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The Joslyn Tomes Breech Loading Rifle.

We are sure that experts who examine this gun will coincide with us in the opinion that few, if any, superior arms have been produced. Its simplicity, ease of manipulation, compactness, and finish, at once arrest attention. Upon close examination it will be seen that the parts are remarkably few, and that they are so arranged in their combination that all may be made extremely strong and durable. Every part is readily accessible for cleaning, and at the same time, when the parts are put together, they form a solid, substantial, and admirable piece of mechanism.

Fig. 1 is a perspective view of the gun. Fig. 2 is a sectional view, showing the position of the parts at the moment of firing, and as they remain till the breech is again opened to insert the cartridge. Fig. 3 is a sectional view showing the breech opened to receive the cartridge, and also showing

the office of the sear, is sufficiently obvious without description.

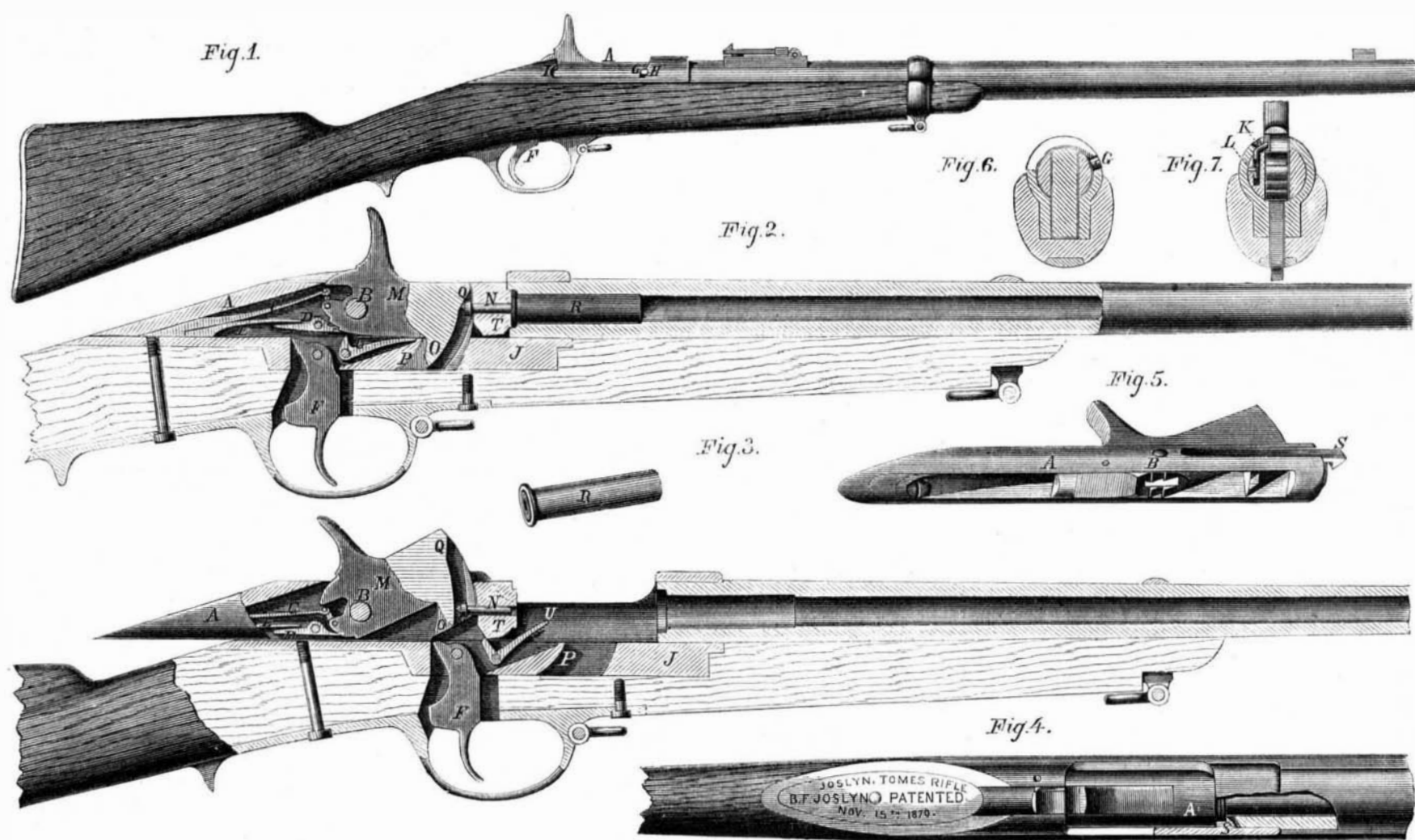
This breech piece slides backward and forward in loading the gun, its motion being limited by the stop screw, G, Figs. 1 and 6, which, when the piece is closed, rests against the shoulder, H, Fig. 1, and when the piece is opened rests against the shoulder, I. By taking out the screw, G (only the work of a moment), the breech piece may be taken entirely out, as shown in Fig. 5, for cleaning, oiling, etc., and replaced as quickly as taken out.

