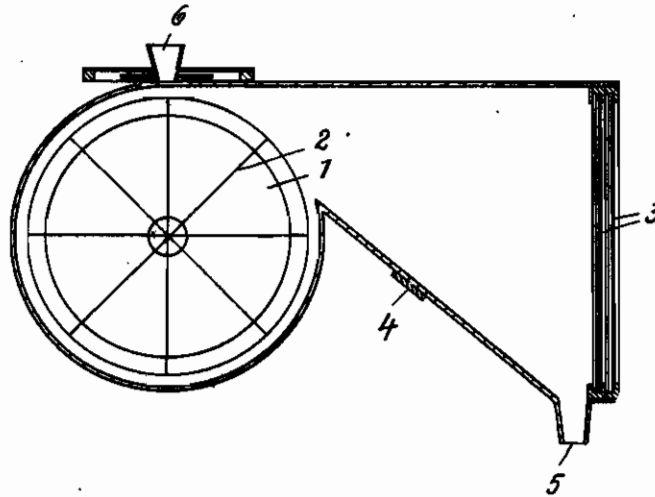


PUBLISHED  
MAY 4, 1943.  
BY A. P. C.

F. GRANDEL ET AL  
A PROCESS FOR REMOVING SKINS OR COVERING  
FROM SEEDS OF CASTOR OIL BEANS  
Filed Feb. 19, 1940

Serial No.  
319,802



Inventors: ~  
Felix Grandel & W. Chelm Imkamp  
By Smith, Michael & Gardiner, Attys.

# ALIEN PROPERTY CUSTODIAN

## PROCESS AND SUITABLE DEVICES FOR HUSKING SEEDS, ESPECIALLY OIL-SEEDS

Felix Grandel and Wilhelm Imkamp, Emmerlich/  
Rheln, Germany; vested in the Alien Property  
Custodian

Application filed February 19, 1940

The husking of seeds, especially oil seeds, is an operation causing considerable difficulty. With all known types of husking machines, equipped with crushing rollers, fluted or grooved rollers, the seeds are never completely husked, but only up to a proportion of 60 per cent. at best, as, e. g., in the case of castor beans.

To obtain more satisfactory results with such machines, it is necessary to direct the seeds through the machine several times to the effect that the cores suffer considerable damage and that excessive crumbling is caused which must be added to the proportion of husk loss. Moreover, damaged cores have a tendency to become rancid in a very short time which means that the fat contained in them deteriorates in quality. When husking seeds or fruit with a high oil content, the above method has proved almost a complete failure because the husks, upon being crushed, do not come off but are partly pressed into the pulp from which they cannot be separated either by winnowing or any other form of mechanical treatment.

Devices have also become known for the husking of oats in which the grains are flung by centrifugal force through turbine-shaped guides into a housing fitted with beat blades where the husks and cores are separated from each other by a rubbing or crushing process, the seeds being thrown against a fluted partition. Such devices, however, are not fit for the husking of oil-seeds because the husks and cores are worked into a pasty substance from which the cores cannot be separated.

The primary object of our present invention is to provide a simple method of husking seeds, especially oil-seeds. To this end, the seeds are beaten with a hard, smooth surface. More in detail, the seeds are flung, according to our invention, against a hard, smooth wall, preferably a glass panel. In this manner, the core of seeds, enclosed in capsules or pockets is easily and completely extracted, free from husk particles. The speed with which the seeds are flung against the surface depends on the class of seeds, the optimum speed being empirically determined in each individual case.

Another object of this invention resides in suitable devices for realizing the above method. Such devices may consist of a drum fitted with vanes, which drum rotates in a housing opposite a wall having a smooth, hard surface on which the seeds projected from the drum will impinge. The said wall may be arranged removably, and may, for instance, consist of two baffles arranged one behind another in the housing. Provision

may also be made for several such husking devices to be arranged one behind another.

On the annexed drawing is shown by way of example an embodiment of an apparatus according to this invention, the embodiment being particularly suitable for husking castor beans. The husking apparatus consists of the drum 1 having vanes 2 at its circumference and of the baffles 3 arranged transversely to the flow of the particles housing in which drum 1 rotates has a section cut away at a point of its circumference where a sheet casing 4 is attached, the said casing being closed on the side opposite the aperture by the baffles 3 and provided with a bottom arranged to slope towards the outlet 5. The baffles are glass panels located one behind another in such a way as to permit their being removed from the casing. A feed hopper 6 is arranged on the top of the cylindrical housing.

The beans dropping from the hopper are caught by the quickly rotating drum vanes and are flung against the glass panel.

Preferably several of such husking devices are combined into a unit by superimposing them to the effect that the material coming out of one of them drops directly into the device below.

When it is desired to remove a glass panel, this is simply withdrawn from the apparatus, cleaned if necessary, and re-inserted behind the second glass panel mentioned above. On the other hand, instead of the glass panels a round disc or a roller may be used which slowly rotates in face of the baffle opening, provision being made to ensure a dust seal. This makes it possible to arrange for automatic cleaning of the disc or roller to the effect that the baffle inside the machine is always clean.

The mixture of husked beans and husks is sifted immediately after the husking process in an upward-flow air sifter or other suitable device attached to the machine, i. e. the husks are separated from the cores. Provision may also be made to remove the husks in air sifters interposed between a plurality of husking units. The rotational speed of the drums in the various husking units and the distance between the vanes and the baffles or rollers depends on the class of seed to be handled. The same applies to the number, size, shape and arrangement of drum vanes. The design of the feed device is irrelevant always providing that arrangements have been made to prevent two or more seeds getting on to the drum vanes simultaneously.

FELIX GRANDEL,  
WILHELM IMKAMP.