IMPROVED WINDING GEAR FOR SEVENTY-FIVE TON SHEAR LEGS.

The accompanying illustrations show the machinery for a set of shear legs for lifting seventy-five tons, and a general view of the shear legs and machinery. The specification states that the machinery was to be capable of lifting: (1) 75 tons at 2 ft. per minute on the larger barrel; (2) 30 tons at 6 ft. per minute on the larger barrel; (3) 10 tons at 12 ft. per minute on the smaller barrel. For 1 the motion is conveyed from the engine shaft through a double set of spur wheels and pinions to a worm and worm wheel, the latter being keyed to the same shaft as the larger barrel; for 2 the motion is direct from the engine shaft to the worm and worm wheel and larger barrel; for 3 the motion is from the engine shaft to a bevel wheel and pinion on a secondary shaft, at right angles to the engine shaft. At the other end of the secondary shaft is a spur pinion keyed to the shaft, and gearing with a spur wheel keyed to the same shaft as the smaller barrel.

The shaft carrying the smaller barrel is fitted at its outer ends with warping drums keyed to the shaft, and the barrel itself runs loose upon the shaft, being connected to, or disconnected from, the driving shaft by means of a clutch. When disconnected from the shaft, any load upon the barrel can be held, or lowered, by means of a hand brake and foot lever, and the warping ends can be worked by steam independently of the barrel. Both barrels are of sufficient size to take the total lengths of rope required by the specification without overlapping. Among the details it may be mentioned that the engine—two-cylinder horizontal type—is fitted with link gear and steel motion rods. The worm is of steel turned from the solid, and runs in an oil trough; all forgings are of steel; all the wheels are of cast steel; and the thrust, as well as all the other bearings, is fitted with heavy gun-metal bushes.

The machinery has been designed and manufactured for a foreign dockyard by Messrs. Baxter, engineer contractors to the Admiralty and foreign governments, of Sandiacre, Nottingham.—*The Engineer*

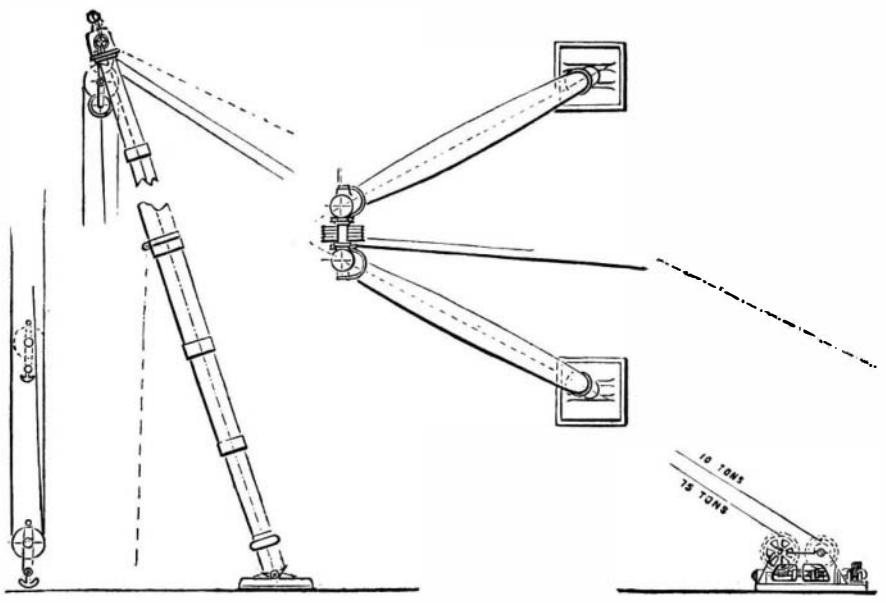


DIAGRAM OF SEVENTY-FIVE TON SHEAR LEGS.

A Substitute for the Nasal Douche.

Dr. Bloebaum no longer uses the nasal douche in removing crusts from the nasal cavity. He simply twists a long and thin roll of cotton on a knitting needle, introduces it into the nose, and withdraws the needle, leaving the cotton in the nose. A second and third are introduced thus, until the entire cavity is filled. Then one may begin with the opposite side and do likewise. In the course of a quarter of an hour the mucous membrane begins to secrete profusely, and if the cotton is then removed it will be found that it is saturated with secretions, and the crusts lie on the rolls of cotton, thus leaving a nicely cleaned cavity for the application of the remedies. He never employs any watery solutions, but salves, which are rubbed into the nasal mucous membrane, or powders, which are insufflated.—*Lancet-Clinic.*

Mixtol: A New Developer.

The name of mixtol has been given to a developer containing hydroquinone and eikonogen. Here is the formula and the order in which the author recommends making this solution:

Sulphite of soda	120 grammes.
Hydroquinone	15 "
Eikonogen	10 "
Yellow prussiate	30 "
Carbonate of potash	75 "
Caustic potash	15 "
Bromide of potassium	1 gramme.
Boiling water	1,000 c. c.
Glycerine	10 drops.

