we surrender—at least we mean before *our mouth is closed* like a backwoodsman's bear-skin powder pouch, to enter our solemn protest.

Do these reformers expect us to believe that a man appears best when his face is so disguised that one would as soon hunt for a mouth at the back side of his head as the front? For one we can't see it. What are we coming to? We have no suitable implements with which to feed ourselves in the event of this fashion becoming "the law of the land." But, hold! Yes, the thought has just occurred to us—we saw in the Scientific American a wood cut representing a spoon for this very purpose. The "bowl" and handle are formed in the ordinary fashion, and a strap of the same material passes over the top forming a sort of funnel. We could name several objections to this new invention, but we have a plan of our own much to be preferred to the patent *hair* spoon—and for one, when "worse comes to worse," we mean to adopt it—and as we do not intend to apply for a patent, all others are at liberty to make the most of our suggestions. These implements, like most improvements, are "cheap, simple and not liable to get out of repair," and now, presuming that the reader is fully prepared for the announcement, we say—for the more solid, nutrimental aliments the patent Sausage Stuffer is just the thing—and for those who indulge in whisky, lager, coffee, tea, buttermilk, &c., the instrument most resembling, but not te hnically styled, a squirt gun, would seem perfectly adapted. What say you, Messrs. *Hall* and *Munn?*

[We copy the above from the Tunkhannock, Pa., *Republican*. We think the suggestion a good one. Let it be tried by all means.—Eds.

Blockade Runners Captured in 1864.

We have a copy of the Report of the Secretary of the Navy for the year 1864, which contains among other things a list of the vessels captured in attempting to elude the blockade in 1864. The total number caught or destroyed is eighty-eight. Of these seventy-eight were captured by merchant built steamers employed on blockade duty by the navy, leaving *only ten* captured by naval vessels proper. Of these ten two were caught in a sound or inlet where there was no escape, one by the *Sassacus*, and one by the *Sonoma*. Two others were taken, one by the *Kanawha* and others, and one by the *Matabassets* and others; but how many and what vessels were "the others" is not stated. One was caught by the *Minnesota*, a frigate of the old navy, and one by the *Pequot*, built by Mr. Wright not on the navy plans. Four out of the eighty-eight were caught by the new navy in the open sea and when the vessels were unaided in the capture; and only six in the open sea whether with or without aid.

We look in vain for the *Eutaw* and other fast naval vessels; their names do not appear; although when the *Eutaw* went into the blockade we were told that she would be heard from. What is the reason of this undeniable fact? Is it true that our naval vessels lack speed? What other explanation can be given?

Rag Boiler Explosion.

Wednesday, Dec. 21st, a boiler used for steeping rags exploded in a large paper mill in Troy, N. Y. The explosion was so violent that it blew down and destroyed a large brick building filled with machinery, breaking timbers a foot square into splinters, and doing damage to the amount of at least $40,000.

As rags are steeped under a pressure of 60 lbs. or more to the square inch, the explosion is no stranger than the explosion of any steam engine boiler. It doubtless resulted from imperfect construction or careless management. A small part of the $40,000 loss would have paid for a good boiler and would have hired a competent man to take care of it.

Big Oil Stories.

Oil wells have done big things in their day. The Phillips well has flowed two thousand barrels per day; Empire well three thousand; Sherman well fifteen hundred; Noble well fifteen hundred; Caldwell well eight hundred; Maple Shade one thousand; Jersey well five hundred; Coquette well fifteen hundred; Reed well one thousand."

We copy the above from an exchange, and would like to believe that the statements are all true; but our courage fails us just at the point of believing.

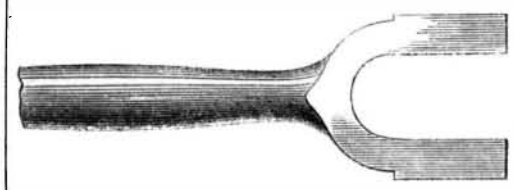
TURNING TOOLS.

PART FOURTH.

With a roughing tool and a finishing tool any one can turn out good work with a little experience, and observation will supply from day to day much more instruction than we could impart in a page of this journal. In complicated work, or in places where ordinary tools cannot be used, it may be of some benefit to our readers to bear in mind what follows.

The forked end of a connecting rod is a difficult thing to turn nicely. It is not troublesome to roughhew it, to make plunges at it with a round-nosed tool, to make chatters in it, or leave it in such a state that it will take a finisher three or four days to file it up. But to turn the various corners neatly, to leave the edges sharp, and the outline without ridges, is a nice piece of work, and on no other job can the turner show his ability better.

