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W. B. M., of Ohio.—It is quite an easy matter to arrange a slide lathe to feed across the face plate. Put a small pulley on a counter shaft over head, and another on the back end of the screw that moves the tool in and out, then put on a belt and go ahead. To cut a scroll you must have some positive arrangement, as gearing belts would slip. Any mechanic can devise a plan in five minutes.

W. B. S., of Ill.—You will find an article on the pressure on a slide valve on page 151, Vol. XII, of the SCIENTIFIC AMERICAN, which will give you all the information you want.

G. L. D., of Conn.—Silver is readily soluble in nitric acid; the two substances combine, forming nitrate of silver, or lunar caustic.

F. J. S., of Tenn.—If water is heated in a close vessel above the temperature of 212°, and then allowed to escape into the atmosphere, it immediately expands into steam, increasing its volume 1,700 fold. In boiler explosions the destruction is due principally to steam thus suddenly formed.

G. E., of Ind.—The admixture of sand with fire clay tends to prevent unequal contraction and cracking under the action of heat; the proper proportions of sand vary with the purpose for which the clay is to be used. Mica is a very infusible mineral, and, in some cases, would, doubtless, be as good, or better, than pure quartz sand, but this could be ascertained only by experiment.

J. G. M., of Conn.—We have had suggestions enough in relation to the cable, unless some one can propose something manifestly of practical value.

T. W., of Pa.—You can only obtain the Patent-office Reports through your Member of Congress. The Commissioner is supplied with but few copies.

T. K., of N. Y.—The question in regard to the rotation of a carriage wheel has been so often discussed in our journal that we do not care to open the subject now. Try the experiment and you will be able to settle the question without our advice.

N. S., of N. Y.—So far as we know, all files are made by the force of a blow upon the surface of the steel. We inquired of a file maker a few days ago why files could not be made by the use of a cutting tool, as you suggest. He thought a good file could not be made in that way, but if you can succeed you will be doing something new so far as our information extends.

J. R. I., of Va.—We should be happy to tell you the value of the contents of the machine shop you are about to purchase if we had any means of knowing. Inasmuch as it is 600 miles from here, that we have never seen it, and don't know what tools there are in it, the chances are that our opinion would not profit you much.

W. H. T., of R. I.—This correspondent wishes to know the best works for a young man to read who wishes to be something more than common. As he has not informed us of the nature of his calling we cannot say. "Bourne's Catechism of the Steam Engine;" "King's Notes on the Steam Engine;" "Silliman's First Principles of Philosophy" are all good works for machinists and engineers.

W. R., of N. Y.—Rosewood is polished by varnishing it and afterward rubbing it down with pumice stone and water. The operation is repeated two or three times. Any wood can be thus polished. Carriages are so treated, and the result is like an enameled surface.

H. H., of Wis.—In regard to the question of two levers, each four feet in length; one having the fulcrum at the end, and the weight one foot from the end; and the other having the weight at the end, and the fulcrum one foot from the end—a clear way of considering the relative power is to let each lever sweep a complete circle around the fulcrum as a center. In both cases the circle described by the weight will be two feet in diameter, but that described by the opposite end of the lever will in one case be six feet in diameter, and in the other eight; and the power is in proportion to the distance passed over.

TO OUR READERS.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1833, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a bona-fide acknowledgment of our receipt of their funds.

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Back Numbers and Volumes of the "Scientific American."

VOLUMES IV., VII., XI. AND XII., (NEW SERIES) complete (bound) may be had at this office and from periodical dealers. Price, bound, \$3 00 per volume, by mail, \$3 75 which includes postage. Every mechanic, inventor or artisan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. VOLS. I., II., III., V., VI., VIII., IX. and X., are out of print and cannot be supplied.

RATES OF ADVERTISING.

TWENTY-FIVE CENTS per line for each and every insertion, payable in advance. To enable all to understand how to calculate the amount they must send when they wish advertisements published we will explain that eight words average one line. Engravings will not be admitted into our advertising columns, and, as heretofore, the publishers reserve to themselves the right to reject any advertisement they may deem objectionable.

