Shaw's Cotton Seed Huller.

The proper hulling of cotton seed is a matter of much importance, in a commercial point of view. Our readers having perused the valuable articles on Cotton Seed and Cotton Seed Oil, published in this journal during the past year, will stand in little need of any argument on this point. If the seed be much broken in the hulling process, so as to approximate the quality of meal, its spoiling during exportation is almost certain. We have been shown a letter, from a London firm, attesting that a lot of seed, hulled by the machine shown in our engraving, was shipped to London from this country, not only arriving in perfect condition, but yielding 42 lbs. of oil from 165 lbs.of seed,in the samples tested, the oil being of excellent quality, not inferior to that extracted from Egyptian seed.

In an agricultural point of view, the proper and economical hulling of the seed is also of importance, since the hulls which are worthless for industrial purposes, or for feeding contain nearly all the fertilizing elements of the seed.

We are informed that since the shipment of seed to London above referred to, other lots have been sent with equal success. If these are facts, as stated, they establish the possibility of shipping hulled seed, and will undoubtedly open the door to a large foreign traffic in this article.

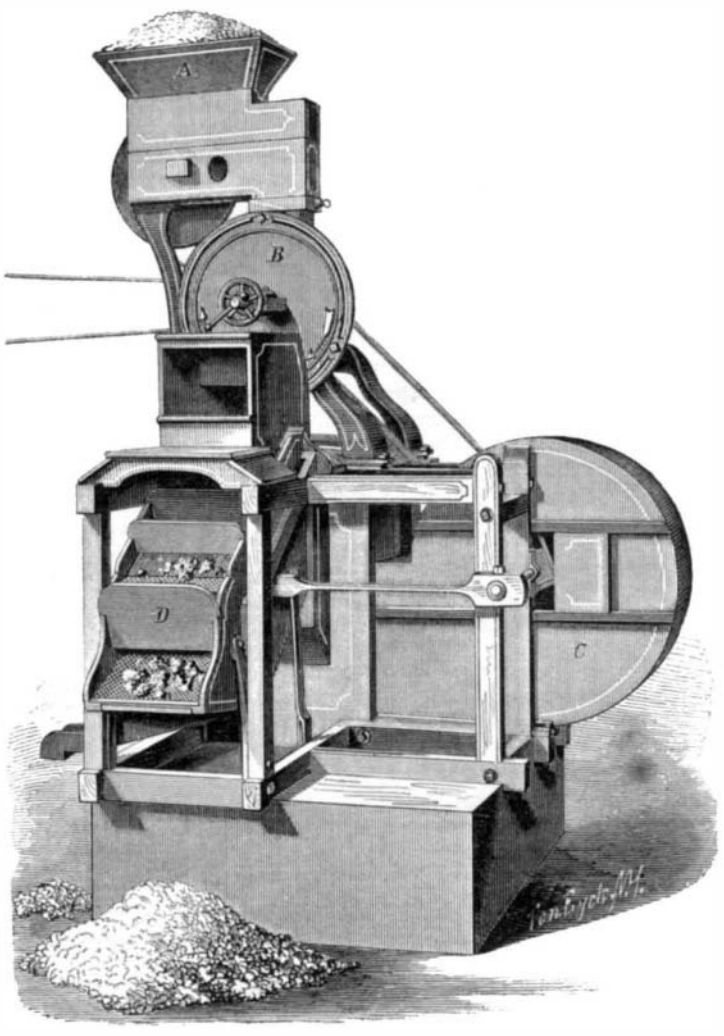
The operation of the machine is extremely simple, as is also its construction.

The seed is placed in the hopper, A. From this hopper it falls upon an endless apron, which carries it along and drops it into a vertical chute, from whence it is carried by a screw conveyer through the center openings of two revolving chilled iron plates, inclosed in the case, B, and passed through between their surfaces to be hulled. These hulling plates have a peculiar "dress," the action of which is to decorticate the kernels of the seed.

The seed, passing downward from the hulling plates, meets a blast, generated by the fan-blower, C, which blast carries up all such seed as is imperfectly hulled, together with the perfectly separated hulls, and deposits them upon the "separators," D. These separators are screens, upon which a series of fingers play, rubbing the imperfectly separated seeds and hulls, and completing the work of the hulling plates.

Very little of the seed is thus imperfectly hulled by the plates, and the passage of the same through the separators completely supplements the operation of the plates. At the same time the air blast removes all dust, and also acts to dry the hulled seed. A second separator in the opposite side of the machine from D separates the small portion of seed that may have been crushed in passing through the hulling plates, the crushed portion being used as food for cattle, while the sound and comparatively uncracked portions, constituting the greater bulk of the product, are reserved for exportation, or for home oil manufactories.

