Trap-making.

The Circular is a weekly paper published by the Oneida and Wallingford Communities—at Wallingford, Conn. Terms, "Free to all. Those who choose to pay may send one dollar a year." The last number of this paper contains an account of the trap manufactory of S. Newhouse, at the Oneida Community, from which we extract the most interesting portions:—

"Mr. Newhouse is a native of Brattleboro', Vt. His paternal grandfather was an English soldier who, having been taken prisoner by the Americans at the battle of Bunker Hill, afterwards adopted this country as his home. From Brattleboro' the parents of Mr. Newhouse removed during his infancy to Colerain, Mass., and in 1820, when he was fourteen years old, the family emigrated to Oneida County, N. Y. The need of a trapper in a new country is not pianofortes or *cartes de visite*, but *traps*. At seventeen Mr. Newhouse felt this need, and in the absence of other means of obtaining a supply, he set to work to make them. The iron parts of fifty or more were somewhat rudely fashioned in a blacksmith's shop, and for the steel springs the worn-out blades of old axes were made to serve as material. A mechanic of chance acquaintance showed the young artisan how to temper the springs. The traps thus extemporized proved on the whole a success; for they would catch, and what they caught they held. After the season's use they were sold to neighboring Indians for sixty-two cents apiece, and the making of a new supply was entered upon. These in turn were sold and replaced, and thus the manufacture of 'Newhouse Traps' was launched.

"During the next twenty years Mr. Newhouse worked at trap-making, sometimes alone and sometimes with a partner or with hired help. The extent of his manufacture was from one to two thousand traps per year, which supplied the local demand, and procured for him a reputation for skill in whatever pertained to wood-craft.

"The Community established itself at Oneida, about two miles from the residence of Mr. Newhouse, in 1848, and the next summer received him and his family as members. For several years after this but little attention was paid to the trap business. A few dozens were made occasionally by Mr. Newhouse in the old way, but it was not until 1855, under a call for traps from Chicago and New York, that practical interest was first directed to this branch of manufacture, with a view to its extension, by Mr. J. H. Noyes. Arrangements were then made for carrying on the business in a shop fifteen feet by twenty-five. The tools consisted of a common forge and bellows, hand-punch, swaging-mold, anvil, hammer, and file. The shop so established employed about three hands. The next year it was removed to a larger room in a building connected with water-power, and the number of hands was increased. Among them were several young men, who, together with Messrs. Noyes and Newhouse, exercised their inventive powers in devising mechanical appliances to take the place of hand-labor in fashioning the different parts of the trap. A power-punch was the first machine introduced, then a rolling apparatus for swaging the jaws. Soon it was found that malleable cast-iron could be used as a substitute for wrought-iron, in several parts of the trap. The brunt of labor expended had always been in the fabrication of the steel spring, and this was still executed with hammer and anvil wholly by hand. Two stalwart men, with a two-hand sledge and a heavy hammer reduced the steel to its elementary shape by about 120 blows, and it was afterward finished by a long series of lighter manipulations. The attempt was made to bring this part of the work within the grasp of machinery. One by one the difficulties in the way were overcome by the ingenuity of our machinists, until at length the whole process of forming the spring, from its condition as a steel bar to that of the bent, bowed, tempered and elastic article, ready for use, is now executed by machinery almost without the blow of a hammer. The addition of chain-making (also executed mostly by machine power) makes the manufacture of traps and their attachments complete.

"The statistics of the business thus extended are in part as follows:—Six sizes of traps are made, for the different grades of animals, from the muskrat to the bear, which have, to a great extent, superseded the use and importation of foreign traps in this country and Canada. The number of these made at the Community works during the last seven years is over half a million. The number of hands employed directly is about sixty, besides the twenty-five or thirty who find employment elsewhere in supplying the iron castings for traps. The number of hired hands in the Community shop is forty, whose present pay-roll amounts to over $1,100 per month, The amount of American iron and steel used is over 300,000 pounds annually.

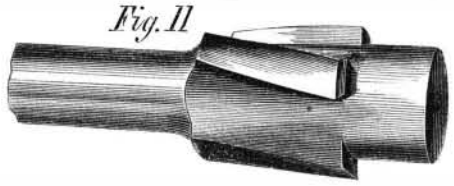
"We may add that to complete their arrangements for carrying on this business to the fullest extent of the possible demand for traps, the Community are building, the present season, a new manufacturing establishment on a water-power about a mile from their present works, which will enable them to more than duplicate their production."

BORING TOOLS.

NUMBER 3.

On page 37 of the current volume we discussed the merits of several sorts of boring tools, all of which are in daily use in machine-shops, in one or another part of the country. We take up the subject where we left it and submit to our readers some other plans of boring tools which have been found very effective. In Fig. 11 we have interposed an engraving of a

Fig. 11



counterborer, which was inadvertently omitted from our article on the "drill and its office," which received so much favor from machinists. It is merely a steel bar having cutters forged upon it in the manner shown. There are an unequal number of these cutters, five being preferred by the maker (Mr. White, a machinist of this city), and after the tool is forged it is turned in the lathe and filed up so as to cut. This is a neat-looking tool and one that we are assured does good work in the hands of skillful men. It may be made of any desired size or length; the one shown in the engraving is designed for gun-work.

