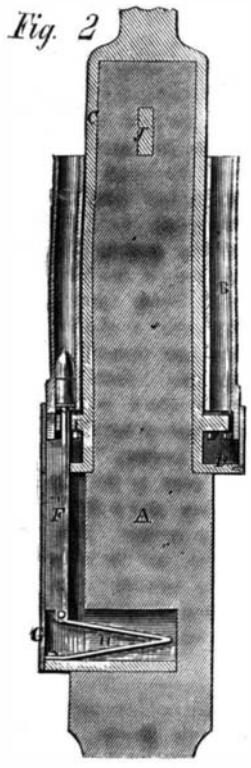
Improved Lance and Pistol.

The prosecution of the art of war involves the employment of many different kinds of weapons; and it is hardly necessary to add that the most deadly ones are the most valuable. Neither artillery nor infantry, alone, can be in every instance relied on to terminate a contest successfully; but resort must be had, at times, to all branches of the service, to relieve each other, as well as to bring the battle to a victorious issue. Of late, our cavalry have achieved wonderful deeds; not only daring in their character, but fruitful in their results; crippling, as they have, the enemy, and causing him to abandon expeditions, which, had they been carried out, would have been productive of serious injury to the national cause. In some countries numbers of regiments of lancers and pikemen still exist; and these troops were recently employed by the Mexicans in the war waged against them by the French. At the outbreak of the present rebellion also this weapon, the pike, was urged upon the Confederate Government by several persons who had had experience in its use, and declared it to be a most formidable instrument for offense and defense. If the pike alone is capable of achieving all the success in the hands of determined men that its admirers claim for it, certainly the combined lance and pistol, an engraving

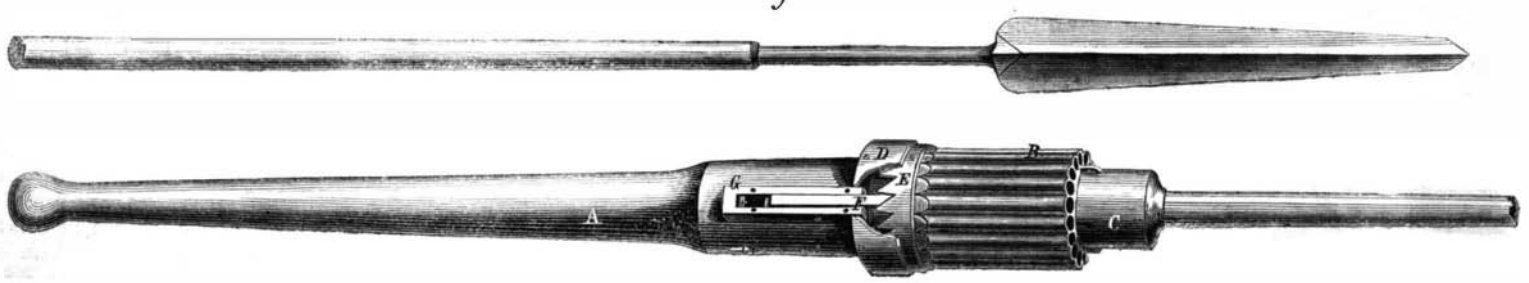
Fig. 2



of which is herewith presented, recently invented by Mr. J. C. Campbell, is a still more terrible weapon; containing, as it does, in addition to the lance-head, a pistol which can be fired as many times without re-loading as it has chambers, be the same more or less. It may be safely assumed that if a resolute body of men had been armed with this lance during the prevalence of the late riots, the outlaws would not have presented a threatening front very long; but would have been dispersed in all directions immediately.

The mechanical construction of this weapon will be easily understood by referring to the subjoined description. The handle, A, of the weapon is constructed of wood: while the shaft and lance, which is broken off in the engraving, on account of its length, is finely-finished steel. The handle of the lance has, in addition to the offensive and defensive point, a many-chambered cylinder, B, revolving about the boss, C. This chamber is bored like an ordinary pistol-barrel, and may be rifled if required, as it is intended to be used at close quarters; however, this feature has not been introduced in the model before us at the time of writing. The protective casing, D, at the base of the chamber, has been cut away by our artist, in order to show the internal arrangement of the mechanism for firing the charges; it is very simple. The ratchet teeth, E, (see Fig. 1), engage with, and depress the slide, F, contained in the case or box, G, on the side of the handle; this is also closed with a cover to protect it from the weather. As the barrel is revolved, the teeth force the slide down, and it immediately flies back into the next space of the ratchet teeth, by the force of the spring, H, in the recess at the bottom; on this slide there is a projecting point, I, which strikes the fixed ammunition with which the cylinder, or chamber is filled, and explodes it. This is in brief the whole machinery required. The weapon is very neatly arranged in its several parts—not at all liable to get out of order—and will stand exposure to the weather without derangement. By pressing on the projecting tongues, J, the barrel may be slid off the boss, and loaded in a few seconds; and then replaced as quickly. There is a small hole in the side of the box containing the slide, F, which is fitted with a pin chained to the handle. This being inserted in a hole prevents the lock from working when not required for use. In using this weapon, the soldier holds the lance as he would a musket on the charge; and he is ready to transfix, or to discharge twenty-five or thirty bullets into his adversary, as occasion may require. The base of the handle may be hollowed out, so as to contain ammunition. The weapon has this merit that it is at all times ready for service, and is not subject to more—if as many—casualties than usually falls to the lot of weapons of war, and can be used by either infantry or cavalry. A patent on this invention was obtained on June 30, 1863, through the Scientific American Patent Agency; further information can be had by addressing the inventor, J. C. Campbell, New York City.

