

**DONATELLO'S EQUESTRIAN STATUE AT PADUA.**

Donato di Niccolò di Betto Bardi, commonly called Donatello, is one of the most dignified and impressive figures of the early Renaissance. It is to this Florentine sculptor (1386-1466) that we owe not only the first great equestrian statue of the Renaissance, but in connection with Michelozzi he created the mausoleum of the fifteenth century, which was so potent a factor in the development of fifteenth century sculpture.

We can hardly realize the difficulty which confronted Donatello when he received the commission for the equestrian statue of the famous condottiere Erasmo da Narni, called "Gattamelata."

The execution of the statue of this mounted warrior was remarkable, as it was the first that had been attempted since the days of antiquity. It was an enterprise as considerable as the construction of the cupola of the cathedral of Florence, by his friend Brunelleschi. In both cases the artists were bold innovators, having to work out not only the design, but also the technical details connected with its execution, for cupola building and bronze casting were not everyday occurrences among the Florentines.

Donatello had probably never seen more than one or two statues of horses, the Marcus Aurelius, now on the Campidoglio, at Rome, and the bronze horses of St. Mark's, at Venice, and possibly a few Gothic or semi-Gothic statues. He was obliged to work out for himself a new system of equine anatomy, a science which had been neglected for centuries.

It is a great art to mount a bronze or marble rider on his steed so that the effect will be monumental. Equestrian effigies had before daunted great sculptors, even Jacopo della Quercia, but Donatello went bravely to work on his problem, and after making the wooden model shown in our engraving, the bronze group was cast and set up on its pedestal under the walls of San Antonio, at Padua. It has become the very incarnation of the condottiere, the captain of mercenaries, and the soldier of fortune is more celebrated in his death by the enduring bronze than in life by his exploits.

The "Gattamelata," with the "Colleone," at Venice, form the most interesting pair of equestrian statues that the Renaissance has produced. The warhorse in the Gattamelata is ponderous and suggests a portrait almost as much as his rider. Vasari says: "The chafing and neighing of the horse are made clearly obvious." Solidly settled on an ornate saddle sits the rider with bare head, one hand grasping the reins while the other holds the bâton of command. He is clad

in armor, and both it and the saddle seem to have come in for that painstaking care which is so characteristic of the Renaissance, and, in fact, of all good periods of art. The charming little naked figures at each end of the saddle would almost give celebrity in themselves to a

for the time. We have an interesting souvenir of Donatello's struggles in the matter of the Gattamelata in the wooden model of a horse which stands in the Palazzo della Ragione, at Padua, a building more remarkable for its great size than for its architecture.

Donatello received his commission in 1444 and in 1453 the casting and chiseling were completed. The wooden horse seems to have been modeled after the famous bronze horses on the façade of the basilica of San Marco, at Venice. It is composed of many pieces ingeniously fitted together, so that it looks like the horse of Troy. At some public games given at Padua by Count Capodalista it was covered with skins and bore a gigantic Jupiter upon its back. The poet Lazzarelli lauded it as superior to any work of Dædalus, Phidias or Praxiteles, and even modern connoisseurs are divided upon the merits of the bronze horse and its wooden prototype. It is certain that in some respects the model is superior, notwithstanding the unworthiness of the material. The head is, however, a restoration. There is a full size plaster model of the Gattamelata in the Metropolitan Museum, New York. It is injured, however, by being placed directly under a ceiling. Its value would be greatly enhanced by bringing it out to the large hall.



