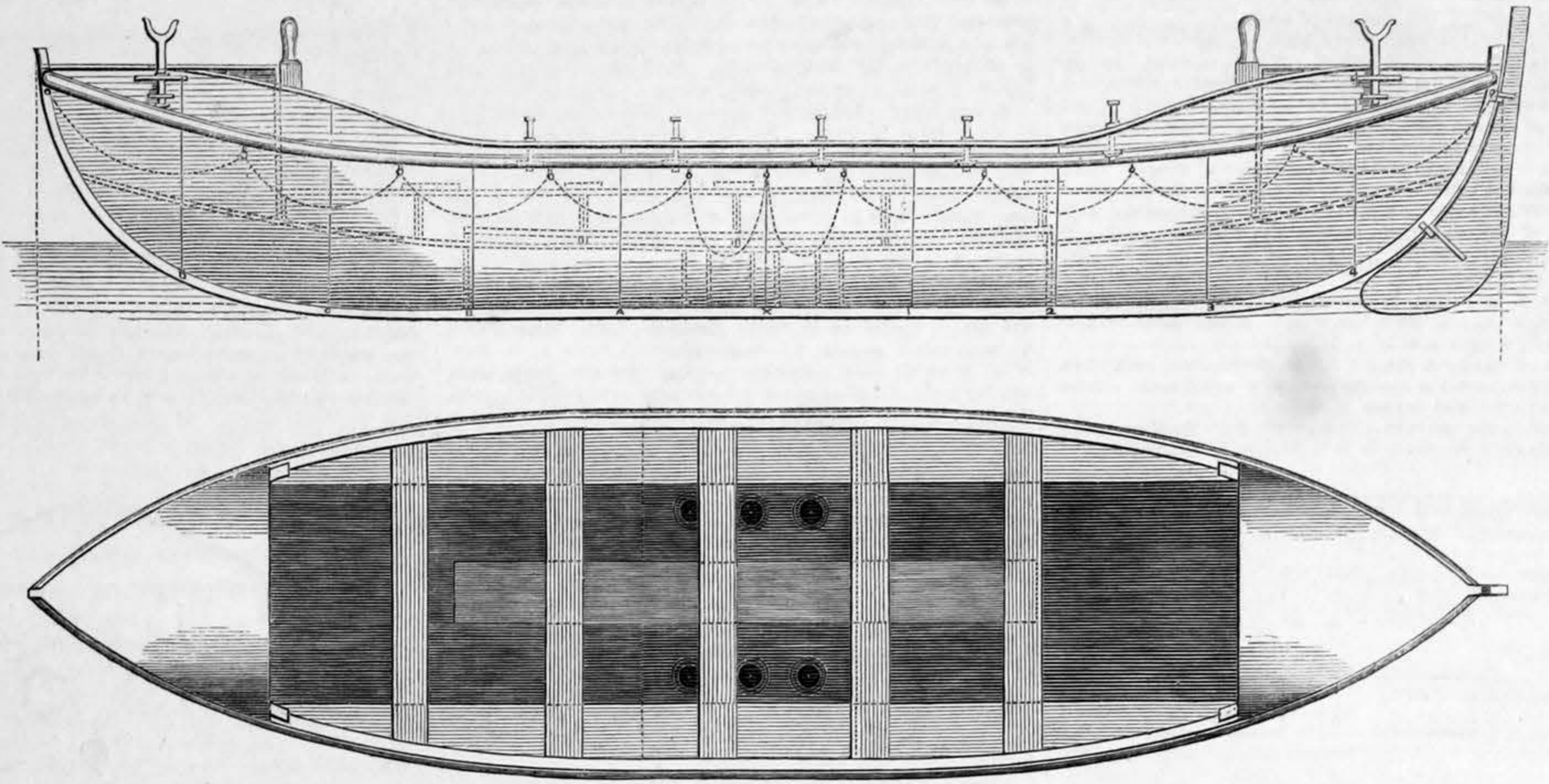


## LIFEBOAT,

DESIGNED BY JAMES PEAKE, ESQ.,

ASSISTANT MASTER SHIPWRIGHT AT H.M. DOCKYARD, WOOLWICH, AS NOW ADOPTED BY THE ROYAL NATIONAL LIFEBOAT INSTITUTION, AND CONSTRUCTED BY MESSRS. FORRETT, OF LIMEHOUSE.



