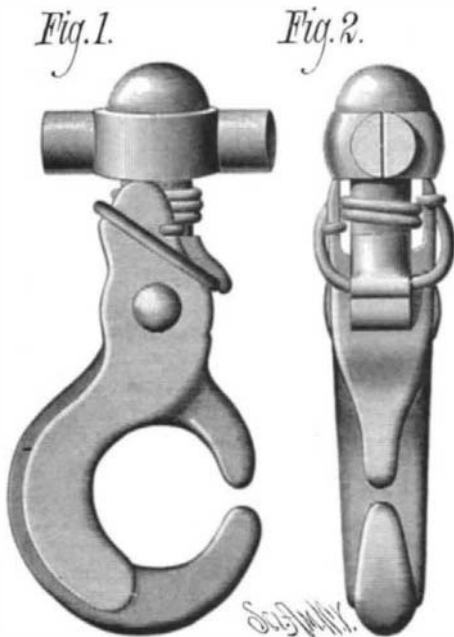


AUTOMATIC DETACHING AND LOCK HOOK.

The engraving shows an automatic detaching and lock hook lately patented by Mr. George B. Whiting, of Washington, D. C. This hook may be applied to ropes, chains, rings, and shackles, in connection with boat davits and cranes, and has many other useful applications. It can be readily and easily attached, and, if required, locked in position, or as promptly and quickly detached from its connection.

Fig. 1 is a side elevation, and Fig. 2 is a front elevation of the device.

The shank of the hook has a swiveled connection for attaching it to the block or shackle with which it is to be used. A shell, pivoted to the shank of the hook and embracing the back of the hook, has a point projecting toward and nearly touching the point of the hook. The sides of the shell extend upward and are engaged by the ends of a spring wound around the shank. This spring tends to

**WHITING'S DETACHING AND LOCK HOOK.**

throw the shell forward toward the point of the hook, but is prevented from doing so by a link that is pivoted to the front of the hook shank. When the shell is unlocked by slipping the free end of the link downward, it is forced forward against the rope, ring, or shackle, detaching it from the hook.

IMPROVED COTTON STALK CUTTER AND PULLER.

We give an engraving of an improved machine for cutting and pulling cotton stalks in order to remove them from the land in preparing it for cultivation. The removal of cotton stalks is one of the most perplexing questions the planter has to deal with, it being expensive to remove them altogether and difficult to dispose of them by any other means.

The machine shown in the engraving is designed to cut the stalks into such small pieces that they will not interfere with tillage and to pull the roots.

The machine consists of two inclined rollers, A B, grooved longitudinally and provided with knives capable of cutting the stalks. These rollers receive their motion from the axles of the drive wheels, and are provided with two large toothed wheels, D, at their lower ends. The knives, b, of the roller, B, fit into slots, a, of the roller, A, as shown in the sectional view, Fig. 2.

The machine is provided with guides, C, which gather in the stalks as the machine is drawn forward. The rear end of the machine is supported on caster wheels, and entire cutting apparatus is capable of being raised from the ground by means of the lever handle near the driver's seat.

As the machine is drawn forward the rollers, A B, in revolving cut off the tops of the stalks to within a short distance of the ground, when the stalks are drawn between the heavy teeth of the wheels, D, and are pulled from the ground. This machine cuts the stalks up so that they do not interfere with the cultivation of the land, and leaves the short pieces of stalk to enrich the soil.

Further information in regard to this useful invention may be obtained by addressing the inventor, Mr. Wm. B. Richardson, in care of C. and A. Freight Office, Kansas City, Mo.

Chicken Hatching by Electricity.

The chicken hatching machine in the Electrical Exhibition deserves celebration as well as other electrical contrivances. It is an ordinary egg hatching machine, in which the heat is regulated by a thermometer, the surface of the

