

THE MOST IMPORTANT AMERICAN DISCOVERIES
AND INVENTIONS.

No. 5.

LATHE FOR IRREGULAR FORMS.

Blanchard.---1818.

There are two classes of inventions—those of one class, like the steam engine, are the product of a long series of suggestions by different intellects, while those of the other class are each the bold conception of a single mind. Nothing could appear more impossible to most persons than the construction of a machine which should carve, from an irregular block of wood, a gun stock or a bust of the exact size and form of a pattern placed in the machine, and yet nothing could be more simple than the plan by which it is effected.

This machine was invented by Thomas Blanchard, of Sutton, Mass., and was suggested to his mind under the following circumstances. He had invented a tack-making machine and sold the right for \$5,000, when a friend induced him to undertake the task of devising a machine for turning gun barrels to supersede the laborious and imperfect method then in use of reducing them to a uniform thickness by grinding. The barrel was required to be cylindrical, excepting about three inches at the breech, which had two flat and oval sides. Mr. Blanchard constructed a lathe which formed the barrel at one continuous operation. The tool commenced at the muzzle and turned the round part of the barrel in the usual manner, and when it reached the proper point near the breech, it received a vibratory motion from a cam in the arbor by which the required form was produced in the most perfect manner.

The Superintendent of the U. S. Armory at Springfield made a contract with the inventor to erect one of his machines at that establishment, and when it was put in operation, the workmen gathered round to see it work. When the finished barrel was taken from the lathe one of the men remarked to another:

"Well John, he has spoiled your job."

To this one of the carvers of musket-stocks responded:

"He can't spoil mine. I'll defy him to turn a gun-stock."

This remark impressed Blanchard forcibly, and he thoughtfully replied:

"I am not so sure of that, and will think it over."

On his way home, a few days afterward, as he was slowly riding over the hilly roads of Brimfield, wrapt in deep meditation, the plan for turning irregular forms suddenly burst upon his mind, and he exclaimed aloud—

"I have got it! I have got it!"

Two men by the road-side, whom he had not perceived, overheard the exclamation, and one of them said to the other—

"I guess that man is crazy."

In this machine the cutters are secured in the periphery of a rapidly revolving wheel, and the block to be carved is suspended in a swinging frame upon a shaft parallel with that of the cutter wheel. The pattern is fastened upon the same shaft, and rests against a rod or wheel on the shaft of the cutter wheel. The shaft bearing the pattern and block is made to revolve slowly; and the pattern resting against its guide causes the frame to swing out or in so that a ring is cut in the block of the same form as that part of the pattern which rests against the guide. The cutter wheel and guide are carried along by a slow rectilinear motion, from one end of the pattern to the other, and thus the block is carved into exact conformity with the pattern.

This machine has come into general use for making lasts, spokes, hat-blocks, wig-blocks, and numerous other articles. It will make both a right and left last from the same pattern, in one case the pattern being turned in the opposite direction from the block. By a simple adjustment, too, lasts may be varied either in size or length from the pattern. We are not acquainted with any other piece of mechanism which produces so many and so varied results by so simple means.

THERE is a tenement-house in this city having sixty-eight rooms, eight by ten feet, containing seventy families of one hundred and forty-four adults, and one hundred and thirty-eight children, eleven dogs, and forty-three cats.

Hints to Riflemen.

If a man travels from the north-east corner of Maine to the south-west corner of Texas, he will find that the inhabitants of nearly all the places are impressed with the conviction that their own particular town contains a body of rifle-shooters superior to any others in the country or in the world. There seems to be no other art or amusement which commands so general an interest in the community as this. It is therefore probable that a treatise upon it, containing original and valuable matter, will have a wide circulation. We have just received from D. Appleton & Co., of New York, a neat little book of 260 pages, entitled "Hints to Riflemen," by H. W. S. Cleveland, an old sportsman who has had a great deal of experience in the use of the rifle, and who writes upon the subject with intelligence and good sense. We make the following extracts because they give a good idea of the work, and also because they are as attractive reading as anything with which we can fill our columns:—

THE BEST TARGET RIFLE.

The conditions whose observance is essential to the utmost perfection of accuracy and power, are more rigidly adhered to in the construction of the American target rifle than in any other which has yet been produced, and their fulfilment has resulted in a weapon, which, in these qualities, has never been, and probably never can be, surpassed. These conditions are: first, an enormous weight of barrel, admitting the use of so heavy a charge of powder as to impart the greatest possible initial velocity to the ball without any serious recoil; second, the gaining twist, which is absolutely essential to prevent stripping when so heavy a charge is used; third, the patent muzzle for loading, which with the help of the 'starter,' insures the accurate insertion and true delivery of the picket; and, finally, the telescopic sight, which renders the aim mathematically exact."

REPEATERS FOR SPORTSMEN.