We are desirous of calling the attention of our readers to the lifeboat which forms the subject of our illustrations, the more especially from the present season being the one in which shipwrecks are more frequent than at other times. Mr. Peake has bestowed considerable pains in examining most of the lifeboats which have from time to time been brought before the public, and has succeeded, as we believe, in designing one which possesses all the good qualities of those previously constructed, besides making some important additions which his great practical experience has enabled him to do. From twenty to thirty boats have now been constructed on Mr. Peake's plans, and the results of their use may be judged from the fact that the National Lifeboat Institution have adopted them to the exclusion of others built from different designs. The following are the particulars of these boats:—

Dimensions . . . Length 30ft. 0in.  
Extreme breadth 7 6  
Ratio of the Breadth to Length . 1 to 4.

**Form of the Boat.**—A long flat floor combining under the assumed dimensions the least possible draught of water with the greatest stability. The sides also are straight in a fore and aft direction to ensure the greatest amount of stableness. Hollow water lines or level lines have been avoided in the construction of these boats as much as possible; the hollow water-line for a boat propelled by oars being considered detrimental to velocity.

**Extra Buoyancy.**—By this term is to be understood air vessels, whether formed in and by the boat, such as the divisions under the water-tight deck, or the air cases, marked *a*, which are above the water-tight deck, and wholly independent of the boat itself. These air cases have the twofold effect of reducing the internal capacity of the boat for holding water, in the event of the boat shipping a sea; and when the boat is full the air cases marked *a* tend, by their buoyancy, to raise the boat out of the water.

**Relieving Tubes and Valves.**—The extra buoyancy would have little effect were not relieving tubes and valves *b* introduced, passing through the water-tight deck and bottom of the boat; these tubes are 6in. in diameter, and six in number; through these the water received into the internal space of the boat up to the gunwale rushes out by the lifting power of the boat and the immersed air cases *a*; and it has been found, that on an average, the six valves will clear the boat, when full to the gunwale, in thirty seconds, the valves opening downwards only. The tubes pass through wood chocks *c*, these wood chocks forming ballast also for the boat.

**Self Righting.**—This property, which has been considered indispensable by reason of the awful accidents which have occurred, is secured to these boats by two qualities acting in conjunction. 1st. The raised ends at the extremities, or the bows and stern, are made into air-tight cases, and give a displacement to the thwarts when the boat is bottom upwards, equal to the weight of the boat. 2nd. The iron keel, of 7 cwt. The boat when bottom upwards, with the fittings now described, would be, by the centre of the weights of her being above the centre of the supporting water, in a state of instability—the centre of gravity being above the sustaining points of support afforded by the raised air cases. The result of such a position is known to most people, being such that the least deviation from the upright causes the iron keel to press downwards, and the buoyancy of the raised air cases to act in full force upwards to make the boat assume the upright position. This evolution seldom exceeds three seconds.