The breech piece slides in a socket formed on the receiver, J, Figs. 2 and 3, which receiver is suitably fastened to the stock, and to the front end of which the rear end of the barrel is secured. If desired the receiver and socket may be made in one piece with the barrel.

When the breech piece is slid into the position shown in

discharged in the manner described, they are extracted from the barrel by a spring catch or extractor, S, Figs. 4 and 5, which, when the breech piece is closed, engages the rim of the cartridge; and when the breech piece is drawn back, draws the spent cartridge back. When thus drawn back, the part, T, of the breech piece strikes upon the short arm of the bell crank lever, U, as shown in Fig. 3, and throwing up the long arm of the lever, throws out the spent case with considerable force.

The essential parts of the mechanism being thus described, we will now describe the manipulation, premising that only four movements are necessary to load and discharge the gun. First, the thumb seizes the comb of the hammer and draws it back to a little more than full cock, which releases the sliding breech piece; and, continuing the pull, draws back the breech piece to the position shown in Fig. 3.



THE JOSLYN TOMES BREECH LOADING RIFLE.

the cartridge as it appears when thrown out by the action of the ejector. Fig. 4 is a top view of the breech piece and a small portion of the barrel, the latter broken away to show the cartridge in position, and the way in which the extractor seizes the cartridge. Fig. 5 is a perspective view of the breech piece as it appears when taken out of the socket and held with its under side turned partly upward and outward toward the observer. Fig. 6 is a cross section through the stock and barrel, and through the stop screw, G, described below, illustrating the manner in which this screw is inserted. Fig. 7 is a cross section through the stock, receiver and breech piece, just behind the hammer, made to show the spring catch which holds the breech piece when the hammer is let down from full cock to half rest or full rest.

The chief points which distinguish this arm are as follows: The sliding breech piece carries the hammer, the mainspring, and sear, and searspring; and the hammer performs the threefold office of striking the firing pin in exploding the cartridge, of locking the breech piece in place in discharging the gun, and acting as a medium for operating the breech piece.

The breech piece shown in Fig. 5, and lettered A, in Figs. 1, 2, 3, and 4, consists of a cylinder beveled at the rear to suit the conformation of the stock.

A vertical slot through this breech piece is formed for the reception of the hammer, which is attached to the breech piece by a strong pivot, B, Figs. 2, 3, and 5. This slot also contains the mainspring, C, and the retaining and releasing catch or sear, D, together with its spring, E. F is the trigger, the action of which upon the sear, D, in firing, as well as

Figs. 1 and 2, it is held by the spring catch pin, shown in detail in Fig. 7, where L represents the spring carrying the catch pin, K. This pin holds the breech piece while the hammer is cocked, but is depressed by the back lash or slight motion of the hammer beyond the full cock so as to release the breech piece. This arrangement allows the hammer to be let down to half rest, or full rest, without releasing the breech piece, or discharging the gun, as the breech piece is only freed from the engagement of the spring catch when the hammer is drawn slightly past the full cock. This catch, however, does not hold the breech piece so firmly that it may not be readily drawn back by the hand.