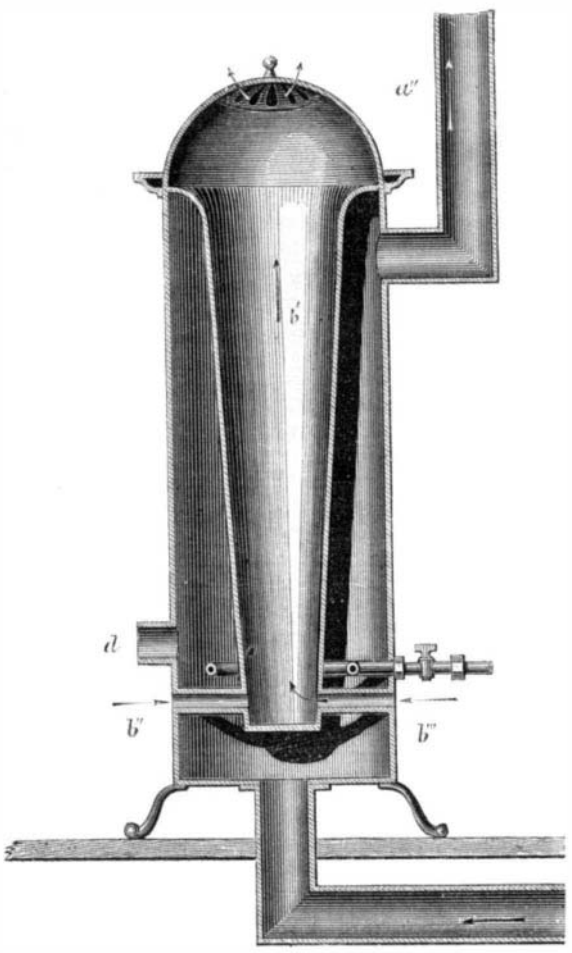
Patented Nov. 9, 1869, and June 7, 1870. For information concerning these machines address Jewell & Ehlen, 93 Liberty street, New York city.



SHAW'S COTTON SEED HULLER.

GAS STOVE.

A correspondent of the *Journal of Gas-Lighting* (London)



gives a description of a gas stove, which is not open to the objections against such stoves as they are usually constructed. It may be easily made anywhere by ordinary sheet-iron workers, and as such a stove would be in many cases very desirable, we reproduce the engraving of it from the journal referred to.

a', the air-passage (2-inch tubing), passing underneath the floor to the outside of the building, and protected by an air-brick.

a'', the exit-flue. With a view to the economization of heat, this may be considered as part of the stove. As much of it as may be convenient should, therefore, be fixed in the room.

b', an air-chamber, through which the air circulates, entering below through the tubes, *b''*, *b'''*. *c*, the ring-burner.

d, a circular doorway for lighting the gas and examining the hight of the jets. This is closed by a disk of glass set in a tight-fitting ring, fastened by a bayonet-joint.

The exit-flue may extend horizontally a considerable distance—say 30 to 50 feet—if within such limits it can be conveyed into a constantly-used chimney, or, in any case, one with a good up-draft. If no chimney be available, the flue may be carried (horizontally) any reasonable distance to the outside of the building, the end being turned up in the usual manner. By a slight alteration in the fitting up—that is, by connecting the air-tubes, *b'*, *b''*—so as to receive air from outside the house, a constant flow of fresh (warmed) air would be admitted to the room.

Rapid Telegraphing.

There was great rivalry between the Western Union and the other telegraph companies having lines between this city and Washington, D. C., as to which should transmit most rapidly the annual message of the President, delivered to the Senate and House of Representatives on December 5th. The message contained about 9,000 words, and was transmitted over 10 wires by the Western Union Company, dropping copies at Baltimore and Philadelphia in 37½ minutes, or at the average rate of 25 words per minute on each wire.

The entire message was transmitted by the Bankers and Brokers' and Franklin Companies in 70 minutes, employing two wires each. This was at the rate of 33 words per minute.

The Franklin Company used two wires until the message was completed, and a third wire for 15 minutes, the average time being 70 minutes, and the average speed 28 words per minute.

The Bankers and Brokers' Company used two wires, the average time being 70 minutes, and the average speed 35 words per minute. One of these wires averaged 39 words per minute—Mr. Benjamin Johnson sending and Mr. I. S. Fitch receiving.

The result in the strike in January last drove from the Western Union to the opposition companies, greatly to the advantage of the latter, some of the best operators formerly employed by the former. The operators of the B. & B., and Franklin lines may justly feel proud of this achievement and their substantial demonstration of superiority.—*The Telegrapher.*

The Mode of Erecting a Railway Bridge across the Ganges.