"The service for which I have thus far had occasion to use the rifle, has been solely in shooting large game mostly in stalking deer. A somewhat extended experience of camp life on the prairies and in the woods, in exploring and surveying wild tracts, as well as on expeditions undertaken expressly for sporting purposes, has taught me the importance of economizing the number and weight of my equipments to the utmost possible degree—the number, because every additional article increases the danger of leaving behind or losing some implement which may be essential to the success of the expedition; and the weight, for reasons which make themselves obvious at an early stage of the march. If one goes on a mere gipsying excursion with abundant means of transportation, he may of course provide himself with whatever luxuries he may deem essential to comfort; but to my mind the zest of a life in the woods consists in securing the greatest possible liberty of locomotion, and relying, so far as may be, upon the products of the chase for subsistence. I have lived for months in the woods, carrying no other provisions than pork, hard bread, and tea, my whole kitchen furniture consisting of a knife and a tin cup, and my chief dependence being upon game roasted upon a stick, or fish wrapped in leaves, and baked in a hole in the ground. Two or three men may easily carry enough of such provisions by team, or in a canoe or bateau, to last for months, and on reaching their field of operations, may deposit them in a 'home camp,' and thence go out on their hunting trips, carrying a week's provisions if they wish in their knapsacks. Six crackers of common 'pilot bread' are enough for a day's allowance, and five pounds of salt pork should last a week, though this of course will depend upon the game secured. In surveying, when I have had no time to look for game, I have lived for weeks together upon no other food than this, frizzling my slices of pork upon a stick held over the fire. A small piece of fresh meat may be cooked in the same way, being skewered between two slices of pork, which will salt it sufficiently and prevent its being smoked. A very small quantity of tea will last a long time, and may be made by steeping in water boiled in the tin cup. Sugar is an unnecessary luxury which no one will ever return to, who has once accustomed himself to do without it.

"To correspond with the requirements of such service the gun should be as light as is consistent with efficiency, and requiring the least possible incumbrance

in the shape of ammunition and equipments. It is obvious, therefore, that the caliber of the gun becomes a matter of vital importance, since a slight addition to the weight of the ball will make a very sensible increase of the load to be carried, when one is taking a full supply. If there is a probability of meeting game which may prove dangerous when wounded, as a bear or a moose, one would feel safer if armed with a weapon which would enable him to deposit an ounce of lead in his carcass. But in order to get the full benefit of so heavy a ball, the weight of the gun must be increased proportionally, and it becomes necessary, therefore, to carry an enormous weight of gun and ammunition in order to be prepared for merely possible emergencies, while for all other service a very much less weight is all-sufficient. It is better, however, to submit to such inconvenience, disagreeable as it may be, than to run the risk of exposure to the alternative of a conflict with an enraged beast with no time to reload. But the necessity of carrying such a load may be obviated by using a repeater, carrying a ball of half the weight, for it is hardly conceivable that any animal may not be stopped by a man armed with a six-shooter. Indeed any of the single shooting metallic cartridge guns might be reloaded in time for a second or perhaps a third shot, which ought to be enough to finish the work in the hands of a man of sufficient nerve to think only of his aim. Excepting for such an occasion as this, or the more probable one of coming upon two or three deer together, or requiring a spare shot to prevent a wounded animal from escaping, there is no advantage to the sportsman from being able to load and fire very rapidly, and he may be hunting a long time without ever meeting an adventure for which a muzzle-loader would not be all sufficient. But if he ever happens to find himself in either of the above supposed positions, he will feel (if he has any of the spirit of a sportsman) that he never before had so keen a sense of the value of time; then it is, that the few seconds more or less, required for the manipulations between the shots, become matters of vital moment. Then he will learn, if he never did before, the importance of being so familiar with those manipulations that he goes through with them instinctively, and without taking his eye off his game; and then it is that the slightest sticking of any part or misplacement, or delay of even a single moment, becomes in his eyes a misfortune whose magnitude cannot be measured by ordinary standards."

EFFICIENCY OF BREECH-LOADERS.

"Capt. Wilson, Co. M, 12th Kentucky Cavalry, is an unconditional Union man, living in a strongly disloyal section of Kentucky. His neighbors had threatened his life. In consequence of this, Capt. Wilson had fitted up a long crib across the road from his front door as a sort of arsenal, where he had his Henry rifle, Colt's revolver, &c. One day, while at home, dining with his family, seven mounted guerillas rode up, dismounted and burst into his dining room, and commenced firing upon him with revolvers. The attack was so sudden that the first shot struck a glass of water his wife was raising to her lips, breaking the glass. Several other shots were fired without effect, when Capt. Wilson sprang to his feet, exclaiming, 'For God's sake, gentlemen, if you wish to murder me, do not do it at my own table in presence of my family.' This caused a parley, resulting in their consent that he might go out doors to be shot. The moment he reached his front door he sprang for his cover, and his assailants commenced firing at him. Several shots passed through his hat, and more through his clothing, but none took effect upon his person. He thus reached his cover and seized his Henry rifle, turned upon his foes, and in five shots killed five of them; the other two sprang for their horses. As the sixth man threw his hand over the pommel of his saddle, the sixth shot took off four of his fingers; notwithstanding this he got into his saddle, but the seventh shot killed him; then starting out, Capt. Wilson killed the seventh man with the eighth shot. In consequence of this feat the State of Kentucky armed his company with the Henry rifle."

A new "wrinkle" in the gas business is an attachment of a small marine clock to street lamps, whereby the gas is turned off at precisely the moment desired. An arrangement of this kind has been applied to a lamp in Springfield, N. J., and so far it works to a charm, and only needs to light the lamps to be perfect.