

# UNITED STATES PATENT OFFICE.

JOHN W. EVANS, OF CLEVELAND, OHIO.

## METHOD OF TREATING COTTON-SEED.

SPECIFICATION forming part of Letters Patent No. 360,768, dated April 5, 1887.

Application filed May 4, 1886. Serial No. 201,114. (No specimens.)

*To all whom it may concern:*

Be it known that I, JOHN W. EVANS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Methods of Treating Cotton-Seed; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improved method of treating cotton-seed meal; and it consists in the steps hereinafter described and claimed.

Heretofore cotton-seed has been decorticated—that is, cracked—to free the kernel from the shuck and lint, after which the kernel was ground and the oil extracted by pressure. A more recent practice has been to treat the seed with acid to destroy the lint, the presence of which renders the oil-meal comparatively worthless for animal-food. After the acid treatment a second treatment was had to free the seed, as far as practicable, from the acid, after which the seed was ground and the oil extracted by pressure. In this process the shucks were saved. The objections to such practice are, first, the cost of the acid process and the subsequent treatment to dispose of the acid; second, the deterioration of the product by reason of the acid treatment and of acid left in the product, and, third, the waste of the lint, the latter being of course burned and destroyed by the action of the acid. I have therefore devised a process in which the lint, after being passed between grinding rollers or stones with the kernel and shuck, is separated from the meal and saved, and the cost of the acid treatment and the consequent deterioration of the meal are avoided.

The process is, essentially, as follows: The cotton-seed is crushed or ground and the oil extracted, preferably by what is known as the "naphtha" process. The meal is then thoroughly dried and ground fine. The grinding after the drying process severs the lint from the particles of meal, and the meal is then bolted to remove the lint, after which the meal and lint are ready for the market, either in bulk or in suitable packages.

In carrying out my new process no new mechanism is required, but, on the contrary,

much latitude is had in selecting suitable apparatus from those in common use. For crushing the seed, rollers or any suitable device will answer the purpose. The well-known naphtha process is preferable for extracting the oil, for the reason that a much higher percentage of oil is obtained than where the oil is extracted by pressure. With the naphtha process the presence of the shucks and lint is an advantage, as they make the mass more porous, by reason of which the steam and naphtha used more readily penetrates the mass. In drying the meal after the oil is extracted, almost any of the devices used for analogous purposes will answer. For this purpose steam heat is preferable, as there is no danger of scorching the meal with steam heat. For grinding the meal after it is dried, either the ordinary millstones or differentially moving rollers will answer the purpose well. Also, in bolting the meal to separate it from the lint, any one of a great number of devices in common use will answer the purpose. Some provision should be made for freeing the sieve or bolt from the accumulation of lint, either by hand or otherwise, and for this purpose an air-current is found to work well; but various bolting devices are now in use having a fan or other means for producing an air-current, so that no invention is necessary in this direction. The first crushing or grinding of the seed does not detach the particles of lint from the particles of meal. The subsequent drying of the meal renders the particles of the latter very brittle, so that the last grinding entirely disintegrates the meal and lint. The shucks, when pulverized by the final reduction, add to rather than detract from the value of the product as a food for animals. The lint thus saved is valuable for various purposes—for instance, for manufacturing paper—and the quantity of lint per bushel of seed is considerable, so that the saving of the lint is a matter of commercial importance. After the extraction of the oil, either by the naphtha process or by pressure, the cost of drying, pulverizing, and bolting the meal is trifling as compared with the cost of the acid process aforesaid.

What I claim is—

The method herein described of treating cotton-seed to remove the oil and to separate the

meal from the lint, which consists, first, in  
crushing the seed; second, in extracting the oil  
therefrom; third, in drying the crushed seed;  
fourth, in grinding the crushed seed, and, fifth,  
5 in bolting the meal to separate the lint there-  
from, substantially as set forth.

In testimony whereof I sign this specifica-

tion, in the presence of two witnesses, this  
23d day of April, 1886.

JOHN W. EVANS.

Witnesses:

CHAS. H. DORER,

ALBERT E. LYNCH.