No. 774,369. PATENTED NOV. 8, 1904.

D. A. TOMPKINS.

COTTON SEED HULLER.

APPLICATION FILED DEC. 17, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 2.

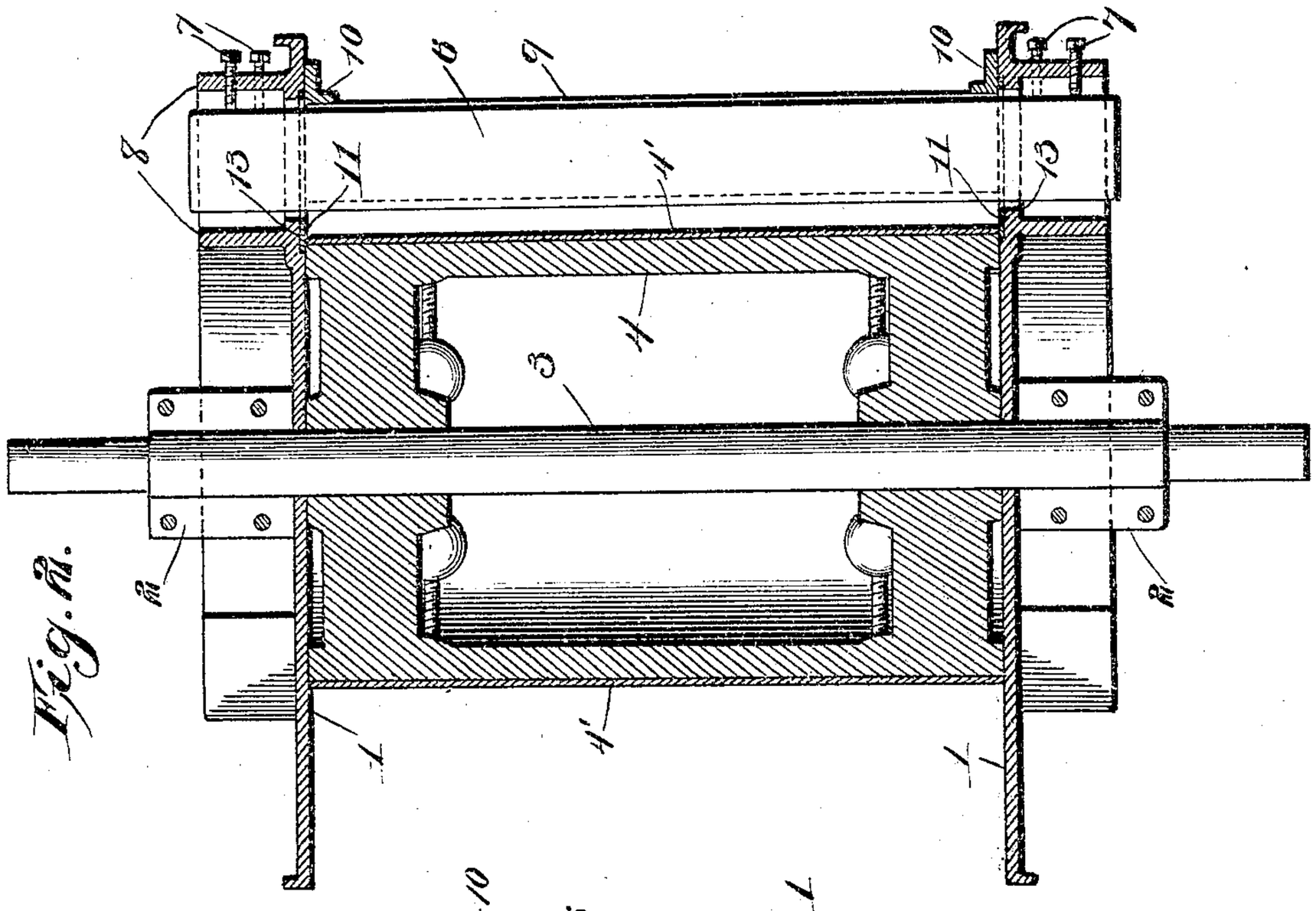
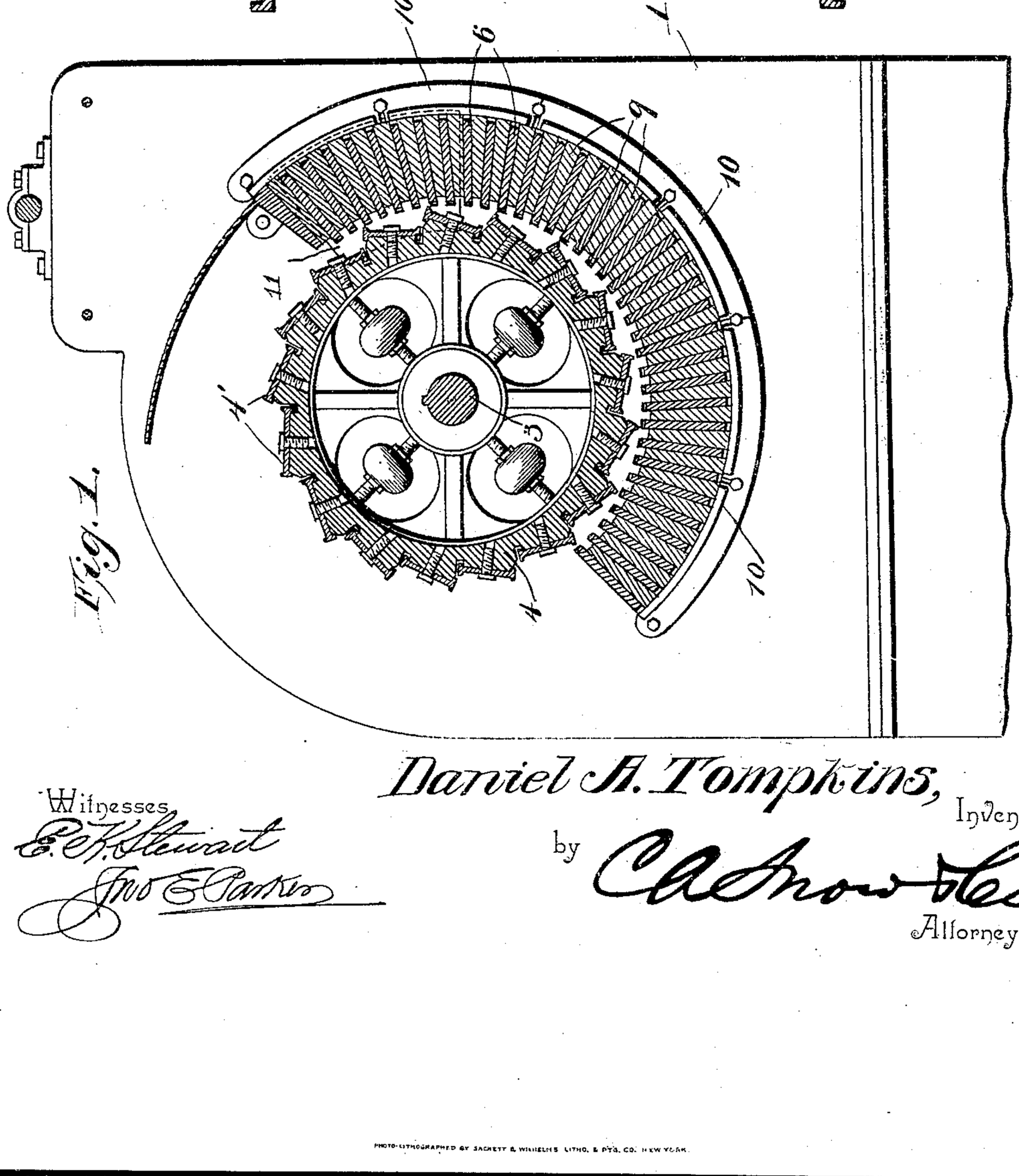


