

seem to keep the country supplied for awhile; but year after year the manufactories continue in active operation; the supply, like the demand, being seemingly inexhaustible.

"TRIAL OF KETCHUM'S HAND GRENADES."

NAVY ORDNANCE YARD, }  
Washington City, Oct. 6, 1863. }

COMMANDER H. A. WISE, Chief of Bureau of Ordnance.  
SIR:—In obedience to Bureau Order, I have examined and tried Ketchum's Hand Grenades, and have to report as follows:—

This Grenade is a hollow projectile ellipsoidal in shape, with an opening at each end of the longer axis. At one end is a hollow cylinder, at the lower end of which is a nipple for a percussion cap, which communicates with the charge:—This cap is exploded by the plunger which fits the cylinder. On the other end of the plunger is a concave iron disc:—a steel spring is also attached to the plunger to prevent its resting upon the cap; a short stick with paper fans attached is inserted in one end of the Grenade to ensure the disc end striking first and thereby exploding the projectile.

The projectiles, 1, 3, and 5-pounders, held 1, 3, and 5 ounces of musket powder respectively.

The trial began on a level piece of ground at Pencote Battery, and each grenade was thrown by the agent, who, however, declined to fire the 3 and 5-pounders without shelter.

Two of the 4-pounders were thrown by the agent (he being the only person exposed) 44 yards,—both of which exploded. A fragment of the second grenade fell 25 yards behind him at an angle of 10° with the line of flight.

Three ineffectual attempts were made to explode some of them in a barrel; the agent being near the point of explosion, but covered by a tree. At the fourth attempt a 5-pounder exploded in a strong iron hooped barrel, bursting the hoops and tearing the barrel to pieces; some of the fragments of the projectiles going through the staves: A 5-pounder was then exploded in another barrel not so strongly made with corresponding results.

Two of the 1-pounders were then thrown by the agent from the wooden wharf into the water, both of which exploded.

These Grenades appear to be as safe as projectiles of so dangerous a character can be devised.

Respectfully submitted,

(Signed) W. MITCHELL,  
Lieutenant Commander and Executive Officer.

The frigate "Niagara."

The Boston Commercial Bulletin says of the Niagara: "This splendid vessel is now at anchor in the stream and looks well; but she is altogether too deep, as she draws nearly 26 feet of water,—two feet more than the Great Eastern and one foot more than the famous British iron-clad Warrior. Her main deck ports do not seem to be more than five feet from the water, and consequently, in a seaway, could not be opened with safety to use her best battery. We have heard that she has not room enough to contain more than two and a half months' stores for her crew, in consequence of the blunders of those sages in Washington, who designed the alterations in her. She was so deep when she had all the stores on board that some of her coal had to be taken out to lighten her. We have heard that she is bound to the Mediterranean, where she will be of as much use as if she was lying where she is—perhaps less, for here she might be used to protect the city. In the Mediterranean we require swift sloops of war and a gunboat or two, not a ship like the Niagara."

GUNS FOR MASSACHUSETTS.—The Putnam machine company, of Fitchburg town, have contracted for the manufacture of the heavy guns for the coast defense of this State; and are erecting buildings and machinery. A portion of the guns will be of the Blakeley pattern, weighing from twenty to thirty tons each, and all of them will be rifled, and are designed to throw a projectile weighing from three to six hundred pounds. This company will also manufacture for the State a new pattern cast-steel rifle gun, designed by C. Burleigh, one of the Putnam machine company.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list:—

*Shoe pegging Machine.*—This invention relates to a new and improved machine for pegging boots and shoes by hand. The invention consists in the employment of an awl, peg-driver and cutter, attached to a spindle provided with a spring and fitted within a tube, and all arranged in connection with a feed mechanism, in such a manner that, by a simple blow on the spindle, a hole will be made in the sole of the boot or shoe to receive a peg, while a peg will be driven in a hole made at the previous descent of the spindle, and a peg cut from the peg-wood to be driven at the succeeding descent of the spindle, the device being fed along on the sole for the succeeding operation as the spindle is forced upward by the spring. William Miller, of No. 3 Harrison avenue, Boston, Mass., is the inventor of this machine.

*Restoring Bone-black.*—This invention relates to certain improvements in the internal arrangement of the furnace, whereby the heat is equally distributed all round the retorts and throughout their entire length, and consequently an ever and uniform heating of the bone-black or other substance contained in the retorts is insured. The invention also relates to a peculiar-shaped retort; whereby a large quantity of bone-black or other material can be exposed simultaneously to the heat of the fire, in a stratum of uniform and small thickness, and the whole mass can be heated evenly and uniformly with a comparatively small quantity of fuel. Gottfried Thilmaier, of No. 165 West 24th street, New York city, is the inventor of this improvement.

*Sawing Machine.*—The object of this invention is to arrange the feed rollers of a sawing machine, so that they can be readily adjusted to cut a log or timber in two or more equal parts, and that the feed rollers will adjust themselves to the thickness of the log or timber. The invention consists in combining with the feed rollers two reciprocating slides which are operated by double crank shafts, connected by a rod in such a manner that the feed rollers will arrange themselves automatically at such a distance from the plane of the saw as may be desired, either both at equal distances or one at a proportionally larger or smaller distance from said plane. S. W. Northrop is the inventor of this improvement, and Winne & Northrop, of Albany, N. Y., may be addressed in relation to it.

