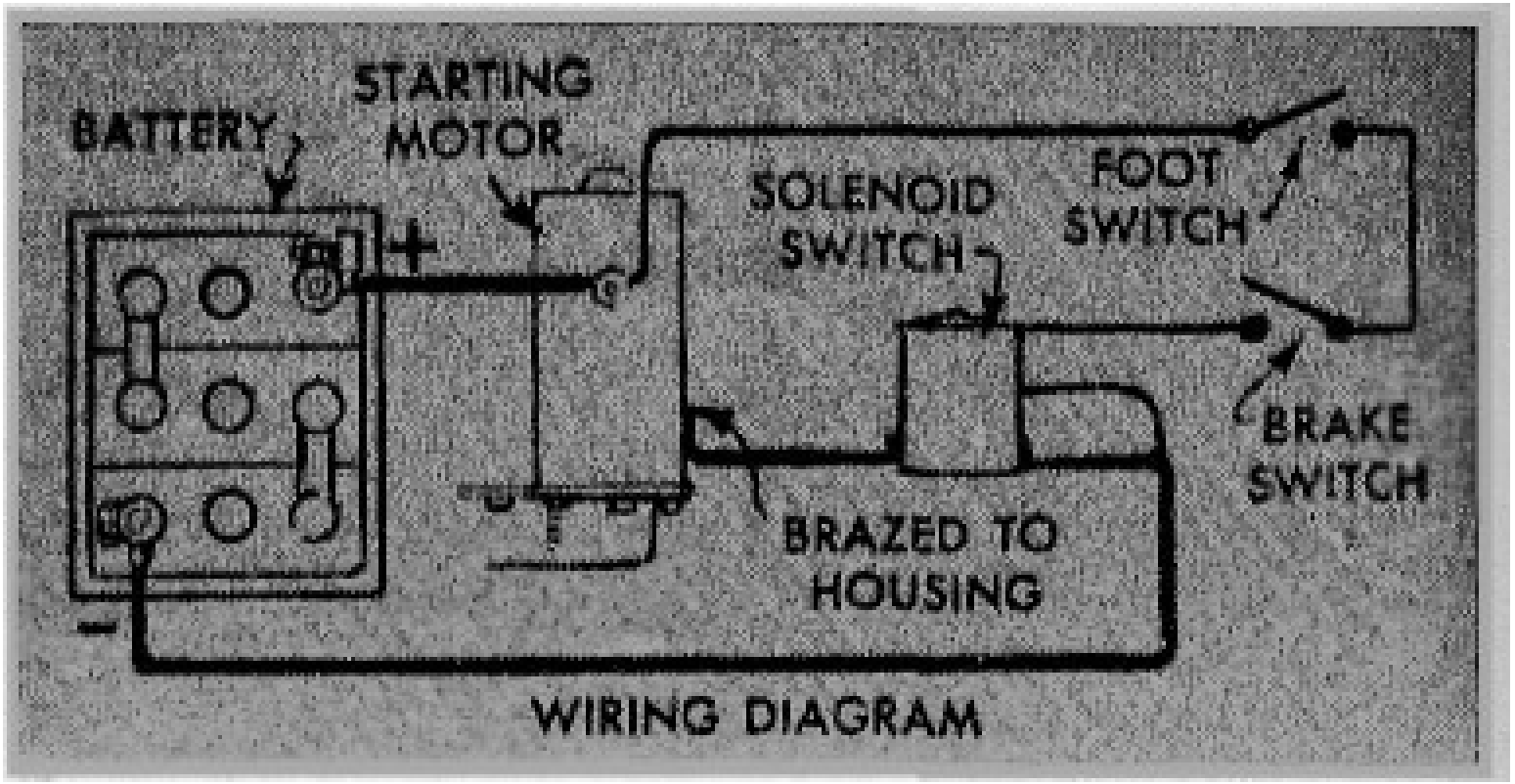
SIDEWALK PLAY CAR

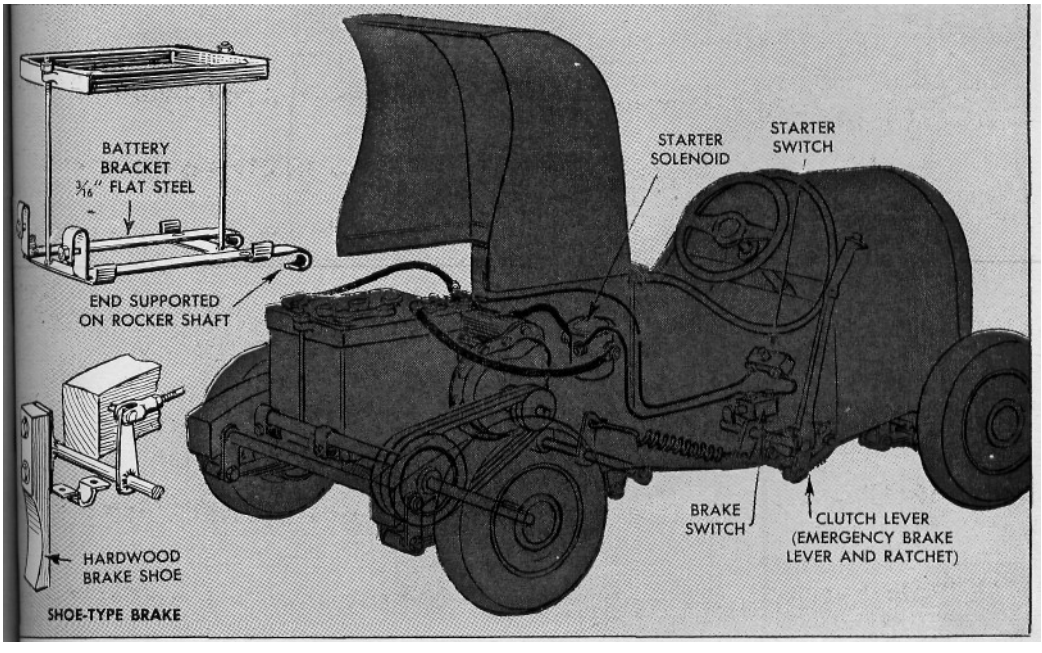
has electric drive

By Elmer V. Clark

LIVELY youngsters and craftsman fathers alike will get a thrill out of this tiny play car, which looks and drives like a real automobile except that it's scaled down to sidewalk-coaster size and travels at slow, safe speeds. It's driven by an auto starter motor of the type having a built-in reduction gear and is fitted with a foot brake, lever-operated clutch, pneumatic tires and a conventional steering gear. As pictured above, the original car measures 58 in. overall length, with a 42-in. wheelbase and 20-in. tread, but allowable variations in dimensions and the necessity of adapting certain parts according to availability, may change these dimensions slightly. For these reasons certain dimensions have been purposely omitted and adaptation or substitution of parts has been left to the discretion of the builder. An example is the length and type of the springs specified in the construction details. Obviously, these can be longer, or even slightly shorter than the lengths given. The side frames are of 2 x 2-in. oak and, in order to avoid waste in forming the curved ends, or lifts, the members are built up to the rough shape by gluing together strips of ¾-in. stock. Before gluing the strips together, be sure that there is ample allowance for bandsawing the curved sections at both ends of each piece. Use waterproof glue in the joints. After the glue is dry, bandsaw the curved ends and plane and sand the parts to the finished size. Apply a coat of shellac to prevent absorption of moisture. The side frames are joined near the ends with long studs, or draw bolts, and pipe spacers as shown on the blueprint on a following page. Note that the front and rear-spring shackles are mounted on the draw bolts and that these must be left loose so that the shackles can move freely. Note also that the brake pedal is pivoted on the same draw bolt as the front-spring shackles. In this case two spacers are used to serve only as collars to position the pedal. Exact sizes of the draw bolts and spacers are not important.

