

borrowed from small capitalists, in sums from £150 down to £10, without any mortgages being given. When this co-operative company first started, every shareholder was an operative. In addition to the Wear mill—that referred to as having been built by the Rosendale Industrial Association—they have now bought of Messrs. B. Mum Bros., Irwell Mills, and are working the two.

“The prosperity and success of the New Bacup and Wardle Commercial Company seem to have given rise to the new companies that are now formed in my immediate vicinity, and preparing large factories to carry on their business. One is the ‘New Church Cotton Spinning and Weaving Company,’ under the Limited Liabilities Act, with power to raise £100,000 in £10 shares, £40,000 of which is already paid, and the company has borrowed £5,000 on mortgage at five per cent. This company has already started, having taken an unoccupied factory of 40-horse power, Vale Mill, New Church, and they are building the ‘Victoria Works,’ which will require an engine of 100-horse power. They calculate upon employing 450 people when complete, which they think will be in February next.

“Another is ‘The Ravenstall Cotton Manufacturing Company,’ also limited, with a nominal capital of £50,000, in £5 shares, with power to borrow to the extent of £10,000. About £20,000 is already paid up, and they are erecting at Hareholme a factory requiring an engine of 70-horse power. I am told that in both of these companies nine-tenths of the shareholders are of the operative class.

“There is another co-operative company which has sprung up within the last six months. ‘The Old Clough Cotton Company,’ which purchased from Messrs. B. & T. Mum two old mills, called Irwell Springs, and are on the same principle as the others, but not having been able to go there to-day I am not able to give all particulars about it. The power, however, has been returned as 13-horse and the number of hands employed 76, and I believe all the shareholders to be of the operative class.

“There are several who take part of a factory, one or two rooms, as the case may be, and in some instances even part of a room, but then these are masters of that part, although they work with and as their own workmen, hire and pay wages as any other manufacturer, without the workpeople employed having any interest in the business. There were many more of these at Bacup than there are now. Some have given it up, while others have succeeded, and either built mills for themselves or rent large premises. There are more of this sort at Rochdale than any other place in my division.”

#### AMERICAN COOKING STOVES ABROAD.

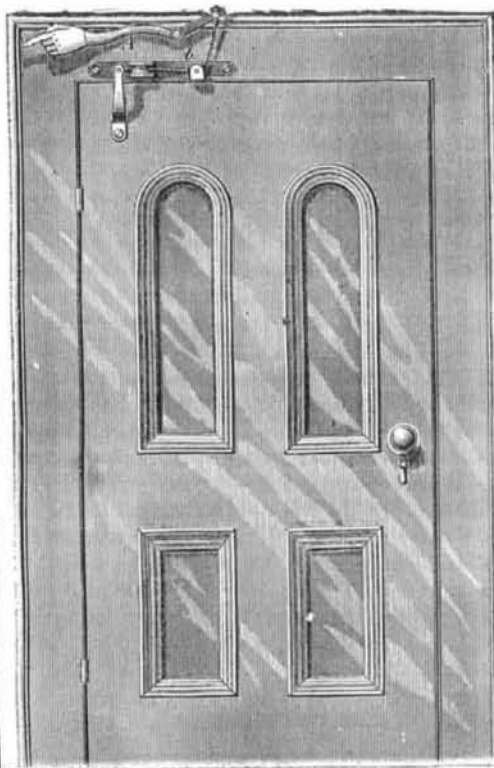
We learn by the *Ironmonger*, a London periodical, that American cooking stoves have been introduced into that city, and have met with great favor by those who have used and examined them. It states that the patterns of these stoves were imported from America, and they are commended for beauty, comfort, cleanliness, and the saving of fuel. Our cotemporary observes that there is no country in the whole world where fuel is burned so extravagantly as in Great Britain; a circumstance, no doubt, owing partly to the abundance and consequent cheapness of mineral fuel, partly to the prejudice of English people in favor of a large open fire, and lastly, and possibly chiefly, to the fact that certain fashions, both in pattern and material, have got possession of the market, and are difficult to displace by those which are even far superior. Precisely in the same manner as the old school-books, which were in use in the infancy of our fathers, are still printed and employed by the hundreds of thousands, although they are despised by every person having the slightest acquaintance with the science of education, and consequently entirely superseded in all schools conducted on any system in advance of the most miserable routine. It is calculated that, at the lowest possible estimate, at least nine-tenths of the heat produced by the burning of coal in an ordinary grate passes uselessly up the chimney, and is entirely wasted. In other words, so defective are our ranges, that it takes ten pounds of coal to do the work of one. Others, and we fully agree with them, place the loss much higher. This extravagance in the use, or rather in the mis-use, of fuel is almost exclusively British. In the United States, where the coal

fields are of infinitely vaster extent than those in Great Britain, much greater economy is practised; particularly in the construction of apparatus for cooking. Many of the American stoves are simple, valuable and ingenious.

#### STEWART'S IMPROVED APPARATUS FOR CLOSING DOORS.

After all the numerous devices which have been tried for closing doors, it is surprising to find still new ones coming forth for effecting so simple an operation. The one here illustrated is peculiar, and, in many places, will doubtless be found superior to any other.

The lever, A, attached by a fulcrum to the door frame, has its long arm weighted while its short arm is connected with the door by means of a cord which passes down vertically, and is turned by the pulley, B,



into a horizontal position, as shown. If the door is opened at right angles with its frame, the lever, A, is raised into a perpendicular position, so that it rests upon its fulcrum, and does not exert any power to close the door, thus allowing the door to remain open. A slight force, however, starts the door from its place of rest, and as the lever descends, its heavy end departs farther and farther from a line perpendicular to its fulcrum, thus drawing the door to its closed position with constantly increasing power, and finally holding it closed with its greatest force.

