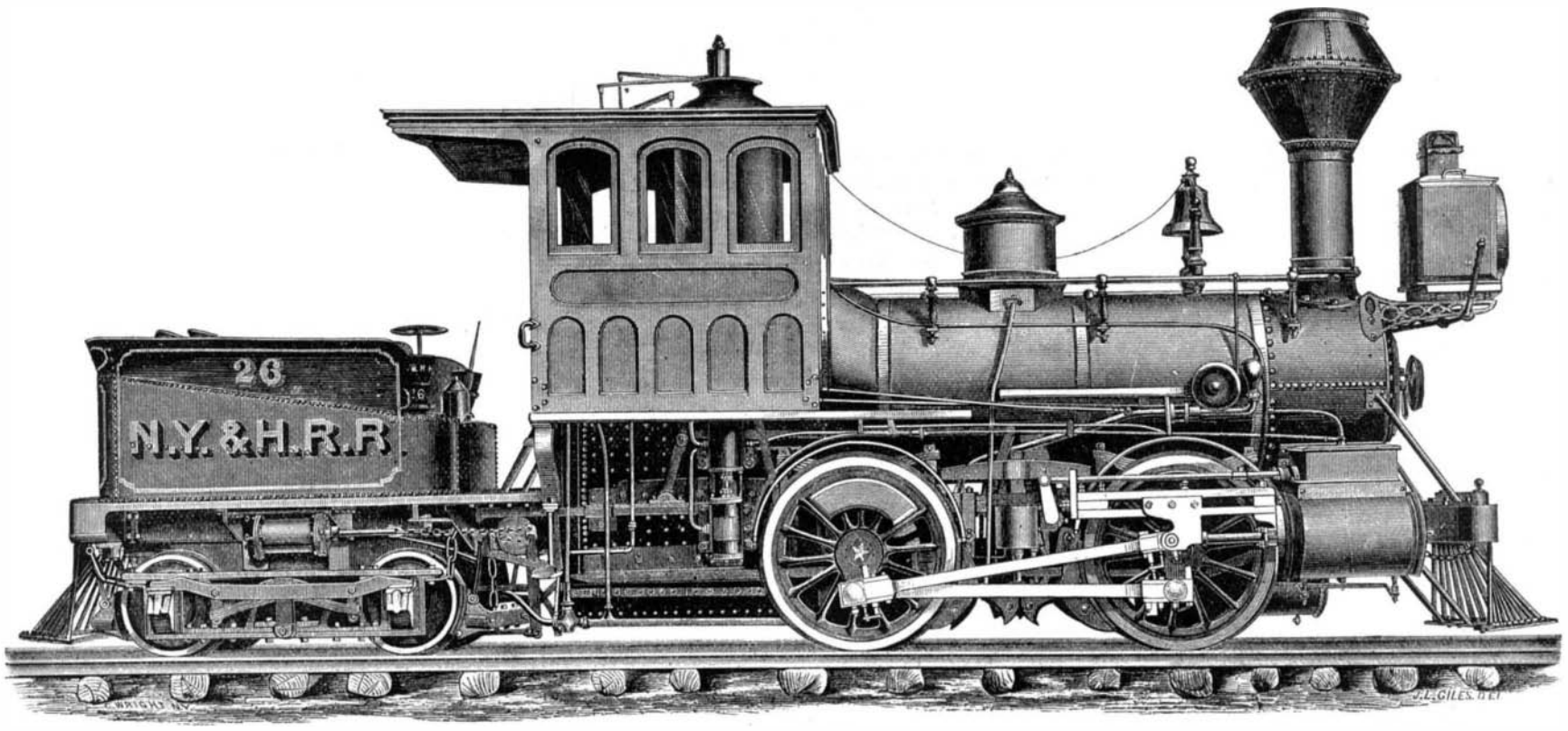
RAPID TRANSIT LOCOMOTIVE.