When the hammer, M, descends to the position shown in Figs. 1 and 2, which it must do in order to strike the firing pin, N, and discharge the piece, the projection or hook, O, Figs. 1 and 2, formed on the nose of the hammer, enters the recess, P, in the receiver, J, and firmly locks the breech piece to the receiver.

The hammer projection or hook, O, enters the recess, P, at half cock, and thus the breech piece is locked before the slight projection, Q, strikes the firing pin, N, Figs. 2 and 3.

This firing pin passes through a hole in the front end of the breech piece, as shown, and by the action of the hammer is driven forcibly against the center of the base of the cartridge, R, as shown in Fig. 2.

The head of the firing pin plays in a cam groove formed in the front face of the hammer, and is thus held away from the cartridge at all times, except when the hammer has descended to nearly full rest.

The cartridges used are metallic, with center fire; and when

Second, the cartridge is laid into the receiver.

Third, the breech piece is thrust back to the position shown in Figs. 1 and 2, which inserts the cartridge into the barrel.

Fourth, the trigger is pulled which discharges the piece in the manner above indicated.

The movements are all simple and rapidly accomplished, making this one of the most rapid firing arms we have seen as well as one of the most positive and certain in its action.

The first movement cocks the hammer, throws out the cartridge, and draws back the breech, the whole being accomplished as rapidly as the operator can move the thumb through the distance required.

To put in the cartridge, slide back the breech piece, and pull the trigger, including the first movement, takes about the time in which one may moderately count four. The piece may be easily fired twenty five times per minute.

The gun may be left at half cock, when it is desired not to fire the piece, by pulling the trigger and lowering the hammer. From this position it may be cocked and fired without drawing back the breech piece, as the spring pin, L, holds it sufficiently firm to allow the hammer to be cocked.

No premature discharge is possible; the breech piece is always locked before the hammer can touch the discharging pin.

This arm was patented November 15, 1870, by B. F. Joslyn, and, to distinguish it from his other firearms, is known as the Joslyn Tomes gun. Address, for further particulars, Tomes, Melvain & Co., manufacturers and importers, No. 6 Maiden Lane, New York.

Does the Internal Administration of Drugs ever Defeat Disease and Death?

Mr. E. P. Buffett, in the September number of *Lippincott's Magazine*, has a very readable essay entitled "Shall we throw Physic to the Dogs?" The reasons he gives why we should do so, are such, we think, as will prompt humane men to say we should from benevolent motives throw physic to something it will neither nauseate nor injure, and let the poor dogs, abused enough now, escape an additional burden. From the article in question, we quote the following extract:

One fact in the history of medicine might well stagger the faith of the most confident believer in the virtue of drugs. It is the coexistence of two systems of practice, professedly antagonistic, each denouncing the other as absolutely ineffective or positively harmful, yet both apparently flourishing, both having enthusiastic and intelligent advocates. At a time when human blood was flowing in streams both large and small, not from the sword, but the lancet—when men believed that their temporal salvation depended on being scarified, cupped, leeches, and venesected—an impudent Teuton, Hahnemann by name, broached the insane idea that patients could recover with less bloodshed, or even with none at all; and, strange to relate, they did so recover with unimpaired integuments, and, so far as human eyesight could determine, just as well unscarified as the reverse. At a time when no fact was better established in medicine than that in certain cases blisters must be applied to the shaven scalp and to the spine of the back, and to the calves of the legs, this same German said to his tender skinned followers, "do not blister," and they persisted in recovering without blisters, but in direct violation of the orthodox rules of practice. Moreover, when hundreds and thousands were standing, hours at a time, spoon in hand, contemplating with rueful countenances the nauseous contents, and hesitating to make the dreadful plunge which should deposit the dose in its uncertain resting place, the Hahnemann before mentioned was tickling the palates of his patients with sugar pellets, and facetiously insisting that they were taking medicine. Some of them believed him, and from some inexplicable cause would recover from their ailments quite as frequently as under the old régime. This wonderful burlesque on the practice which Solomon adopted, whether it has added anything useful to the Pharmacopœia or not, has at least added a horn to a dilemma. Either the ridiculously mild measures and small doses were useful and effective—which we must be pardoned for saying we do not for a moment believe—or the ridiculously large and filthy doses and severe treatment which had previously been in vogue were useless, which we just as firmly believe. The inference is a fair one, even if it has not been absolutely demonstrated, that the virtue of drugs and their efficacy in healing disease has been overestimated, and that recoveries had been ascribed to the action of medicine which were due to an entirely different cause.

