

IMPROVED ROAD-SCRAPER.

The common road-scraper employed for excavating, filling up ruts, and otherwise grading roads, is a simple flat-bottomed scoop, tipped with iron or steel, with raised sides and a pair of handles by which to operate the implement.

The accompanying engravings illustrate a road-scraper, for which a patent was granted to Nelson Peck, on the 3d of January last, Fig. 1 being a side view, showing the scraper raised; and Fig. 2 a view showing the scraper in a position ready for excavating. This scraper is mounted on wheels, and is arranged in such a manner as to be raised and lowered by the movement of a lever, so as to be rendered operative and inoperative as desired; it is drawn with greater ease, and is operated with much less severe labor than the common scraper.

H represents a head-stock, to the upper part of which the draft-pole, B, is attached. The stock may be formed of metal, or heavy plank shod with metal, at its lower end. C is the scoop. D D are two levers, attached by fulcrum pins, *a a*, and the outer ends of these levers pass through and form the axles of the wheels, E E. To the inner ends of these levers are secured rods, *b b*, which are united to the lever bar, F, which works up and down in a guide, G, attached to the head of the stock. There is a projection, *d*, on the guide at one of its sides; at its top is a recess, *e*, and there is also a similar one, at its bottom. A spring, *f*, in the side of the guide, exerts its tension on lever handle, F, to hold it in either recess.

When the scoop is not scraping the earth in front of it, the bar, F, has its back end near the handle held in the upper recess, *e*, of the guide, G, which holds up the scraper above the road, as shown in Fig. 1, the stock and scoop being elevated and the machine supported on the wheels. When the lever bar, F, has its back end near the handle lowered into the under recess of the guide, the stock and scoop are then depressed on the jointed levers, D D, as shown in Fig. 2; and when the machine is drawn along, the earth is scraped into the scoop, and when drawn to the spot where the load is to be deposited, the scoop is emptied of its contents by simply raising the handle of F into the upper recess, *e*. This action makes the front of the scoop assume a vertical position when the earth is discharged. The machine may be turned round to resume the same operations; or if the earth can be scooped straight forward, it may be drawn along and the handle depressed to take another load, and so on for continued operation.

This road-scraper, it will be observed from the foregoing description, is managed by the operator in scooping and dumping, by simply raising and lowering the handle, F. The scoop does not require to be thrown over; the labor is easy, and there is none of that jerking and hauling which is common in operating the common scraper. It is a little more expensive to make; but the facility with which it can be drawn from place to place, and the great amount of labor saved, should render it popular and deserving of favor.

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IMPORTANT IMPROVEMENT FOR INCREASING THE POWER OF STEAM.

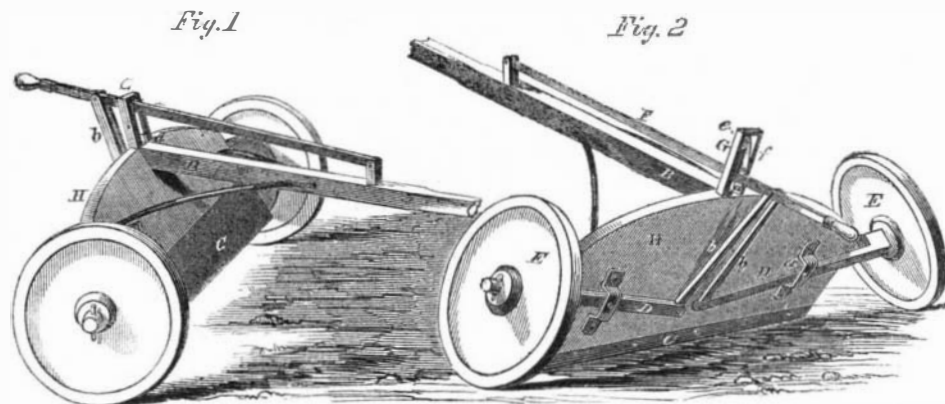
Hitherto most of the methods adopted for superheating steam have resulted in the destruction of the pipes or vessels used for that purpose, from the very obvious reason that iron, over a certain degree of heat, decomposes steam and absorbs its oxygen, setting free hydrogen gas, and reducing the iron to a proto-oxide.

Mr. S. N. Carvalho, of Baltimore, claims to have made a practical application of a well-known scientific fact, for the purpose of overcoming this great difficulty in obtaining purified steam, divested of the aqueous particles which are always present in steam used directly from the boiler. By an order from the Secretary of the Navy, Mr. Carvalho's apparatus has been erected and

attached to the boilers of the Ordnance Department in the Washington navy-yard, where it has been in successful operation during the last fifteen days. It has demonstrated the important fact that, while formerly it was necessary to have from 35 to 40 lbs. of steam in the boiler to give 40 revolutions of the fly-wheel, the minimum power required to perform the work of the whole establishment—12 lbs. of steam in the boilers—passed through Mr. Carvalho's "Oxy-hydrogen Superheater," which produces 40 revolutions, while 14 lbs. gives 45 revolutions, and more effectually performs the work of the establishment, with a corresponding economy of fuel.

Messrs. A. and W. Denmead & Sons, of Baltimore, have successfully introduced the invention into that city, and have already contracted with the patentees for the sole manufacture of the apparatus for the State of Maryland. Messrs. James Murphy & Co., of the Fulton Works, will occupy the same position in this city.

