

IMPROVED STEAM RIVETING-MACHINE.

It is doubtful if the labor which is now done in hammering, planing, turning, cutting, punching, and riveting iron, by steam and water power, could be performed by the efforts of all the inhabitants of the country if their whole labor were directed into this channel. The properties of the metals adapt them peculiarly to be operated upon by machinery. They are so rigid that they can be handled by machinery with great precision, while their hardness demands the aid of the great forces of nature in cutting and shaping them. Numerous machines have consequently been invented for working iron and other metals, and no doubt new ones will continue to be invented for hundreds of years to come, for "perfection" has not yet been written upon any of the works of man. One step in this long series of improvements is illustrated in the accompanying engraving.

COAL OIL.—SECRET INVENTIONS.

The manufacture of coal oil has become a vast business, and millions of gallons are annually made and sold. As far as we can judge from observation, the article ordinarily sold in this city is well prepared for the market, but complaints continue to come to us from the country that a mere stuff, an imposition called coal oil, is palmed off upon them. There are a few manufacturers who give great attention to the purification of the article before it is offered to the market—they are secretly practising useful inventions for the purpose, while others seem to be satisfied to get the crude oil, and make the most they can out of it. Unless more care is taken in this particular, the oil will fall into discredit and disuse.

There are processes now secretly employed for the purpose of purifying oil, but they benefit the public comparatively very little, and there remains yet much to be

MACHINES FOR SWEEPING STREETS.

It is now many years since we first directed public attention to machines for sweeping our streets, and though no movement was made for some years afterwards, to carry out our suggestions, the good seed thrown broadcast into the public mind has germinated and brought forth its golden harvest at last. Such machines are now employed, for keeping our streets clean, by R. A. Smith, who has undertaken to do the work for one half the amount formerly expended. They have now been at work for some time in Broadway and some other streets, and never before have we had such clean thoroughfares. The people are delighted with the change, and the store-keepers are in extacies. Our city, once famous for dirty streets, promises, under the new order of things, to become the cleanest-swept in the world. If all the streets were laid with the small block pavement, and machines employed as scavengers, we have no doubt that New York would become a model of cleanliness in her streets. Every effort should be exerted to bring about this result, for sanitary reasons. The greatest amount of mortality is always found to prevail in localities where the streets are left filthy, and the health of New York has been much lower than any city in our Union on this account. No city in the world is better situated for complete drainage and the means of public cleanliness, yet we have been disgraced for the prevalence of dirt even in our most frequented and fashionable streets. We hope these things have gone past forever. The street-sweeping machines were long opposed by many interested parties, but their recent success has conquered opposition, and it will not be easy for those political schemers who fattened on corporation dirt to brush them aside for any selfish purposes.

CLOSING OF THE AMERICAN INSTITUTE FAIR.—The Fair of the American Institute has closed and the prizes have been awarded, but up to the time of going to press we have been unable to procure a corrected list for publication. We wonder if this old respectable association will ever have instilled into it a moiety of the enterprise which characterizes the majority of the exhibitors which bring their wares and machines to the grounds every year for exhibition. At the time of our going to press, the awards have been made six days, and the managers cannot furnish a correct list for publication yet. If the Rip Van Winkles of the institute wake up in time, we shall publish a list of the premiums in our next number.

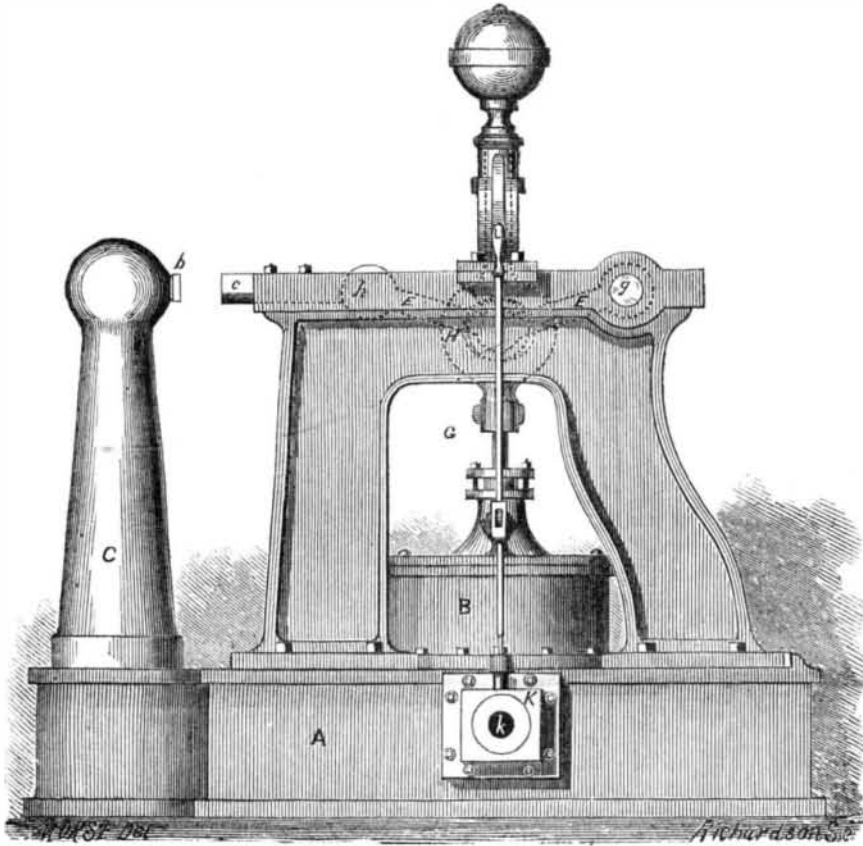
A CHANGE.—Captain Meigs, of the corps of Topographical Engineers, has been relieved from the superintendence of the capitol and Post-office extensions, and Captain Franklin, of the above corps, has been assigned to the charge of those works. He has recently served as Secretary of the Light-house Board, and is considered an able officer. An old feud has existed between Capt. Meigs and Mr. Walter, the architect, and the upshot of the matter is that the former has been removed from the post of superintendent.

