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## Rail-Road News.

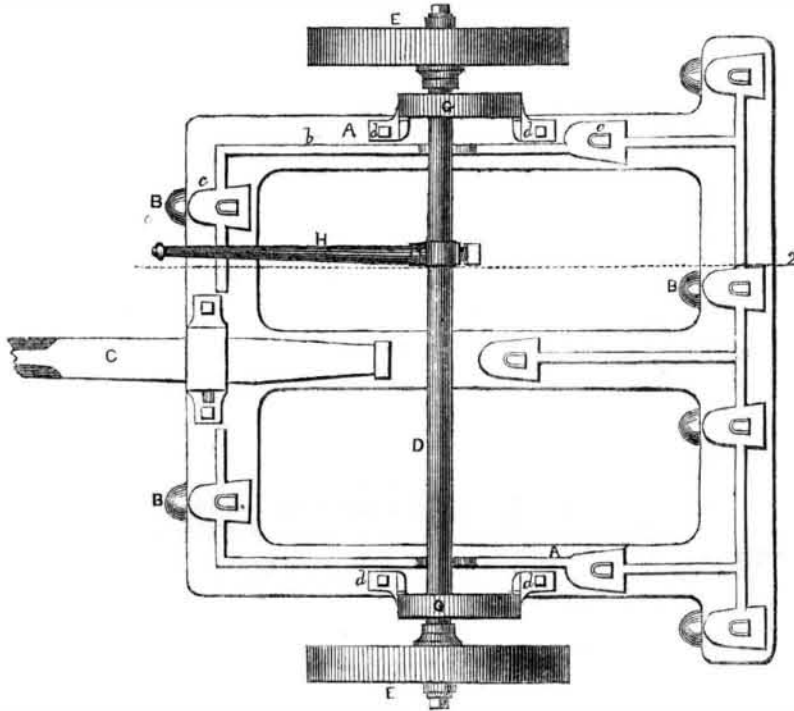
### The Panama Railroad.

The Panama Railroad progresses very slowly, but it is said that it will be finished in three years. There are but three stations formed at present. There will be one more, making four from Navy Bay to Gorgona, as follows:—1st, Navy Bay, the commencement;—2d, Gatun, about 7 miles from Navy Bay; 3d, Bohia Soldado, (soldier's camp);—4th, Juan Grande, (Great John.) The distance from Navy Bay to Gorgona, by railroad, is 28 miles; the Chagres river will be crossed by a bridge, 1½ miles this side of Gorgona. Nothing has been done or commenced on the other side of Gorgona, nor will there be until this is finished. There will be some stupendous work between Gorgona and Panama—a tunnel is to be made of about 3,000 feet. There are about 130 persons at this station, one half of whom are unable to work in consequence of sickness. In fact there are but five months' working time in the whole year, the balance of the time being constantly rainy and sickly. The dry and healthy season has now commenced, and the weather is delightful, with fine breezes from the mountains. On this road there are no contracts given out, consequently there is no room for speculation or imposition. The wages given are good, and every man is treated with attention and good feeling—no more work imposed upon him than is considered prudent. The superintendents and engineers are perfect gentlemen of education and much travel—they are principally from New York. The laborers are mostly from the West, Buffalo, and Erie, Pa. The wages to laborers are \$40 per month, with medical attendance and board—no deduction of time for sickness. The other employes on the road have compensation varying from \$50 to \$100 per month. They talk of finishing this part of the road (to Gorgona) this season; but it seems impossible for the surveys are not perfected and actually decided upon.

The air line distance from Chagres to Panama, is 30½ miles. The highest point of land on the line of road between Gorgona and Panama is 320 feet above the Pacific.—The Pacific is 12 feet 6-100 higher than the Atlantic. The greatest rise of water known at Panama, 22 feet; the least, 10. There are swamps between Navy Bay and Gatun 2½ feet lower than the Atlantic. The grade of the road from Navy Bay to Gorgona, 26 feet to the mile; Gorgona to Panama, by mule path, 22 miles; Cruces to Panama, by mule path, 17 miles; Isthmus of Tehuantepec, air line distance between the Atlantic and the Pacific, 132 miles; Nicaragua air line distance between the Atlantic and Pacific, 90 miles.

The steamship Great Britain, that was wrecked in Dundrum Bay, was sold for \$90,000—about one seventh of its original cost.—As it is an iron vessel, the bargain is a good one for the buyer.

IMPROVED CULTIVATOR.—Figure 1.

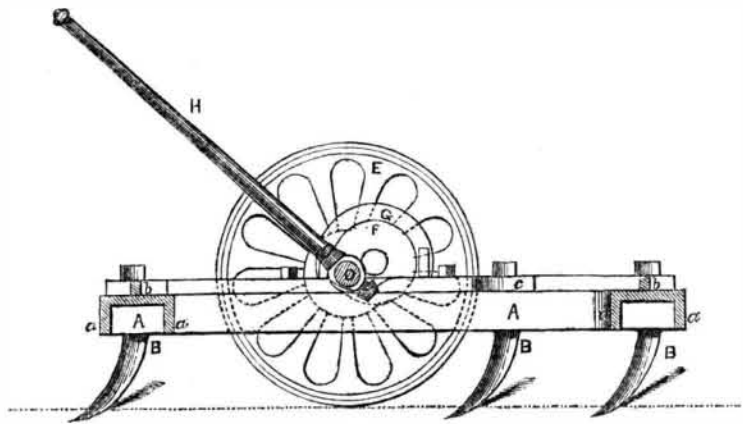


This improved Cultivator is the invention of Mr. Andrew Teal, of Geneseo, Livingston Co., N. Y., who has taken measures to secure a patent for the same. Figure 1 is a plan view of the Cultivator; and figure 2 is a longitudinal section, showing the eccentric moving axle. The same letters refer to like parts. The cultivator frame, with the teeth, can be lifted up, to raise the teeth from the ground and lower them at pleasure. To do this, the wheels are stationary so far as elevation is concerned, and the axle is attached to an eccentric rolling in a strap on the frame, which is operated by the lever, H, to elevate the frame, the axle always maintaining the same distance from the ground. The frame is made of cast metal, and is constructed of a peculiar form. A A are the sides of the metal frame; B B are the cultivator teeth; C is the pole of the implement; D is the axle of the wheels,