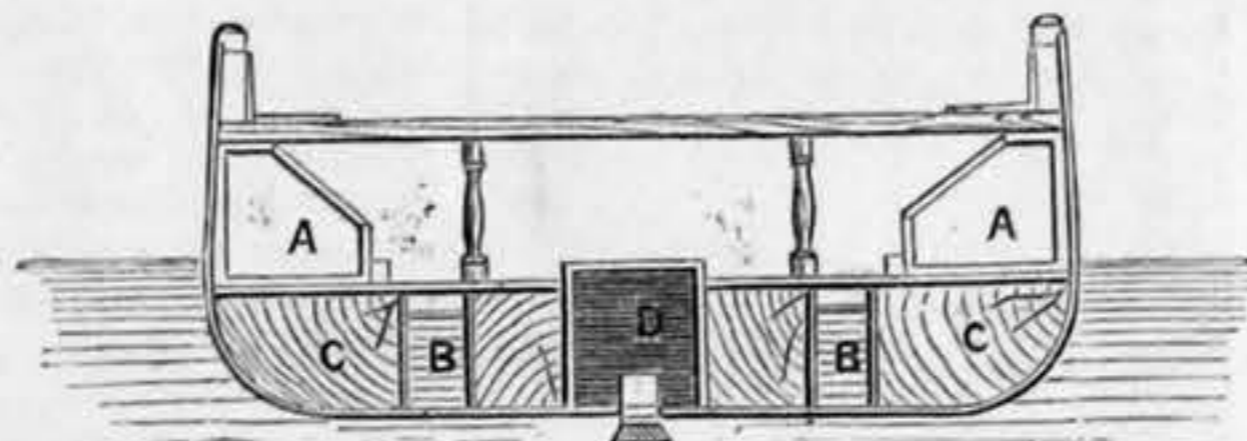
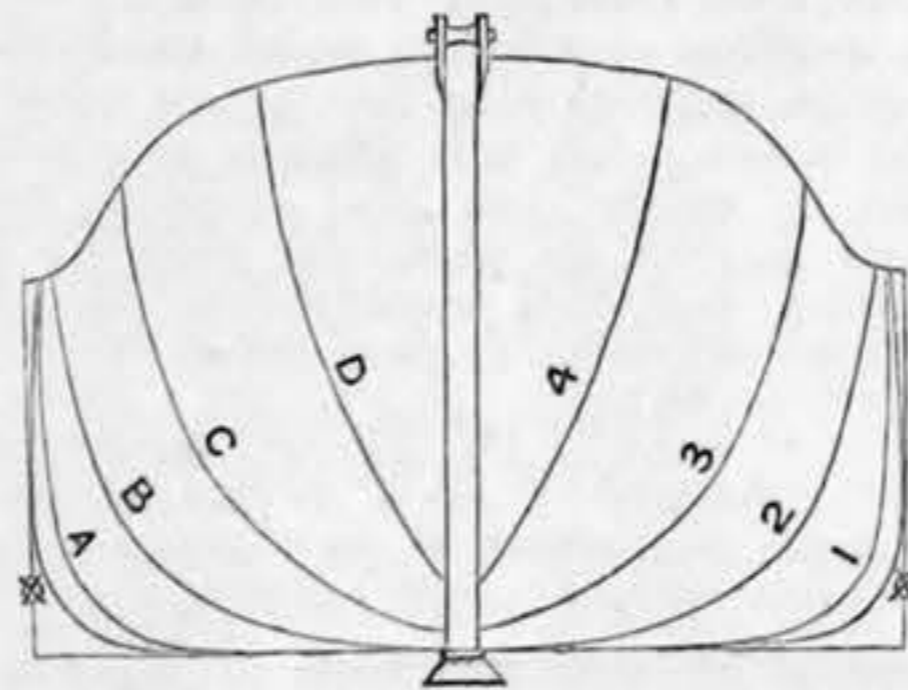
**Stability, or Power of resisting Inclination.**—The boat will bear, with the valves closed, the weight of 26 men on one gunwale; and with the valves opened, allowing the water to flow into the boat, 18 men in the same position.

**Weight of the Boat, with all complete.**—38 cwt., giving 14in. draught of water.

**Mode of Propelling.**—The boat to be rowed with 10 oars; 2 sweep oars being used for steering when required, in a short sea or surf.

