

Holland's Climax Hammerless Guns.

Among the more recent and successful competitors for the favor of sportsmen, in the matter of hammerless guns, are those made by Messrs. Holland & Holland, of London. At the recent Sportsmen's Exhibition in that city these guns attracted a good deal of favorable attention and called out many commendations from experts who had given them the practical test of field service. The chief advantage claimed for these guns lies in their freedom from liability to accidental discharge. By a simple and clever device a safety block is always interposed between the hammer and the cap of the cartridge, except when the trigger is pulled, while the trigger is locked by a top safety bolt which may work automatically if desired. The setting out of the locks is so arranged that, in discharging the piece, before the sear can be pulled out of the tumbler-bent, and the hammer allowed to fall upon the striker, the trigger will have lifted the short arm of the safety bar far enough to clear the block out of the way of the falling hammer. In this way there is obtained, when the lock is in good order, an absolute security against accidental discharge, not only when the lock is bolted, but even when placed at full cock ready for firing. It is impossible for the jar given by the explosion of one barrel of a double gun to set off the lock of the other barrel, a matter of no small importance to sportsmen when using heavy charges. The locks are simple in construction, and can be taken off for cleaning or repairing, the same as an ordinary side lock. The pistons which raise the tumblers to full cock are under cover, and fit into circular holes so as to prevent the entrance of water to the lock. The gun is easily opened, yet has a sound and secure connection, having the top lever with a double bolt grip under the barrels, and when desired a third grip at the top—a triplex fastening which stands heavy shooting with large charges without any loosening or gaping of the action. A widely known contributor to the *London Field* ("Wildfowler"), who has used one of the Climax sporting guns for the last two years, firing about five thousand shots with it, says that he has never had a misfire or the slightest hitch with it. He describes it as one of the hardest hitting guns he has ever used.

Among the guns shown at the Sportsmen's Exhibition by this firm were some specially adapted for pigeon shooting. They were arranged with extra top grip, bare seven and a half pounds weight, to shoot four drachms powder and one and a quarter ounce shot, chambered to the three inch shell. The barrels are from English steel, Damascus, or from Whitworth fluid steel; choke bore. The duck guns shown were of three sizes; ten bore, chambered to take full length shell, and to shoot up to five and a half drachms powder; warranted to give good pattern and penetration at eighty yards; eight bore, shooting up to seven drachms; and four bore singles, thirteen to fifteen pounds, shooting ten drachms, and warranted to kill up to one hundred and fifty yards.

New York City Refuse.

A bill passed by the House of Representatives, April 10, makes it a misdemeanor, punishable by fine and imprisonment, to deposit ballast, street-sweepings, garbage, or other refuse in any of the navigable waters in or around New York Harbor. Such stuff, if dumped into the water, must be carried at least five miles out to sea.

The rule is a good and necessary one, and if properly carried out will put a stop to practices which are rapidly filling up the channels, and which, in summer, create grievous nuisances along the shores of the harbor and adjacent waters.

Another effect will be to bring into prominence and increase the demand for processes for destroying or utilizing street-sweepings, garbage, and similar refuse. It seems a pity to cast such materials into the sea, for they are rich in elements drawn from the soil, and which by good rights ought to go back to it.

The prohibition of dumping inshore will also make an immediate demand for self-dumping sea-going scows or boats capable of running five miles out to sea in all sorts of weather. A very promising device of this sort was publicly tested a few days ago, in an improved form of the Barney self-dumping boat. A smaller boat on the same general plan, tried last year, failed to operate satisfactorily. The new boat is 110 feet long, 28 feet wide, and when loaded draws 9½ feet of water; she can carry 500 tons, has sharp bows and a rounded stern, and can, it is said, go out to sea with perfect safety in the severest weather. Her hull consists of two parts called pontoons, extending her entire length, hung at both ends and in the middle to heavy bridges, working upon hinges at the sides. The carrying space is between the pontoons, the interior surfaces of which, when in their fixed position, slope inward toward the keel, where they meet, forming a hold which has the shape of the letter V. It is 86 feet long. The confined space within the pontoons—not between them—serves to make them so buoyant that, when the vessel is empty, their position is naturally a closed one. They are locked together before loading, and are not unlocked until the dumping ground is reached. When this is done the load forces the pontoons apart at the bottom and it drops into the water. The pontoons are held in this position by the hand on the wheel. When that is relaxed their buoyancy brings them back together and they are relocked. The owners of the improved scow claim that it will save \$60,000 per year to the city if adopted.

