

The application of artificial heat to ripen wine being old, and the application of artificial heat to the outside of casks to ripen wine contained therein being old, it did not require invention to apply artificial heat to the inside of the casks to ripen the wine in the same.

There was no invention in applying steam pipes to the interior of a cask for the purpose of heating the wine contained therein, steam pipes having been previously applied to the interior of a closed tub for the purpose of heating water in the same.

MILITARY NOTES.

Eiserne Portionen (rations of iron) is the name given by the *Militär Wochenblatt* to the canned provisions which the German soldier is now compelled to carry in his knapsack or haversack, not for immediate consumption, but for use at those times when his command is removed from the base of supplies or the quartermaster's department is short. It says: "These victuals of iron are, during war, to be used on the evening preceding a great battle, or, better, when, the army making a sudden change of front, the convoys are for a day or two retarded." Much of this canned provision is put up in America, and is said to be both better and cheaper than the German. The 7th corps (Westphalian) commanders have recently experimented with canned chocolate and cocoa, which, though seemingly light refection for a marching column, has, on the contrary, been found excellently adapted.

The report made to the French Chirurgical Society by the surgeons who examined the bodies of the soldiers killed by the explosion of *melinite* at Belfort shows, as printed in *L'Avenir Militaire*, that the effects of this new explosive are even more to be dreaded than was supposed. Of the 17 men hit, only six lived. The bodies of the slain, it is said, were literally torn into shreds, and it is the belief of Dr. Tachard and his assistants that much of the substance exploded only after entering the bodies, or, in other words, that *melinite* as now compounded explodes at different periods, some early, some late; the first bursting the shell into fragments, and the latter, adhering to these fragments, exploding when driven home. They remarked on the absence of burns and of poisoning. The bodies of the wounded were found to be tattooed as if with explosive dust.

The French military authorities have recently issued stringent orders regarding the observance of the Sabbath day, and an over-zealous officer, Colonel Pons, commanding the 3d Infantry of Marine, who insisted upon calling out his men for practice on Sunday, has been sent to the penal colony—New Caledonia.

That grand old ship the *Victory*, Nelson's flagship off Cape Trafalgar, when he encountered and beat the combined French and Spanish fleet, October 21, 1805, was recently found to be in a sinking condition, but, happily, has been saved, and now, after weathering the storms of a century, rides at anchor in Portsmouth harbor. A plate fastened to her quarter deck marks the spot where the great admiral, shot through the body by a musket ball, survived only long enough to see the enemy strike his colors.

The *Revue Militaire de l'Etranger* says the Russians are constructing sledges at Stanislau for the transportation of field artillery through the snow. It says, as quoted by the *Broad Arrow*:

"A stout log of timber, destined to support the axle-tree, is placed in the longitudinal axis of the sledge and stoutly secured. The gun carriage is run trail first over the sledge, the width of which, being less than the track of the wheels of the gun, renders this possible. The under surface of the axletree being made to rest on the log above mentioned, the wheels are removed and placed over the trail. Provision is made for the security from injury of the elevating gear. The axletree arms and trail are now secured by lashings, as also the wheels. The whole rides with sufficient stability, and the axletree seats, if any, may be occupied by two gunners. The limber is similarly disposed on a second sledge, except that no log is here necessary to support the axletrees. The pole (or shafts) may be lashed between the 'sabots' of the sledge. Three gunners may be seated on the limber boxes."

Compare this complicated apparatus with the simple plan adopted by Bonaparte when, in his first Italian campaign, he dragged his cannon over Alpine snows, set in grooves roughly hewn out of the trees which the soldiery felled, the wheels set, pair by pair, astride of mules and horses. Field guns, it is true, are larger now than they were then, but knowing as we do, from subsequent tests, how great was the ingenuity of the great master of war, there can be little doubt he would have suggested to himself a ready means of handling heavier material of like kind. Ready wit is worth a deal of preparation!