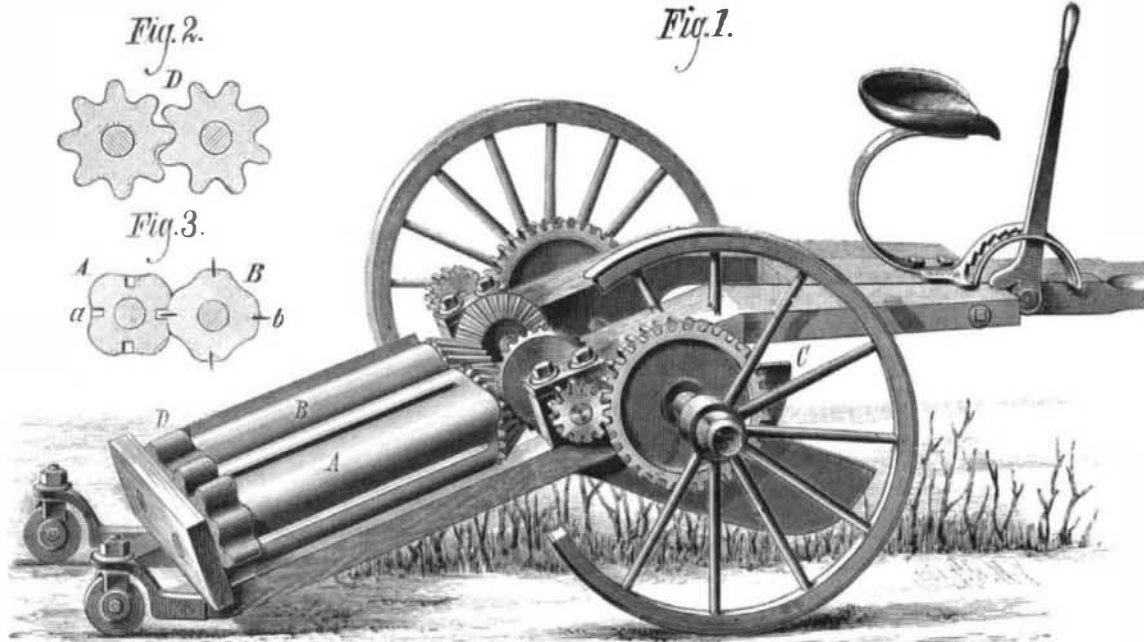
mercury in which, as it rises or falls, acts by electric wires and a magnet upon a ventilator, which opens as soon as the heat rises to 104 degrees, and shuts when it begins to fall too low. It has been observed that machine-hatched chickens suffer from lonesomeness, and do not eat so well as those who hear a mother's constant voice; and so the ingenious proprietor of this machine is now constructing a telephone which will convey to his henless chicks, scattered in different cages about a meadow, the clucking of a central hen. It is a benevolent idea; and if he would go a little further, and discover a way of "laying on" maternal care to the poor featherless chicks that are so often seen abandoned in the stationary machines called perambulators, yet greater would be his boast that he has not lived in vain.—*St. James's Gazette.*

American Shoemaking Machinery at the Frankfort Leather Fair.

A notable feature of the International Shoe and Leather Exhibition at Frankfort-on-the-Main, recently closed, was a complete American shoe factory, organized by C. S. Larrabee & Co., of Mainz. About a hundred machines were shown in operation, exhibiting fully the progress which our inventors are making in shoe machinery and in the manufacture of shoes by machinery. The principal machines exhibited are protected by patents, and included Keats' sole sewers, Larrabee heelers, the Jamieson crimper, Busell trimmer, union edge setter, etc. The official list of awards kindly forwarded to us by Mr. Larrabee shows that he received seven gold medals, six silver medals, and eleven bronze medals for himself and the builders of the various machines shown in the exhibition factory, and for manufacturers using them.

Acorn-Storing Birds.

At a late meeting of the California Academy of Sciences, a paper was read by Mr. R. E. C. Stearns, on the acorn-storing habits of the California woodpecker. In Napa County he had examined a fallen yellow pine, the bark of which was full of acorn holes. Its length was 175 feet, and the diameter of its butt was five feet ten inches, and at ninety feet three feet eight inches. Above the ninety foot line the woodpecker holes were comparatively few; neither were there any in the first ten feet of the trunk from the ground. A piece of the bark, twelve by twelve inches, showed sixty holes. Taking an average of thirty-six holes to the square foot, it gave 41,040 acorn holes in the bark of this one tree. The holes were drilled to receive acorns of different sizes, for the birds are exact workmen, and each acorn is nicely fitted into its special cavity. Woodpeckers reject the cups and store the acorns without them. In Knight's Valley he observed woodpecker holes in a large spruce tree, and he was informed that they also bore into the bark of certain oaks to a limited extent. The acorns were generally considered as laid up for a winter supply of food; but while in this climate no such provision was necessary, it was also very improbable that woodpeckers would feed on hard nuts or seeds of any kind. The more rational explanation is that they are preserved for the sake of the grubs they so frequently contain, which being very small