Fig. 1.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

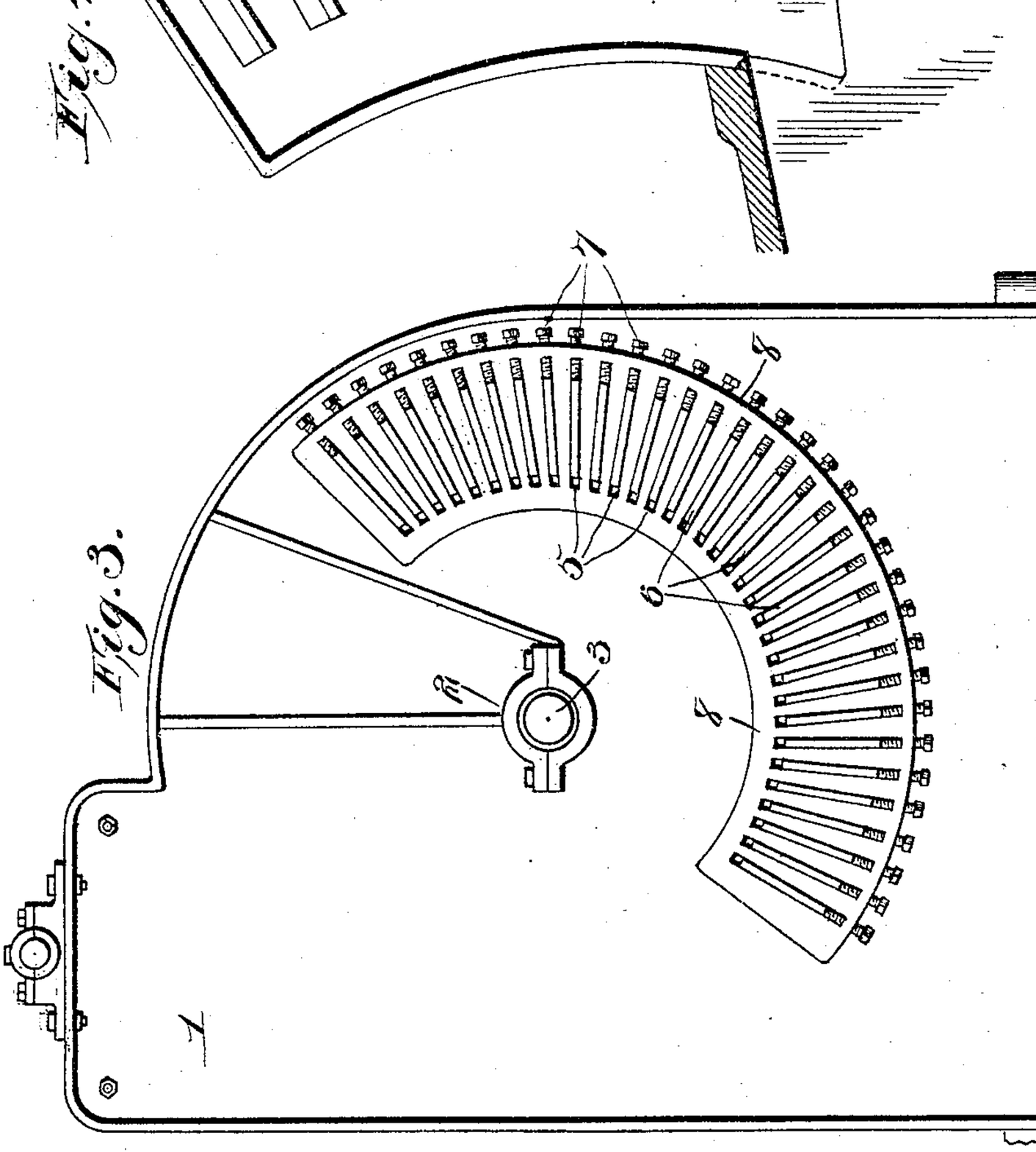

Fig. 3.

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No. 774,369. Patented November 8, 1904.

UNITED STATES PATENT OFFICE.

DANIEL A. TOMPKINS, OF CHARLOTTE, NORTH CAROLINA.

COTTON-SEED HULLER.

SPECIFICATION forming part of Letters Patent No. 774,369, dated November 8, 1904.

Application filed December 17, 1903. Serial No. 185,571. (No model.)

To all whom it may concern:

Be it known that I, DANIEL A. TOMPKINS, a citizen of the United States, residing at Charlotte, in the county of Mecklenburg and State of North Carolina, have invented a new and useful Cotton-Seed Huller, of which the following is a specification.

This invention relates to certain improvements in cotton-seed hullers and machines of similar class for the separation of hulls from seed or grain.