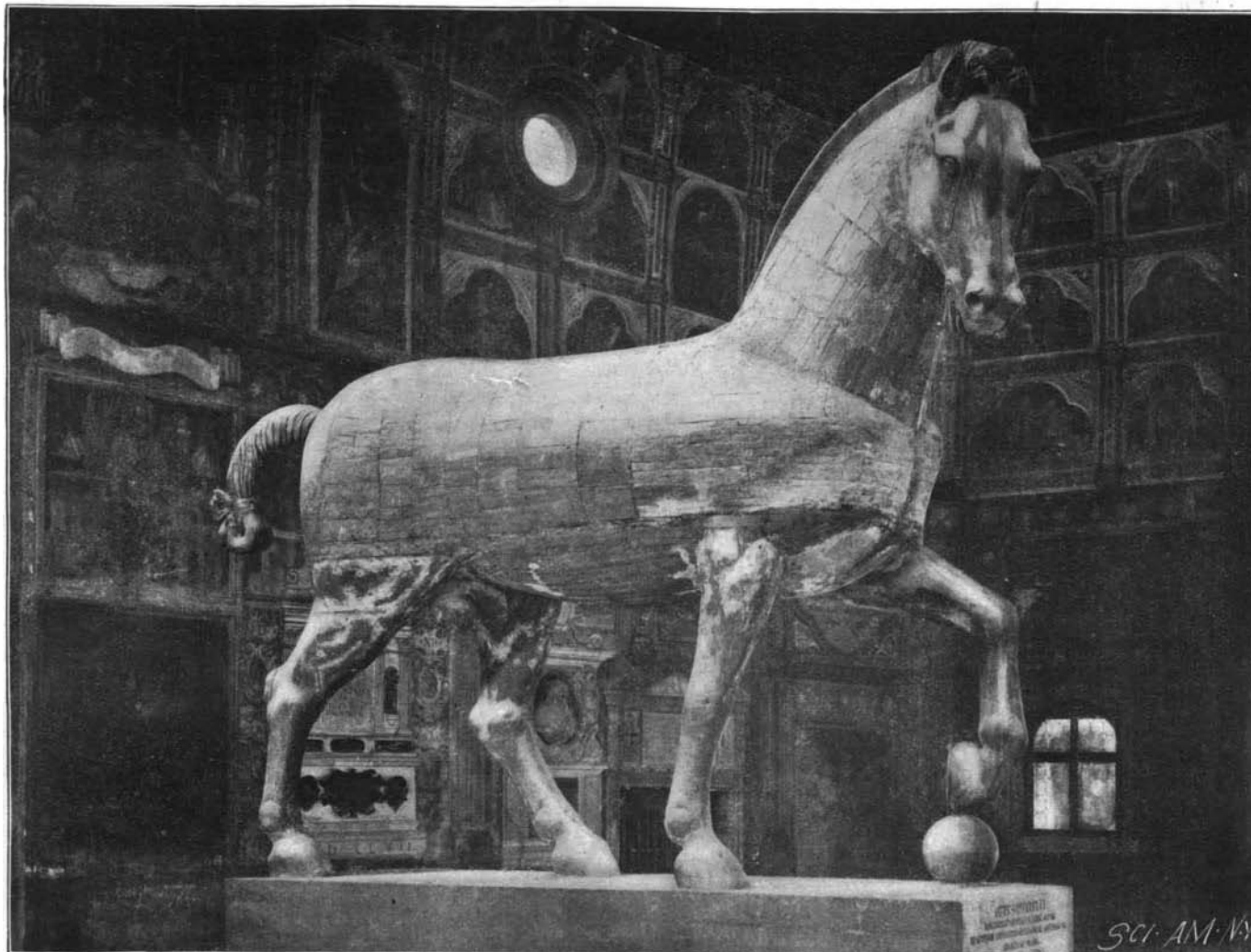
**DONATELLO'S EQUESTRIAN STATUE "GATTAMELATA" AT PADUA.**

collection. The head of the rider is a magnificent study in portrait sculpture, and it shows us the condottiere who was prudent rather than rash, like the rider of that other bronze horse in nearby Venice. The pedestal has two bronze bass-reliefs, with genii which hold a cartouche surmounted by a casque, the crest of which is ornamented by a cat—the arms of the Gattamelata. The reliefs have now been taken to the great church of Padua, St. Antonio, or "Il Santo" as it is called, and modern copies have been substituted for them. The Gattamelata cost about \$33,000 of our money—a large sum

