

THE "LITTLE SPEEDY" CORN SHELLER.

We illustrate in the annexed engravings a new and handy little machine for shelling corn, which, judging from the inventor's statement of its capabilities, is quite certain to meet with a ready welcome from farmers and poultry raisers. It is claimed to shell from ten to twelve bushels of ears per hour. It adapts itself to large and small ears, and is equally effective whether the latter be green or dry. It does not break cobs or corn, is strongly constructed of metal, is not liable to get out of order, weighs but eight lbs., and is easily attached to the grain receptacle by inserting the wedge, shown at A, in the perspective view, Fig. 1. The working parts of the device are represented in plan, Figs. 2 and 3, and in section, Fig. 4.

The upper portion, B, of the machine is movable, and is rotated about a vertical axis by the bevel gearing and crank shown. The lower part is stationary, so that in this portion the cob is held immovable while the grains are stripped from it by a device placed in the revolving upper part. The holding apparatus is shown in Fig. 2. C are sharp-edged wheels upon swinging arms, which are held up to the cob by the springs, D. Said arms are mutually braced and caused to adjust themselves simultaneously by the curved pieces, E. The construction of this arrangement, as well as its relation to the stripping device, Fig. 3, will be clearly understood from Fig. 4. The strippers are pivoted in the upper portion of the machine, and have springs, F, to hold them to their work; and their inner extremities are suitably fashioned and sharpened for quickly detaching the grain. They also, and for the purposes already mentioned, are mutually inter-braced.

The machine can be operated by any one, without instruction. The ears are inserted above and held in the hand until seized by the holding device. The wheels on the latter, revolving, allow the cob to pass downward, but of course prevent its turning; while the stripper, as the ear descends, removes the grains. There is no necessity of touching the ear after it is once gripped; and thus, while the right hand turns the crank, the left hand is free to feed in the corn as quickly as may be.

For further particulars, regarding agencies, purchase of rights, etc., address the inventor, Mr. Curtis Goddard, Alliance, Stark county, Ohio.

3. This arrangement is similar to the escapement in clock trains. The wheel, C, has as many notches as there are coins required to be introduced to cause the removal of one card. On the shaft of the escapement wheel is a ratchet wheel and pawl, also a cam wheel, D; and said shaft is actuated by a cord wound about it, which connects with a spring, at E, Fig. 2.

The cam wheel, D, has a shoulder, against which bears the

notches. As each coin introduced swings the lever but once, it is evident that six coins must be inserted in order to cause a complete revolution of the wheel shaft and one retraction of the spring bolt. There may be a greater or less number of notches as desired, as it is evident that by this means the price asked for each card is secured.

The invention may be used for distributing advertisements, or it might be employed for selling newspapers which could be uniformly folded and inserted. It also might be useful for collecting fares from street car passengers, giving each person a ticket in return, which the conductor might collect.

Patents in the United States and foreign countries have been secured through the Scientific American Patent Agency. For further particulars, address the inventor, Mr. William Alexander Brice, care of R. Clifford Poulter, 4A Middle Temple Lane, London, E.C., England.

New British War Steamers.

The Dreadnought, double turret ship, lately went out of Portsmouth harbor for a preliminary trial under way of her machinery, which was under the sole control of Mr. Robert Humphrys, of the contracting firm. Everything passed off with the greatest success. The blast was not once used, nor was it considered necessary to remove the ashes to increase the draught. The engines easily realized sixty-nine revolutions a minute, while the power developed was considerably over the contract power of 8,000 horses. The speed obtained was about fifteen knots an hour. The ship was so sensitive that she readily obeyed the slightest touch of the helm. Six hours' trial was made in very boisterous weather. In running up and down the measured mile course the ship was on several occasions timed, when it was found that a mean speed of 14½ miles had been obtained. This was highly satisfactory, but even better results will be obtained when the mile trial is made. The draught of the ship was only 21 feet 11 inches forward and 24 feet 6 inches aft, whereas her estimated load draught when ready for sea is 26 feet 8 inches forward, and 27 feet 2 inches aft. As the trial was not only for the purpose of enabling the contractors to obtain the covenanted horse power out of the engines, but also for the purpose of ascertaining the consumption of coal in proportion to power, the boilers were easily fired in

