

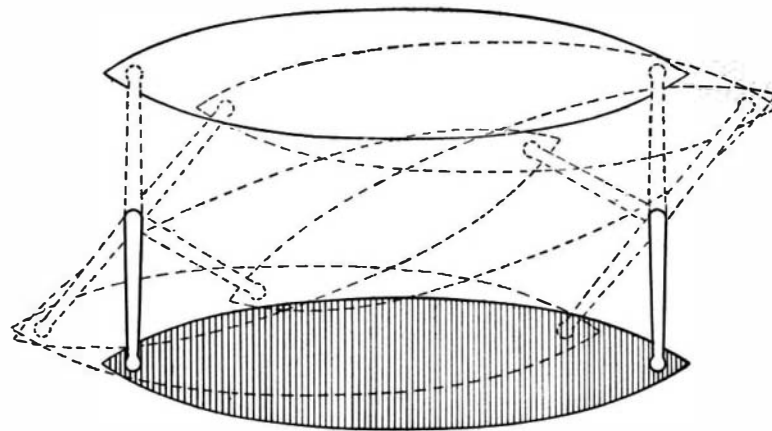
The Typewriter and Health.

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 lifeboats 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

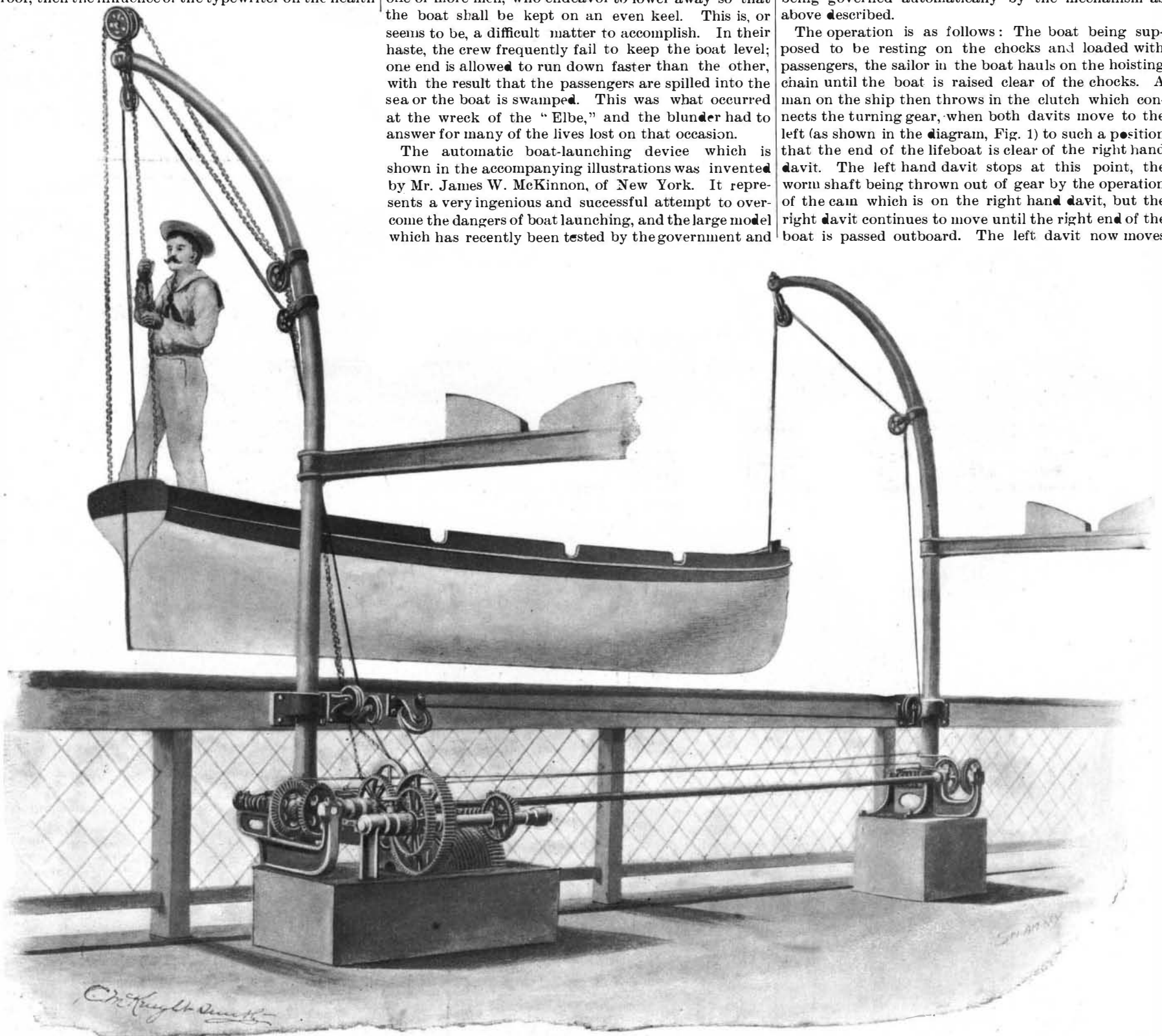
by the officers of the Atlantic steamship lines, at the Brooklyn Navy Yard, has given great satisfaction.