**Mechanical Build of the Boat.**—Diagonally built of two thicknesses of white deal with oil paper placed between them, thickness of deal  $\frac{3}{4}$  of an inch. The layers, excepted forward and aft, run from gunwale to gunwale, the keel being brought on afterwards; this arrangement makes the boat very strong, and lighter than is obtainable by any other mode of building. The fixing of the thwarts and the minor fittings of life lines, &c., will speak for themselves; but in the construction of these boats care should be taken to secure the tightness of the deck or flat, and that the end cases are well built, the upper parts being covered with cork to give a firm footing to a man who may be compelled to jump on them. In one boat the air-tight deck was left out, and a succession of air-tight cases substituted; they were found efficient, and it now becomes a matter of expense and weight as to this fitting becoming general in the boats that may hereafter be built for the Institution, observing that the deck formed by cases has the advantage of the facility afforded for the cases being removed to examine the boat internally, and being able to reduce the weight of her by removal of them for transporting along the beach. The boats on this plan have now stood the test of three years, have saved many lives, have gained the confidence of all their crews,

and still further have, by their good properties in a sea-way, dispelled the prejudices of the fishermen and boatmen of localities where peculiarly-formed boats, and those of ages past, were supposed to be alone effective for meeting and overcoming the trying and perilous circumstances which must inevitably attend in a storm the rescue of the crew of a stranded or shipwrecked vessel.



The great need of such lifeboats as that which we have described, is rendered manifest by a glance at the Admiralty Register of Wrecks and at the Wreck Chart of the British Isles, which is annually published by order of the House of Commons. During the year 1854 our coasts were the scene of no fewer than 987 wrecks of ships; of which 431 were totally lost as wrecks, and 53 sunk by collision; in the remaining 503 cases, the ships, either by stranding or by collision, were so much damaged as to require to discharge cargo. But, more melancholy to tell, there are believed to have been the fearful number of 1,549 human lives lost by these catastrophes—and all, be it remembered, on our own coasts—on the coasts of the most busy maritime island in the world: when, if there be liability of disaster through the vast congregation of shipping, there ought on the other hand to be a supply of invention and good sense sufficient to check, in same degree, such disasters.

The Royal National Lifeboat Institution has been organised for the purpose of lessening the great evil of a want of sufficient means to save life in the case of shipwreck, and its usefulness cannot be over estimated. This Institution has still in use, in some localities, lifeboats on the designs of other parties, but all lifeboats now constructed by it are on Mr. Peake's plan. The average cost of these boats, with their various fittings and gear, and life-belts for their crews, is about £160 each. The lifeboat's transporting carriages cost from £80 to £160, and the boat-houses from £50 to £100. It will be thus seen that a complete lifeboat establishment will cost about £400.

Moreover there must be a crew of trusty men, able and willing to brave a raging sea, strong and resolute to pull the oar under any stress of weather; and there must be a master or coxswain exercising sufficient control to command the men, and direct their energies in a proper channel. It is in this direction, quite as much as in the provision of lifeboats, that the Lifeboat Institution has rendered service. A system of payment, partly in the nature of a salary, and partly as a reward, is adopted, such as may induce steady men to render aid; and honorary local committees assist in collecting the means whereby the outlay is to be defrayed, and in the general arrangement of the lifeboat establishments.

That there is a positive amount of good work rendered by the Lifeboat Institution is made manifest by the simple fact, that in 1854 alone the lifeboats belonging to and in connexion with the Institution were the means of saving the lives of 132 persons on board 13 vessels, all of whom would probably have been lost but for such aid. The list of lives saved, during a course of 31 years, is indeed most creditable to the Society and to all connected with it—the total number of persons rescued from shipwreck during that period being about 9,600. In testimony of the meritorious and distinguished services rendered in saving so many lives, the Institution has voted 79 gold

medallions and 560 silver medals, besides pecuniary rewards amounting together to £9,600.

In the event of fatal accidents happening to the crews of its lifeboats, or to those of shore boats, while attempting to rescue shipwrecked persons, the Institution votes gratuities varying from £5 to £50 to widows and other dependents. Thus the Institution holds out every inducement, as far as the means placed by the public at its disposal admit, to parties to exert themselves to save life from shipwreck.

