

Military Novelties.

WRITTEN AND ILLUSTRATED BY JAMES SCOTT.



WHEN any great matter affecting a nation's welfare arises it is sure to stir into action the latent potency of many individual minds. So it has proved in connection with the lamentable war which has for so long a period ravaged South Africa. As fast as disasters or inconveniences accumulated men were ready with schemes by the adoption of which future misfortunes of a like character might be avoided.

In the mechanical and inventive aspects of the matter keen and wonderful projects have been laid before military officers and others in kindred employment, patent agents, and journalists who interest themselves in these subjects. It has been my purpose to bring together for survey many objects of which the germs have proceeded from a variety of minds, and I think that the series embraces quite a unique assortment of ideas, to which without further prologue I will devote some attention.

In the natural course of things the outfit of Tommy Atkins acquires first importance, and perhaps boots might be regarded as deserving of initial consideration, especially as it was once reported that many soldiers were practically barefooted during certain periods of their protracted wanderings.

In Nos. 1 and 2 we have a boot which can claim many merits. Consisting essentially of a pivoted and detachable sole, furnished with springs at the front and back, it is supposed to reduce materially the exertion demanded in marching and to enable worn-out soles to be easily and quickly replaced by others. Between the proper and the extra heels is a coiled spring, whilst a horse-shoe spring occupies a portion of the area between the toes. As the boot stands when off a foot it would appear as in No. 1, both heel and toe being slightly elevated above the additional sole. In use the hinder spring would tend to soften the tread as the heel

met the ground, and during the lifting of the heel the expansion of the spiral would help to relieve the tiresome weight occasioned when the body is supported merely on the toes and a clear space necessarily exists below the heel. The effect of the front spring would be to lend assistance during the movements of the foot. Regarded from the cobbling point of view, it appears to offer substantial advantages. It is a weary and often impossible matter to attend to the repair of footgear during a march; and here we have a neat solution of the difficulty. A stock of extra soles of various sizes should be selected for transport, and as fast as they became destroyed through hard wear they could be immediately replaced by new ones pivoted into proper position.

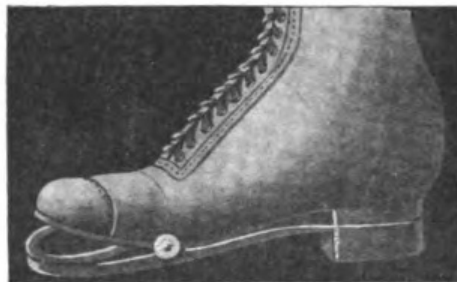
Having dealt briefly with the feet we will ascend to a discourse concerning a quaint helmet.

One of the acutest sufferings to which fighting men are subjected is undoubtedly the prolonged deprivation of that essentially necessary commodity, water. The awful parched throat is a most agonizing thing for a marching soldier to endure. The wounded warrior, too, knows how

frightful is the experience of an absence of water, for usually his first call is for something to quench his intolerable thirst. This being the case, all ideas which have for their object the alleviation of this form of suffering deserve due attention, however far-fetched they may appear at first sight.

The suggestion embodied in Nos. 3 and 4, for instance, appears at first to be an outrageous and ludicrous one; but the apparently repellent features disappear when we fully consider its claims.

The helmet may be so constructed that the lower portion of it really represents a narrow reservoir, this effect being produced by the addition of a secondary connection which fits over and outside the fundamental head-gear, being joined to it only along the base line, thus providing an intervening space.



1 AND 2.—A SPRING-BOOT FOR MAKING MARCHING EASY.



3.—HELMET FOR COLLECTING RAIN.

Midway down this cunningly contrived cavity is to be a ring of carbon (or similarly suitable substance) entirely surrounding the helmet.

In districts where, during long marches, it was the exception to meet with water, but where an occasional shower of rain presented itself, a sufficiency of the liquid, in a purified condition, would be secured automatically, and without detrimental halting of the troops.

There is another merit borne by the contrivance, which is not an inconsiderable one. In hot countries a helmet so partially filled with water would serve as a beneficial cooling agent to the throbbing head of the soldier wearing it. The life-sustaining liquid would be accessible by means of a tiny tap inserted beneath the under-rear of the helmet. If the device be regarded impartially I think that it may justifiably be said to be worthy of adoption, either as it stands or in a modified form. A cup to hold the water might be screwed on to the top of the helmet, from which position it would be readily detachable.