At the trial the process of dumping and closing the scow is said to have taken ten minutes.

Relation of Fires to the Weather.

A recent issue of the *Chronicle* discusses from an insurance point of view the probable influence of atmospheric conditions upon fire losses, the main factor considered being humidity. The discussion, which is a very suggestive, not to say important one, is not confined to the generally recognized increase in local fires during specially protracted seasons of dry weather, but seeks rather to discover the broader relations of general rainfall throughout the United States, and the observed fluctuations in the aggregate fire losses, year by year and month by month. "Assuming that the human hazard is a constant, and that the difference of states in respect to architecture and industry has been reduced by the law of average also to a constant, what is left to explain the increased or diminished aggregate fire loss of one year over previous years unless it be some meteorological peculiarity?"

Taking the statement of the precipitation, month by month, during the year ending with June, 1879, compared with the average for several previous years, as given in the last published report of the Chief Signal Officer of the United States, and using it as a basis of comparison with the fire losses for the corresponding months as contrasted with the average losses in the same month of the two previous years, the *Chronicle* finds that an excess of humidity is steadily followed by a decrease in the fire loss, and a deficiency by a corresponding increase in the fire loss.

The same relation between rainfall and fire loss is strongly indicated in tables showing the periods of greatest and least fire loss in California, where the contrast between the wet and the dry season is so sharply drawn. Notwithstanding the fact that the wet months cover the season—the California winter—when domestic fires are most employed, thereby increasing the relative fire hazard, the monthly mean of fire loss for the wet season is only about half that of the dry season.

From these and other tests the *Chronicle* deduces the following conclusions:

(1) That there is an interdependence between the humidity and the fire loss; (2) that whatever affects the rainfall, such as the destruction of forests, etc., will affect the fire loss; (3) that there is a factor in the shape of an atmospheric hazard that should enter into the underwriter's calculations quite as well as the other elements of "moral" hazard, etc.; (4) that there are localities peculiarly adapted by meteorological conditions to a high ratio of fire loss; (5) that this natural hazard should determine, as nearly as practicable, the architecture of such localities, their means of fire protection, and the proper rate of premium for risks there written.

Early Developed Power to Command.

The following list of great generals whose superior capacity was exhibited in early manhood, was compiled by the late Brevet Major-General Emory Upton:

Philip of Macedon ascended the throne at twenty-two, was the conqueror of Greece at forty-five, and died at forty-seven.

Alexander the Great defeated the celebrated Theban band at Cheronea before arriving at the age of eighteen, ascended the throne at twenty, had conquered the world at twenty-five, and died at thirty-two.

Julius Cæsar commanded a fleet before Mitylene and distinguished himself before the age of twenty-two; completed his first war in Spain and was made consul before the age of forty; conquered Gaul, twice crossed the Rhine, and twice invaded Britain before the age of forty-five; won the battle of Pharsalia and obtained supreme power at fifty-two. He died at fifty-six, the victor of five hundred battles and the conqueror of one thousand cities.

Hannibal was made commander-in-chief of the Carthaginian army in Spain at twenty-six, and had won all his great battles in Italy, concluding with Cannæ, at thirty-one.

Scipio Africanus, the elder, distinguished himself at the battle of Ticinus at sixteen, and at twenty-nine overthrew the power of Carthage at Zama.

Scipio Africanus, the younger, had conquered the other Carthaginian armies and completed the destruction of Carthage at thirty-six.

Genghis-Khan achieved many of his victories and became emperor of the Monguls at forty.

Charlemagne was crowned king at twenty-six, was master of France and the larger part of Germany at twenty-nine, placed on his head the iron crown of Italy at thirty-two, and conquered Spain at thirty-six.

Gonsalvo de Cordova, the great captain, had gained a great reputation and was made commander-in-chief of the army of Italy at forty-one.

Henry IV., of France, was at the head of the Huguenot army at sixteen, became King of Navarre at nineteen, overthrew his enemies and became King of France before the age of forty.

Montecuculi, at the age of thirty-one, with 2,000 horse, attacked 10,000 Swedes and captured all their baggage and artillery; gained the victory of Triebel at thirty-two; defeated the Swedes and saved Denmark at forty-nine; and at fifty-three defeated the Turks in the battle of St. Gothard.

Saxe was a *maréchal-de-camp* at twenty-four, marshal of France at forty-four, and at forty-nine gained the famous victory at Fontenoy.