Fig. 1.



CAMPBELL'S COMBINED LANCE AND PISTOL.

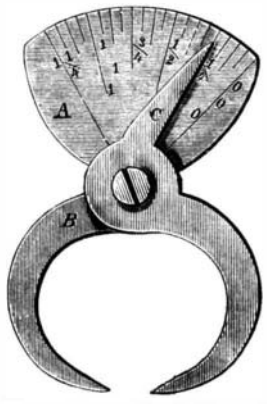
A SENSIBLE PATENT REFERENCE CASE.

On the 8th inst. in the Court of Queen's Bench, Guildhall, London, a peculiar patent case came up for trial before the Lord Chief Justice and a special jury. The parties were Saxby *versus* Stevens. The complaint was for the infringement of a patent system of colored railway signals, combined with points or rail frogs. The points were moved in harmony with the signals, so that when a signal was right, the rail point, to switch on or off, was right, and *vice versa*. The floor of the court was occupied by large models, exhibiting a line of railway, with a junction station, and all the signal lamps, and apparatus or points and levers, to show the operation of the invention. Mr. Bovill, Q. C., opened the case for the plaintiff, and entered into an elaborate explanation of the details of the invention exhibited in the models, and in photographic drawings. After having been thus engaged for an hour and a half, the Lord Chief Justice, who saw that the jury was becoming more and more bewildered, asked if it were necessary to enter into all the details, as he thought it impossible for the jury to remember them.

Mr. Bovill answered, that he had felt this difficulty, but it was the only course left for him; there were the models, and he must go on with the explanation. On he went again for another hour, when the Chief Justice again interposed. Mr. Bovill then stated that it was only after long and laborious study that he was able to understand the invention; still he must do his best, and again he proceeded, when the Chief Justice again interrupting him, said: "Would it not be far better for the parties to refer this case to mechanics, or engineers, or other persons who are familiar with patents." Mr. Bovill said: "It would be infinitely better to do so;" and Mr. Grove, counsel for defendant, acquiesced in this view. The Chief Justice then said that the present mode of trial in such cases, where the jury was not composed of mechanics, was hopeless, and that the decision of such a jury must be like a "toss up," and very unsatisfactory. After consultation with their clients, it was agreed to refer the whole case to Mr. Montague Smith, Q. C., a gentleman well versed in patents and mechanics. This sensible reference was manifestly satisfactory to the jury that had been empanneled to try the case.

TALBOT'S PATENT CALIPERS.

The accompanying engraving is a representation of a well-designed implement, which machinists especially, and mechanics in general, have frequent occasion to use. The calipers are provided with a scale, A, engraved on the projecting portions of one of the legs. This scale as well as the leg, B, to which it is attached, is one piece of steel, and is spaced off, and numbered, to correspond with inches, or parts of an inch, so that the person using the tool may instantly



set his calipers to any desired size, without having recourse to a rule, the arm or pointer, C, enabling him to read the register at a glance. The use of the tool is sufficiently evident in the engraving, without further comment; and we think that all mechanics will agree with us in saying that this is a very convenient form of self-regulating calipers; they may be made on this principle for either inside or outside work. This invention was patented on Jan. 27, 1863. Further information may be had by addressing the patentee, D. C. Talbot, at Worcester, Mass.

LANE'S CARRIAGE-JACK.—Since publishing the illustration of Lane's patent carriage-jack in a recent number of the SCIENTIFIC AMERICAN, we have had one of the articles in constant use. It is certainly one of the most convenient implements which can be introduced in a stable; and we most cheerfully recommend its general adoption. The jack combines lightness with strength; and is easily operated. Any person wishing to purchase a good article is referred to our advertising page for further information.