The Italian expeditionary army, encamped in the

fortified town of Massowah, Abyssinia, and now awaiting the attack of King John, are said to be under fine discipline, notwithstanding the ravages of the fever. The Italian foot soldier bears fatigue poorly, if he is correctly reported, though the corps called Bersagliers, recruited from the Italian Alps and Apennines, is hardy and enduring. At Dogali, where a previous Italian expeditionary force were slaughtered almost to a man, the Abyssinians captured many stands of arms of the repeating type, with a store of ammunition pertaining to the same, and it is said a portion of the enemy's force are armed with these rifles. King John's lieutenants, Negus and Ras Alula, and most of their men, are of Coptic, that is to say Christian, extraction. They are big men, hardy, courageous, and intelligent, and since only one of the many armies sent against them in recent years succeeded—it was that under Lord Napier of Magdala—they are by no means to be regarded as a despicable foe. Lord Napier carried the war, without delay, into the very heart of their country, and thus gave them no time for preparation, and the terrible fever no chance to spread among his troops. The Italians, on the contrary, have been playing a waiting, and what old African soldiers regard as a dangerous, game, and there is authority for the report that they have tired of this, and will soon re-embark for Naples, as the rainy season is about to set in.

The Austrians are busily strengthening the fortifications of Pola, which has become the headquarters of the Austro-Hungarian navy. Pola is at the extremity of the Istrian peninsula, which protrudes 60 miles into the head of the Adriatic and flanks the approaches to the two principal commercial harbors of the empire, Trieste and Fiume, and commanding what may become the hostile port of Venice. Austria is looking to acquire a port in the Ægean Sea. Her navy consists of 11 ironclads, 2 unarmored cruisers, 5 corvettes, 39 torpedo boats, 8 river monitors—the same being manned by 9,000 men.

Government Telegraphy.

Nearly all the discoveries and improvements in telegraphic science have been American. The specially American demand for the improvements stimulated the most ingenious and ambitious operators in our telegraph companies to discover newer and better methods. There were many rival lines of telegraph, and competition between them was fruitful in efforts to acquire greater control over electricity, and get out of it faster and cheaper work. To all these inventors Senator Edmunds stands in his place in the United States Senate and gives notice: "If my postal telegraph bill becomes law, the Secretary of War will have power to seize your devices and machines, and use them in the government service; and if you and he cannot agree upon a price for them, your only remedy will be to sue the government in the Court of Claims, with the privilege, if dissatisfied with its award, of appealing to the Supreme Court." Whatever influence this language, perfected into law, may have on other things, it will end telegraphic invention. That is dead sure. Research and endeavor in this most delicate and elusive department of science will no longer have the encouragement of large reward and a competitive market. The admirable business of these finely organized men, who lead lives of ingenious experiment and patient trial, will be struck with paralysis in face of the brigand purpose of the government to seize their devices, and to drive them to the cost and heart-breaking of law suits.

And what will become of our business of commercial and social telegraphy, thus stolen from private ownership and corporate management? It is now the best in the world. Why? Its owners are Americans, driven to unceasing endeavor in their business by unceasing competition. Its managers are Americans, who cannot be matched for administrative ability and technical knowledge. Its operators are Americans, exceptionally intelligent and skillful. Indeed, the Western Union Telegraph is the most distinctive American institution in the United States. But within a year after the government should get hold of it, it would be impossible to recognize it, so wholly would it have lost every characteristic excellence. For government telegraphy will be a flat failure. It will be a failure: First, for want of the stimulus of private ownership spurred by competition; secondly, because the most skillful, brightest, and manliest of the operators will not accept public service, there being no future in it, and a government clerkship being to them a descent in life; thirdly, because these skilled specialists would scorn to be officered by politicians who have no knowledge of the business of which they are justly proud; fourthly, principally for the reason that the skilled men who, as superintendents of divisions, now manage the business and plans of the great telegraph lines, could not be drawn into the public service.

Federal office holding is the business of second rate and third rate men; of men who drop their muskets in the battle of life and straggle to the rear; of men willing to exchange large possibilities for small certainties.

