

A NEW MILITARY FOLDING BICYCLE.

The bicycle as a supplementary fighting unit is rapidly making headway in the various armies of the world. For years it was regarded more as a toy than an efficient mount, and consequently the nations, absolutely unaware of the capabilities of the machine for military purposes, did not regard its introduction with favor. But its advantages have now been so forcibly emphasized that those very people who at one period regarded it with resentment are now foremost in their recommendations for employing it upon the battlefield. For certain military duties, such as scouting and conveyance of dispatches, the cycle is absolutely without a rival. It is noiseless, occupies small space, and consequently offers but a very insignificant target to the rifle fire of the foe, offers great mobility, and is absolutely reliable.

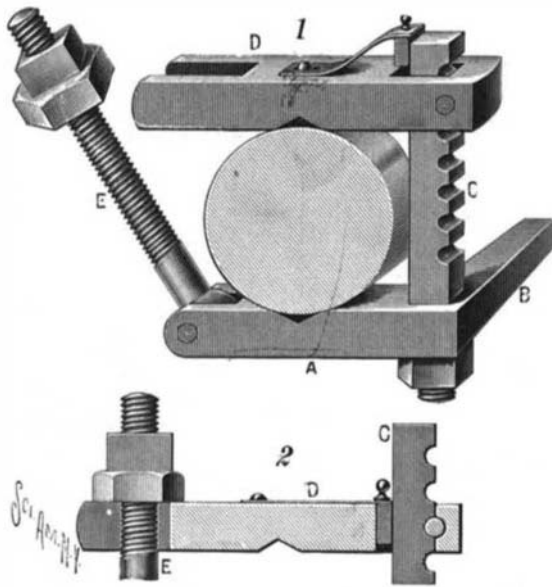
In England recently, an army of cyclists numbering about 2,000 men in all was organized for the purpose of determining how far it would be possible for an army of such mounted men to temporarily repel the advance of an invading army until the main army were able to arrive and fight a pitched battle. It was supposed that the foe had landed on the southern coast of England and were advancing on London by the thirty-six roads leading to the metropolis, since the railways had all been destroyed. The cyclists had to dispute the advance of the foe, and they accomplished the object in such a convincingly formidable manner that their utility has been thoroughly established.

Other nations have also been equally zealous in introducing the cycle into their respective armies. France, Germany, Italy, Belgium and Russia all possess military cycling detachments, and recently the Japanese have made the innovation in their army. In the majority of the cases, however, the cycle generally employed is of a collapsible design. That is to say, the machine is so constructed that by means of some simple operation it can be folded up into small compass and be slung upon the back of the rider, out of the way. To satisfactorily accomplish this desideratum with the existing type of machine, however, is a very difficult matter. The majority of the devices by which the cycle may be folded are based upon the idea of hinging the frame in some manner. This principle, however, destroys the rigidity and strength of the machine to a very appreciable degree.

But a military cycle has now been devised which is said to be stronger, more rigid and lighter than the conventional type of machine: and lightness commensurate with strength and rigidity in a military cycle is a great recommendation toward its utility upon the battlefield.

It will be recognized that the frame is constructed upon the system of triangles, which principle is the most conducive to stability. The tubes of the frame are doubled throughout, whereas in the existing type of cycle they are single. A very important improvement is the front section of the frame, carrying the steering wheel. There is no fork. As is well known, this is one of the most serious defects inherent in the present diamond frame, since the system of triangles has to be abandoned somewhat in the front head. But in the Dursley-Pedersen this defect is efficaciously surmounted. There are a pair of tubes springing from the hub of the front wheel on either side to the head of the frame. The front tubes on each side are perfectly straight, but the second tubes are drawn back in the center, and an open steel crown plate holds all four in position. From the head of the machine the tubes dropping to the crank bracket are placed almost vertically, while from the crank bracket two more tubes spring to the front fork, holding it firmly in position. From the head also drop the tubes to the hub of the back wheel, and another pair of tubes radiate from the crank bracket to carry the saddle, which is one of the most conspicuous features of the whole machine. It does not consist of a shaped leather seat securely fixed upon a saddle pillar, but is a seat suspended hammock fashion between seven spiral springs attached to the adjustable saddle pillar and the top front fork, to which it is secured by means of a strap, which can be adjusted so as to tighten or