Why the soldier's body should not be amply protected where possible, even at the sacrifice of dignity, is a question presenting a queer phase of mystery. Warriors, during battle, are not seen by spectators as they are

during a review, and mere outward appearance should be regarded as trifling compared with the opportunities offered by the provision of a shield of some kind or other, however grotesque it might be. After all, a living soldier, however ludicrous he might appear to the caricaturists and other people with an eye for comicalities, would be far more valuable to those whom he served than a dead one.

It may be argued that the use of shields would tend to diminish a soldier's personal courage; but I think we need fear no effects of this kind. As a



4.—THE HELMET GIVING OUT PURE FILTERED WATER.

matter of fact, the recipient of a bullet does not know who fired it (as a rule), so that the pluck required to face a shower of bullets is far different from that demanded to meet a bayonet charge. This being a feature concerning which many arguments for and against could be adduced, I will refrain from continuing my meditations, and

take the illustration No. 5 in hand.

There, the shield buckled to the front of the soldier's body covers the most vulnerable spots, and, if the surmise of the inventor be

correct, would prove a most beneficial protection. It is not intended to be composed merely of a sheet of netting, but is to be provided with small spiral coils at the junctions of the wires, the whole apparatus being overlaid with fine wire. The impact of the bullet would be toned down immediately it touched the resilient surface of the shield. In other words, the bullet would be thrust back by the springs.

The climbing of forts and steep declivities is one of the most dangerous and hazardous tasks which fall to the lot of soldiers during war time, and any ideas



5.—A SPRING-FITTED WIRE SHIELD.

which might be available for reducing difficulties of this nature deserve a warm welcome. Whether the strange notion pictured in No. 6 comes into a useful category or not is a point around which much difference of opinion will probably arise.

The leather belt now used by a military man acts as an indispensable adjunct to his outfit, enabling many articles to receive a secure and steady attachment, which would be impossible in the case of its absence from the fighter's waist. We will, therefore, regard the suggested item as a kind of *secondary* belt, to be composed of some strong and light metal. It is intended to be a kind of circular spring (somewhat similar to many patterns of ladies' bracelets) fitted so that its ends, when united, could be locked immovably together. The formation of the trellis-ladder would proceed by one belt or hoop being linked into a fellow one, and, after having been brought round as flat as possible with it, to be screwed up tight. In this manner each hoop would interlace with others in its own immediate vicinity, and, when several dozens had been so treated, a tolerably firm and convenient ladder would result, up which several men at once could swarm. Used as belts, extreme portability would, of course, be insured, in contradistinction to the nuisance occasioned by cumbrous ladders. An additional advantage may be cited on behalf of the contrivance. Being worn continually upon the person, no delay would be caused, as might happen when ladders went astray, or failed to be brought up in time to the spot where they were required. We will suppose that under cover of the darkness the troops had successfully reached

a coveted portion of the exterior of a fort. Silently the belts would be detached from the waists, and each soldier would quickly interweave his belt into position with those adjacent to him. When men had been efficiently drilled into the methods of attachment

the task of building up a trellis-ladder many feet high and several yards long would occupy only a few moments of time, and dozens of attackers be enabled to ascend to advantageous positions along the battlements.

Important and powerful improvements are continually being effected in rifles, and it may be reasonably expected that at some time in the near future the long range attainable will exceed the limit to which clear vision will be enabled to seek an object to aim at. In such a case something similar to the peculiar device illustrated in No. 7 may be used. It

consists, as will be seen, merely of a telescope affixed in an uplifted position to the rifle, so that sight and aim may be taken simultaneously at the otherwise invisible enemy. Of course, other parts of the rifle would need careful development in order to meet the alteration caused by the added features; but this would not prove a very formidable task for inventors of military contrivances.