Solomon says: "A merry heart doeth good like a medicine." The inference is unmistakable. The wise monarch thought that "a medicine" does good. Probably Solomon supposed he had sufficient grounds for such a conviction. He had a large family, and as he was not in the habit of sparing the rod, very likely he succeeded in persuading some of the juvenile members to swallow certain unpalatable doses which he thought necessary for their health; and very likely he then thought he observed good results from the administration. It is not improbable that the Jewish king, having retired for the night after some sultry summer day, with every window of the royal palace widely open to catch the faintest zephyr, had been aroused in the small hours to find that the chilly northern blasts from the hills about Jerusalem were driving in at the open casement, and that the infant Rehoboam, from his trundle bed, long before the matutinal hour, was vigorously crowing with spasmodic croup. No doubt then, as would be the case at the present day, the door bell of the family physician was energetically rung, and the future hope of Israel was duly plied with ipecac, hive syrup, blisters, and sinapisms. The boy surviving the treatment, the father then, as parents do now, would forever afterward triumphantly point to the white headed urchin as a living monument to prove both the skill of the family physician and the value of hive syrup and ipecac. Doubtless, under some inspiration of this kind, Solomon assumed that there could be no question that medicine does good.

We make no pretension to any greater wisdom than Solomon on general subjects, but we do think that if he were living at the present day he would very carefully reconsider the proverb we have quoted. He undoubtedly had a family physician who was a regular practitioner, who frowned upon all patent medicines, who had never learned the value of infinitesimals, and who treated his patients in the original heroic style. Solomon probably believed that the medicines prescribed by his physician were orthodox, and that all others were heathenish and abominable. How would it have puzzled the wise man to have found, as we do at the present day, that not only the regular system of practice is successful, but that many other systems entirely at variance with it appear to be equally so! How would it have astonished the king to learn that his wisest and wealthiest senators and prophets were using, with immense satisfaction and apparent success, Indian vegetable pills, and the water cure, and the movement cure, and the extract of buchu, in ailments of every character and variety! How his temper would have been ruffled if the queen of Sheba on her visit had pronounced his family physician a humbug and urged his dismissal, while she offered as a present, various minute bottles of infinitesimal pilules, with glowing descriptions of their charming effect upon herself and the ladies and children of her court! But Solomon, after carefully considering the facts, would probably have drawn the inference, from the great variety of medi-

cal treatment around him, either that everything which claims to be a medicine, no matter how unskillfully applied, is just as effectual as the carefully prescribed doses of the court physicians, or that all medicines are alike ineffective and do but little good. And the new thought might gradually have dawned upon his mind that Nature or some inherent agency would just as certainly, if not as speedily, have cured the infant Rehoboam, without the aid of the official emetic, cathartic, or sinapism.

JONATHAN DENNIS, JR.'S APPEAL.

It is seldom that a decision emanating from a Commissioner of Patents partakes of the humorous. But Commissioner Leggett's review of the case of Jonathan Dennis, Jr., in appeal, reported below, is an exception to this common rule. Mr. Dennis is a Quaker gentleman of considerable distinction around the Patent office, and he deserves much credit for the perseverance with which he has so long prosecuted his case in the face of adversity.

APPEAL FROM EXAMINERS IN CHIEF, APRIL 28, 1871.

In the matter of the application of Jonathan Dennis, Jr., for letters patent for Improved Lessons for Teaching Reading. LEGGETT, Commissioner.

The applicant's claim is set out in the following words:

What I claim as my invention and improvement in the construction and arrangement of lessons for teaching reading, is placing a picture over or with some or all the nouns or names of things in the period or sentence to be taught, to aid or enable the learner to pronounce the word from the picture. I also claim in combination with a noun and picture in a reading sentence, repeating or duplicating the noun or name of the picture between the picture and its name, in the period or sentence, in the same or in different type.