Note especially the construction and


BATTERY
STARTING MOTOR
SOLENOID SWITCH
FOOT SWITCH
BRAKE SWITCH
BRAZED TO HOUSING
+
-
WIRING DIAGRAM



mounting of the front and rear axles on the springs. The front axle is fitted with drilled pads to which the underslung springs are bolted, but at the rear it will be noted that the axle bearings serve as spring pads. Shims of 1/8-in. flat steel are placed between the spring and the bearings, one shim being longer and having a drilled lug welded near the forward end to provide a bearing for the brake shaft when the band-type brake is used. When the shoe-type brake, shown in the detail above, is used, the brake-shaft bearing is attached to the car frame.

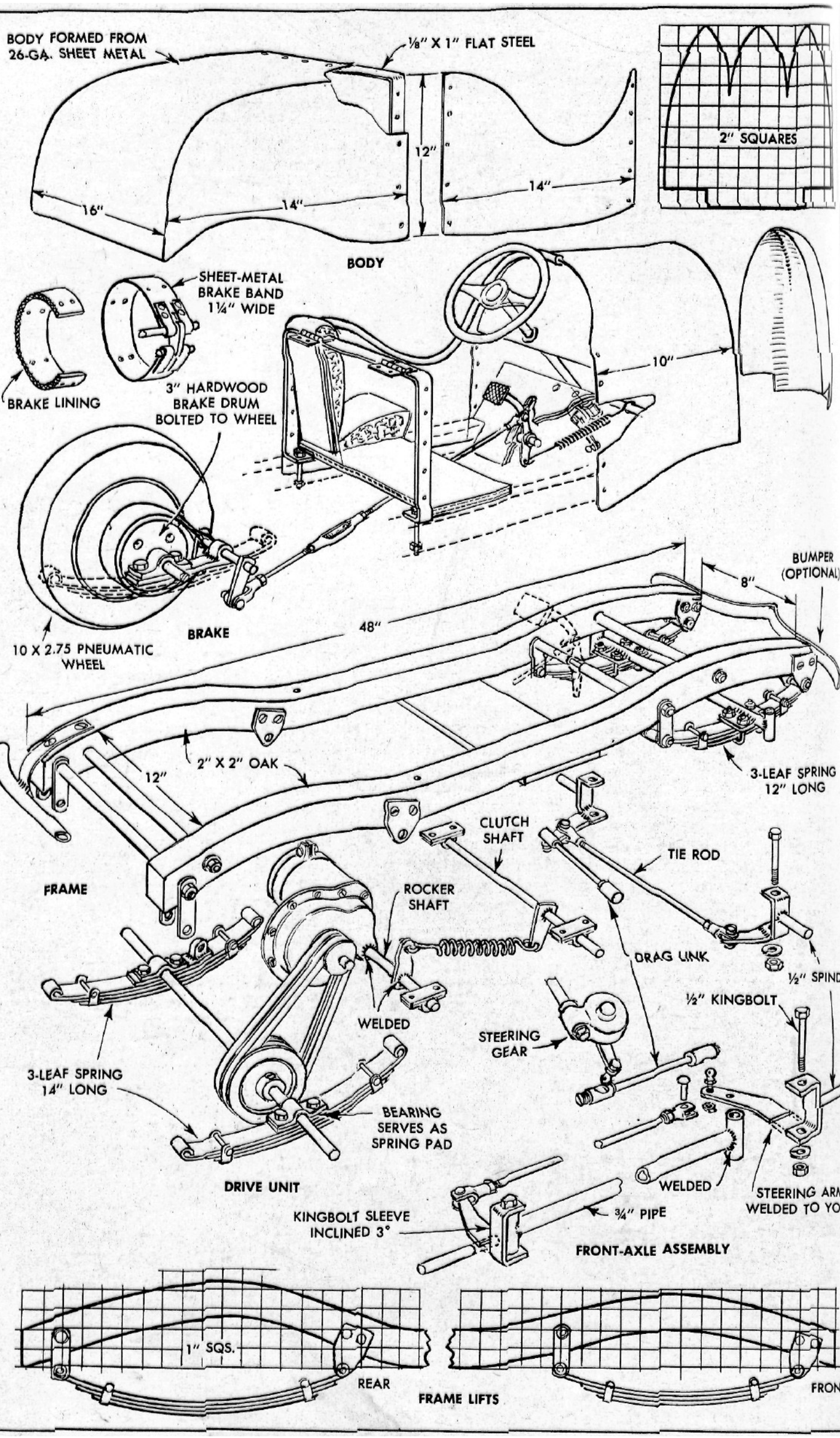
The front axle is of the conventional auto-type construction, the principal parts being made from pipe and flat steel, bent, welded and bolted together as in the blueprint. The drag link and tie rod can be taken from Ford Model-A steering linkage. Crosley or American Austin parts may be substituted. Rods with ball joints also can be improvised. A Crosley or Austin steering gear can be used, the gear being mounted on a bracket under the hood. The steering shaft is approximately 22 in. long and ½ in. in diameter and is mounted on a generator bearing at the top end. The lower end of the shaft is fitted into an adapter sleeve, the size and length of the sleeve depending on the type of steering gear used. The steering wheel is 8 in. in diameter, the original being taken from a discarded toy.