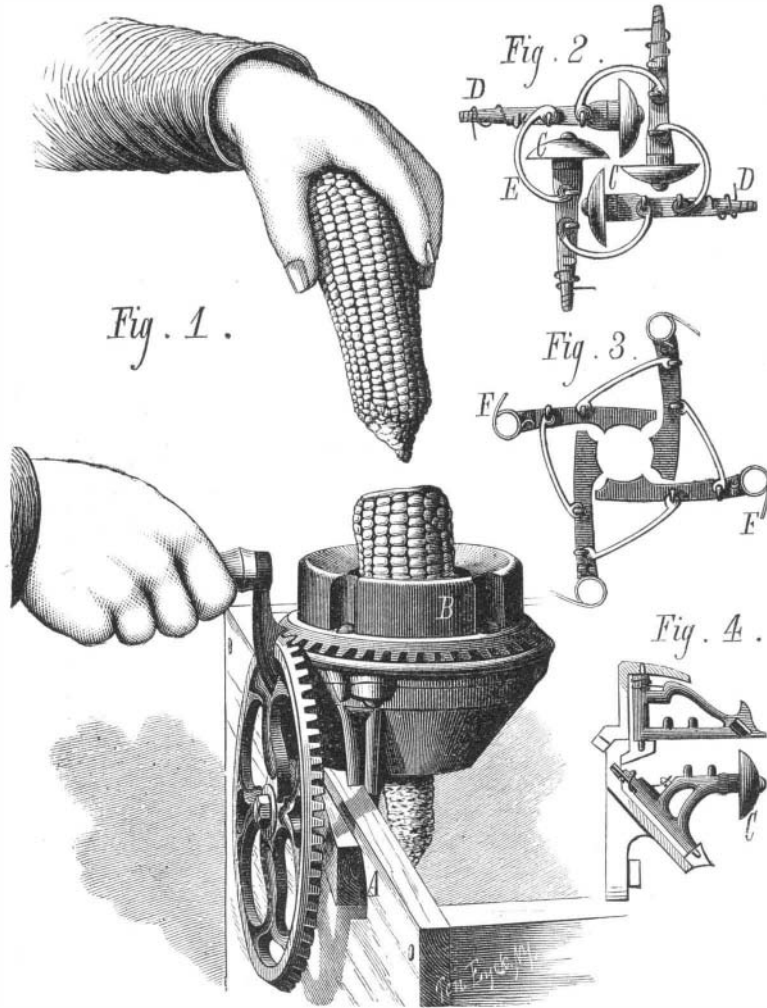
order to keep down steam. This was rendered all the more necessary in consequence of the boisterous character of the weather, for no sooner did the ship give a lurch or indulge in a roll, which she did whenever she went about, than the spring safety valves lifted, and the steam escaped with a rush. With smooth water, consequently, it is very probable that even better data would have been obtained.

The Thunderer, double turret-ship, was also tried recently at Portsmouth in boisterous weather. The great difficulty experienced was to prevent the engines developing superfluous power, there being neither hot bearings nor priming, nor trouble of any kind, to impair the working of the engines during the six hours. For the first four half hours the revolutions were purposely kept down; but when the blasts were applied, the arrears of power were so rapidly worked up that it was subsequently necessary to ease the machinery somewhat. Even with all the care exercised, the power exerted on the 6th, 9th and 11th half hours exceeded 6,000 horses. The uniformity exhibited in the workings of the engines was remarkable. The difference in the total means of revolutions of the two pairs of independent engines was only 0.17 per minute. The amount of Nixon's steam navigation coals consumed during the six hours was 48 tons, or 8 tons an hour. This represents an expenditure of 3.14 lb. per indicated horse power per hour, a result which may be regarded as highly satisfactory from an economical point of view, considering the amount of useful work performed.

Testing for Boracic Acid.

Mud obtained from the bottom of a borax lake in California was found to contain a large amount of organic matter and sodium carbonate; besides these were found iron, alumina, lime, potash, and silicic, phosphoric, and boracic acids. Owing to the very large amount of soda present, it was difficult to test for boracic acid; but this was done at last by use of Mr. Iles' glycerin test, which we described at length on page 180 of our volume xxxiv., the ordinary methods having in this instance failed entirely to reveal the presence of this acid.

SAPOLIO contains (besides organic matter) soda, iron, alumina, lime, and hydrochloric, sulphuric, carbonic, and silicic acids.



