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Increase of Railroad Post Routes.

The Postmaster General's recent Report gives us a good idea of the rapid increase of railroads in our country, which is an index of its rising greatness, facilities for travel, rapid conveyance of merchandize and news, and the enterprise of our citizens. It says:—

"On the first of July, 1842, the total length of railroad route was 3,191 miles. On the first day of July, 1852, the number of miles on which the mail was conveyed on railroad, amounted to 10,146, making an increase of 7,055 miles in ten years Between the first of July, 1852, and the first of July, 1856, the railroad sercice was increased 10,177 miles, exhibiting the fact that within that time this description of service has been more than doubled.

The table below shows the length of railroad routes and cost of mail service thereon, at the end of each fiscal year from 1852 to 1856, inclusive:

Year.	Miles.	Cost.
1852	10,146	$1,275,520
1853	12,415	1,601,329
1854	14,650	1,786,453
1855	18,333	2,073,098
1856	20,323	2,310,389

On the first of December, 1856, the railroad service had increased to 21,310 miles, and the total cost for this service at that date amounted to $2,403,747."

Oregon Fruit.

Oregon must be a great country for fruit, according to our cotemporary and exchange, the Oregon *Times*, published at Portland, in that territory. It says:—

"The size, quality, and quantity of apples raised here from young trees, challenges competition, and justly excites the wonder of all. It is estimated that not less than $75,000 worth of apples will be shipped to California this season. The last steamer took away some two thousand bushels, we learn.

The size of our apples is almost incredible. We saw a bushel of pippins at Pritchard's the other day, whose average weight was eighteen ounces each. From one small tree he has gathered six bushels of Tolpy Hockings. Quinces and pears also grow in abundance.

Almost every farmer has an orchard growing, and from the yield of the young trees we cannot resist the conclusion that Oregon is destined to become the most celebrated portion of the Union for fruit. It is no uncommon thing to see specimen apples weighing from one and a half to two pounds."

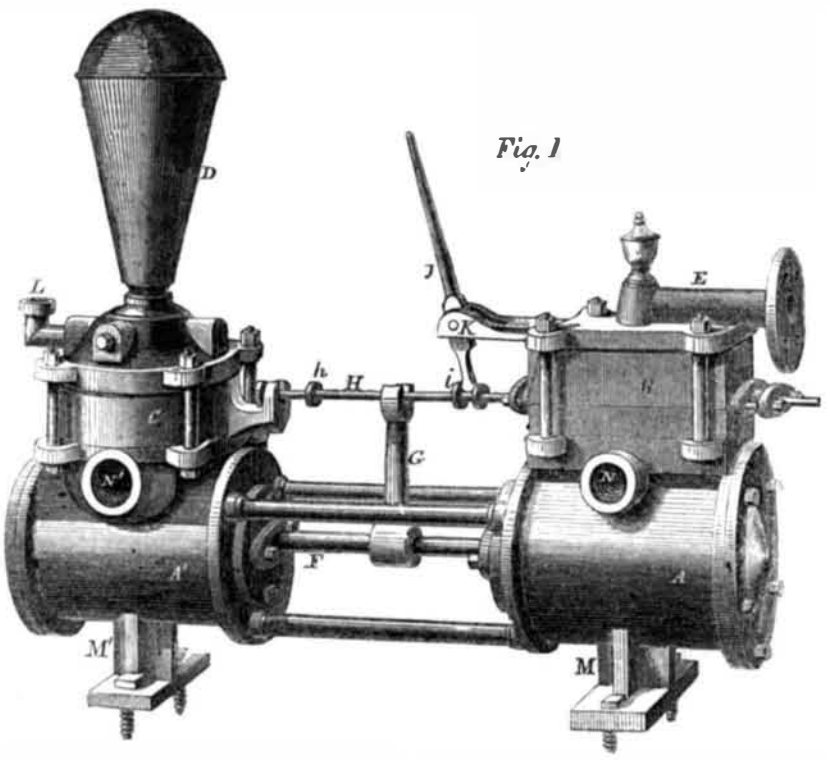
A Dangerous Cosmetic.

The use of belladonna, we have seen advertised to give brilliancy and fascination to the eye. This is a dangerous drug to use for this purpose. It is true that it gives to the eye an extraordinary brilliant appearance by contracting the *iris*, and enlarging the pupil; but this tends to weaken and destroy the delicately beautiful action of the organ of sight.

Russian Squirrel Trade.

In 1842 1,460,000 squirrel skins were exported from Russia to China in exchange for tea. Most of these skins came from Siberia, and were the quarry of the exiles' traps.

IMPROVED STEAM PUMP.



Improved Steam Pump.

The accompanying figures represent the improved Direct-Acting Steam Pump of Messrs. Guild & Garrison, of Williamsburgh, N. Y., for which a re-issued patent was granted July 29th, 1856.

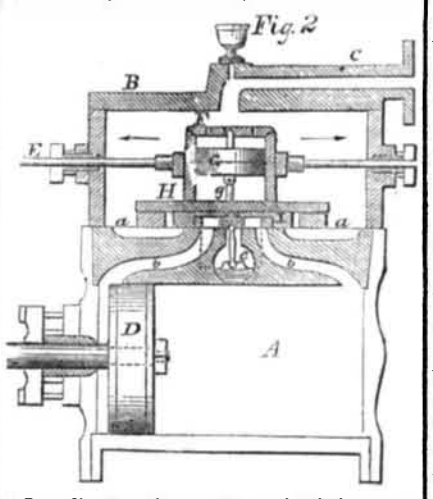
Figure 1 is a perspective view of the steam engine and the pump. A is the direct-acting steam engine and all its parts. A is the pump and its parts, which are operated by the steam engine. B is the steam chest or valve box; C the valve box of the pump, and D the air chamber. F is the piston rod, G the valve shipper, H the valve rod, and *h* the tappet, which the shipper strikes while moving in one direction, and I is the tappet crotch, which it strikes while moving in the other direction. J is the valve rod lever, with its lower end in the crotch; K is its fulcrum. E is the inlet steam pipe, and N the exhaust. N' is the suction passage of the pump, and L its discharge pipe. M M are flanges to bolt the cylinder to sleepers.