Last month a party of engineers, headed by Sir John Rennie, visited the works of Messrs. Campbell, Johnstone & Co., at Silvertown, to witness the exhibition of a new method of launching girders or bridges without scaffolding. The structure which formed the subject of the experiment was two spans, each 110 feet in length, of a bridge which is to be erected across the Ganges at Cawnpore, and which will carry on the top surface the rails of the Oude and Rohilkund railway, and below, a good and substantial roadway for bullock trains or ordinary traffic. The bridge is to be formed of lattice tubular girders, the hight over all being ten feet eight inches, and the bullock road nine feet wide by eight high. The bridge, when complete, will consist of 23 spans each of 110 feet in length, resting upon cylindrical piers of brickwork, and the weight of materials in each will be about 75 tuns.

The method hitherto adopted for launching girders of these dimensions has been simple haulage by means of chains and pulleys, which has been attended with great loss of power, delay, and many other inconveniences. The mode adopted and devised by Messrs. Campbell, Johnstone & Co., avoids waste of power, has nothing to do with either chains or pulleys, and depends entirely upon direct propulsion. The span having been built up on the shore, rests at each end upon a series of ten wheels, which are propelled by ten hydraulic rams, five on each side; the number may of course be diminished or increased, according to the work to be performed—and to these wheels, which play upon a rail beneath the bridge, there is fitted a worm and worm-wheel moved by a ratchet brace, which is set in motion by five men on each side working handles up and down, who can propel 150 tuns at the rate of nine inches in the minute, a speed which, with a slight alteration of the machinery, will be increased to a foot. In this instance a bridge 2,530 feet in length, is to cross the Ganges in 23 spans of 110 feet each. Every section (each including two spans) will be launched from the same shore, and all will be driven across by the apparatus and moved from pier to pier as required. The bridge was designed by Mr. Heppel, C. E., and has been constructed by Messrs. Campbell, Johnstone & Co., to whom belong the entire credit of devising the apparatus for the fixture of the superstructure.—*Herapath's Journal.*

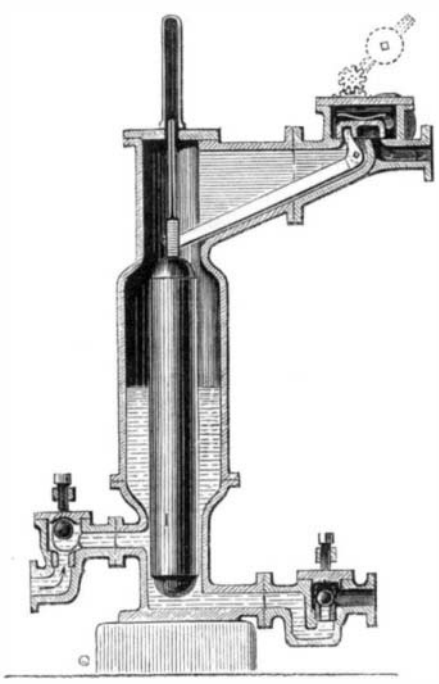
AUTOMATIC BOILER FEEDER.

This new feeder is the invention of the English enginee Mr. Macabies, and is designed to maintain a constant level in steam boilers. It is composed of a cylindrical receiver furnished with two spherical valves, one slide valve, and a floating water gage.

The receiver is put in communication first with the atmosphere and the hot water of a reservoir, and then with the steam and water of the generator.

It is in reality a supply cylinder of small capacity working automatically, and having no parts liable to derangement. The work of supplying the boiler is reduced to a simple surveillance of the apparatus.

According to the *English Mechanic*, when the float is down, as in the figure, the steam in the receiver can escape by the valve at the upper right hand corner, and hot water from the proper reservoir flows in by the valve at the lower left hand side. As the receiver fills, the float rises and closes the right hand upper valve; the steam, then acting upon the water of the receiver, closes the valve which admits the supply and opens the valve upon the opposite side, which communicates with the boiler. The water, being subjected to equal pressure above and below



flows into the boiler by virtue of its weight. The float descending with the water shuts the steam valve and the water again flows in.

DYEING ARTICLES MADE OF HORN BLACK.—The objects made of horn, and ready for use, but not yet polished, are placed in a lye of caustic soda or potassa, and left therein until a portion of the surface has been dissolved, which may be readily detected by the somewhat fatty feeling the horn assumes when touched with the fingers. The objects are next washed in pure fresh water, and afterwards passed through Lucas' aniline black. After having been dried, the objects are washed, and, lastly, polished.