We give a plate representing one of the three new tank engines built for the New York and Harlem Railroad, by the Schenectady Locomotive Works. They are intended to run local trains between the Grand Central Depot, 42d street, New York, and Williamsbridge, a distance of eleven miles, including that portion of the Underground Railway on Fourth avenue, between Grand Central Depot, 42d street, and Harlem river. These trains are at times very heavy, owing to excursions, races, etc.: and as the stopping places are very close together, very powerful engines are required for the service. Their general plan will be recognized as that which has long been advocated by Mr. M. N. Forney. The frames which extend back of the fire box are continuous, although they do not appear so on the engraving. The Westinghouse brake has been applied to the truck and also to the driving wheels. Owing to the great weight on the latter, and the power which the brake exerts on them and also on the truck, the engine can be stopped very quickly; and as there is plenty of adhesion, it can be started without much danger of slipping. The following are the principal dimensions: Gage of road, 4 feet 8½ inches; total wheel base, 20 feet 11 inches; distance between centers of front and back driving wheels, 6 feet 8 inches; total weight of locomotive in working order, 72,000 lbs.; total weight on driving wheels, 49,500 lbs.; diameter of driving wheels, 48 inches; diameter of truck wheels, 26 inches; diameter of cylinders, 15 inches; stroke of cylinders, 20 inches; outside diameter of smallest boiler ring, 44¼ inches; size of grate, 35x53 inches; number of tubes, 144: diameter of tubes, 2 inches; length of tubes, 9 feet 6½ inches; square feet of grate surface, 12·88190; square feet of heating surface in fire box, 81; square feet of heating surface in tubes, 710·4; total feet of heating surface, 804·28; exhaust nozzles, double; diameter of nozzle, 2½ inches; size of steam ports, 1x13 inches; size of exhaust ports, 2¼ x13 inches; throw of eccentrics, 4½ inches; outside lap of valve, ⅞ inch; inside lap of valve, $_{16}^{1}$ inch; size of main driving axle journal, 6½x8 inches; size of other driving axle journal, 6½x8 inches; size of truck axle journal, 3¾x6 inches; diameter of pump plunger, 4¼ inches; stroke of pump plunger, 3½ inches; capacity of tank, 1,200 gallons.—*Railroad Gazette.*



RAPID TRANSIT LOCOMOTIVE, UNDERGROUND RAILWAY, NEW YORK CITY.

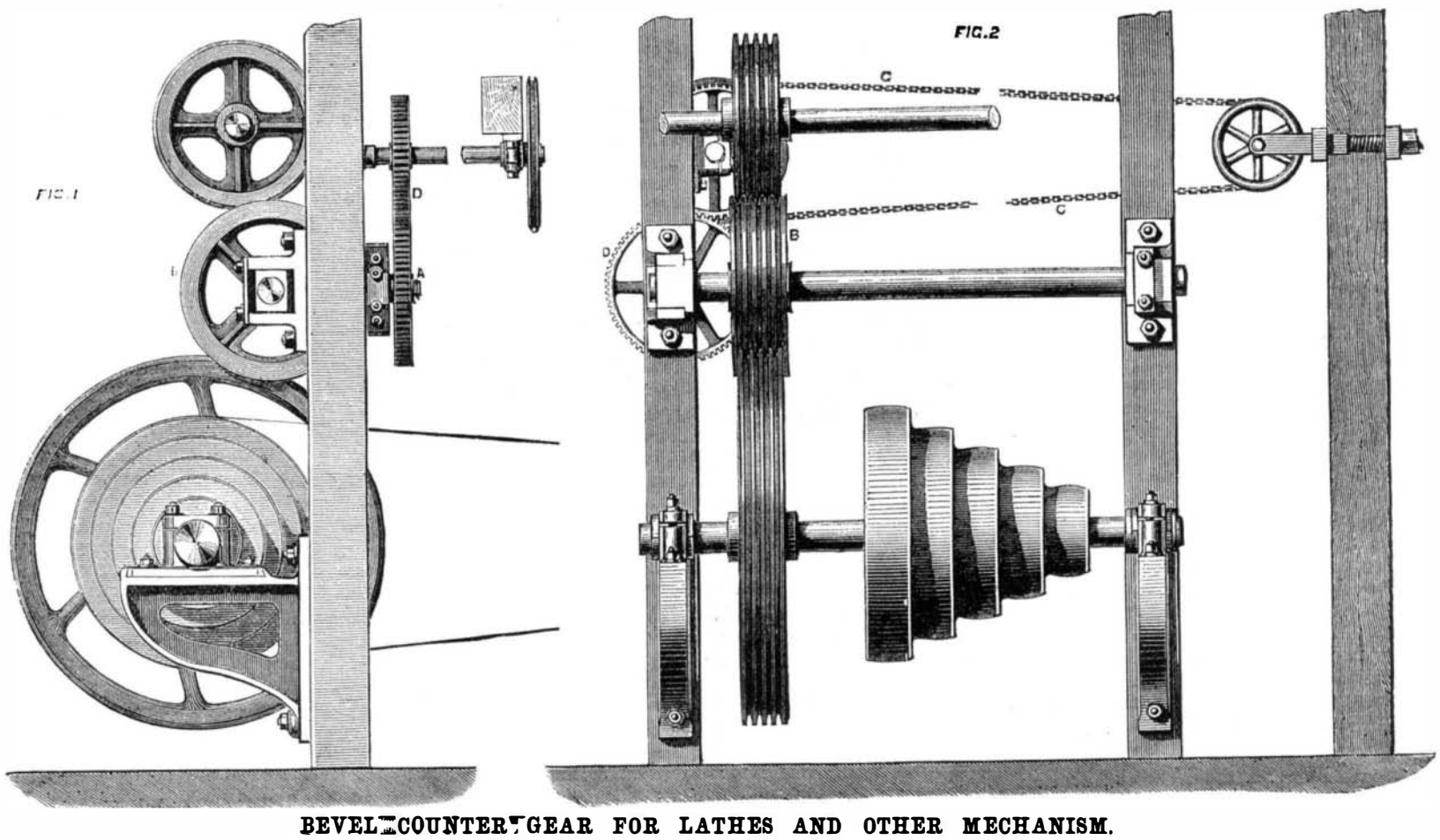
Common Sense Chairs.