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.

again, the right continuing to move also until both davits are at an acute angle to the side of the ship. The right davit stops at this point and the left continues to move to a position parallel with the right, when both move in unison and come to rest in the outboard position or at right angles to the axis of the ship. The operator in the boat now pulls on the chain, which is long enough to reach to the water, and lowers the boat, which, as already explained, is certain to strike the water on an even keel. It should be mentioned that one man operating the chain can raise and lower a boat load weighing four tons with ease.

An improvement on the mechanism here shown is being made with a view to enabling the whole operation to be carried out from the boat, thereby doing away with the necessity of a man remaining on the ship to throw in the turning gear clutch. The time consumed in transferring the boat from the chocks to the water on the occasion of the recent test at the navy yard was eighty seconds, which is considerably shorter, it is needless to say, than the time consumed by the present methods.

Accidents to Animals.

Among wild quadrupeds only the ruminants with large horns and long limbs seem commonly liable to accidents. Cases of stags dying with interlocked antlers are recorded from time to time, and Buckland gives an account of a curious accident which befell a big stag in Windsor Forest. The poor beast had been standing on its hind legs to nibble leaves from a thorn tree, and caught its hoof in a fork in the trunk. This threw it on its back, and broke the bone. Though red deer are in this country mainly found wild on mountainous ground, we much doubt if they are really a mountain species or specially clever on rocky ground.

Mr. J. G. Millais mentions one pass where the bones of deer that have missed their footing and fallen down the crags may frequently be seen. Broken limbs are very common, even among park stags, generally due to fights in the rutting time. This must usually lead to the death of deer in all districts where large carnivora are found; but the astonishing way in which broken bones, or even worse injuries received by wild animals, cure themselves if the creature is let alone, shows that the most serious accidents need not lead to death, even if left to nature. The most striking of re-

Glendyne and "the runner up" for the cup were slipped at a hare which went wild and strong. When killed after a good course by the two crack greyhounds, it was found to have only three feet. This may be compared with the accounts of a collie dog, recently quoted in the papers, which had one fore foot and one hind foot cut off by a reaping machine, but which still manages to help with the flock. Dogs, which ought to be little liable to accidents, are very frequent sufferers, largely from their association with man and intense desire to participate in all his doings. One of their commonest mishaps arises from their love of riding in carts. They become quite clever at scrambling

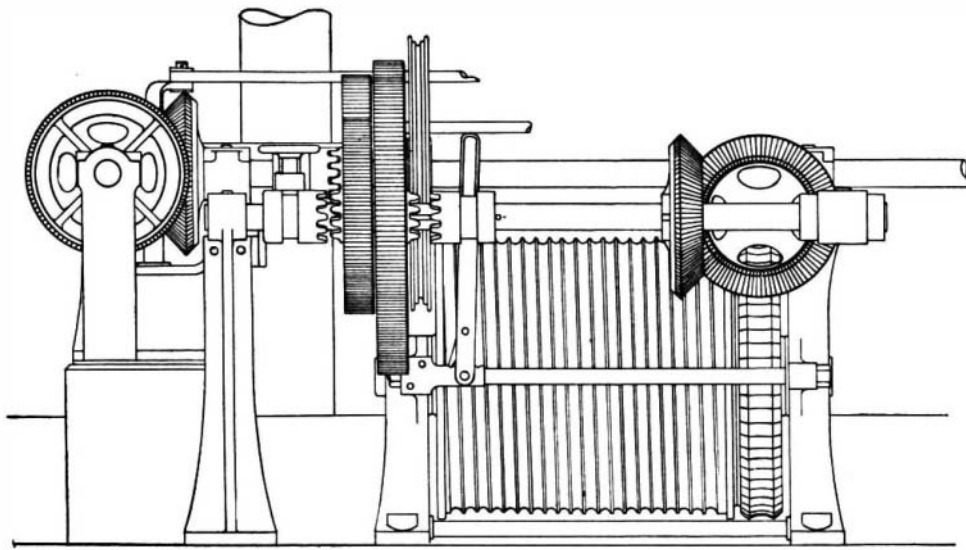
sickroom. Unless warned not to try his eyes too much, he is apt, through forgetfulness, to overtask his accommodative powers or injure the already weakened ciliary muscle. When the rest of his body recovers its normal strength, the eyes continue weak. After straining the eyes more in the vain hope that his sight will improve, the person, if he is wise, will consult experienced help; if otherwise, he will pick up the first pair of spectacles available, regardless of whether they be too strong or too weak for his eyes. Should he finally go to an optician, the latter will often find it difficult to fit glasses satisfactorily.