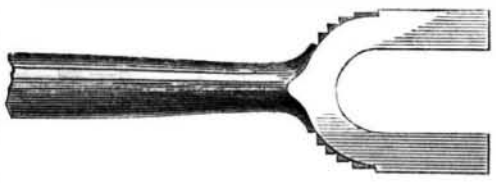
This is the piece of work spoken of, and although it is quite simple in its appearance, it is very trouble-



some. It is flat on the face toward the reader, and unless the finishing and roughing tools are set at the proper angles, and well secured, they catch under the advancing edge and break off or jump in. Every mechanic knows what mortification it is to have a tool act thus; for when the surface has been finely finished elsewhere one unlucky mischance by catching may spoil the whole,

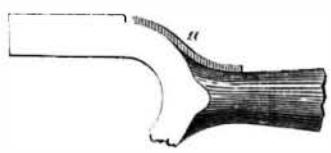
As the rod comes from the forge it is rough, and in heavy rods for marine engines, such as we now speak of, especially so. If it is troublesome to turn the rod it is bad to forge it, and the blacksmiths generally leave an abundance of metal.

After the rod is laid out with the curves expressed on the drawing, and properly centered, the turner takes a square-nosed tool and runs in nearly to the lines all round, as in this diagram.



This roughs out to the outline neat and clean, and develops the shape perfectly. It is handier than any other method, because the workman knows exactly what he is doing. Instead of skipping about, taking off a lump here and a chip there, he goes steadily on to the end, and never makes one turn of the feed-screw handle without some advancement.

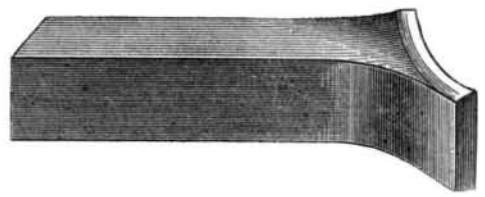
A square-nosed tool is better than any other for this purpose, because the edge, or corner, takes hold fairly and firmly, while the round nose, although it conforms to the curve better, is continually working or crowding off. When the tool has to be worked down a distance by hand, as in this diagram, it is



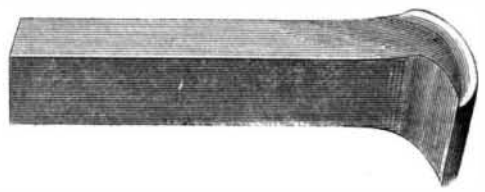
better to put in an ordinary roughing tool, with the feed in, and start at *a*, and cut it right down at once to the center punch marks denoting the outlines. In this way the lathe does much more work, for no man can feed as regularly and steadily, or as effectively, as the lathe itself can.

When the outline is once developed, and the ridges cut off by a bent side tool, the outline of the curves will present a surface consisting of a series of smooth-faced angles without a rough cut, a "dig," or a chatter upon them. After this it is an easy thing to cut off the tops of these angles, and make one fair and beautiful sweep of the whole outline. The surface will shine as bright as the face of a mirror, and be as true as a pair of dividers can lay it out. We know this because we have tried it.

The final finish can be well given by a tool con-



structed as shown in Fig 22, and the reverse curve as in this cut (Fig. 23). It must be borne in mind



that these tools have but little cut, or rake below, for the circle they cut on is very large and short, circumferentially, and a raking edge will jump in, while one too straight will push off. The linear length of the tool, or distance along the line of cut, should not be great, for the liability to spring is very greatly increased thereby. From two to three inches, and even less, ought to be sufficient for rods of ordinary marine beam engines.

Correspondence

A Well-expressed Compliment.

Messrs. Editors:—Inclosed find $3 for the Scientific American for one year, commencing January, 1865. A journal that combines so much that is artistic and beautiful with so much that is valuable and instructive I wish every success. I appreciate harmony in every thing, and I love to associate external beauty with richness of soul.

Hoping that prosperity may ever be your portion, I am, yours very truly, Wm. H Stevens.

Fredonia, Dec. 18, 1864.

Influence of Colored Light on Sorghum Molasses.

Messrs. Editors:—I take the following extracts from my memoranda:

Four cylindrical glass tubes, each of 1½ ounce capacity, and respectively of blue, red, green and yellow color, were filled three-fourths full with sorghum molasses, of a clear wine color, closed with cork stoppers, and exposed to the rays of the sun. After two months' exposure, the appearance was as follows:—The molasses in the red tube was covered with a moldy scum; that in the yellow tube had a flaky sediment; the molasses in the blue glass tub kept perfectly clear, and the peculiar taste of the sorghum was considerably diminished; the molasses in the green glass tube was similar to that in the blue, but not quite so perfect. The cork stoppers were removed; the scum in the yellow and sediment in the red tubes were also removed; the four tubes afterward covered with paper, to prevent the dust from falling into them, and exposed for two months longer to atmosphere and sun. A moldy scum appeared again in the yellow tube, a sediment in the red, while those of blue and green color remained clear as before. This experiment shows that molasses will keep best under the influence of blue color. The sorghum molasses contains a good portion of gum, also likely pectin.

The process of Prof. Goessling's patent, spoken of in Vol. XI., No. 25, consists, as I understand, mainly of a method adopted by Robert Philips, of Germany, published in No. 9, *Oeconomical News*, for the year 1843; also in Vol. I of Dr. Ludwig Gall's practical