Figure 2 is a vertical section taken through the steam valve chest and cylinder. A is the cylinder, B the steam chest, C the inlet steam pipe, D the piston, E the valve rod, F a small cylinder in the valve chest, which has a small piston, G, in it, having a jointed arm, *g*, in it, extending down within the exhaust cavity of the valve seat, and rocks on an arbor or shaft therein. The piston, G, is fitted steam tight in its small cylinder, and the pressure of the steam comes upon its top surface. There is a plate or valve driver, to which the small cylinder is attached; it laps around the valve ends leaving a small space between them. I is a chambered slide valve, and *a a* are cavities in the face of the valve seat, and by the valve connect with the ports that lead to the cylinder, A. The valve driver plate is placed between a valve at each side, hooking around their ends with the small space between them, as shown, for lead; it does not lie nor press on the top of the valves.

When the valve is moved to the one side, the steam passes from one of the cavities in the seat under its end into one of its chambers, thence into the cylinder by one of the passages, *b b*; the steam is then exhausting from the under end of the large piston, D, through the other chamber of valve I, and out through the passage, *c*.

When the piston, D, of the engine arrives near the end of its stroke, and the shipper arm strikes one of the tappets on the valve rod, it causes the valve driver plate to slide a short distance before moving it; but when its hook at the end has come in contact with the end of the valve, I, to commence moving it on its seat, the arm, *g*, of the small piston, G, (fig 2,) passes its line of culmination, and the pressure of the steam which is always acting on the small piston, G, to force it towards the valve, causes the arm, *g*, then to be thrown suddenly over, giving the small piston its cylinder, and the valve driving plate, a quick movement to reverse the position of the valve. The small piston in the cylinder relieves the valve driver of such pressure of the steam as is due to its area.

The principle of the invention embraced in this improved steam pump, consists is giving to the valve in the steam chest the whole or part of the movement necessary to effect the change in the direction of the movement of the engine piston by means of the steam acting upon the small piston, G, (fig. 2) in the small cylinder in the steam chest, throwing the valve by a rocker arm, as described.



In a direct-acting steam engine it is necessary that the valve should have a throw given to it at the dead points. The means of accomplishing this object in this steam pump are very ingenious and simple. A number of ways of applying the driver without balancing the valve may be carried out. Two short slide valves of the common form, each working over one steam port and one exhaust port are used, these valves being connected at their sides by narrow strips, H, between which the driver—consisting of a flat plate with a cylinder like the above—works directly on the valve seat. The rock arm, *g*, and its rocker shaft will be arranged to work in a cavity in the valve seat. The valve driver may also be arranged to work in a seat at one side of the valve seat; or for long strokes with a valve at each end and the driver between them. There is no waste of steam or power in working the valves of this pump.

Quite a number of these steam pumps are now in successful use, and they have acquired an excellent reputation for boiler feeders for sugar refineries, draining quarries, mines, &c. it is also an excellent fire pump for factories on ships, and every purpose, in fact, for which a compact, strong, simple, cheap, and convenient double-acting steam pump is required, also as a vacuum or air pump.

These pumps are manufactured at the works of the Company at Williamsburgh, N. Y.—More information may be obtained respecting them by letter or otherwise addressed to Guild, Garrison & Co., No. 301 Pearl st., New York City.

One of these pumps can be seen in operation at James O. Morse & Co.'s, No. 79 John street, this city.

A Reported Great Lake in Africa Nowhere

The *Westminster Review* for October notices "Explorations and Discoveries during four years' wanderings in the wilds of Southwestern Africa, by C. J. Anderson," from which we extract this paragraph:—

"C. J. Anderson has put an end to a lie which was beginning to gain credence among us. African missionaries, penetrating some distance inwards from the southwestern side of the continent, recently bronght information—which they received second-hand from Arab travelers—of a vast fresh water lake far in the interior, described as being of enormous dimensions—as nothing less than a great inland sea. Frequenters of the Geographical Society's meetings at Whitehall have observed, in consequence, on the site which used to be marked in the maps as a sandy desert, a blue spot, about the size of the Caspian, in the shape of a hideous inflated leech. We trusted that a more accurate survey would correct the extreme frightfulness of the supposed form. Mr. Anderson, however, has spared us further excitement. The lake turns out to be a mirage—a mythus with the smallest conceivable nucleus of fact. On the very spot occupied by this great blue leech—long. E. from Greenwich 22, lat. 20 21—he found a small speck of bitter water (not fresh) something more than twenty miles across, of the size of Lough Corrib, in Galway. So perishes a phantom which has excited London geographers for a whole season."

Paint Poison.

A correspondent of the Paris Academy of Sciences, states that the poisonous properties of lead paint are due to the turpentine which is mixed with it, not the lead. This opinion is antagonistic to the commonly received one It may be correct, however, in this way: the turpentine is volatile, hence it may lift some of the lead when evaporating, and thus the metal be inhaled by the painter, in the form of mineral gas. He asserts that if turpentine were not used, paint-poison would be unknown.

Gold in a Brickyard.

By the recent news from California it is stated that at San Andreas, during a rain, it was discovered that some brick in a brickyard contained gold, and it being found that the gold was more valuable than the brick, the proprietors had turned a stream of water on it, and were washing away the whole brickyard.