The principal object of the invention is to prevent the waste that ordinarily occurs in machines of this class from the passage of whole seeds or grains through the machine owing to wear of the parts either from constant operation on the material being treated or from attrition due to the presence of sand or other foreign matter in such material.

A further object of the invention is to prevent this waste by the employment of wear-plates that may be readily renewed when worn, and thus avoid the necessity of renewing any of the principal or expensive parts of the machine or its supporting-frame.

With these and other objects in view, as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a transverse sectional elevation of a cotton-seed-hulling machine constructed in accordance with the invention. Fig. 2 is a sectional plan view of the same. Fig. 3 is an end elevation of the machine. Fig. 4 is a detached perspective view of one of the wear-plates constructed in accordance with the invention.

In the drawings, 1 designates opposite side plates of the machine, each plate being provided with a bearing 2 for the reception of a transversely-disposed shaft 3, on which is mounted a knife-carrying drum 4. The periphery of the drum is of suitable shape to receive a series of knives 4′, arranged on lines parallel with the shaft 3, the knives being preferably of the character shown in Fig. 1, so that they may be readily reversed when one of the cutting edges becomes worn.

The two side plates are each provided with a series of slots 5, each of the slots being arranged on a line tangential to the periphery of the shaft and serving to receive a knife 6, the ends of the knives projecting for some distance beyond the outer surface of the plates and being supported by set-screws 7, that extend through suitable openings formed in arcuate flanges 8, projecting from the side plates. This permits of convenient adjustment of the cutting edges of the knives with respect to the cutters 4 on the periphery of the drum.

The cutting-knives 6 are bound together for mutual support by means of a plurality of wedge-shaped strips 9, usually formed of wood and driven in from the outer edge of the segment, these wooden strips being of a length corresponding to the distance between the inner faces of the two plates 1 and the strips being held firmly in position by means of adjustable segments 10, that are formed in sections for convenience in adjustment.

In a hulling device of this character there is constant wear on the inner surfaces of the plates 1, and if sand or other abrasive material is mingled with the material to be treated the wear is very rapid and in a short time the cast metal of which the plates are formed is worn into ridges and grooves, the latter soon becoming of a size sufficient to permit the passage of whole seeds or other articles being treated. While the loss is small in the treatment of small quantities of material, it is found to result in considerable loss after a season's operation, and repairs can only be made by the renewal of the entire side plates.

In order to overcome this difficulty, as well as to materially strengthen the machine at a point where initial crushing or cutting operation occurs, I employ a pair of arcuate plates 11, having a plurality of openings corresponding to the knife-receiving openings

formed in the side plates. The arcuate plates 11 are formed of hardened steel or iron or steel otherwise so treated as to materially resist wear and are seated in recesses 13, formed in the inner surface of the side plates, the recesses being of a depth about equal to the thickness of the plates, so that the faces of the segmental plates will be flush with the inner surfaces of the side plates. This construction serves to materially strengthen the side plates at the point of initial cutting where the greatest strain occurs, and as the inner edges of such plates extend to a point within the peripheral line of the drum there will be little or no danger of cutting. In any event the hardened metal will resist the cutting action more effectually than the cast metal of which the side plates are formed and without the expense of employing side plates formed wholly of hard metal, while at the same time they permit of convenient renewal when after a long period of time they become unfit for further use.

In order to secure the wear-plates in position, the ends of the wooden wedges are employed, these wedges serving by contact with the inner faces of the wear-plates to hold them firmly in place within the recesses.

Having thus described my invention, what is claimed is—

1. The combination with side or cheek plates recessed on their inner faces, and wear-plates fitting in said recesses, both cheek and wear plates being formed with openings, of a plurality of cutter-bars extending through said openings, and cross-bars fitting between the opposing wear-plates and holding them in position, and constituting means for maintaining the cutter-bars in spaced relation.

2. The combination of the side or cheek plates formed with arcuate recesses in their inner faces, and with cutter-bar-receiving openings, wear-plates arranged in the recesses and also formed with cutter-bar-receiving openings, an arcuate series of cutter-bars having their ends extending through said openings, and spacing-strips wedged between the bars and having their opposite ends bearing against said wear-plates.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DANIEL A. TOMPKINS.

Witnesses:

ANNA L. TWELVETREES,

W. F. WALKER.