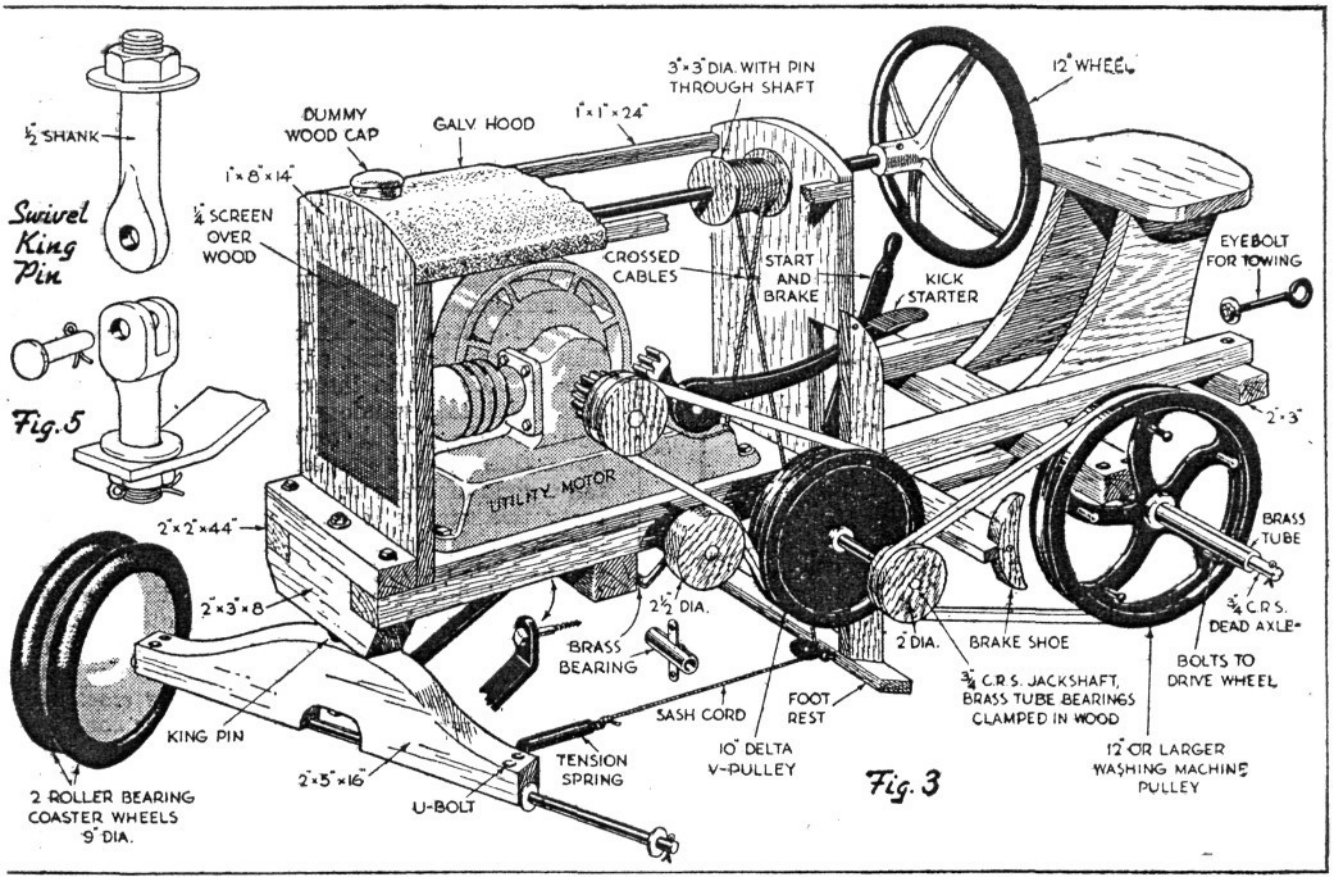


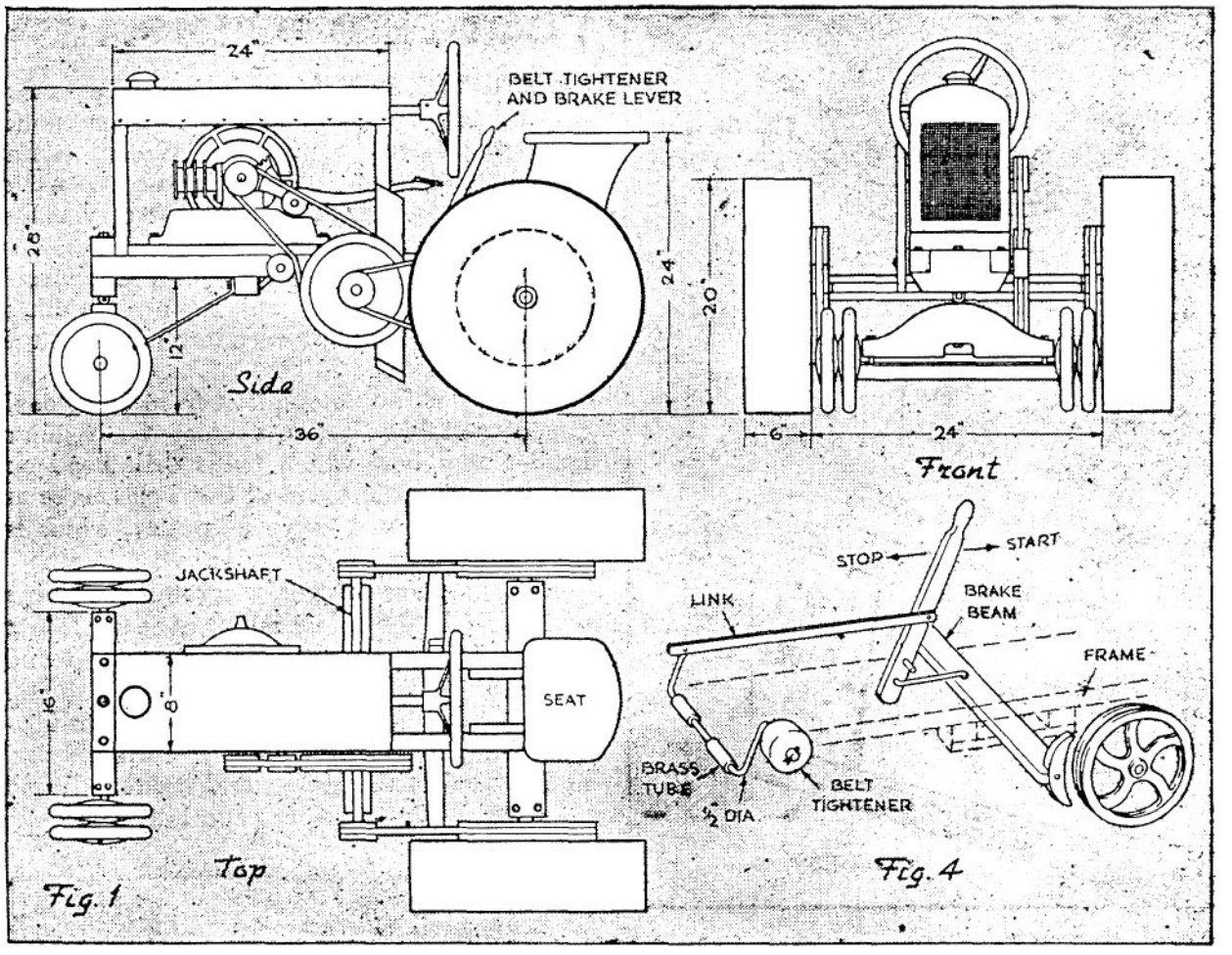
BABY TRACTOR For Odd Jobs

By no means a mere toy, this little tractor has ample power and maneuverability to perform all sorts of light tasks.

ANY small gasoline engine geared low enough will develop considerable pull in this junior tractor and a handy boy not only should have a lot of fun with it, but may be able to pick up various odd jobs of hauling and towing in the neighborhood. It can be used to pull small loads of dirt, gravel or rubbish, or tow two or three coaster wagons full of youngsters. It is geared to travel as fast as a brisk walk and is designed to run over rough or soft ground as well as on the sidewalk.

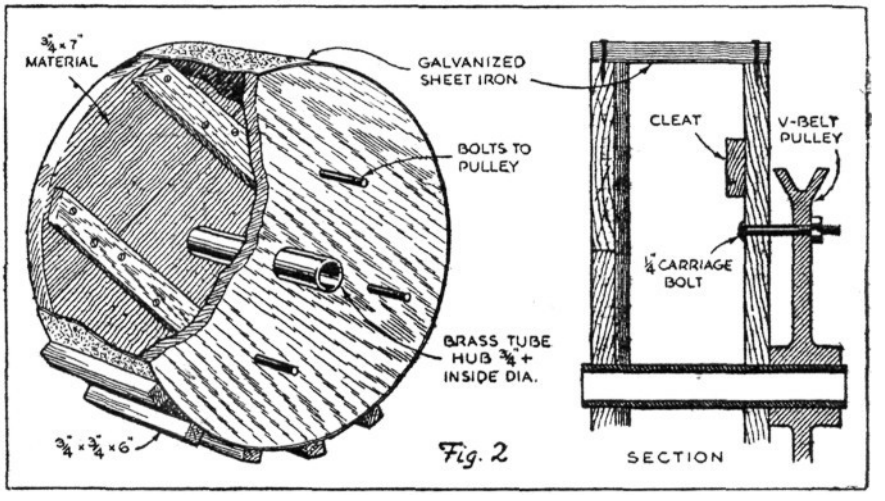
Its lines are similar to those of a full-size job, as seen in Fig. 1; its wide tread prevents tipping over on the side of a hill and it has a very short turning radius for work in close quarters. The large drive wheels are very simply made. Two 20-in. disks are built up of 3/4-in. x 7-in. boards cleated on the inside, as shown in Fig. 2. The tire is a 6-in. wide strip of heavy galvanized sheet iron with cross treads nailed over it. A section of brass tube serves as a hub. The wheel turns on a 3/4-in. cold-rolled steel axle. It is highly important that the hub, which is driven in to a tight fit, be accurately centered and true in the wood disks. The driving load is carried by carriage bolts through V-pulley and one side of the wheel.