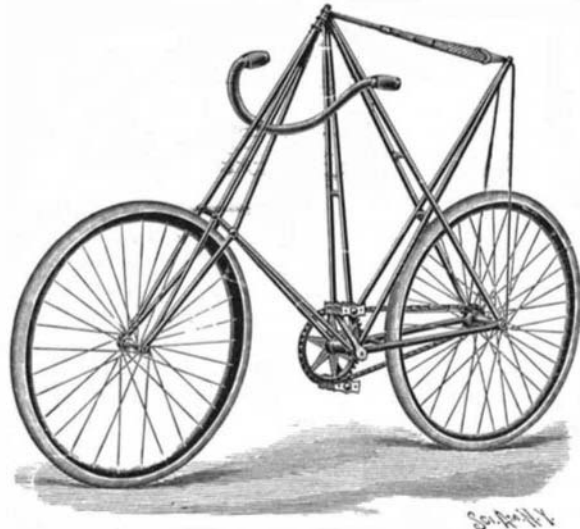
to slacken the saddle as desired. The recommendation of this unique saddle is that it adjusts itself to every movement of the body, and allows perfect freedom to those muscles which cycling brings into play. By this means perineal pressure is entirely averted, while per-



THE SCHELLENBACH COLLAPSIBLE LATHE-DOG.

fect ventilation, ease, comfort and softness of seat are assured. As the strain between the saddle pillar and the hub of the back wheel is purely tensile, they are connected on each side by wires in place of tubes. The joining of the tubes throughout the machine is accomplished by sweating instead of the more general brazing, the former method being considered to be stronger. The handle bar is passed through the front tubes, and is fixed at a low elevation, the handles curving upward to the desired height.

Some idea of the strength of this principle of construction may be gathered from the fact that the in-



THE DURSLEY-PEDERSEN MILITARY CYCLE, SHOWING PRINCIPLE OF CONSTRUCTION OF FRONT FORKS.



FOLDING BICYCLE, WITH RIFLE ATTACHED. WEIGHT, 15 POUNDS.



BICYCLE FOLDED AND CARRIED UPON RIDER'S BACK.

ventor's original machine was built of poplar sticks, in lieu of the steel tubes, secured together with twine, and represented a total weight of 18 pounds. Yet this machine, primitive though its construction is, has been ridden no less than 5,000 miles without the slightest mishap, and is still in use.

The cycle is folded by slipping out the front wheel and tubes at the head and at the point where the two tubes radiating from the crank bracket join the front tubes. The front wheel then folds back upon the back wheel and is kept in position with a strap. It takes but twenty seconds to perform the operation and to sling it upon one's back, and it can be as readily put together again. The total weight of the machine, which is constructed of steel throughout, is only 15 pounds. Indeed, it folds up so compactly that one can climb obstructions and perform the ordinary military duties with the greatest facility and without the slightest inconvenience. The rifle is fixed vertically in a slot on the frame of the front wheel.

A COLLAPSIBLE LATHE-DOG.

A lathe-dog which can be more conveniently and securely fitted to the work than dogs hitherto used, and which can be adjusted within a wide range, is the subject of an invention which George W. Schellenbach, of Joplin, Mo., has recently patented.

As shown in our illustration, the lathe-dog has a base, A, which constitutes a fixed jaw. From one end of the base or jaw, A, a tail, B, projects, which is to be used in the ordinary manner. Passing through one end of the jaw, A, and provided on its lower threaded end with a nut, is an arm, C, formed with notches. The arm, C, passes through an opening in a movable jaw, D, provided with a pin designed to lie in any one of the notches of the arm, C. A key carried by a spring secured on the movable jaw, D, extends into the opening mentioned and wedges the arm, C, and the jaw, D, rigidly together. The end of the jaw, D, is slotted to receive a screw, E, pivoted to the fixed jaw and provided with a duplex locking nut. By means of this nut the jaw, D, is forced down toward the jaw, A, since a slight rocking movement is permitted by the pin lying in the notch of the arm, C. The working faces of both jaws may be recessed to hold the work securely.

It is evident that the dog can be easily taken apart and packed in a very small space and that its range of adjustment is wider than that of ordinary dogs.

Petroleum in Japan.

The petroleum industry has reached a considerable development in Japan, as may be remarked from the reports recently published in The Japan Times relating to the province of Echigo. In this district as many as thirty companies now exist, some of these representing a capital of more than half a million, while the total capital engaged in the petroleum industry in this region is estimated at more than six millions. As an indication of the activity which now prevails in the petroleum region, it is stated that two of the principal banks of Japan are about to make branch establishments in the cities of this district. There is some talk of installing a pipe line from the district of Echigo to Tokio, upon about the same plan as that now established in the Caucasus region. The plans for this work are soon to be drawn up, and it is to be directed by M. Miyagi, a prominent Japanese engineer, who is a graduate of the engineering college of the Imperial University of Tokio.

The Torpedo Boat "Bailey."

The torpedo boat "Bailey" had her builders' test on the Hudson River, at Yonkers, September 17. She made 30 knots, and it is thought she will show 32 knots on her official trial trip. Her contract calls for 30 knots. The builders' trial was made at a pressure of 165 pounds of steam and she developed a little over 5,000 horse power. Her capacity is in excess of 6,000 horse power.

DURING some excavations in the Forum at Rome, the laborers unearthed the head and part of the body of a marble horse. It is a magnificent piece of sculpture, and great value has been placed upon it. According to experts, the relic dates from about the second century before Christ.