For several months we have had in use sundry examples of the "Common Sense" chairs, as made by Mr. F. A. Sinclair, of the Union Chair Works, Mottville, N. Y., and we are therefore enabled to speak from experience concerning their merits. As to comfort, they compare favorably with the most expensively upholstered or stuffed chairs, and are superior to the latter in durability of materials and economy of price. The "Common Sense" chair is made wholly of wood, with elastic wood woven backs and seats. Mr. Sinclair has evidently discovered the art of physiologically forming and proportioning the parts of the chair so as to secure the greatest amount of ease.

Furthermore, his flourishing establishment is an example of what may be achieved by intelligent effort and persevering industry. From a small beginning, with his own labor, his works have grown until now he employs twenty-five men, aided by improved machinery. The best ornamental woods are used, which are kiln-dried, worked, and joined in the most substantial manner. His illustrated catalogue shows several varieties of chairs, with the prices, which are quite moderate.

COUNTER GEAR FOR LATHES.

Our engraving shows a new driving gear for lathes, etc., now being introduced by Messrs. Hind, of Nottingham, England. The illustration practically explains itself. Friction wheels are used. That marked B can be wedged out between or withdrawn from the other two by a screw on the axis of A. This latter wheel can be moved by the endless chain, C C.—*The Engineer.*



BEVEL COUNTER GEAR FOR LATHES AND OTHER MECHANISM.

An Ice Water Head Dress.

In cases of hyperpyrexia, the rapid reduction of the patient's temperature by means of local application of cold is known to be highly beneficial, and in many cases is executed in a rather rough manner by sponging the head, etc. But this presents many inconveniences, such as unnecessary fatigue to the patient, and probability of wetting portions not requiring the application of moisture. Mr. Knowsley Thornton has perfected an ice water cap, composed of a coil of India rubber tubing, bound together so as to fit the patient's head. One extremity of the coil is connected with a pail or other vessel containing iced water; the other is placed in any convenient outlet for the water to trickle away. Its effect in cooling the brain makes it most valuable in cases of this description.

A Dangerous Plant.

The *Revue Horticole* draws attention to the fact that contact of the skin with the leaves, and more especially the roots, of the *rhus juglandifolia* or *vernicifera* is likely to be followed withgreat irritation from the stinging juices which exude from them. The symptoms much resemble those caused by the *rhus toxicodendron*, or poisoned sumach, long used in England as an irritant, and still in use in America. There is an intense itching, followed by swellings and, perhaps, severe and obstinate ulcers. Though some people can handle the plant with impunity, yet to most it is dangerous; therefore, as it is now in great request in consequence of the beauty of its foliage, let them beware how they handle it.