Although details on the blueprint show the starter motor welded to a rocker shaft, which passes through a hole drilled in the flange of the reduction-gear housing to which it is welded, for best results weld a bracket to the gear housing and then weld

the free end of the bracket to the rocker shaft. This construction will give a somewhat better clutch action when tightening and slackening the double V-belts with the clutch lever. The rocker shaft turns in bearings bolted to the side frames. The clutch shaft, with its tension spring, is mounted in the same manner. Use a 2-in. V-pulley on the reduction gear and a 5-in. pulley on the rear axle. Although double V-pulleys are shown, single-groove pulleys will serve the purpose quite satisfactorily. Only the right-rear ground wheel is fixed on the axle and serves as a driver. The left rear wheel turns free. This arrangement gives the necessary differential when turning.

Details on pages 174 and 175 give the wiring diagram, construction of the battery bracket and the position of the controls. Note the arrangement of the brake switch and how it works in the motor circuit. When it is desired to stop, the clutch lever is pushed forward and the brake pedal depressed. A small lug welded to the inner end of the clutch-lever shaft opens the brake switch and stops the starter motor. The motor cannot be started until the clutch lever is pulled part way back. This arrangement prevents undue idling of the starter motor. With the pulley sizes given and with the gear ratios of the average reduction-gear starter motor, the car travels at a speed of approximately five miles per hour. A 6-volt, 130-amp. battery will give about eight hours of service on one charge.

Construction of the sheet-metal body is quite simple. It is made in three sections which consist of the hinged rear deck, the driver's compartment and the hood, which includes the separate false grille. The pattern for the grille is first laid out on 2-in. squares and then cut to the form shown, before bending and soldering. Sides of the cockpit and the hood are attached to the side frames with screws uniformly spaced. The seat bottom, floor boards and dash are cut from ½-in. plywood. The seat can be upholstered if desired. Bumpers, dummy lights and other fittings are optional with the builder.


BODY FORMED FROM 26-GA. SHEET METAL
⅛" X 1" FLAT STEEL
2" SQUARES
12"
16"
14"
14"
BODY
SHEET-METAL BRAKE BAND 1¼" WIDE
BRAKE LINING
3" HARDWOOD BRAKE DRUM BOLTED TO WHEEL
10"
BRAKE
10 X 2.75 PNEUMATIC WHEEL
BUMPER (OPTIONAL)
8"
48"
2" X 2" OAK
12"
3-LEAF SPRING 12" LONG
FRAME
CLUTCH SHAFT
TIE ROD
ROCKER SHAFT
DRAG LINK
½" SPINDLE
½" KINGBOLT
WELDED
STEERING GEAR
3-LEAF SPRING 14" LONG
BEARING SERVES AS SPRING PAD
DRIVE UNIT
WELDED
STEERING ARM WELDED TO YOKE
KINGBOLT SLEEVE INCLINED 3°
¾" PIPE
FRONT-AXLE ASSEMBLY
1" SQS.
REAR
FRONT
FRAME LIFTS