The patent for this door closer was granted to the inventor, Stephen Stewart, on the 11th of September, 1860, but an interest in it has been assigned to D. G. Chapman, to whom inquiries for further information in relation to it may be addressed, at No. 70 Dillwyn-street, below Noble, between Third and Fourth streets, Philadelphia, Pa.

**STEEL SPRINGS.**—For the last six months, Messrs. James Jeffries & Sons, the well-known spring manufacturers, of Philadelphia, have adopted a new mode of securing the leaves of their springs together. No hole is made through the leaves, nor is any bolt used. Two notches are made in each edge of the two top and two bottom leaves, these notches being made where they will be covered by the band which, when shrunk on, is indented, by means of a punch, into each notch. The band is thus indented at four points on each side, or at eight places in all, and has so firm a hold upon the leaves that loosening would be impossible. The top and bottom leaves being thus held firmly by the band, the intermediate leaves are held firmly in place by the studs, punched in the ordinary manner, at their ends. The metal taken out of the top and bottom leaves in making the notches is not one half that which would be removed for a bolt hole, while the intermediate leaves are left of the full width and strength. Springs thus secured together can never work loose, and there is no extra part which, like a bolt, can break or come off.

#### ACTUAL YIELD OF CROPS PER ACRE.

Any one much acquainted with farmers must be aware of their general disposition to overestimate their crops; but we suspect that those most familiar with this trait of human nature will be surprised at the actual yield of the leading staples in the fertile State of Ohio, as shown by the following statistics from the office of the Auditor of the State, which we find in a recent number of the *State Journal*:—

**Wheat.**—Number of acres sown, 1,790,627; bushels produced, 13,345,844; average per acre, 7½ bushels.

**Corn.**—Acres sown, 2,339,204; bushels produced, 69,372,343; average per acre, 30 bushels.

**Oats.**—Acres sown, 644,954; bushels produced, 15,055,059; average per acre, 23½ bushels.

**Rye.**—Acres sown, 98,011; bushels produced, 561,065; average per acre, 5¾ bushels.

**Barley.**—Acres sown, 102,729; bushels produced, 1,639,388; average per acre, 16 bushels.

**Buckwheat.**—Acres sown, 149,645; bushels produced, 2,222,083; average per acre, 15 bushels.

**Meadow.**—Acres, 1,340,566; tons of hay produced, 1,365,888; average per acre, 1 ton.

**Wheat Crop.**—Smallest average per acre: Trumbull county, ½ bushel; Mahoning, ½ bushel; Columbiana, 1 bushel; Stark, 1 bushel. Largest average per acre: Ottawa county, 17 bushels; Erie, 16 bushels; Sandusky, 16 bushels; Lucas, 16 bushels. Smallest crop in one county: Trumbull, 2,084 bushels; Mahoning, 6,510; Portage, 10,373 bushels; Geauga, 11,078 bushels. Largest crop in one county: Butler, 589,076 bushels; Seneca, 502,500 bushels; Montgomery, 461,214; Highland, 399,005 bushels.

**Corn Crop.**—Smallest average per acre: Carroll county, 15½ bushels; Geauga, 20½; Stark, 21; Vinton, 22½. Largest average per acre: Lucas county, 42 bushels; Lake, 37; Preble, 38; Butler, 37; Ross, 37; Pickaway, 37; Warren, 37. Smallest crop in one county: Paulding, 127,593 bushels; Geauga, 154,319; Carroll, 211,596; Van Wert, 282,018. Largest crop in one county: Ross, 2,895,097; Pickaway, 2,722,153; Butler, 2,089,463; Franklin, 1,883,209.

Butler county produced the largest crop of barley, 339,935 bushels; Coshocton, the largest crop of rye, 26,541 bushels; Columbiana, the largest crop of buckwheat, 123,233 bushels; Wayne, the largest crop of oats, 529,370 bushels; Trumbull, the largest crop of hay, 47,998 tons.

Among the numerous useful applications of which photography is capable, there is one both novel and amusing which deserves to be recorded. Urgent private affairs detaining a certain prince at Palermo, he could not as usual, pay his annual visit to Paris this summer. But the prince's wardrobe required replenishing, and with a new Neapolitan dynasty came new fashions; the prince was in a state of sartorial despair, till the happy thought occurred to him to be photographed, on the scale of one inch to the foot, and to send the proof to an eminent Parisian *tailleur*. The artist took his measures accordingly; the suit was duly made and forwarded to Palermo. The prince, on receipt of his garments, sent a letter to the tailor, in which he proclaims the fit to be admirable. He is delighted, and so is the tailor. The prince sent another photograph representing him in his new suit. It is easy to see that it is a perfect fit.

**WATER IN LONDON.**—In a careful and elaborate report to the New River Water Company, Professor Spencer, in speaking of the corrosion of iron mains and the effect of gas leakage, states that it is computed that there are 4,000 miles of gas mains laid under the roadways of London, from which 600,000,000 feet of gas are annually absorbed into the earth, the far larger proportion of which could be saved by improved conduits. As a matter of economy, its results would pay a dividend of five per cent on the gross capital of the London companies. It is a question for photographers how far the extraordinary excess of carburated hydrogen with its other impurities, contaminating their water at times, may account for exceptional and unexplainable phenomena and puzzling failure.

Two telegraph operators can carry on a silent conversation together by making the dots and lines of the Morse alphabet on each other's hands with their fingers.