Make the chassis frame of parallel two-by-two's (net) with cross pieces as indicated in Fig. 3. The hood may need to be altered from dimensions given here if a larger engine is used. The dummy radiator is merely a 1-in. board cut as shown with heavy screen nailed over it. The "instrument board" is merely a duplicate of the radiator. These two ends of the engine compartment are tied together with strips on the sides, as shown, and covered with galvanized sheet iron. Use an old steering wheel from a sidewalk auto. The wheel should be fairly small. A length of 3/4-in. galvanized pipe makes a good steering shaft, and the spool is 3-in. x 3-in. wood. The cables must be crossed in order to steer the same as an auto. A coil tension spring keeps the cable taut.



The rear axle is clamped to the two-by-three cross members by means of U-bolts, as is the front axle to its two-by-five inch member. The 3/4-in. steel jackshaft is carried in brass-tube bearings clamped to the frame with wood blocks as shown.

Small pulleys on the ends of the jackshaft carry belts to the drive wheels, and as these belts are not adjusted too tightly, they allow slippage in turning corners, thus serving as a differential. In this connection the writer has found by experience that a good V-belt is very accomodating in this way; it will slip if the load becomes excessive but pulls like fury when not overtaxed. A 10-in. (Delta) V-pulley is driven direct by the engine pulley. The V-belt between the two is adjusted loosely enough to permit the motor to run free. An idler pulley serves as belt tightener and when thrown in position the tractor starts in motion.



The diagram, Fig. 4, illustrates operation. When the lever is forward the idler pulley is free and the brake shoes engage with the rear drive-pulleys. Drawing the lever back brings the idler-pulley against the engine ,belt and tightens it. Note that the idler should be swung on an arm about 3-in. long, and so installed that when engaged the arm is past center and is automatically held in this position until released by the operator.

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which—if delivered at ten-pound pressure through a 12-inch pipe—would stretch all the way to the moon and two-thirds of the way back again. The statistically-minded will agree that that's more than just a lot of hot air.

If you joined a party of tourists and went looking for the New York Steam Corporation's plant, the chances are you'd be disappointed. It isn't distinguished by a maze of pipes, boilers and retorts; if it weren't for four large smokestacks, you'd probably miss the plant completely, since more than half of its total assets lie buried beneath the city's streets and sidewalks.

This is the beauty of a central steam plant, as the founders of the New York company realized almost sixty years ago. Coal is delivered to the plant in barges, thus eliminating the rumbling of coal trucks through the city streets, and, by being able te press a button to get his heat or cut it off, Mr. Citizen does his part to do away with ash removal trucks and the soot that is the scourge of most big cities.

But, even though it is the centralized core of a $10,000,000 enterprise, the company's plant is not the roaring maelstrom one might expect it to be. Only about 1,800 men—including executives and office staff, distribution gangs and the plant force—are required to run this gigantic organization, with less than 300 needed at the plant itself to manipulate the levers, buttons and switches that keep the wheels turning.

Probably no business in the world is as dependent on buttons as the New York steam plant. Virtually everything is done with buttons; one button starts the scoops that grab up the coal from barges and dump it into the crushers; another starts the machinery which pulverizes it into black dust at the rate of 160 tons an hour; another sets the furnaces into roaring action, and

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Baby Tractor For Odd Jobs

[Continued jrom page 117]

The job can be greatly simplified because the belt tightener and brake are not absolutely necessary. The slow speed of the tractor does not involve any hazards, especially if the engine belt is always tight, for by shutting off the ignition the motor itself serves as a brake. In starting, the operator simply works the kick-starter with one hand and pushes the light vehicle forward with the other until it takes hold, after which he can easily hop aboard.

If one wishes to work over uneven ground the chassis can be made flexible by the use of a swivelled king bolt, Fig. 5. This, however, is a blacksmith's job if you haven't the proper equipment to make it yourself. A brace should be installed as in Fig. 4. In case of a swivelled king bolt this brace must also be swivelled at the top connection.

For greater power use as large pulleys as are available on the drive wheels, and as small as possible for those driving them.

Power Tool Bracket

[Continued jrom page 123]

socket for the post from thicker wood and after removing sharp corners with sandpaper, screw it to the edge of the workbench. The post may be stored on a shelf when not required, as it can be slipped into the socket in an instant. Provide a padlock for the hasp so that you may lock the hand piece and prevent use of the tool in your absence. By using a clip and hasp of suitable size and shape, this bracket is easily adapted for use with other types of flexible-shaft tools.