The board of examiners-in-chief reject the application on the ground that "an improvement upon an old contrivance or device, in order to be the subject of sufficient importance to support a patent, must embody some originality and something substantial in the change, producing a more useful effect and operation. In the opinion of the board, what the applicant claims as his invention is not of sufficient importance, in view of this principle, to entitle him to a patent."

By way of argument the applicant has introduced a vast amount of printed and written matter, and an oral address of over two hours, covering almost the whole art of teaching; all of which I have patiently listened to and carefully read, hoping to find something that would warrant me in reversing the decision of the board of examiners-in-chief, for the applicant having diligently pursued this case, since the early part of 1864, when his application was first filed, I desired to reward his perseverance; but, really, the more the case is studied, the less there is of it.

Pictures have been used in teaching reading ever since a written language was first adopted. The earliest efforts at a written language were by picture representations of thoughts, and from that remote period to the present, pictures have always been used in giving children their first notions of written language. The plan adopted by the applicant is but one among very many of the schemes adopted from time immemorial to accomplish the same ends. Each of these plans varies slightly from the others, but between no two of them, probably, could there be found a patentable difference. The man who first conceived the idea of picturing his thoughts ought to have had a patent, but it is probably too late now for any broad claim in that direction.

The most common way of teaching words by pictures is to place the name of a picture directly under it. The only improvement the applicant claims to have made upon this plan is the connecting of these names with the pictures over them, together, so as to form phrases and sentences. It is barely possible that such change may have some advantages, but certainly none that entitle it to a patent. The applicant does not limit his plan of teaching to placing the picture over the name, but says, "over or with some or all the nouns or names," etc. In this form his improvement is clearly anticipated by many books and primers published all along for the last one hundred years or more. I have before me a primer published A. D., 1762, entitled, "A Guide for the Child and Youth." In two parts. The first for children: containing plain and pleasant directions to read English; with prayers, graces, and instructions, fitted for the capacity. The second for youth: teaching to write, cast accounts, and read more perfectly; with several other varieties, both pleasant and profitable. By J. H. M. A., teacher of a private school. London, 1762.

The lessons this book first taught, by a process substantially the same as the applicant's, have been transmitted in the New England Primer, and various other forms, from that time to this, and probably have gone into nearly every English speaking family the world over.

As I cannot here produce the illustrations, I will select such examples as will most readily recall to memory the pictures by which they are taught:

"In Adam's fall

We sinned all."

This book attend
Thy life to mend."

"The cat doth play
And after slay."

"The dog doth bite
A thief at night."

"The idle fool
Is whipped at school."

"My book and heart
Shall never part."

"Zaccheus he
Did climb the tree
His Lord to see," &c., &c.

Here the words Adam, book, cat, dog, thief, fool, book and heart, Zaccheus and tree, are all so marked by the type in which they are printed as to refer to the picture which is found "with" each couplet. These pictures not only distinctly illustrate the works marked, but also fully suggest the thought intended to be expressed by the couplet, thereby accomplishing the whole object of applicant's device, and more too, and by a plan substantially the same.

This kind of instruction, for generations past, has constituted a part of nearly every nursery library; and at this late date, amid all our efforts to make knowledge free, to give the applicant a monopoly of this mode of teaching for the next seventeen years, and thereby either deprive the nursery maids of this agreeable mode of instructing the little ones committed to their charge, or take the risks of expensive suits and heavy penalties for infringement of a patent on the process, would be an outrage of which the Patent Office certainly ought not to be guilty. The decision of the board of examiners-in-chief is therefore affirmed.

Fire Escapes.

