

AN EFFICIENT LATCH FOR HEAVY DOORS.

A latch especially adapted for use on heavy and thick doors, such as those of barns and other outbuildings, etc., is shown in the accompanying illustration, and has been patented by Harris M. Whitcomb, of Albany, Ind. It has an oblong metal case with lateral flanges having countersunk holes, for attachment to the inner side of a door by screws, a central lengthwise slot adapting it for the detachable connection of one of the handles that operate the latch bolt. A washer on the outside of the door has a slot corresponding to the slot in the case, and the bolt or latch has an enlarged central slotted portion, one end of the bolt being round and surrounded by a spring, while the other end is square and beveled at its extremity to engage a beveled

required. Armor piercing shells are now being supplied to the navy capable of withstanding the test of passing through a caliber of hard-faced armor quite as well as those of earlier manufacture did that of passing through a caliber of simple steel. A new type of shell, called semi-armor-piercing, has also been developed to meet the modern practice of armoring large portions of heavy ships with armor from 4 inches to 6 inches thick. These shells will carry large bursting charges through half a caliber of armor, and explode after having gone through." It cannot be said that the manufacture of guns in the United States is very rapid. Perhaps it is fast enough, however, to keep pace with the building of their ships. The following quotation from the American Engineer's review of an article on "The Engineer in Naval Warfare" may be of interest in this connection: "The manufacture of guns has been chiefly in the hands of the line officers. This policy has not been productive of good results; for, while the largest rapid-fire guns in our navy are 6 inches—and there are only a few of them—other navies are mounting rapid-fire guns up to and including 8 inch. Other nations are obtaining greater muzzle velocities for nearly all calibers than are derived in our own practice. Other navies have developed wire-wound guns, by which greater strength, less weight, and ultimately less cost and time required for manufacture are attained. Our navy has done nothing in this respect. The army is experimenting with such a

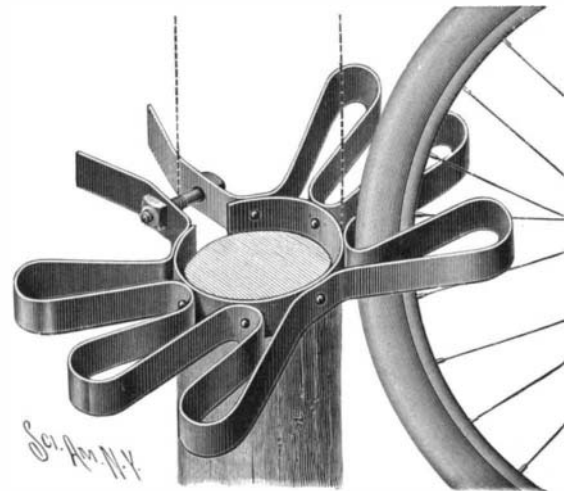
ferably made removable, and may be secured on the under side of the leaf if desired.

Government Crop Report, 1896.

The crop report of the Department of Agriculture says: "The estimates by States and Territories of the area, product and value of the principal cereal crops of the United States for 1896, made by the statistician of the Department of Agriculture, are as follows: Corn area, 8,627,000; product, 2,283,875,000; value, \$491,007,000; yield per acre, 28.2 bushels; farm price per bushel, 21.5c. Winter wheat area, 22,794,000; product, 267,934,000; yield per acre, 11.8 bushels. Spring wheat area, 11,825,000; product, 159,750,000; yield per acre, 13.5 bushels. Total wheat area, 34,619,000; product, 437,684,000; value, \$310,603,000; yield per acre, 12.4 bushels; farm price per bushel, 72.6c. Oats area, 27,566,000; product, 707,346,000; value, \$132,455,000; yield per acre, 25.7 bushels; farm price per bushel, 18.7c. Rye area, 1,831,000; product, 24,369,000; value, \$9,961,000; yield per acre, 13.3 bushels; farm price per bushel, 40.9c. Barley area, 2,951,000; product, 69,695,000; value, \$22,491,000; yield per acre, 23.6 bushels; farm price per bushel, 32.3c. Buckwheat area, 755,000; product, 14,090,000; value, \$5,522,000; yield per acre, 18.7 bushels; farm price per bushel, 39.2c. Potatoes, area, 2,767,000; product, 252,235,000; value, \$72,182,000; yield per acre, 91.1 bushels; farm price per bushel, 28.6c. Hay area, 43,260,000; product, 59,282,000 tons; value, \$388,146,000; yield per acre, 1.37 tons; farm price, \$6.55 per ton. Tobacco area, 595,000 acres; product, 403,004,000 pounds; value, \$24,253,000; yield per acre, 678 pounds; farm price, 6c. per pound."