ing took place recently at the Chemical Society, when Mr. Horace Brown delivered an address on the vitality of seeds that had been exposed to very low temperatures for a considerable time. The late Prof. G. T. Romanes had already shown that seeds could be kept in an almost complete vacuum for a year or more without undergoing any deterioration in their germinating properties. A later worker also adopted the ingenious device of sealing up seeds in Geissler tubes for a long period, when, on subsequently passing a spark, no glow due to incandescent carbonic acid gas or nitrogen was observed, thus proving that the seeds do not exhale either of these gases when kept. Mr. Brown, in conjunction with Prof. Dewar, has maintained seeds at the temperature of liquid air (180 deg. C.) for a continuous period of 110 hours. On subsequently carefully thawing the seeds and testing them, they were found to be completely unaffected. They germinated quite as freely as other test seeds which had not been so treated, and, in fact, no difference in their behavior could be detected.

**The Vitality of Seeds.**

Succi, who recently completed his sixty-fourth public fast in Rome, has abstained from food in his performances for 2,500 days of his life—nearly seven years.



**WOODEN MODEL FOR THE "GATTAMELATA" PALAZZO DELLA RAGIONE PADUA.**



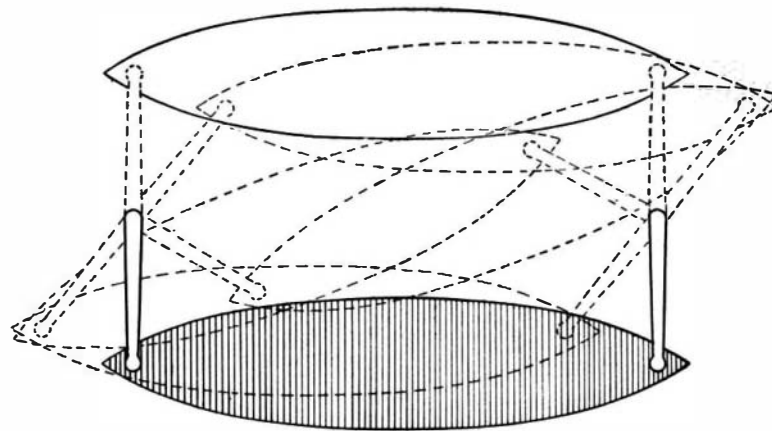
### The Typewriter and Health.

The typewriter has won its way so completely wherever much writing is done that any evidence of the influence which it may exert upon health deserves attention. The Phonetic Journal publishes a note from a correspondent who, in response to the question, "Has anyone ever known of a genuine case of typewriters' cramp induced in a normal constitution by the use of any standard machine?" replies that he suffers from cramp so produced and has heard of two other cases. The Phonetic Journal was in the first instance disposed to doubt the existence of typewriters' cramp, but admits that the case of its correspondent is a genuine example of the affection. Typewriters' cramp belongs to what Dr. Poore calls the professional impotencies, and its occurrence after the nimble, oft-repeated movements of the typewriter's hand and fingers is a thing no more to be wondered at than pianists' cramp, composers' cramp or tailors' cramp. In the course of time it is but too probable that typewriters' cramp will become, if not as well known, at least as recognizable as ordinary writers' cramp. But if the spread of the typewriter brings to its user the risk of cramp, there is, if an American journal is to be believed, a balance of advantage to be set down in its favor. "The death-dealing corset," we are told, "has found in the typewriting machine and the bicycle two implacable foes." No expert can manage either the typewriter or the bicycle while she is held in "a close-fitting cage of whalebone and steel." If the wheel and the typewriter have done much for woman, not the least of the blessings they may bring is in helping to set her free from what The New Education describes as "the cramping, uncomfortable, health-destroying, ugly, and barbarous mediæval invention called the corset." This is vigorous language, but if the contention is good and capable of proof, then the influence of the typewriter on the health

of at least the female section of those who use it must, in spite of the risk of typewriters' cramp, be regarded as beneficial.—Lancet.