The corporate telegraph managers, on the other hand, are first rate men and high priced. When they leave the wires, as they are constantly tempted to do in every direction, they go upward in responsibility, rank, and pay, and never go downward. Mr. Hughitt, the president of the Chicago and Northwestern Railroad Company, confessedly the best railroad man in America, started on his upward career as a telegraph operator under the great Tom Scott, with but a common school education. His schooling on the wires, in and out of a railroad station and on its platform, was worth a dozen university educations. Fifty thousand dollars a year would not draw this great administrator into the management of a government telegraph, either as Postmaster-General or Superintendent.

Among the great steel rail makers and iron masters of the world are the Brothers Carnegie, of Pittsburg. Each in unaided youth was a telegraph operator on the Pennsylvania Railroad. Each left the wires for higher service and larger pay in railroad management. Both went as part purchasers and managers into a Bessemer steel mill on the line of the road. Sheer volume and quality of brain, inspired by a genius for organization and command, and directed by courage and morality, carried them to the summit of industrial success. A column of this paper would not suffice for the mention of the promoted operators, officers of the Western Union Telegraph Company, of kin in quality to the Carnegies and Hughitt, who have been captured from the wires by great railroads, banking institutions, and manufacturing corporations, and carried off to superintendency on high pay. It is officers like these who have given success to American telegraphy. Politics attract not these men. To them public employment is a tomb for the young and an asylum for the aged. In the case of the chief of them, to whom the government would naturally turn for management of a telegraph plant to include over 53,000 post offices, we do not believe that the Presidential salary would tempt Gen. Eckert to think of undertaking it.

Bad enough will be the case of the government's postal telegraph without adequate general and division officers to manage it, capable and ambitious men, trained in every department of their business. It has been truthfully said that, excepting a woman's spring bonnet, nothing quicker gets out of usefulness than a telegraph line not constantly looked after.

In corporate telegraph service the operators live and work under discipline. The conditions of employment are fidelity, industry, and obedience to rules. For want of these virtues operators lose their places. Transmute these men, by act of Congress, into federal office holder, straightway they pass out from the discipline of a well managed corporation, and take life easy in the short hour, go-as-you-please ways of a government department.

We warn the people of the United States that if they permit the system of telegraphy they now enjoy to be carried off into the Post Office Department, government telegraphy will as surely be a failure in America as it has been in Europe.—*N. Y. Sun.*

Cities of Half a Million and Over.

London, England.....	3,955,819
Paris, France.....	2,269,023
Canton, China.....	1,500,000
New York, N. Y.	1,400,000
Aitchi, Japan.....	1,362,050
Berlin, Prussia.....	1,122,330
Changchoofoo, China.....	1,000,000
Sian, China.....	1,000,000
Tschautchau-fu, China.....	1,000,000
Tokio, Japan.....	987,887
Sartama, Japan.....	962,717
Tien-tsin, China.....	950,000
Philadelphia, Pa.....	850,000
Hang-tcheon, China.....	800,000
Pekin, China.....	800,000
Tschingtu-fu, China.....	800,000
Woo-chang, China.....	800,000
Brooklyn, N. Y.....	771,000
St. Petersburg, Russia.....	766,664
Calcutta, India.....	766,298
Vienna, Austria.....	720,105
Chicago, Ill.....	715,000
Constantinople, Turkey.....	700,000
Foo-choo, China.....	630,000
Moscow, Russia.....	611,974
Hang-chow-foo, China.....	600,000
Hankow, China.....	600,000
Liverpool, England.....	573,000
Glasgow, Scotland.....	514,043
Pekalonga, Java.....	505,204
Madrid, Spain.....	500,900
Bangkok, Siam.....	500,000
King-te-chiang, China.....	500,000
St. Louis, Mo.....	500,000
Tat-seen-loy, China.....	500,000

An Automatic Electric Chess Recorder.

Dr. Wurstenberger, of Zurich, Switzerland, has constructed an electrical machine that records the movement of chess men on the usual board. It is now at work in London. The record is printed on a paper strip, like the stock printing machine. A print is made when a chessman is taken up or removed from the board; also when set down on the board. It is a very complicated machine.