GODDARD'S CORN SHELLER.

spring driven bolt, F; so that, at every revolution of that wheel, the bolt slips from the shoulder, and its forward end is thus retracted sufficiently to allow the front card in the case above to drop out, as said card rests, as will be seen from Fig. 2, upon the bolt. The cards are introduced by lifting the cover of their receptacle, which is afterwards locked. They are placed upon an inclined plane, and they are constantly pushed forward by a movable frame, G, having a

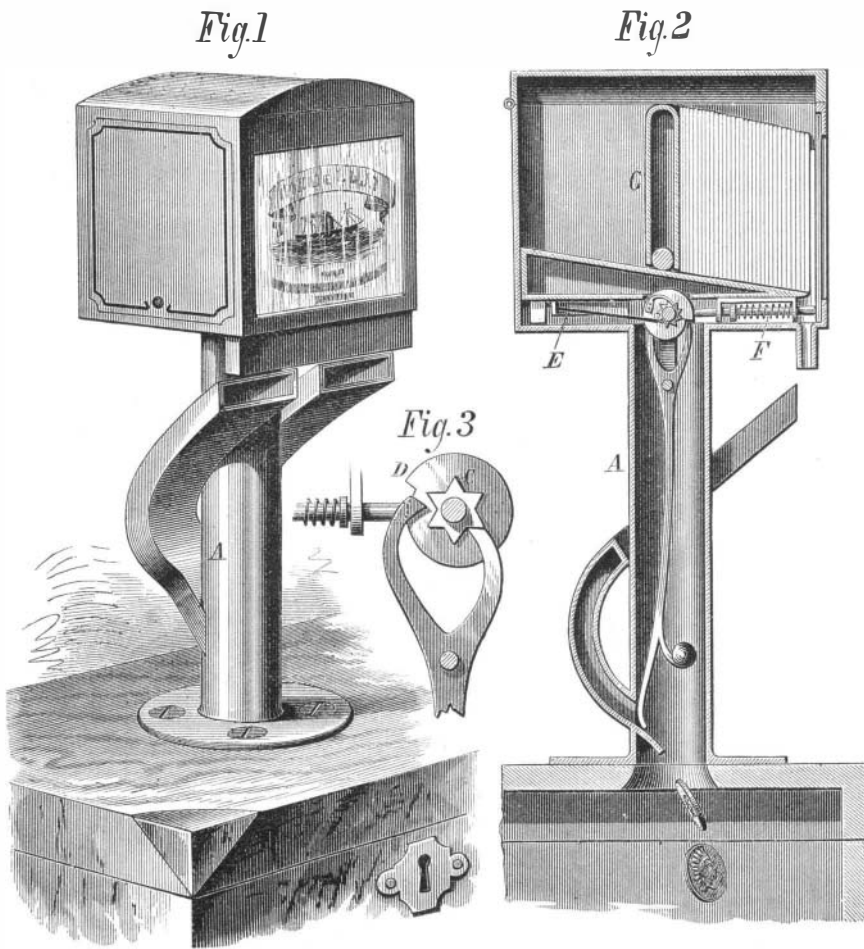
A MACHINE SALESMAN.

Among the ingenious devices for gathering small change from visitors to the Centennial were several curious mechanical toys, which the inventor placed in the halls of the principal hotels near the grounds. Each consisted of a case having a glass front through which a miniature scene was visible, the trees, houses, figures, etc., being neatly painted and cut out of pasteboard. Over the box was placed a request for the visitor to drop in a five-cent piece at a slit in the side and witness the performance which would thereupon take place. When the coin was inserted, on its passing into a receptacle beneath, it struck and released a detent; clockwork was thus allowed to act, and the figures were set in motion to represent a trotting race, fox chase, or some similar proceeding. The device had places for advertisements; and what with his returns for displaying them and from the very many five-cent pieces which entered the till, we were informed that the enterprising exhibitor cleared quite a large sum of money.

The invention herewith illustrated, while being somewhat on the same principle as the above, is a decided improvement thereon, as it gives the donor of the coins a return for his expenditure in the shape of a photograph card or picture, which is prominently displayed, and which he is induced to purchase by the announcement that on his inserting so many pennies into the slit the object will fall into his hand. It is impossible to remove the card until the requisite number of coins is inserted, nor can the mechanism be operated by any instrument introduced in the slit, so that the "machine salesman" is automatically honest. The construction of the invention is clearly represented in the sectional view, Fig. 2. On the top of the till or money chest is a hollow column, A, which supports the box in which the cards or photographs are displayed, said box having a glass face. Entering the column near its base is the money conduit, which extends upward spirally and, for the sake of symmetry, has an orifice at each side of the column, A. As a coin is dropped into this tube, it descends; and just before it enters the column, it strikes the end of a pendulum lever, B, which is suitably counterweighted to hold it up to the tube orifice, and which is forked above its pivot to engage a toothed wheel, C, Fig.

roller on its lower portion. In this way, as the retracting of the bolt allows one card to fall out, another is at once pushed forward in its place against the glass.

It will be observed that the escapement wheel has six



BRICE'S ADVERTISING MONEY BOX.