Other natural causes that affect the eyes are wind, dust, light and heat, when excessive. Eyes otherwise good enough become weak under such conditions. The weakness may be due to an error of refraction, and under most conditions the accommodative power of the eyes is strong enough to overcome the error. But under such atmospheric or climatic conditions as I have mentioned the accommodation is lessened, and the eyes cannot find relief except by the use of glasses. They should generally be convex.

Having mentioned those losses of visual acuteness due to natural causes, next in order are causes produced by civilization. At the outset I will say that if the patient were to change his occupation and take plenty of fresh air and exercise, the optician's services might never be needed, but these "ifs" are in the way and are not to be got rid of by the average individual.

Take a boy from the country, bring him to town and place him at clerical work, writing perhaps all day and into the night. Put him behind a counter and let him stand all day, with an hour free out of 12, or more, or let him sit at a workbench, following a trade that keeps his eyes fixed steadily hour after hour 12 to 18 inches in front of him. Take this same youth with hitherto good eyes and bid him use them day in and day out, reading for a profession, or let him occupy his time in a dimly lighted room, or bend over a desk beneath artificial light all the time. I might go on, giving instance after instance, without particularizing any calling as more harmful than others to the eyes.

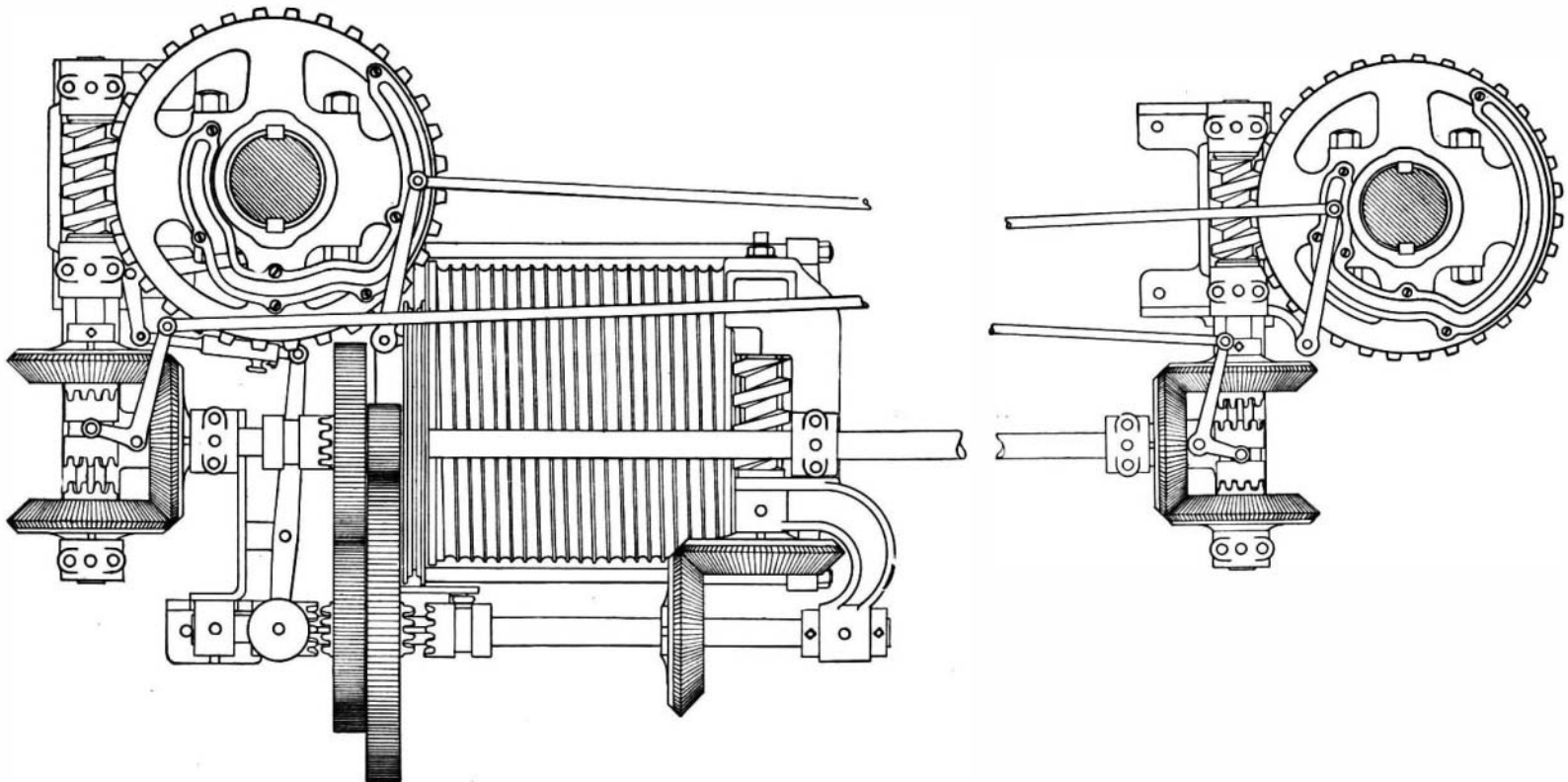
Is it a wonder that the children of this generation are wearing glasses along with their grandsires? Old age is no longer the reason for wearing glasses. In nine cases out of ten the young man needs a convex