### THE MCKINNON AUTOMATIC BOAT-LAUNCHING DEVICE.

Next in importance to the provision of a sufficient number of life-boats on an ocean passenger ship is the



1.—DIAGRAM OF MOVEMENTS OF DAVITS.

arrangement of some speedy and safe means of launching them. To anyone who has watched the boat drill on any of the Atlantic liners, it is evident that the process is slow, and might be full of risk when carried out in the panic of a sinking or burning ship. The records of marine disaster, indeed, show that a certain and not inconsiderable proportion of the fatalities are due to delay and accident in launching the boats. The ordinary means of launching consist of independent hoisting tackles, at each end of the boat, the slack of which is coiled up within the boats. When a boat load of passengers is to be launched, each tackle is handled by one or more men, who endeavor to lower away so that the boat shall be kept on an even keel. This is, or seems to be, a difficult matter to accomplish. In their haste, the crew frequently fail to keep the boat level; one end is allowed to run down faster than the other, with the result that the passengers are spilled into the sea or the boat is swamped. This was what occurred at the wreck of the "Elbe," and the blunder had to answer for many of the lives lost on that occasion.

The automatic boat-launching device which is shown in the accompanying illustrations was invented by Mr. James W. McKinnon, of New York. It represents a very ingenious and successful attempt to overcome the dangers of boat launching, and the large model which has recently been tested by the government and

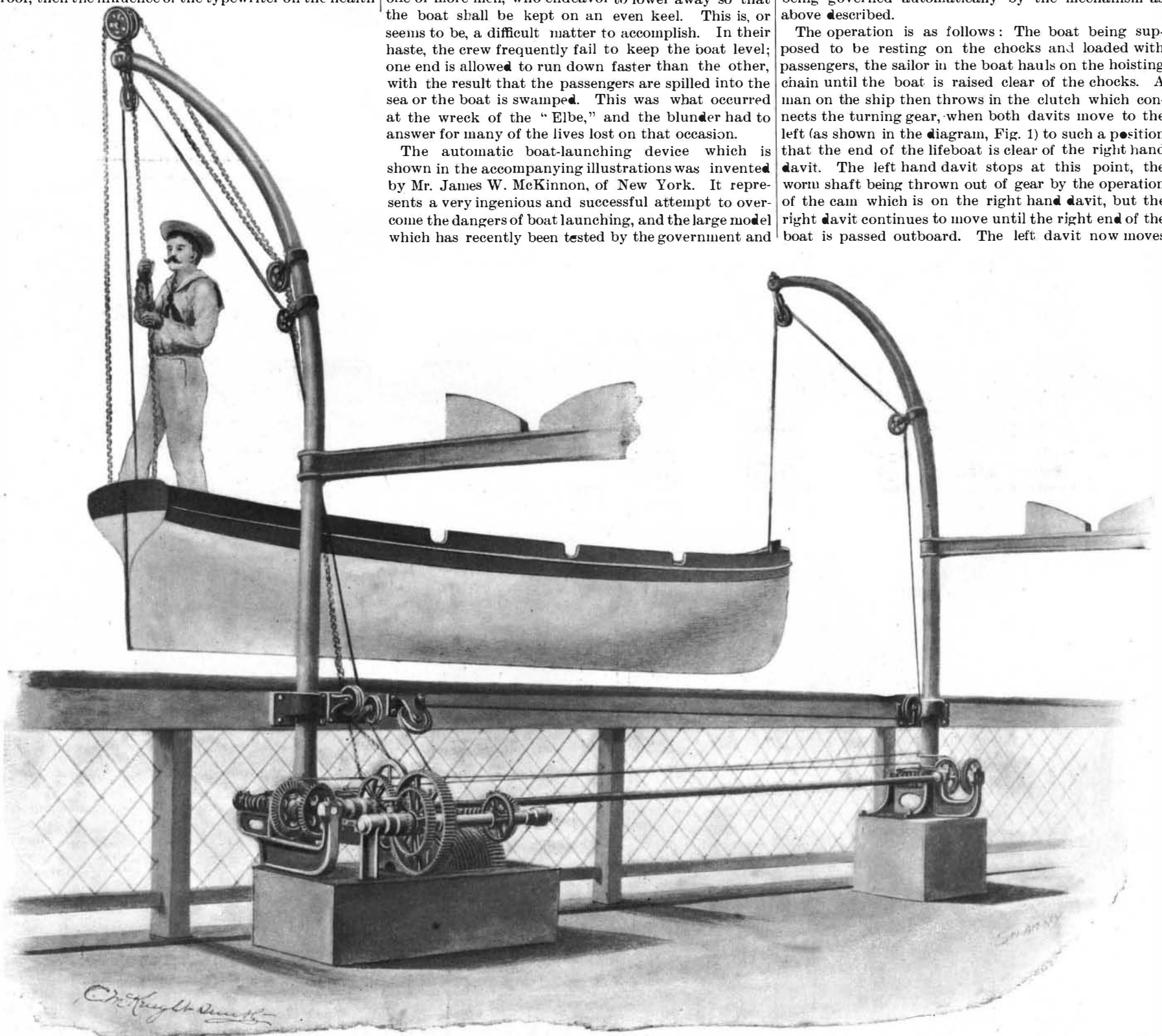
by the officers of the Atlantic steamship lines, at the Brooklyn Navy Yard, has given great satisfaction.