GAS-WORKS AT THE ST. DENIS HOTEL.—Our readers will remember that we published an illustration of these works on page 113 of the present volume. We are informed that many persons have, in consequence, addressed inquiries in regard to the matter to the hotel; and we are requested to say that such inquiries should all be addressed to the "Gas Generating Company," No. 512 Broadway, New York.

HYATT'S application for the extension of his patent on illuminated vault-covers, referred to in our Washington letter, has been granted by the Commissioner of Patents. We shall endeavor to present an outline of this case in our next issue, as it involves some important considerations.

THE ST. LOUIS FAIR.—An interesting letter on the mechanical portion of the late St. Louis fair appears in this number, written especially for our columns. It should have been published three weeks ago; but owing to a press of other matter, it was crowded out. It will, however, be read with interest.

VINEYARDS ON THE OHIO RIVER.—A correspondent of the Cincinnati *Gazette* states that extensive vineyards have been planted on the Ohio river, in Kentucky, and that the produce of wine this season from them will reach about 300,000 gallons. The average is about 250 gallons per acre, but some old vineyards yield 400 gallons to the acre.

**SPARROW'S STEAM RIVETING-MACHINE.**

It is a machine for riveting bolts, and for punching and cutting iron, and consists simply of a toggle press acted upon directly by the piston of a steam-cylinder. The rivet to be headed is placed between the die, *b*, and the horizontal slide, *c*. The steam-cylinder, *B*, is open at the upper end, the steam entering through the pipe, *k*, and steam-chest, *K*, and acting on the under side only of the piston. The cross-head, *H*, of the piston-rod, *G*, has an elliptical opening or slot through which, in a friction-roller, passes the pin which connects the toggle with the piston-rod. The two arms, *E E*, of the toggle are forked, one to receive the piston-head, and the other embracing both the piston-head and its fellow toggle. Fastened rigidly to the piston-head is a rod extending in an exact line with the piston-rod upward into a vertical guide, to retain the piston in its true line of motion. *L*, is the lever for opening and closing the valve.

The principal advantages claimed for this machine are:—First, that it requires a comparatively small cylinder; second, the pressure can be regulated at will and retained upon the rivet until the rivet is well set; third, it is portable and, with the addition of a small boiler, may be set apart from any connection with the power or boilers of an establishment; fourth, steam is only required to do the work, acting on only one side of the piston, the weight of the piston bringing back the parts to their places.

The patent was issued (through the Scientific American Patent Agency) Sept. 27, 1859, and inquiries for further information may be addressed to the inventor, John Sparrow, superintendent of the Portland Company's Locomotive Works, Portland, Maine.

done. A process used secretly does not prevent another party from legally patenting and holding the same thing, as the law does not contemplate that the secret use shall act as a bar to the rights of an inventor who secures a patent for the same thing. Judge Mason, while Commissioner of Patents, decided a case between two interfering applications that "When an invention is only resurrected to supplant and strangle an invention which has been given to the public, and which has been made practically useful, all reasonable presumption should be in favor of the inventor who has been the means of conferring the real benefit upon the world." If a certain process for purifying coal oil is in secret use in a coal oil factory, and a patent is afterwards granted to another party for the same process, it is the presumption of law that the patent is valid; and furthermore if it could be shown to the satisfaction of a court of competent jurisdiction, that the process thus secretly used was an infringement upon the one patented, the party infringing would be liable to damages for continuing its use, as against the rights and interests of the patentee, for neither the law nor the public know anything about inventions used secretly. It is not the purpose of the law to grant patents solely for the benefit of the inventor; it contemplates also the public interest, and the Commissioner is bound in the exercise of his functions to hold those two interests continually in view. A great field is open to inventors to discover some economical process for purifying coal oil, and whoever enter upon such investigations will do well to make careful records of their experiments so that they will be able to identify and prove their inventions in case a dispute should arise in future touching the question of priority of discovery.