A pair of small cranes with bed or base pieces are adapted for resting across the window sill, and screwing thereto to hold the said cranes in the proper working position by means of the projections at the outer ends, and screws at the inner ends, the latter screwing through the bent ends of the base pieces against the sill under the rib or projection of the latter. These cranes are connected together for the purpose of steadying them by a bar, pivoted to one, and hooking on a stud pin on the other; also by a bar pivoted to one and detachably connected to the other by a bolt or pin; but the said bars may be connected in any suitable way to render them readily detachable, so that the apparatus may be readily put up or be taken down and packed for removal. These cranes have pulleys suspended from the upper ends in any suitable way for suspending a carriage by means of ropes. The ropes are attached to a ring connecting them with four chains, holding the platform by each corner; thence the said ropes pass up over the pulleys and down through tubes, the former being supported vertically on a frame, slightly above the platforms, and the latter on the platform below, in the same vertical lines with the others; from these latter the ropes extend to the ground, being long enough to reach the ground when the platform has been let down to it. These tubes are employed as a means of holding the ropes so that they may be readily clamped by friction apparatus for regulating the descent. In the lower tubes the ropes are clamped by crooked levers which project through holes in the tubes and press the ropes against the inner wall of the tubes; the levers being pivoted to the bottom of the platform, where they pass through it and extend along the upper side toward the center, where they nearly meet, to be conveniently secured by a button or any equivalent device. A spring is placed under the long arms of the levers for throwing them up whenever they are released from the button. This friction apparatus is designed mainly for holding the platform up previous to and while entering upon, but it may also be used alone or in connection with other friction apparatus for regulating the descent. The inventors prefer, however, to employ other apparatus alone, using this merely to hold the carriage while preparing for the descent. They therefore combine the clamping levers with two upper tubes in a similar manner, being a more convenient arrangement for regulating the descent by hand than the others, the said levers rising up along the tubes so that one person may grasp both the tube and lever of one side of the carriage in one hand, in a manner to force the levers against the ropes with great power. On commencing the descent the lower lever will be released, and the upper levers employed. The levers have a projection on one side, extending into the tube to act on the ropes. They are also provided with springs to throw them out. A piece of flannel or other substance that will not burn readily, may be stretched around the carriage to protect the occupants. It is claimed that this apparatus may be readily set up in any window, and may be worked down and up as many times as necessary for removing persons or baggage, being elevated by the working of the ropes by persons on the ground, the levers being released from them at the time. Messrs. John C. Hancock and Edward P. Richardson, of Somerville, Mass., are the inventors of this fire escape.

A Clergyman's Workshop—The Pastime of the Lathe.

A correspondent of the *Commercial Advertiser*, gives this description of the workshop of the Rev. John Todd, of Pittsfield, Mass.:

In one room a well stocked library with rare books, ancient and modern, in different languages. In the centre of the room is a rippling fountain, and articles of beauty from kindly donors, with relics of the war. In this study the hand of the owner is seen in elegant book cases made by himself, beautiful picture frames from his own workshop, and little adornments turned from his own lathe to adorn a room where so many hours of brain work are expended.

Directly opposite is another room of entirely different character. Here is the veritable "Congregationalist lathe" procured from the proceeds of his contributions to that paper, and so most aptly named, while another lathe, of great value, elegant and beautiful, is greatly prized by the owner, who points out its various graces with the enthusiasm of a collector of gems. Here is a collection of saws and screws, and clamps and planes, and vices and gouges, and mandrels, and other tools, that would confuse any but a born mechanic, while shelves of acids and chemicals for polishing, with delicate anvils and tools of great variety, are kept in perfect order. One of the lathes' appliances performs two thousand revolutions in a minute, and is as delicate and graceful in its movements as the sweep of a bird through the air. If a tool is wanted for special use, the fertile brain of the Doctor invents it, and his skilled hand brings it out of the rudest elements.

He has a great variety of beautiful woods from different parts of the world, and a steam engine so petite and fairy like as to call forth commendations from the dullest looker on. Everything is arranged so systematically that the owner could put his hand on any one of over a thousand tools in the dark.

FERMENTED MILK.—On the steppes of Tartary, mare's milk is an ordinary beverage of the people; and a drink called "koumiss" is made therefrom by fermentation. A similar beverage has been produced in Germany from cow's milk, and showed, on analysis, that it contained alcohol, carbonic acid, lactic acid, with butter and caseine in a minutely divided state, as well as sugar and other residues of the milk. It is stated to resemble a mixture of cream and champagne, in flavor.