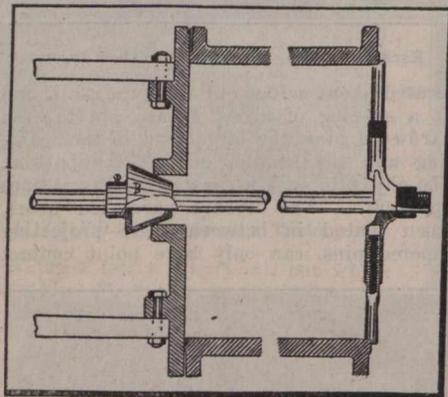
Setting Guides and Crossheads at the C.P.R. Montreal Shops.

The accompanying plans show a home made device for quick use in setting locomotive crosshead guide bars. A is the centre expander adjusted in the cylinder centre in the front end of cylinder, and can be readily proved to be in the centre by calipers or otherwise. B shows a tapering attachment, or cone, pressed as far as possible in the stuffing box in back end of



Cylinder Centring Device.

cylinder. If the stuffing box is clean the cone is unerring in regard to the exact central position, and no time need be spent in further proof of the exact central location of the extending shaft. As is well known, a string is not only difficult of adjustment, but its flexibility is an abiding drawback to its reliability. With the device described, the best results may be obtained both in the perpendicular and horizontal adjustment of the guide bars. The dimensions of the parts of the device, of course, may be such as are readily adaptable to the



Centre Expander in Cylinder.

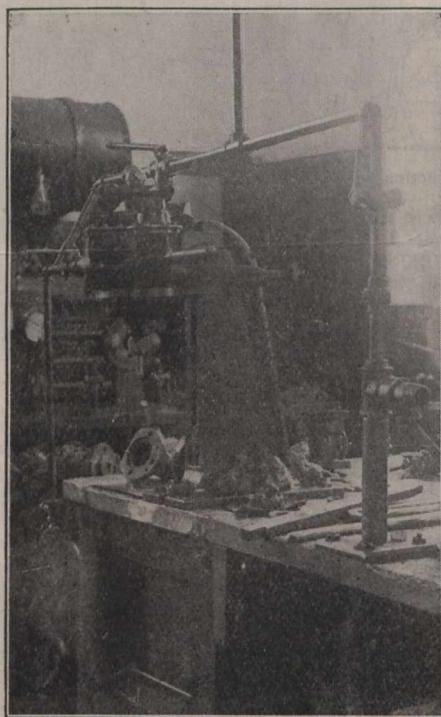
sizes of the cylinders, but adjustable threaded ends on the front end appliance may readily give a range varying in several inches of diameters of cylinders.—J. G. Koppell, in *Railway and Locomotive Engineering*.

Reward for Automatic Train Stop.—A reward of \$10,000 has been offered by the New York, New Haven & Hartford Rd., to the first inventor of "an automatic device that will safely arrest an express steam locomotive that has passed danger signals; the test of efficiency to be its adoption within 1913, 1914 or 1915, by the New Haven, the New York Central, or the Pennsylvania lines, and its approval or recommendation by the Interstate Commerce Commissioners."

Grinding in Air Brake Valve Seats at Grand Trunk Railway London Shops.

The accompanying illustration shows a simple outfit for grinding air brake valve seats, a method employed in the air brake department of the G.T.R. car shops at London, Ont. On the end of one of the benches there is rigged up a vertical support to which is attached an air motor, the spindle of which is fitted to carry the valve that is to be ground to the valve seat. The casting containing the valve seat is held under the revolving spindle by the operator, who moves it up to and away from the valve intermittently, to grind a good seat. Only the smaller valves are ground in, in this manner, a larger machine, specially designed, being employed for the larger sizes.

The air connection comes from the pipe above, and along the horizontal piping over the top of the motor, entering through the handle from the left. The twisting handle valve is not employed, as it has been found



Stand for Grinding in Air Brake Valve Seats.

to close from the vibration of the machine when the operator is attending to the grinding. This valve is blocked open, and an air cock introduced, to be opened and closed without trouble from shifting.