The application is simple, practical, and of comparatively little cost, and can be attached to every description of boiler. A patent has been taken out in this



PECK'S IMPROVED ROAD-SCRAPER

country and applications are pending abroad, which latter fact prevents our readers from having the benefit of a full knowledge of the invention at present, but they shall have it "one of these days."

CHARCOAL AS A DISINFECTANT.

A lecture was recently delivered before the Society of Arts, in London, by Mr. W. E. Newton, in which he attributed various virtues to peat and other vegetable charcoal. He stated that, in the form of a powder, put upon poultices, peat charcoal had been most beneficially employed in some of the London hospitals, especially in cases of offensive sores. It absorbed the putrid effluvia, and was of great benefit in cancers, &c. In many cases, when taken internally, it was productive of good effects in those troubled with disordered stomachs, such as heartburn, sick headache, palpitation of the heart and giddiness. In all diseases of the chest, sore throats, diphtheria, or bronchial affections, peat charcoal has been found very useful. In France, a scientific commission, appointed by government to investigate this subject, has reported very favorably regarding the usefulness of this substance for a great number of purposes. A minute quantity of peat charcoal, in powder, boiled with some American corn starch and milk, has been given, with almost miraculous success (in London) for curing dysentery.

THE CHINESE SUGAR CANE IN EUROPE.

Experiments with and a complete analysis of the Chinese sugar cane have been made by Professor Voelcker. He found that, in the month of August, it was bitter and unfit for the feed of cattle, while in September it had become sweet—a sugar cane. He says:—"The taste of the plants on the 23d of August was anything but sweet. I caused a direct sugar determination to be made in a fresh and large quantity of the plant, but was unable to detect any sugar." And again:—"The Sorgham contained nearly six per cent of sugar on the 26th of September; cattle supplied with this at that time greedily ate it, and to all appearance, did well upon it. The proportion of sugar in the whole plant is about the same as that in carrots." In Great Britain it is held to be inferior to clover—all things considered—for cattle feed. It takes so long to arrive at a proper condition for feeding that it will never answer in that climate, however well it may be adapted to warmer latitudes.

TIDAL MOTIVE POWER.

An exchange states that Dr. Seguin, of Paris, has proposed a novel and ingenious application of the tides as a motive power, applicable to machinery and agriculture. He proposes to construct, at the water side, two monster basins—one being furnished with gates permitting the entry of tide water, but preventing its exit—the other, having gates, permitting the exit of water, but opposing its entrance from the tide. By this means the first basin would be filled with water at high tide, and the other would be completely emptied to the level of ebb tide. A canal or race, being constructed between the two basins, would thus become the seat of a continuous current in one direction. By this means the alternating motion of the water will be converted into a continuous action, calm, as easily regulated and susceptible of the same applications as natural water-courses. The only question to be settled, in considering the applicability of this scheme, is its economy, and upon this point there might possibly be some doubt. Dr. Seguin, it is stated, proposes especially to apply this method to the purification of the Thames.

This very tidal power may be seen in practical operation every day within three miles of New York. Tidal wheels are quite common on the salt water creeks of Long Island, and have been in use for the last hundred years. In favorable situations they are useful; and in calling attention to the foregoing paragraph we may be doing service to several persons, as the plan may be carried out in many places along our more northern coasts, where the tides are high and capable of furnishing a

variable water-power for a number of hours daily. A turbine wheel, constructed with adjustable buckets, may be the best adapted for such situations.

APPLICATIONS FOR THE EXTENSION OF PATENTS.

Straw-cutter.—George Catchpole, of Geneva, N. Y., has applied for the extension of a patent granted to him on the 5th of September, 1846, for an improvement in the above-named class of inventions. The testimony will close on the 6th of August next; and the petition will be heard at the Patent Office on the 20th of that month.

Steel-yard.—Thaddeus Fairbanks, of St. Johnsbury, Vt., has applied for the extension of a patent granted to him on the 15th of September, 1846, for an improvement in the above-named class of inventions. The testimony will close on the 4th of August next, and the petition will be heard at the Patent Office on the 27th of that month.

Separating Oleic and Stearic Acids.—James S. Gwinne, of New York City, has applied for the extension of a patent granted to him on the 3d of September, 1846, for an improvement in the above-named class of inventions. The testimony will close on the 6th of August next; and the petition will be heard at the Patent Office on the 20th of that month.

Bomb Lance.—Oliver Allen, formerly of Norwich, Conn., has applied for the extension of a patent granted to him on the 19th of September, 1846, for an improvement in the above-named class of inventions. The testimony will close on the 20th of August next; and the petition will be heard at the Patent Office on the 3d of September.

PEELING POTATOES.—All the starch in potatoes is confined very near the surface; the heart contains but little nutriment. Ignorance of this fact may form a plausible excuse for those who cut off thick parings in preparing potatoes for mashing; but none to those who know better. Circulate the injunction, "pare thin the potato skin."

WHILE the boiler that furnishes steam for the machine-shops of the New York road, at New Haven, is under going repairs, a locomotive is made to do service as a substitute. It is "jacked up" so as to take power from the driving wheels, as they revolve in the air.