**RICHARDSON'S COTTON STALK CUTTER AND PULLER.**

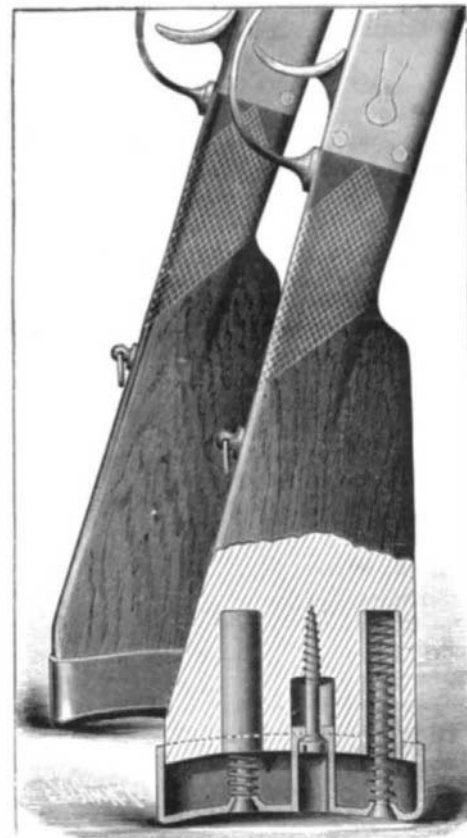
when the acorn falls, grow until they eat out the whole interior, when they become a welcome delicacy for the bird.

Mr. Lightner, a member of the Academy, had observed woodpeckers engaged in drilling holes in the bark, when a bluejay was seen to fly close up to one and inspect the size of the hole. Some active chipping then ensued, when the bluejay flew away, but soon returned with a green acorn, without the cup, in his beak. This he offered to the woodpecker, who took it with his beak, and set it into the hole, and drove it home with a few taps, where it remained. This process was continually repeated. Mr. Lightner desired to know what were the special benefits derived by this mutual service conducted between a seed-eating and an insect-eat-

ing bird. Mr. Stearns said that great numbers of untouched acorns remain in the spring, which have developed no worms suitable as food for the woodpecker, but which supply nutriment to bluejays and squirrels. Thus a community of interest was manifest, explaining their joint labors.

IMPROVED CUSHIONED GUN STOCK.

The engraving represents an adjustable and yielding gun stock lately patented by Mr. Hiram W. White, of Yankton,

**WHITE'S CUSHIONED GUN STOCK.**

Dakota Territory. The gun stock is made in the usual form, except at the butt, where opposite sides are made parallel for a short distance to receive the yielding butt, which caps over it, and is capable of sliding on or off the butt within prescribed limits.

The butt has an inwardly projecting thimble or socket near the middle for receiving a long screw that extends into the wood of the stock and serves to adjust the butt and to limit its outward movement.

From the butt two parallel guide pins project into guide holes in the stock, and are surrounded by spiral springs, which tend to press the butt outward as far as the adjustment of the screw will permit.

This construction renders the butt of the gun elastic, so that the shock of the recoil will be modified so as to be scarcely noticeable. The degree of elasticity can be adjusted by turning the screw in or out, so as to suit the strength of the gunner or weight of the gun, and the strength of the charges fired from the gun.

The length of the stock may be varied by turning the screw in or out to adapt the length of the stock to the gunner's arm.

Another advantage in this improved stock is that there is no tendency to raise or tilt the muzzle, and thus detract from the accuracy of the aim at the instant of firing.

This invention, while it adds very slightly to the expense of a gun, greatly increases the facility and comfort in using it. The engraving shows a sectional view and also an external view.

Further information in regard to this invention may be obtained by addressing the inventor as above.

Salmon from the Arctic Regions.

The steam yacht Diana, lately arrived in London, has solved an interesting question with regard to the importation of salmon. The vessel belongs to the Hudson's Bay Company, and has been fitted up by the Bell-Coleman Mechanical Refrigeration Company, of Glasgow, with one of their patent dry air refrigerators, designed by Mr. I. I. Coleman. The hold is made air-tight, is lined with a non-conducting lining, and contains about 35 tons weight of fish, which have been kept at a temperature of about 20° or 22° Fah. throughout