TO SOAP MANUFACTURERS.—PROF. H. DUS-SAUCE, Chemist, is ready to give information and advice to manufacturers, and furnish them Processes to make the following Soaps:—Castile, Olive Oil, Tallow, Oleic Acid, Family, Soft, Cocoa and Palm Oils; T transparent, Silicated, White, Colored and Perfumed Toilet Soaps, Soaps by the cold process. Recipes to prepare every kind of L. es and purify them after having been used. He also furnishes Plans of Soap Factories and Drawings of the Principal Apparatus. He makes out on short notice Analyses of Alkalies, Lyes, Greases, Soaps Etc. Address New Lebanon, N. Y.

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE, WASHINGTON, Sept. 27, 1865.

IN THE CASE OF MAJOR JOHN A. HADDOCK, 12th Regiment Veteran Reserve Corps, Acting Assistant Provost-Marshal General, Western Division of the State of New York, tried before a General Court Martial, which convened at Emira, New York, May 22, 1865, and at Syracuse, New York, July 6, 1865, for "violation of the 93rd article of war," in receiving presents and large sums of money, as bribes, from substitute brokers, to influence his official action; for "violation of the 83rd article of war, and conduct unbecoming an officer and a gentleman," in writing certain communications for fraudulent purposes; also, for "fraud, malfeasance in office, abuse of official powers, complicity with bounty brokers in the Western Division of the State of New York, accepting presents and bribes, proposing to accept presents and bribes, agreeing to accept presents and bribes, being interested pecuniarily in recruiting and filing quotas in the Western Division of the State of New York," the Court sentenced him "to be cashiered and utterly disabled to have or hold any office or employment in the service of the United States, that he pay a fine of ten thousand dollars to the United States, and be imprisoned at such place as the proper authorities may designate until the said fine be paid—the period of said imprisonment not, however, to exceed five years; and in conformity with the 85th article of war, the Court adj. in and to the said sentence, that the crime, name and place of abode of the said John A. Haddock, to wit: the Town of Watertown, in the State of New York, and punishment of the said delinquent, be published in the newspapers of the State of New York, from which particular State the said delinquent came, and where he usually resides," which sentence was duly approved and ordered to be executed.

E. D. TOWNSEND, Assistant Adjutant-General.

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Lot No. 3.—Consisting of one hundred and twenty (120) barrels of Pure Rye Whisky, originally inspected in February, 1885, containing about two thousand four hundred (2,400) gallons. Proposals for two (2) barrels and upward of this lot will be received.

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The Government reserves the right to withdraw any or all of the above lots, and to reject any proposals deemed too low. Payment to be made in United States currency within ten (10) days after notification of acceptance of bid and prior to delivery of the property.