A SIMPLE BICYCLE HOLDER.

The device shown in the illustration is designed to be readily attached to or removed from a pillar, post, or other convenient standard, and by engaging the tire of the rear wheel of a bicycle with the holder, several machines so held will be separated at the front, so that

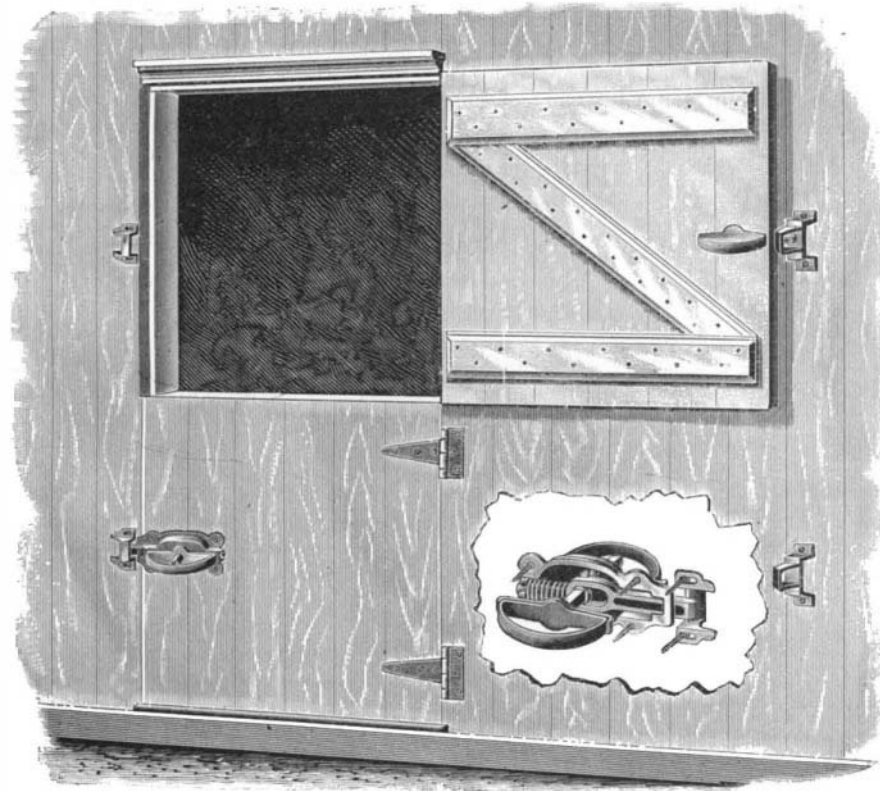


RISDON & POOLE'S BICYCLE HOLDER.

the handle bars of adjacent machines will not interfere. By reversing the device bicycles may be held at different angles to the support, and the holder does not engage the rim or the spokes, avoiding the possibility of injuring the machine. This holder has been patented by Thomas Poole and Edgar S. Risdon, and is being manufactured by Risdon & Poole, No. 19 Jennie Street, Trenton, N. J. The device is made of a strip or band of metal crimped to form alternate loop arms and intervening spaces, the ends of the band being carried outward to form opposing jaws which may be drawn together or toward each other by a bolt and nut. The body of the holder is preferably attached by rivets to a central tie band. The holder may be made with any desired number of loop arms and intervening spaces.

Business Ninety-six Years Ago.

Not only was the field of business enterprise restricted, but the transaction of business within that field was slow and difficult. The merchant kept his own books, or, as he would have said, his own accounts, wrote all his letters with a quill, and when they were written let the ink dry or sprinkled it with sand. There were then no envelopes, no postage stamps, no letter boxes in the street, no collection of the mail. The letter written, the paper was carefully folded, sealed with wax or a wafer, addressed and carried to the post office, where postage was prepaid at rates which would now seem extortionate. To send a letter, which was a single sheet of paper, large or small, from Boston to New York or Philadelphia, cost 15½ cents, and to Washington 25 cents, and this at a time when the purchasing power of a cent was five times what it is at present. To carry a letter from Philadelphia, then the capital of the United States, to Boston and bring back an answer by return mail would have consumed from twelve to eighteen days, according to the season of the year and the weather.—Portland, Me., Board of Trade Journal.