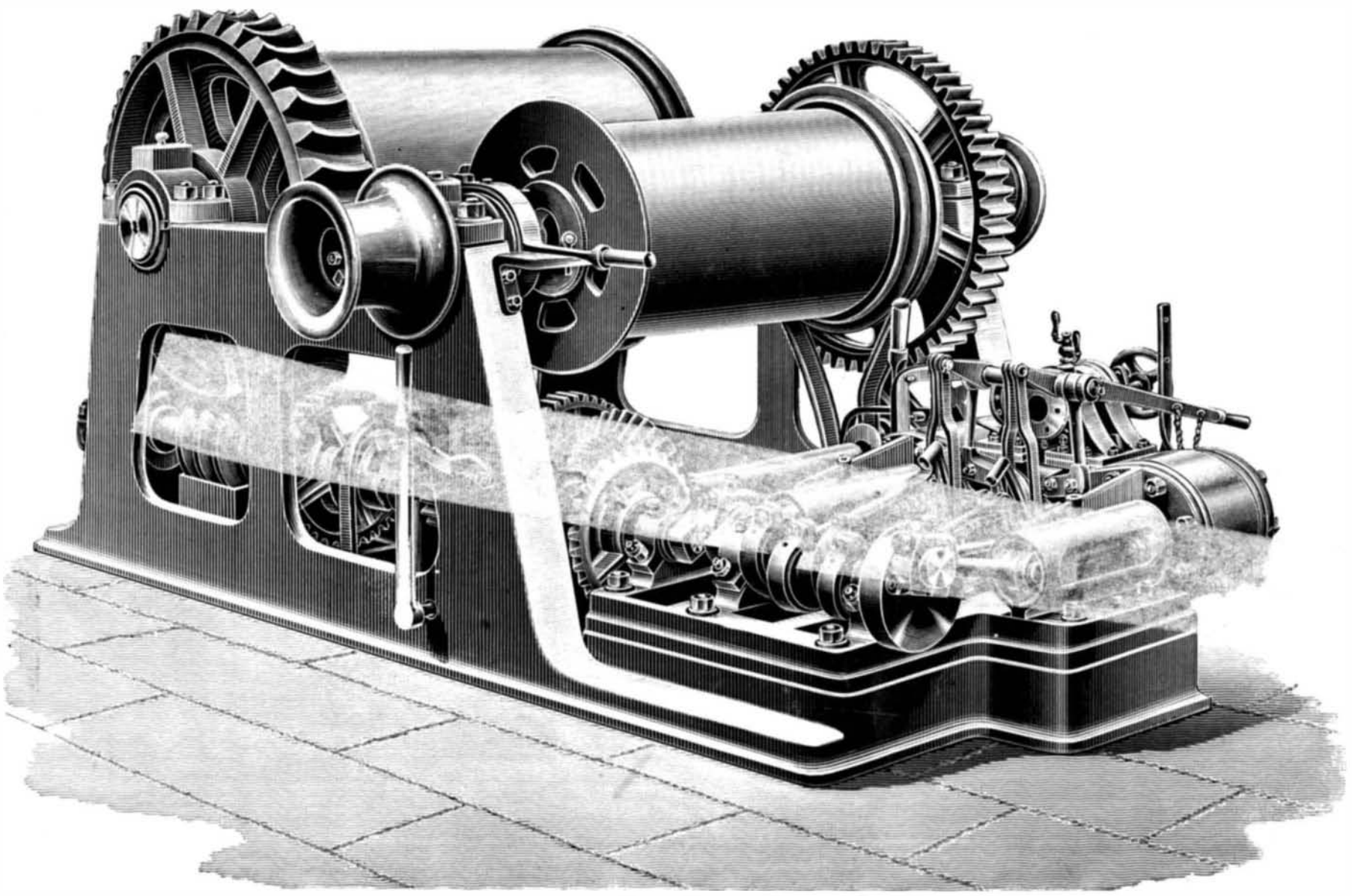
Care must be taken to operate on a slow fire, and to wait until each salt is well dissolved before adding the other. This solution, when filtered, is of a beautiful yellow color, and of perfect transparence. It keeps well. For instantaneities, add one-half water; for time negatives, two-thirds, or, better, do away with the potash and increase the quantity of carbonate of potash to 95 grammes. If necessary, add a few drops of a solution of bromide of potassium at 10 to 100. The author says that it stains neither the plate nor the fingers, that it never detaches the gelatine, that it acts rapidly, yielding vigorous negatives without being hard, full of details in the half tones. Several plates may be developed in the same bath—thus 70 c. c. of the developer and 70 c. c. of water were sufficient to develop twelve instantaneous plates 9 by 12 centimeters; the first required three and one-half minutes, and the last eight to ten minutes. None acquired a yellow color; all were good, and the bath was hardly deeper in color than the new bath.—*La Nature.*

Lead as a Tooth Filling.

Dr. S. S. Davidson, of Ottawa, in the Dominion *Dental Journal*, says:

"On June 14, a physician practicing in Ottawa, and well known for his hunting propensities, came to my office to have a lower wisdom tooth treated. After this was accomplished he asked me if there were any other teeth in that vicinity that required treatment. Examining the second molar, I found what I thought to be an amalgam filling in the grinding surface, which had the appearance of years of service. I remarked that the filling in this tooth was still giving good service. He declared he never had a tooth filled, and never before had required the services of a dentist. Upon closer examination I found the cavity filled with a grain of No. 4 shot. This had been jammed in so hard that it completely stopped the opening to the cavity. Around the edge an oxide had formed, and to all appearance was preserving that tooth as well as the most carefully inserted gold filling. The only way the worthy doctor could account for it was in eating a tempting morsel of wild duck, of which he is very fond. The shot being embedded in the meat had crowded into the cavity unknown to him and there remained. Strange to say, he would not have it removed and replaced by a more costly filling, remarking 'That is good enough for me.'"

THE General Electric Company now has establishments at Lynn, Mass., Schenectady, N. Y., and Cleveland, Ohio, and employs upward of 15,000 men. The rise and growth of electrical industries in this country is something astonishing.



STEAM WINDING GEAR FOR SEVENTY-FIVE TON SHEAR LEGS.