The tools shown in the engravings published previously are merely those which are employed in comparatively light work, and in the minor operations of general machine work. There are cases, however, where these tools are not available, and others, entirely different and distinct in character, must be produced. An instance of this may be found in the cranks of heavy marine engines. These are forged solid, and the holes for the shaft and crank-pin are cut out of the mass of metal. In old times these cranks were bored by making a large hole with a common drill (say five inches in diameter), and afterward inserting a boring bar and cutter like the one shown in Fig. 12, and enlarging the hole. This method is doubtless still practiced in many shops, but there is another way which is more expeditious and economical. This is to bore a solid core out of the boss of the crank, as shown in Fig. 13, and leave the center standing.

Fig. 12

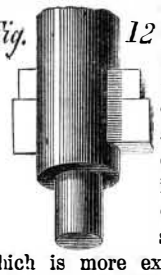
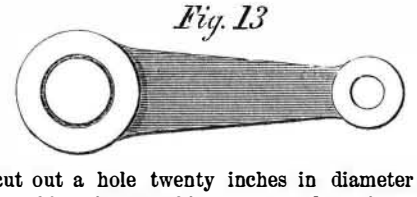
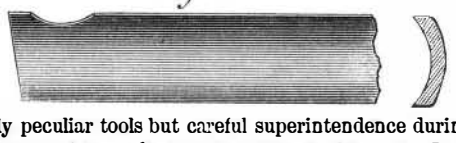


Fig. 13



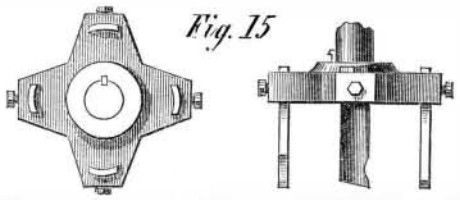
To cut out a hole twenty inches in diameter in solid metal is quite an achievement, and requires not

Fig. 14



only peculiar tools but careful superintendence during the operation. The tool is shown in Fig. 14. It is curved in section, perfectly flat and made very wide sideways, but not on its cutting edge. The cutting part is about $\frac{5}{8}$ths of an inch across. Four of these tools are set in a cast-iron cross which screws on the spindle of a heavy boring mill, and the tool thus arranged is shown complete in Fig. 15.

Fig. 15



The cutters are set so that two travel in line with each other, while the other two cut in another track, so that in this way a wide groove is produced from which the chips can be removed with facility. The channels are shown in Fig. 16. The tools do not bind or clog when care is taken, and they are so wide that they do not spring sideways. When one side has been cut half way down, the crank is turned over and bored from the other until the two cuts meet. The central core then falls out. The hole is afterwards bored true to the size required by an ordinary turning tool, and generally needs only two light cuts to finish it. With good luck one man should bore a twenty-inch hole, twenty inches deep in fifteen or twenty hours. The economy of this plan, as compared to the old one, is striking, and should be practiced in all shops that do work of this class.

Fig. 16

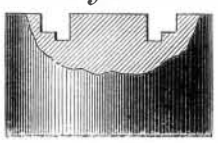
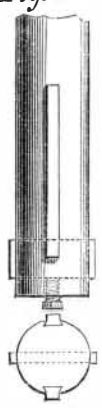


Fig. 17



A plan for a boring bar and cutter which was (and it may be still is) used in a mill for boring car wheels, is shown in Fig. 17. These wheels are used in such numbers on long lines of road, that it is necessary to provide some means for boring them as fast and as economically as possible. With this cutter a car wheel $3\frac{3}{4}$ bore and 8 inches deep, cored out $3\frac{3}{8}$, has been bored in from six to eight minutes complete. The arrangement is merely an ordinary bar with a cross-bit, or cutter through it; but at right angles with this there are two steel rimmer-blades, dovetailed in the bar. These rimmers are turned up in the bar itself, and can be driven out for grinding or other adjustment as required. They taper very slightly from the bottom to top, and are made a little larger than the cutter so as to follow it and true up the rough portions or surfaces left in the rapid descent. This cutter and bar does good work, when it is not forced too much, and we have known thirty wheels to be bored on the machine it was attached to in ten hours.

The "Scientific American."

The American mechanic will nowhere find in the same complete yet condensed form, the same amount of valuable and entertaining information that can be obtained in this journal, at the low subscription price of three dollars per annum. The volume commencing with the next issue will be especially rich in valuable information, as arrangements have been made to secure full tabular reports of the double set of experiments now progressing in New York, to test the actual value of working steam expansively. One series of experiments will be conducted by a commission under direction of the War Department, and will employ the basis of a fixed quantity of steam, with cylinders of different capacity. The other is progressing under direction of Messrs. Hecker & Waterman, and will be directed to ascertaining the value of steam worked expansively and non-expansively, in cylinders with and without a jacket of steam. To those who have already been subscribers to this journal we need say nothing. To those who have not heretofore had this privilege, we can recommend it as a serial that should be in the hands of every American mechanic —*Pittsburgh Dispatch.*