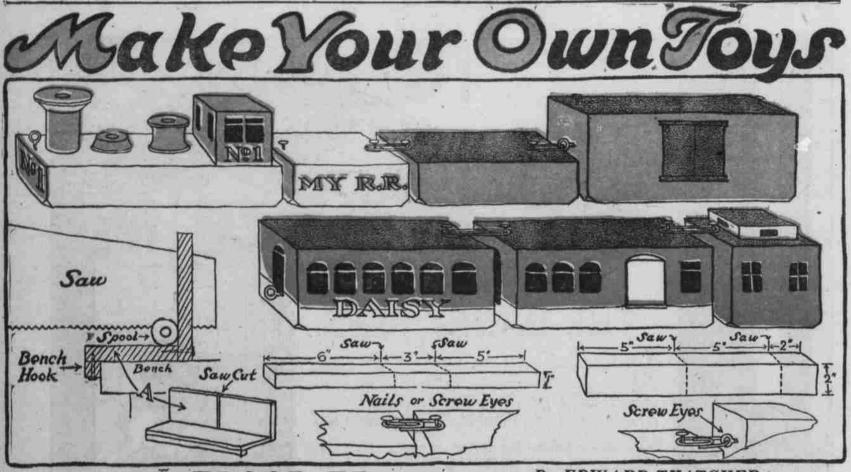
## INVISIBLE COLOR BOOK

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## **By EDWARD THATCHER** OR 1

T HIS train has no wheels. Why? Because it is a floor train and doesn't need any, you see. A train of this kind is very easy to make and with a lively "conductor" at one end of the pull string and the engine at the other end, the train may be made to travel over the floor at a great rate. The engine and the cars may be coupled and uncoupled just like the real ones and all sorts of trains made up by the young trainman.

and all sorts of trains made up by the young trainman. Some blocks of wood, spools, tacks, screw-eyes and paper-fasteners are] all the materials you will need to make this train of cars, The "boiler" of the engine, the tender and the flat cars are made of blocks of wood 1 inch thick and 2 inches wide. The different lengths are shown in the drawing. The freight car, the "Pullman," the baggage car and the caboose are all made of blocks of wood 2 inches thick and 2 inches wide. A small block of wood 34 inch thick and 1 inch square is nailed to the top of the caboose as a lookout.

The ends of wooden packing boxes are usually made of boards 1 inch thick and this wood may be used to make the boiler, etc. If you have no wood 2 inches thick you may nail two 1-inch blocks together to make the "Pullman" and the other large cars.

The smokestack for the engine is made of a fairly large spool. One end of this spool is sawed off and nailed to the boiler as a sand box. The steamdome is made of a small flat spool as shown. You will find that the holes thru the center of the spools are about as large in diameter as the heads of the nails which may be used to nail them to the boiler. Cut out

(Formerly Instructor at Teachers' College, Columbia University, New York.) three round pieces of heavy cardboard; each piece should be about  $\frac{1}{2}$  inch in diameter. The nails should be driven thru the center of these pasteboard disks and then thru the holes in the spools and into the boiler.

The cab is made of a block of wood 1 inch square and 2 inches long.

This is nailed to one end of the boiler as shown.

A bench hook is shown in the drawing, A. This is a sort of miter-box with only one side. It is quite easy to make one of these handy little devices, which will enable you to hold the blocks and spools securely while you are sawing them. To make the bench hook two pieces of wood about 1 inch thick, 4 inches wide and 8 inches long are nailed together at a right angle as shown. A small strip of wood is then nailed along under the front edge. as shown. A small strip of wood is then named along under the front edge. This small strip is pushed up against the edge of the bench when the bench hook is used to hold the work while sawing it. A saw cut is made in the upright part of the bench hook as shown. This cut should be straight up and down—at right angles to the bottom board. A steel square should be used to mark this line before sawing it. When you wish to saw a spool or a block it is rested in the angle of the bench hook as shown. Hold the piece firmly in place with one hand and use the saw with the other.

The couplings are very simple. They are made of the wire paper fasten-ers, which look like chain links, and you may buy a whole box of them for 10 cents. The coupling pins are made of tacks or small screw-eyes as shown. The screw-eyes make the safest coupling for the very young trainman, as there are no sharp edges.

