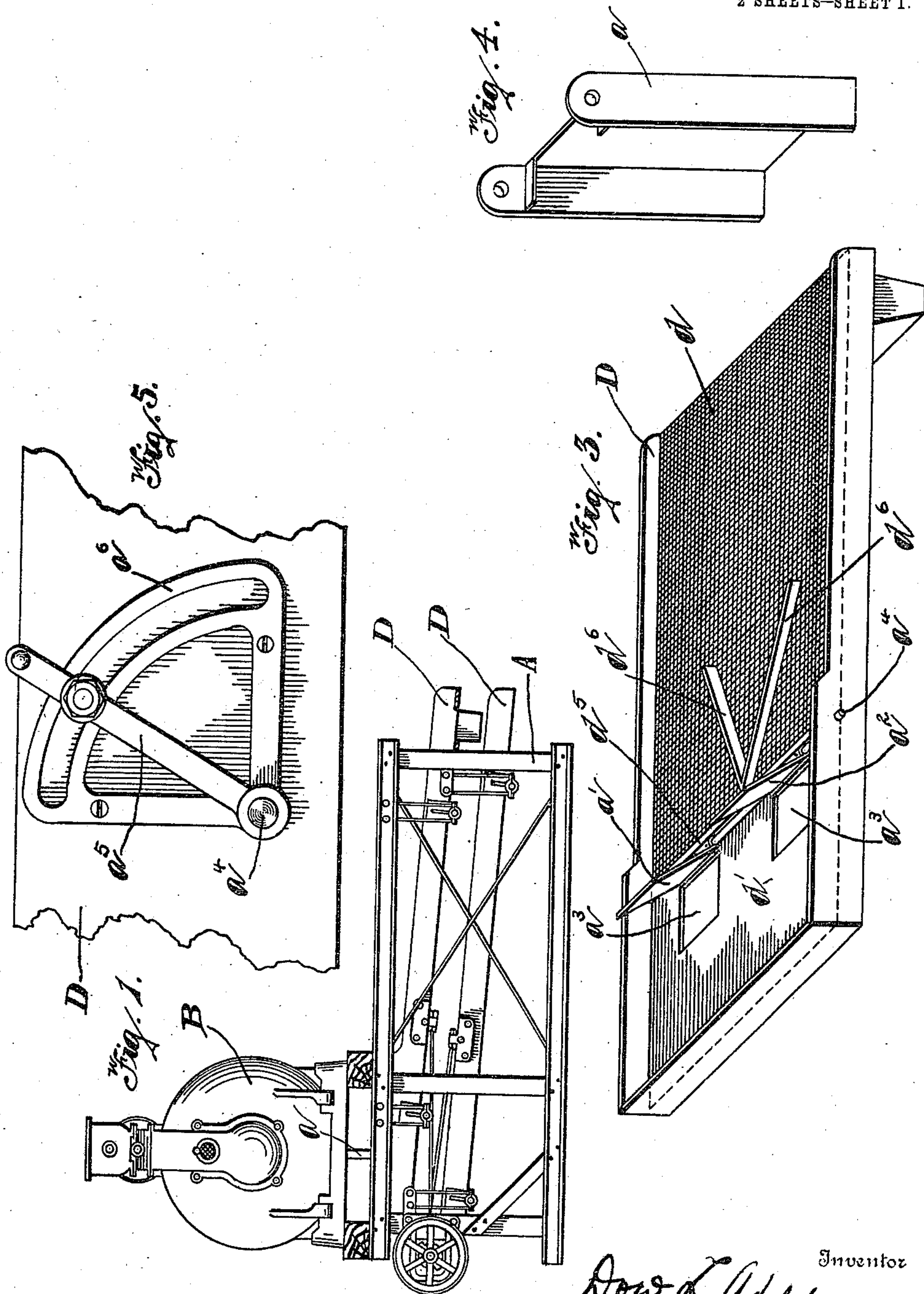


D. L. ADELSPERGER.
HULLING AND GRINDING MACHINE.
APPLICATION FILED JULY 26, 1909.

989,686.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.