E E; this axle is firmly secured on an eccentric, F. G is a metal strap firmly fixed to the sides, A A, of the frame, and the eccentric, F, works inside of this metal strap. These straps, therefore, are the bearing boxes of the axle of the wheels. H is a lever secured on the axle, D. It will be observed, that by bringing the lever, H, down the broadest part of the eccentric, F, will roll upwards in the strap, G, thus raising the frame, and consequently the cultivator teeth up from the ground, to free them from all obstructions, or to wheel the implement on roads, in fields, &c., like a wagon.

The frame is made of iron, and is cast of such a form as to embrace lightness with great strength, and, as a consequent, great durability. The sides and cross ties are cast partially hollow. The undersides have two side projecting flanges or ribs, a a, forming a hollow

Figure 2.



channel between, and the upper surface has a central projecting rib, b, with a depression on every side; c c are the sockets for the cultivator teeth; d d are the bolts which fasten down the straps, G G, to the sides, A A, of the frame. The dotted lines, (1 2, fig. 1) show where fig. 2 is taken, and the tongue or pole, C, left out.

The mode of elevating and lowering the cultivator teeth, by the lever and eccentric is really beautiful and simple, and is the best arrangement for that purpose known to us, in combination with a cultivator. This agricultural implement is well worthy of universal

attention. We believe that it will receive it, and that it will be generally esteemed. We have never seen an implement of the kind, the teeth of which were so easily elevated and depressed; and we know that this is a quality essential to a good cultivator.

More information may be obtained by letter addressed to Mr. Teal, at the place mentioned above.

### Water Gas for Lighting and Heating.

A great many of our papers are now describing Mr. Gillard's Light. The patent specification of it will be found on page 333, Vol. 5, Sci. Am.

### Amalgam of Gold or Silver.

Place a gold leaf in the palm of the hand, and pour upon it a globule of mercury. The latter will be seen to absorb, or combine with the gold; forming a more or less fluid and yellow amalgam, according to the proportion of the two metals. This amalgam is used in water gilding. The affinity of mercury for gold and silver is so strong, that those who are foolish enough to clean their watch cases with mercury, or one of its salts, will find them irretrievably spoiled; the same holds good with plated articles cleaned by a vile composition, sold about the streets for this purpose, made of the nitrate of mercury, ground up with whitening. Even those who are obliged to take calomel, and other mercurial medicines, should abstain from wearing any gold articles, or carrying gold money, as the mercury oozes through the pores of the skin, and attaches itself to the gold money carried in the pocket, rendering it so brittle that it may often, when thus contaminated, be broken in two. The best way of restoring money thus spoiled is to keep it red hot for an hour or so, in the bowl of a tobacco-pipe, a crucible, or ladle.

### Preparation of Ditto Practised by Water Gilders.

Put 2 drachms of mercury into a crucible, and heat it until vapor is seen to issue from it; now throw into the crucible 1 drachm of gold or silver, and stir them with an iron rod. When the gold or silver is found to be fused, or incorporated with the mercury, the amalgam is poured into cold water; when cold, pour off the water, and collect the amalgam, which will be of about the consistence of soft butter. This after having been bruised in a mortar, or shaken in a strong phial, with repeated portions of salt and water, till the water ceases to be fouled by it, is fit for use, and may be kept for any length of time without injury in a stopped phial. It is essential in this manufacture, that the mercury should be extremely pure, as the least admixture of lead tin, or metal, would materially injure the gilding for which it is used.

### Silvering Clock Faces, Barometer Plates, &c.

Mix together equal parts of muriate of silver and moistened cream of tartar: with this rub the plate to be silvered, until the whole has acquired a complete coat, sufficient to preserve it from corrosion. During the operation it may be frequently heated, and immersed in distilled water to wash away the superfluous saline matter.

### Silvering Plates for the Daguerreotype.

Precipitate oxide of silver from the nitrate by potass; filter, wash, and dry it. Dissolve this oxide in pure liquid ammonia, the solution will be of a yellow color. Immerse a slip of polished copper in it, and let the moisture evaporate. When the copper is quite dry, hold it over a charcoal fire; the oxide will be decomposed, and the metal reduced on the copper in the form of a complete coating. This may be made beautifully bright by polishing with leather. It offers a much more brilliant and smooth surface than that of the last experiment, and is a ready method of silvering copper-plates for the Daguerreotype pictures.

### Hydrogen a Metal.

Mr. Edward D. Kendall, of Cambridge, Mass., who has contributed some excellent articles for our columns, has directed our attention to an article from him, published in the Boston Olive Branch, on the 17th of last August, 1850, wherein he takes the same view of hydrogen as Dr. Foster has done in the Sci. Am., of the 11th inst.