WHITCOMB'S BARN DOOR LATCH.

catch on the door jamb, a similar catch on the casing or wall holding the door open when desired, as shown in the engraving. One of the bow handles is rigidly connected with a rectangular spindle, and the other handle has a hub with a square mortise opening to receive the spindle and lateral arms that engage and operate the latch bolt. The bolt may be disengaged from the catch by seizing and turning either handle, and as the door is swung open the latch bolt automatically engages the catch on the wall. The latch is adapted to doors of different thicknesses, as the spindle of one handle may be readily adjusted in the mortise of the hub of the other handle.

American Institute Fair.

The sixty-ninth fair of the American Institute will be held at Madison Square Garden, from Monday, September 20, to Thursday, November 4, next. The board of trustees has selected Mr. A. Chasseaud to be the managing director of the fair. The institute has established a temporary office in the tower of the Madison Square Garden. The idea of the managing director is to amplify the departments that have been regular features of the American Institute Fair in the past years. He will inaugurate new ways which will add greatly to its scope and usefulness. Especial effort will be made to obtain a representative exhibit of new machinery, inventions and chemical processes. There is no good reason why the fair of the American Institute should not revive the old time interest which was felt in it.

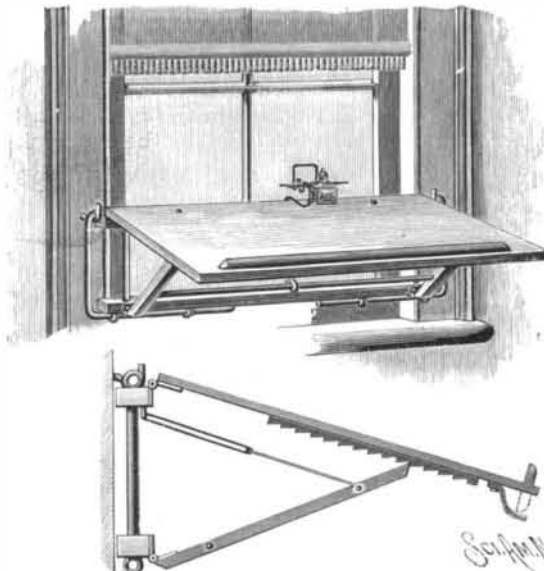
The Manufacture of Guns in the United States.

It is stated in the report of the Secretary of the United States Navy that: "During the past four years 213 guns have been manufactured of all calibers, as follows: seventy 4 inch, seventy-one 5 inch, six 6 inch, forty-five 8 inch, one 10 inch, eight 12 inch, twelve 13 inch. Including the twenty sets of 4 inch, thirty-five sets of 5 inch, fifty sets of 6 inch, and two sets of 8 inch gun forgings, for which contracts have been awarded, we have in course of manufacture at this date 196 guns of all calibers from 4 inches to 13 inches. Of these, sixty-three guns are for the auxiliary naval cruisers, for which an appropriation was made at the last session of Congress. In addition to the above, 100 3 inch field guns, for landing and boat service, are in hand and will be completed in the near future. March 1, 1893, 116 guns of all calibers were mounted aboard ship. At present, including some temporarily landed pending repairs of vessels, there are 366. Our projectiles of all calibers are manufactured by private firms, of which there are at least seven possessing the necessary plant and skill for the manufacture of the various kinds

weapon. We do not say this in a spirit of reflection on our ordnance officers. We all know that private firms, with their facilities for experiment, and with some government encouragement, can always outstrip the governmental shops. Our ordnance will continue to be inferior to that of other nations until private firms in the United States manufacture heavy guns like Armstrong does at Elswick, Krupp at Essen, and Canet at Havre."

A CONVENIENT WINDOW DESK.

A simple form of desk which may be quickly put up at or removed from a side wall, partition or window casing, and regulated to any desired angle, being also adjustable lengthwise to accommodate it to any width of window, is shown in the accompanying illustration, and has been patented by William A. Roos, of No. 512 West Forty-eighth Street, New York City. The leaf is hinged to the upper members of light frame sections, on which are adjustable extension pieces formed of metal rods movable through eyes, the extension pieces being engaged by hooks in the window casing. The leaf is held at any desired angle by hinged arms engaging racks on the under side of the leaf as shown in the sectional view, the arms being connected by cross bars and being yieldingly held against the racks by a spring, which may consist of a simple rubber strap. The inventor has a novel form of inkstand, covered by another patent and especially adapted for use with this desk. The rib on the front edge of the leaf is pre-



ROOS' WINDOW DESK.