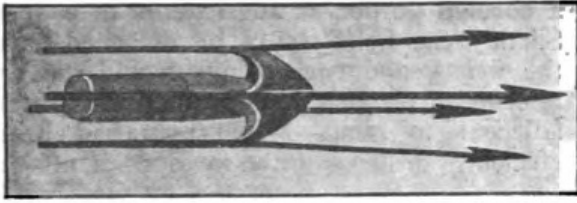
While on the subject of rifles I should like to direct the reader's attention to a notion for the existence of which, in a materialized form, there would seem to be scarcely any justification, even when judged from the brutal point of view. It is suggested that an object like that depicted in No. 8, having barbed frontal extensions, should be placed loosely over the muzzle of a rifle preparatory to firing it. The conical portion of it would



6.—A TRELLIS-LADDER, MADE OF BELTS.



7.—A TELESCOPIC RIFLE.



8.—A COMPOUND ARROW, TO BE DRIVEN FROM THE MUZZLE OF A RIFLE BY THE BULLET.

come immediately over the muzzle of the gun. It is anticipated that a discharged bullet, as it sprang from the rifle, would carry the object impaled upon it, and impart equivalent energy to it. Seeing that a bullet itself can inflict effectual damage upon arriving at its desired destination, such an addition appears to be somewhat superfluous; but it has been added to this catalogue on account of its unique formation and purpose.

The crossing of streams is one of the most formidable obstacles encountered during an army's progress, and the delay caused by the incidental awkwardness of the experience oftentimes results disastrously, giving undesired opportunities to the enemy.

Much ingenuity has been developed in efforts having for their object the provision of some worthily serviceable contrivance with the aid of which quick, safe, and easy passage may be made across rivers; but I think that the suggested

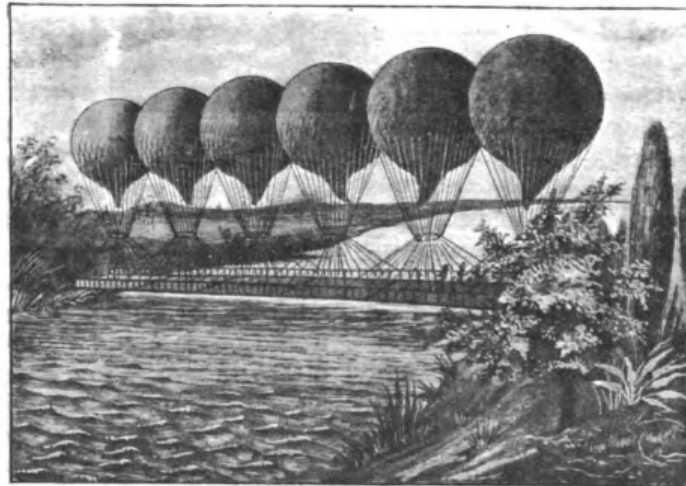
balloon bridge (No. 9) can claim novelty as a predominant feature of itself.

Let us examine the thing thoroughly. To small balloons would be suspended strong and light, open-ended, oblong cars, instead of circular ones, built in such a way that one could be bolted and locked to a companion car, which in its turn could be similarly treated in connection with a third car, and so on. Upon the arrival of the troops at a spot suitable for the purpose the balloons would be inflated and the cars attached. Extremely careful ballasting would necessarily be a most important requirement on the part of the operators; but such capabilities are not impossible. When one car had been

so securely and properly fixed to the river's bank that the floor of the car was tolerably steady and level, the operators would guide a second balloon into position, and rigidly fasten its car to that already prepared for use. At this point there would be practically a single car, twice the size of the normal ones, supported by *two* balloons. In like manner a third one would be joined in line with the first two; and then a fourth, fifth, sixth, and others successively until the opposite bank was reached, when the last one would require firm attachment to the land. During the construction of this quaint bridge the flooring or roadway, as it became resolved into shape, could be utilized as a platform for the continuance of the work. The very delicate and varying ballasting required could be considerably aided by means of ballast-bags suspended from the balloons and resting on the river's bottom, serving really as anchors. In this way it would be possible to hold a balloon stationary at any desired altitude. If needed a

few feet higher, the mooring-rope would be allowed to lengthen; whilst if the men wished to reach a lower elevation, the rope would be gathered in.

Once formed, there would exist a solid, compact gangway over the river, the gas-bags having sufficed instead



9.—A BALLOON BRIDGE.

of scaffolding to support the various sections of the bridge during their manipulation. Torrential currents, which render pontoon bridge building unmanageable, would not prove very serious in connection with the kind of work with which I am now dealing, and this fact alone is worth some consideration. With modifications, not only rivers, but ravines, and gorges, and similar geographical torments, which are now regarded as absolutely impassable, could be negotiated. Strategical movements would thereby receive an advantageous impetus.

