

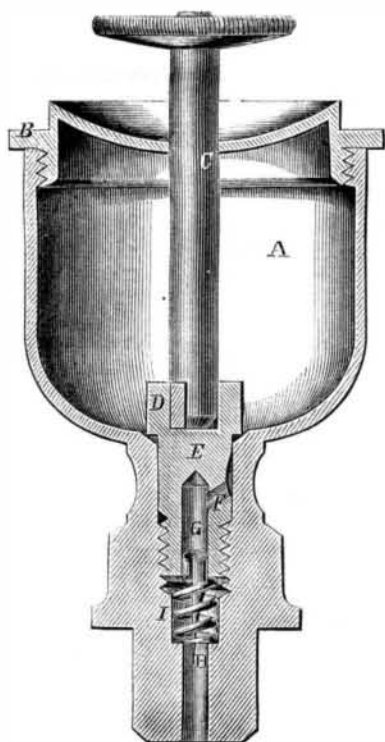
## FERGUSON'S OIL CUP.

In a course of experiments by M. Morin it was ascertained that the friction of bearing surfaces was about 28 per cent less when the lubricating material was applied continuously than when applied at long intervals in the usual manner; consequently, the nearer the approach to a continuous flow, and, at the same time, no more oil be used than is necessary to effect perfect lubrication the more economical the result. Probably every one who has used wick-trimmed oil cups has experienced great difficulty in properly adjusting the flow of oil, and so adjusting it to feed while the machine is in motion, or to be shut off when stopped.

The accompanying engraving represents an improved oil cup which was designed to effect the object specified. It has been found to operate successfully, having been tested by actual use for over a year, the lubrication being better and the consumption of oil much less than with wick-trimmed lubricators in like situations.

The following description will enable the details to be clearly understood:—

The cup, A, is closed by a cap, B, fitted in the usual manner, and perforated to receive the spindle, C, the head of which is milled, so that it may be easily unscrewed; it is not allowed rotary motion in the socket, D, yet it may be readily withdrawn when desired to fill the chamber, or the cap, B, may be removed for that purpose. The plug, E, is operated by means of the spindle, C, and when screwed down the flow of oil from the cup is shut off. By unscrewing the plug, E, sufficiently to raise the top of the triangular groove that leads to the lateral passage, F, above the bottom of the cup, the oil will flow through the passages named, into the hole, G, and over the finger, H, from the point at which it will drop as long as any oil remains in the cup, and be delivered in a frequent succession of small drops, rather than in large drops at long intervals, as would be the case if the fine point



were omitted altogether. The rapidity of the discharge may be regulated by turning the spindle and screwing the plug, E, up or down. The spring, I, is used to prevent the jar of the machinery or any slight accidents from causing the plug, D, to become displaced when once adjusted.

With good oil—and none other should be used on machinery—"there is no trouble," says the inventor, "from clogging the passages if the plug is removed once in two or three months, and the dirt and settlements of the oil wiped out."

For additional information address J. H. Ferguson, No. 195 Nassau street, Brooklyn, N. Y., by whom it was patented through the Scientific American Patent Agency, on Oct. 3, 1865. [See advertisement on another page.]

The reward of \$100,000 for the arrest of Jefferson Davis has been paid to those who made the capture,

## JORDAN &amp; SMITH'S SCREW WRENCH.

The common screw wrench of one variety is made with a screw, as shown in this engraving, but the step, A, which the screw works in, is supported by the ferrule on the wooden handle, of which it forms a part. As this is a manifest weakness, putting the strain of screwing up a bolt or nut on the small nut,



on the end of the handle, it is better to make the wrench as shown in this engraving. Here the screw step, A, is carried by the shank, C, of the wrench, thus giving great stiffness and rigidity to the jaws and rendering them more capable of retaining a firm hold on a nut. The step of this wrench is made separate, and fits tightly to the shank, where it is retained by a stout screw thimble, D.

This mode of construction makes this wrench a very desirable one, since the handle is entirely independent of the jaws, and is, therefore, less liable to become loose. All common screw wrenches used for any length of time, made with a screw like the one shown, have loose handles, as machinists know.

This improvement was patented through the Scientific American Agency on Oct. 10, 1865, by Lucius Jordan and L. E. Smith. For further information address them at Southington, Conn.

## Russian Railroad Cars.

The *Nord* contains a description of the railway carriages running on the Moscow and St. Petersburg line. It appears that for the trifling addition of two roubles to the usual fare, travelers are received in brilliantly lighted saloons, around which luxurious sofas and arm chairs invite the weary to repose, while perusing the latest periodicals and newest novels, which are scattered on the tables. When the hour of retiring arrives, the valet de chambre conducts the gentlemen passengers to their sleeping apartments, while smart chambermaids point out to the lady travelers their bedrooms and boudoirs, fitted up, as the advertisement says, "with every modern luxury, including baths," etc. The smoking room has perfect contrivances for ventilation, and the thorough enjoyment of the cigar, pipe or hookah.

## BOOKS FOR MECHANICS.

Attentive readers of the SCIENTIFIC AMERICAN must have noticed frequently, in our advertising columns, long notices of new books on mechanical subjects. The manner in which these works are advertised is especially calculated to draw attention to them. Mr. Henry Carey Baird, the publisher, takes the index of any one of his works and inserts it literally. Such announcements are very expensive, but it pays, or else they would not be inserted.

We desire to call the attention of our readers of all classes to these books, as they are on subjects connected with branches of trade, art matters, and on professional things generally that are not only interesting as sources of knowledge, but positive aids in carrying on business. A man who is content to pursue the same routine his father did before him, is not apt to make a shining mark in the world, but for those who believe that knowledge is power, all practical information is valuable.

Mr. Baird's books are practical and, therefore, useful.

The long winter evenings are approaching, and there is no better way to employ a portion of them than in learning something. We advise every person who reads this notice to send a stamp for a catalogue to Henry Carey Baird, No. 406 Walnut street, Philadelphia, and if, among the long list, they do not find something useful, they must be hard to please. See the advertisement in this number.

## KING &amp; SMITH'S WASHER CUTTER.

Leather washers, or rings of leather, are extensively used in the arts, and also for domestic purposes. They are sometimes applied on the axles of wagons, between the wheel and the shoulder; sometimes used for joints in water pipes, and in many other places not necessary to mention in detail. As it is a tedious and unsatisfactory operation to cut many washers with a knife, the tool shown herewith will be found a valuable substitute.

It is simply constructed, and the engraving explains itself. A casting, A, is furnished with cutters, B, which work in slots, C. These cutters are held by screws, and can be set at any point. In the



center of the casting there is a fixed point, D, which is also capable of making a hole. This tool will cut out a ring of leather of any required dimension within the range of its width; it is quickly adjusted, and always ready for use. It is also convenient for joiners and pattern makers to cut their wood into circles when needed. It is used with a common brace.

It was patented on Oct. 24, 1865, through the Scientific American Patent Agency, by Messrs. Charles A. King and Otis A. Smith. For further information address them at Middletown, Conn.

ACCORDING to Newton, the great comet of 1680, at its perihelion, was only distant from the sun by the 163d part of the semi-diameter of the earth's orbit, where it would be exposed to a heat 2,000 times greater than that of red-hot iron, a temperature which would instantly dissipate any substance with which we are acquainted,