*Skirt Wire.*—This invention consists in the covering of skirt wire by weaving instead of by plaiting or braiding, as his heretofore been the common practice, thereby effecting great economy in the covering process by a great saving in the quantity of yarn required to produce a good covering, and in the power required to drive the necessary machinery, and making as good if not a superior article. William Darker, Jr., of Philadelphia, is the inventor of this improvement, and further information may be obtained of the assignee, J. B. Thompson, No. 29 North 20th street, Philadelphia, Pa.

*Stretching Hat Bodies.*—This invention relates to a new and useful machine for stretching hat bodies preparatory to blocking them, such hat bodies as are filled or felted after being formed on machines contrived for the purpose. These hat bodies, after being filled or felted, are very much contracted in dimensions, and require to be stretched previously to being blocked and brought to the desired form; this stretching operation has hitherto been performed by hand at a considerable expense; and this invention is designed to supersede the manual operation. To this end it consists of two blocks attached to arms, the upper ends of which are suspended on a pivot and operated by means of a cam and spring, or their equivalents, in such a manner that the two blocks will be moved simultaneously toward and from each other, and the hat bodies, which are placed on the blocks, properly stretched. T. G. Oakley and W. R. Finch, of Brooklyn, N. Y., are the inventors of this improvement.

*Fire Extinguisher.*—The liability to fire in bins for cotton and other fibrous materials has been so great that, in all modern bins, it is customary to place a train of perforated water pipes, and connect such

pipes by a cock or valve with a tank of water, so that in case of fire, water may be let into the bin by opening the cock or valve by hand; but there is often so much loss of time before opening the valve that the fire makes considerable headway before the water reaches it. The object of this invention is to make such cock or valve self-acting, and to this end it consists in the attachment to such cock or valve, of a weight which, until fire occurs in the bin, is supported in a cup or seat, in which is placed a small quantity of gunpowder, gun-cotton, or other explosive material, from which a fuze leads in serpentine or other form through various parts of the bin. When fire takes place in the bin, it must soon reach this fuze, by which it is almost instantaneously transmitted to the gunpowder or other explosive material in the cup or seat, by the consequent explosion of which the weight is blown out and caused to open the cock or valve and admit the water into the bin. William Kitson, of Lowell, Mass., is the inventor of this improvement.

*Paddle Wheel.*—This invention consists in constructing the floats of the wheel of two parts, to wit, one part consisting of a flat board having its lower edge rounded, and the other part consisting of a series of blocks attached parallel to the first-mentioned part and at right-angles therewith; the blocks being wedge-shape in their transverse section, and rounded at their outer and inner ends, whereby the floats or blades are made to operate without the concussions and jars which attend the operation of the ordinary paddle wheels, and the "lift," as it is commonly termed, produced by the resistance the water offers to the buckets as the latter leave it, avoided, and, at the same time a strong, durable and economical paddle wheel obtained. Leonard Ames, of Wanbeck, Wis., and Melville Miles, of Pepin, Minn., are the inventors of this improvement.

*Breast Pump.*—This invention relates to certain improvements in that class of breast pumps in which the rarification of the air is effected by the action of a flexible elastic globe or diaphragm. The invention consists in the employment of an elastic hemisphere placed on a flanged disk which is provided with a valve and secured to the top of the breast cup in such a manner that said hemisphere can be readily placed on the flanged disk without requiring any fastening, and the air in the cup can be rarified by repeated action of the thumb or one of the fingers on the hemispherical diaphragm. The invention consists also in the application of a small strip of oil silk or other suitable flexible material tied across the aperture leading to the interior of the cup, in such a manner that on depressing the hemispheres, said strip is pressed down upon the aperture and caused to close the same, and on releasing the hemisphere the strip is drawn off from the aperture and the air in the cup is rarified. It consists, finally, in the arrangement of a recess in the middle of the flanged disk which supports the hemisphere, to receive the valve and a small quantity of loose cotton or other suitable material saturated with oil, in such a manner that the valve is protected against injury whenever the hemisphere is removed, and that by the action of the grease the valve is prevented from sticking. John N. Beadle, of New York city, is the inventor of this improvement.

*Slide for Extension Tables.*—The object of this invention is to construct the slides for extension tables, in such a manner as to obviate all difficulties attending the swelling of the wood and the consequent sticking or bending of the slides, which causes a great deal of embarrassment in extending and closing or contracting the table. The invention also has for its object strength and durability, together with a greater degree of extension with a given length of slides than hitherto. J. T. Birchard, of Milwaukee, Wis., is the inventor of this improvement.

NEVER SULK.—Better draw the cork of your indignation, and let it foam and fume, than wire it down to turn sour and acid within. Sulks affect the liver, and are still worse for the heart and soul. Wrath driven in is as dangerous to the moral health as suppressed small-pox is to the animal system. Dissipate it by reflecting on the mildness, humility and serenity of better men than yourself, suffering under greater wrongs than you have ever been called upon to bear.