3.—ELEVATION OF HOISTING AND TURNING GEAR.

or jumping in, but are not "built" for jumping down on to a hard road. If the cart moves as they make their spring the danger is increased, and fore legs broken, usually just below the shoulder, are very commonly seen.

Dogs also have dangerous falls when on the ground, accidents usually ascribed only to bipeds and horses. A greyhound going at full speed will trip, fly head over heels, and break a leg, or even its neck. Master Magrath in 1870 went through the rotten ice of the River Alt, from which Alctear takes its name, while following the hare, and nearly died from the effects. But the strangest mishap which the writer has ever seen fall to the lot of a dog was the case of a setter which "tripped" over a sitting hare. The dog, a large, heavy animal, was ranging at high speed in a field of thinly planted mangold. As it passed between the



AUTOMATIC LIFE SAVING DAVIT DEVICE.—4.—PLAN OF HOISTING AND TURNING GEAR.

cent instances is the case of a doe antelope at Leonardslee, which smashed its hind leg high up, and so badly that the bone protruded. It would have been shot, but it was observed to be feeding, as if not in pain. It survived the winter, and was seen to swing the injured leg forward to scratch its ear before the bone set. The fracture reduced itself, and the cut skin grew over the place, leaving a scar. Later, though lame, it was perfectly well, and reared a young one.

A tiger recently killed in the hot weather had a bullet wound a week old which had smashed its shoulder. This wound, though a very bad one, was perfectly healthy, and there was evidence that since it was inflicted the tiger had eaten no flesh, but only drank water. In the Waterloo cup coursing in 1886 Miss

rows, its hind feet struck something, and it nearly turned a somersault. The object was a squatting hare, which, as the dog flew over in one direction, quietly scuttled off in the other.—London Spectator.

Loss of Visual Acuteness.

It is interesting to compare the visual acuteness of the normal eye before and after the effect of some purely physical cause that may be within the realm of either nature or civilization. Taking a few instances of each for illustration, I will cite from nature first. It is well known that severe illness greatly impairs the acuteness of vision of an otherwise strong eye. Almost the first thing a convalescent will do is to call for a book or newspaper to while away the tedium of the

glass to assist his overtaxed eyes in fulfilling their duties.

In addition to these causes of weakened vision, it is hardly necessary to mention the common evils of tobacco and alcoholic stimulants. Again, if the strong constitution of a boy cannot save his eyes for their thousand and one uses, how can frail women escape? The ever increasing army of women workers in shops and offices and the new avenues of employment opening to them swell the number of spectacle wearers. It has been my purpose to point out that it is not the serious and very plain errors of refraction that cause the most of an optician's patronage, and he must often attribute the loss of visual acuteness to other causes.—Dr. H. Ruth, in Jewelers' Weekly.