The boat is hoisted and lowered by two steel ropes which are fastened to ring bolts at the bow and stern, and lead through sheaves at the head and near the foot of the davits to a hoisting drum located at the foot of the left hand davit, looking outboard. The two ropes being wound upon a common drum, the boat is at all times maintained on an even keel. The movements of the davits in swinging the boats outboard are controlled by worm gears which are keyed to the davits as shown in Fig. 4. The swinging movements are not always in the same direction, as in passing the boats between the davits it is necessary at certain points to reverse or stop the motion. These movements are accomplished by bevel gears and clutches, which are thrown in and out of gear at the proper moment by means of cams on the worm gears and rods connecting the cams with the clutches.

The hoisting and turning gear is operated by means of an endless chain, which passes over sheaves on the right hand davit and drives a sprocket wheel shaft above the hoisting drum. At each end of the shaft is a bevel gear which meshes with a pair of loose gears on the worm shafts. The worm shafts and the worm wheels at the base of the davits are driven in either direction according as one or the other of the loose bevel wheels is engaged by the clutches, and the movement of the clutches is controlled by the cams on the worm wheels.

The drum is driven by a worm and gear, operated through a countershaft, which is thrown in and out of gear by a clutch on the latter. After this clutch has been thrown in the whole operation is performed by the man in the boat, the various motions of the two davits and the lowering of the boat on an even keel being governed automatically by the mechanism as above described.

The operation is as follows: The boat being supposed to be resting on the chocks and loaded with passengers, the sailor in the boat hauls on the hoisting chain until the boat is raised clear of the chocks. A man on the ship then throws in the clutch which connects the turning gear, when both davits move to the left (as shown in the diagram, Fig. 1) to such a position that the end of the lifeboat is clear of the right hand davit. The left hand davit stops at this point, the worm shaft being thrown out of gear by the operation of the cam which is on the right hand davit, but the right davit continues to move until the right end of the boat is passed outboard. The left davit now moves



2.—AUTOMATIC LIFE-SAVING DAVIT DEVICE—LIFEBOAT BEING SWUNG OUTBOARD BY ONE MAN.