Vauban, the great engineer, had conducted several sieges

at twenty-five, was *maréchal-de-camp* at forty-three, and *commissaire-général* of fortifications of France at forty-five.

Turenne, passing through the grades of captain, colonel, major-general, and lieutenant-general, became a marshal of France at thirty-two, and won all his distinction before forty.

The great Condé defeated the Spaniards at Rocroi at twenty-two, and won all his military fame before the age of twenty-five.

Prince Eugene, of Savoy, was colonel at twenty-one, lieutenant-field-marshal at twenty-four, and shortly after general-field-marshal. He gained the battle of Zenta at thirty-four, and co-operated with Marlborough at Blenheim at forty-one.

Peter the Great, of Russia, was proclaimed Czar at ten years of age, organized a large army at twenty, won the victory of Embach at thirty, founded St. Petersburg at thirty-one, and died at the age of fifty-five.

Charles XII. completed his first campaign against Denmark at eighteen, overthrew 80,000 Russians at Narva before nineteen, conquered Poland and Saxony at twenty-four, and died at thirty-six.

Frederick the Great ascended the throne at twenty-eight, terminated the first Silesian war at thirty, and the second at thirty-three. Ten years later, with a population of but 5,030,000, he triumphed over a league of more than 100,000,000 of people.

Cortes effected the conquest of Mexico and completed his military career before the age of thirty-six.

Pizarro completed the conquest of Peru at thirty-five, and died at forty.

Lord Clive distinguished himself at twenty-two, attained his greatest fame at thirty-five, and died at fifty.

Wolfe was conqueror of Quebec at thirty-two.

Napoleon was a major at twenty-four, general of brigade at twenty-five, and commander-in-chief of the army of Italy at twenty-six; achieved all his victories and was finally overthrown before the age of forty-four.

MECHANICAL INVENTIONS.

An improvement in machinery for untwisting and carding curled horse hair has been patented by Mr. Thomas Adcock, of Adelaide, South Australia. The object of this invention is to untwist ropes of horse hair and to card the hair by a continuous operation in one machine. This machine will perform the work much more rapidly and better than it can be done by hand. One, two, or more untwisters may be used as desired, and the machine driven by hand or other power.

A novel motor has been patented by Mr. Samuel N. Silver, of Auburn, Me. The invention consists of one or more sliding and reciprocating cylinders, containing pistons held in these cylinders by latches, which pistons are each adapted to slide on a central rod surrounded by a coil spring, to which pistons rocking arms are pivoted, which are loosely mounted on a shaft, these arms being provided with pawls or other suitable clutching devices for rotating the shaft. When the cylinders are pressed downward the springs are brought in tension, and when the springs exert the power stored in them they rotate the shaft.

An improvement in rolling mills has been patented by Mr. Wilhelm Wenstrom, of Orebro, Sweden. This invention relates to that class of rolling mills in which one pair of horizontal and one pair of vertical rolls are arranged to roll metal simultaneously upon four sides, and are made adjustable with relation to each other. The object of this invention is to give the rolls an exact and steady motion under all circumstances, and to secure a compactness of construction and arrangement by which the bearings are adapted to withstand the required pressure without straining or displacement.

Mr. George A. White, of Halifax, Nova Scotia, has patented an improvement in circular knitting machines for the manufacture of tubular fabrics, particularly the class of hand machines using double sets of needles for forming ribbed fabrics. The object of this invention is to render such machines more perfect in operation, and thus produce better fabrics with less labor and attention in the operation of the machine. The novel features consist particularly in the fender or latch opener and the cams for moving the needles.

A Good Suggestion.

The *Avalanche*, of Memphis, Tenn., contains a suggestion, made by a resident of that city, which is well worth carrying out. He would have in every stateroom on a steamer an electric bell connected with both the pilot house and the clerk's office. In case of threatened disaster the prompt awakening of all the passengers might save many lives. As the *Avalanche* says, a sudden alarm to rouse all the sleeping passengers at once on the first discovery that the steamer is on fire would give the passengers a chance for their lives. There is always more or less dangerous delay when a messenger undertakes to awaken the sleepers by knocking on the cabin doors, and there is the risk of the messenger looking out for his own safety instead of the safety of the passengers. People who travel are canvassing their chances to escape in case of fire, and it would be well for owners of steamers to provide all measures within their power to secure safety for their passengers. The same precautionary plan of simultaneously and suddenly awakening the sleeping guests of a hotel could also save precious time in case of fire.