It would need actual experiment to demonstrate the efficiency or futility, as the case might be, of the extraordinary contrivance



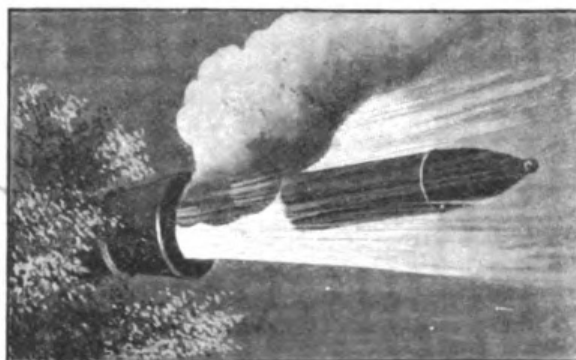
10.—A "BULLET-DEVIATOR," MADE BY A WHIRLING WHEEL.

depicted in No. 10, and naturally such experiments would demand a risk to which few people would care to voluntarily expose themselves. Theoretically, however, the invention seems to possess unusual merits, being destined to serve as an obstructor to sundry bullets whose billets would otherwise be the human body in proximity to the apparatus. It is a very simple affair—nothing more, indeed, than a rapidly rotating wheel. It is supposed that should a soldier occupying a position behind it be fired at, the bullet would, immediately upon arrival at the wheel, be struck aside by the revolving fans. Whether such a desirable result would really ensue in connection with such a thing as a swiftly travelling bullet cannot be definitely declared; but that apparently it would be quite possible may be understood by a simple experiment. If the reader will remove one of the wheels from a discarded clock (or, in fact, use any kind of open wheel), and spin it briskly upon a table, he will find that when a small object is dropped down on to the rotating wheel it is thrust violently aside, instead of falling through the meshes of the wheel. From analogy, something similar in effect might be expected on the part of a bullet coming into contact with one of the revolving wheels illustrated in No. 10, provided that the motions of the latter were made with extreme speed. The motive force operating a series of these barriers might reasonably be electricity, a power which will undoubtedly

be extensively utilized in future warfare. When quickly revolving this contrivance would not interfere with the view of a soldier, as there would appear before him seemingly a mere circular mist. His own bullet would, of course, be fired from between a pair of the wheels, in the angle caused by their close proximity one to the other.

Here, finally, is a newly devised shell of extreme originality. When fired from the gun it would resemble the object portrayed in No. 11. It consists of a hollow cone, to which are hinged a number of tubes like miniature cannons, each capable of

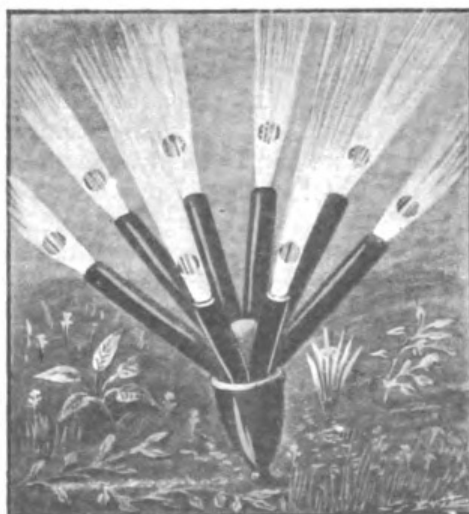
discharging an explosive shell on its own account. Upon the shell arriving at its destination it would fall point downwards, the tubes would open out and point in every



11.—A NOVEL COMPOUND SHELL.

direction, and from them would issue the explosive shells scattering to all points of the compass, as shown in No. 12. In this manner a more disastrous result could be secured than by using a single large shell to explode where it fell, for a vast area could be swept by these means.

A soldier fully equipped in a uniform comprising the helmet, belt, shield, and boots illustrated would certainly present a curious spectacle; but from a utilitarian aspect there can be no denying his increased efficiency, and, after all, the soldier exists for quite a different reason than that of gratifying the eyes of artistic people.



12.—THE SHELL BURSTING.