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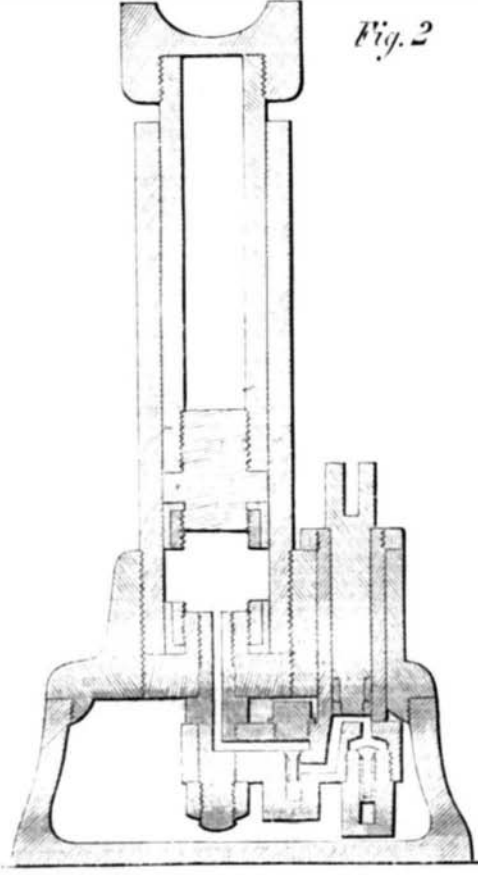
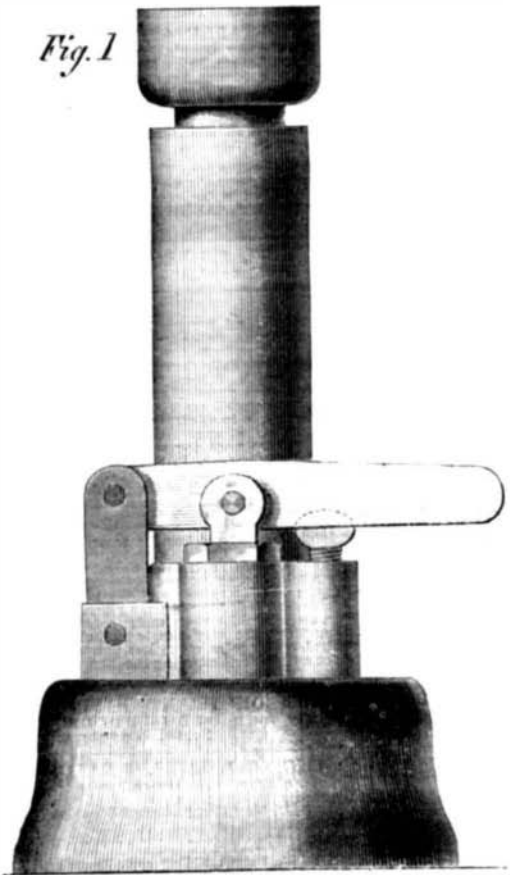
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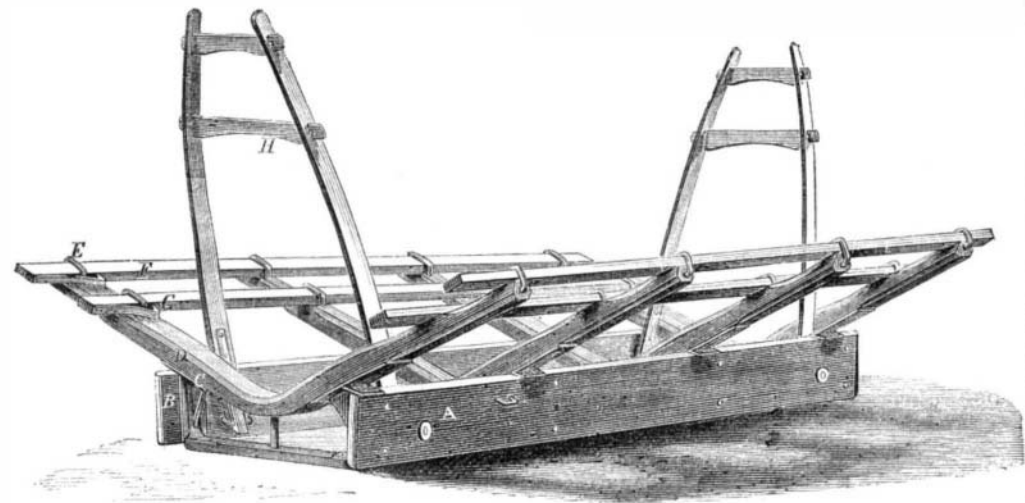
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plain themselves very clearly as regards the construction.

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can be readily put on or taken off by one man or a stout boy.

In the engraving, the two pieces, A, may represent the side boards of any common farm wagon. These are fitted with brackets, B, which receive slides, C, fitted to the saddle pieces, D. These saddles are four in number, and have irons, E, which take the slats, F. These slats are run through the irons and there retained by spring catches, G. The ladders, H, can



THOMAS'S HAY AND GRAIN RACK.

with precision, by means of the thumb screw near the lever, is apparent, as under the old plan of pressing upon the valve with a pin and a short lug on the bottom of the handle, when reversed, is very liable to produce accidents by its sudden motion, when under great weight; it is strong, compact, not liable to get out of order, and cheap, and it is so constructed that, should one part of it be broken by any acci-

dent, it can be repaired at less cost than other hydraulic jacks, and in less time. The rack is also remarkable for the small space it can be stowed in, and the ease with which it can be repaired if any portion breaks—instead of carrying the whole away to a shop, the defective part may be removed with little trouble.

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It was patented through the Scientific American Patent Agency by W. M. Thomas, Aug. 15, 1865. State, town and county rights for sale. Address him at Binghamton, N. Y.

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