It may not here be out of place to mention that within the last few weeks the lifeboats of the Institution have saved the lives of 50 persons from shipwreck; and in the same short period it has voted many medals, and about £200 for meritorious exertions in saving the lives of 192 shipwrecked persons.

The principle on which the Institution acts, in affording assistance to localities on the coast, which need to be supplied with lifeboats, is to solicit from the inhabitants of the locality one-half or other moiety of the first cost, proportional to their ability; as also for an annual contribution towards the maintenance of the lifeboat and her crew—the Institution guaranteeing to make up all deficiencies.

During the past twelve months the Institution has made great efforts to provide, on our coasts, new lifeboats, where most urgently needed, and to make those previously established by it thoroughly efficient. This work has involved an expenditure of more than £2,000.

We have taken considerable pains to gather the foregoing particulars of the mode in which the Lifeboat Institution propose to assist in the establishment of Lifeboats, and carry out its other objects, believing that its operations are of the utmost importance, and recommend themselves to the consideration of every one. There are now fifty lifeboats in connexion with the Institution, and constant applications are being made for additional ones from stations on other parts of the coast, who have furnished us with such particulars as we required. The Institution doubtless owes much of its success to the energies of its officers, and we strongly recommend a visit to the offices of the Institution in John-street, Adelphi, of all those who are curious to see what has been done in the saving of life from shipwreck; not forgetting to recommend them to do what they can to assist in extending its usefulness. We think it right to state that the importance of the subject alone suggested the idea of visiting the Institution, and making such notes as we have laid before our readers, which we have done without any invitation whatever.

**THE AMERICAN GUN MACHINERY FOR THE ENGLISH GOVERNMENT.**—We have had occasion to allude several times within the last two years to the movements of the English Government in revolutionising their system of manufacturing small fire-arms, so as to make it conform to the American system. Some two years ago, the English Government determined upon a grand national armory for the manufacture of small arms, after the American plan—sent out to this country a commission of army officers and engineers for inspection and arrangement in connexion with the newborn purpose. These gentlemen had free access to our establishments, and finally determined to copy the American principles of manufacture throughout. To do this, they engaged James M. Burton, for some years chief engineer and mechanic at the Harpers' Ferry (Va.) Armory, to take a like position at the new English Armory, and he is now in that country in the discharge of its duties. They also ordered, built here, complete sets of the machinery in use at our armories. Robbins and Lawrence, of Windsor, Vt., were employed to build some 100 "milling machines," used to cut the gun locks, and execute the other iron parts of the gun. These are a common machine, in this country at least, and were some months since completed and sent abroad. This branch of the contract amounted to some 30,000 dols., or 40,000 dols. But the more important and intricate machinery—that for the manufacture of the gun stock—was entrusted to the Ames Manufacturing Company, of Chicopee. This has been just completed, and was despatched to England in the steamer of this week. The elements of national and local pride enter so largely into this lot of machinery that we may be excused for speaking of it with some speciality. It consists of twenty-five different machines, three of which are duplicates. The rest constitute "the set," and through each of them does the gun stock have to pass in the manufacture. The machinery is capable of turning out 250 stocks per day, each machine requiring the average of a minute to execute its peculiar office. The cost to the English Government of this superb lot of machinery is about 50,000 dols. Mr. Oramel Clarke, one of the best workmen in the stocking department of the armory, has been employed to go out to Europe, and take the charge of the machinery and its operation. The new Government armory of England, into which this machinery and its new operations are to be introduced, is located at Enfield Lock, nine miles north of London. It is intended, ultimately, to employ 800 operatives, and turn out 500 muskets daily. Captain H. J. W. Jervis remains to look to the completion of a contract for 25,000 rifles for the same Government, which are in progress at the establishments of Robbins and Lawrence, at Windsor, Vt., and Harfoot.—*Springfield Republican.*