The pipe in the right foreground has a short connection near the level of the table for the testing of angle cocks for leakage, etc. On the other side of the table, in the left background, the pipe terminates in a small pet cock, used for cleaning dirty valves, etc., by blowing a blast of air through.

Station and Other Buildings on the National Transcontinental Railway.

Contracts were let by the National Transcontinental Railway Commission during the past year, for the building of 59 station buildings of design A; three stations of design D; four ice houses, four store houses, three freight houses, three trainmen's houses, 59 tool houses, no 1; four tool houses, no. 2, and 59 coal boxes. The location of these several buildings is as follows:—

Section 13, district A.—Ice house, store house, no. 1 tool house. Sec. 14, district B.—11 design A station, 10 of which are to be

fitted for bunks; 11 no. 1 tool houses and 11 coal boxes. Sec. 15, district B.—5 design A stations fitted for bunks; 1 design B station; ice house, store house, freight house, trainmen's house, 5 no. 1 tool houses and 5 coal boxes. Sec. 16, district D.—10 design A station fitted with bunks, 10 no. 1 tool houses and 10 coal boxes. Sec. 17, district E.—25 design A stations, 18 to be fitted with bunks; 2 design A stations, two ice houses, two storehouses, two freight houses, two trainmen's houses, 27 no. 1 tool houses, 2 no. 2 tool houses, and 25 coal boxes. Sec. 18, district F.—8 design A stations, 6 being fitted for bunks; 5 no. 1 tool houses, 2 no. 2 tool houses, and 8 coal boxes.

Following are some details of each of these buildings:—

DESIGN A STATION BUILDING.—This is a 1½ story frame building, on concrete foundations, and without cellar, 51½ by 16 ft. outside dimensions, with a kitchen to the rear, 14½ by 12 ft. On the ground floor of the main building are:—waiting room, office, living room, agent's bedroom, and baggage room. This latter is in some cases to be used as a bunk room. The upper floor has three bedrooms, reached by a stairway from the kitchen. Stoves are used for heating.

DESIGN D STATION BUILDING.—This building is used only at divisional points, and is a full two story frame building 130½ by 30 ft., on concrete foundations, and with concrete cellar. On the ground floor are:—lunch room and kitchen, general waiting room, women's waiting room, office, conductors' and trainmen's room, baggage room and lavatories. On the upper floor are 10 office rooms and toilet room. The building is heated by steam, lighted by electricity, and finished inside with plastered wall and hardwood trim in natural wood finish.

ICE HOUSE.—This is of wood, resting on sills and having double walls, the spaces being filled with sawdust. Dimensions, 59 by 24 ft. outside measurements. Capacity, 600 tons.

STORE HOUSE.—This is a one story brick building with concrete foundations and basement, and concrete oil storage room at the end. The dimensions over all are 74½ ft. by 20 ft. 2 in., the oil storage having accommodation for 10 oil tanks. The store house proper has a tar and gravel roof, and the oil storage a concrete roof. The building is fitted with steam heating and electric light.

FREIGHT HOUSE.—A one story frame building supported on piles, dimensions 60 by 28 ft., and consisting of an office, perishable freight room and freight storage room. The roof is of tar and gravel; the outside walls are battened, and the freight room walls are covered inside to a height of 5 ft. with 1½ in. plank. It is electrically lighted, and heated by stoves, storage for coal being provided in a bin underneath.

TRAINMEN'S HOUSE.—This is a two story frame building, 37 ft. 4 in. by 39 ft. outside dimensions, on concrete foundations, with concrete basement, and tar and gravel roof. The basement contains furnace room, for heating the building, wash rooms, lavatories and dressing room, fitted with shower baths and basins with hot and cold water attachments. On the ground floor is a recreation room, a living room and two bedrooms, while on the upper floor are 20 bunk rooms with lavatories and closets. There is a two story verandah at the front, supported on concrete piers and roofed over.

TOOL HOUSES.—These consist of frame buildings supported on pile heads, no. 1 being 12 by 10 ft.; and no. 2, 12 by 25 ft.

COAL BOX.—This is of 2 in. plank, and has a capacity of 10 tons. Its dimensions are 14 ft. by 7 ft. by 6 ft.