Witnesses
Oliver F. Clarke
Chas. J. Welch

By

D. L. Adelsperger
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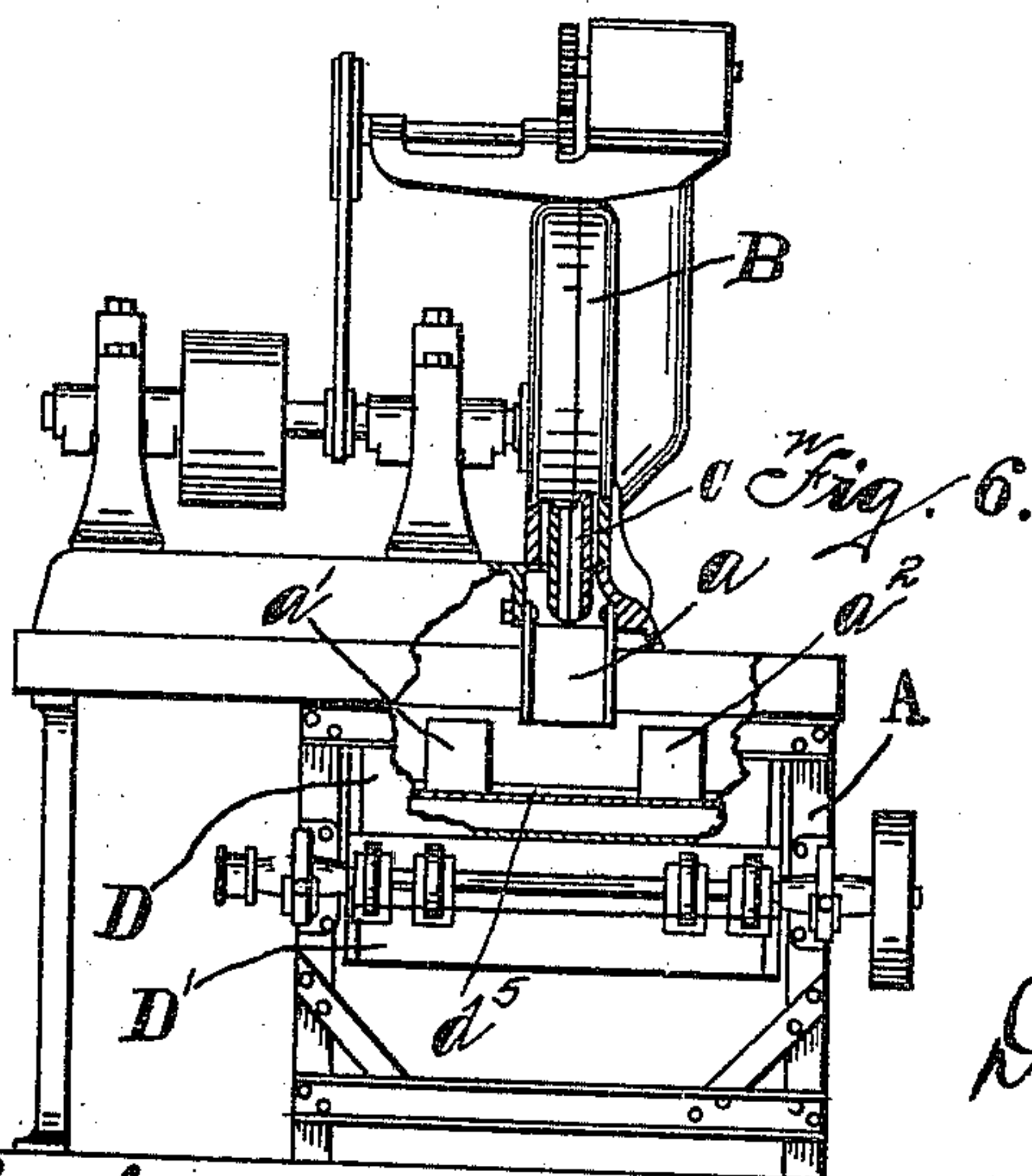
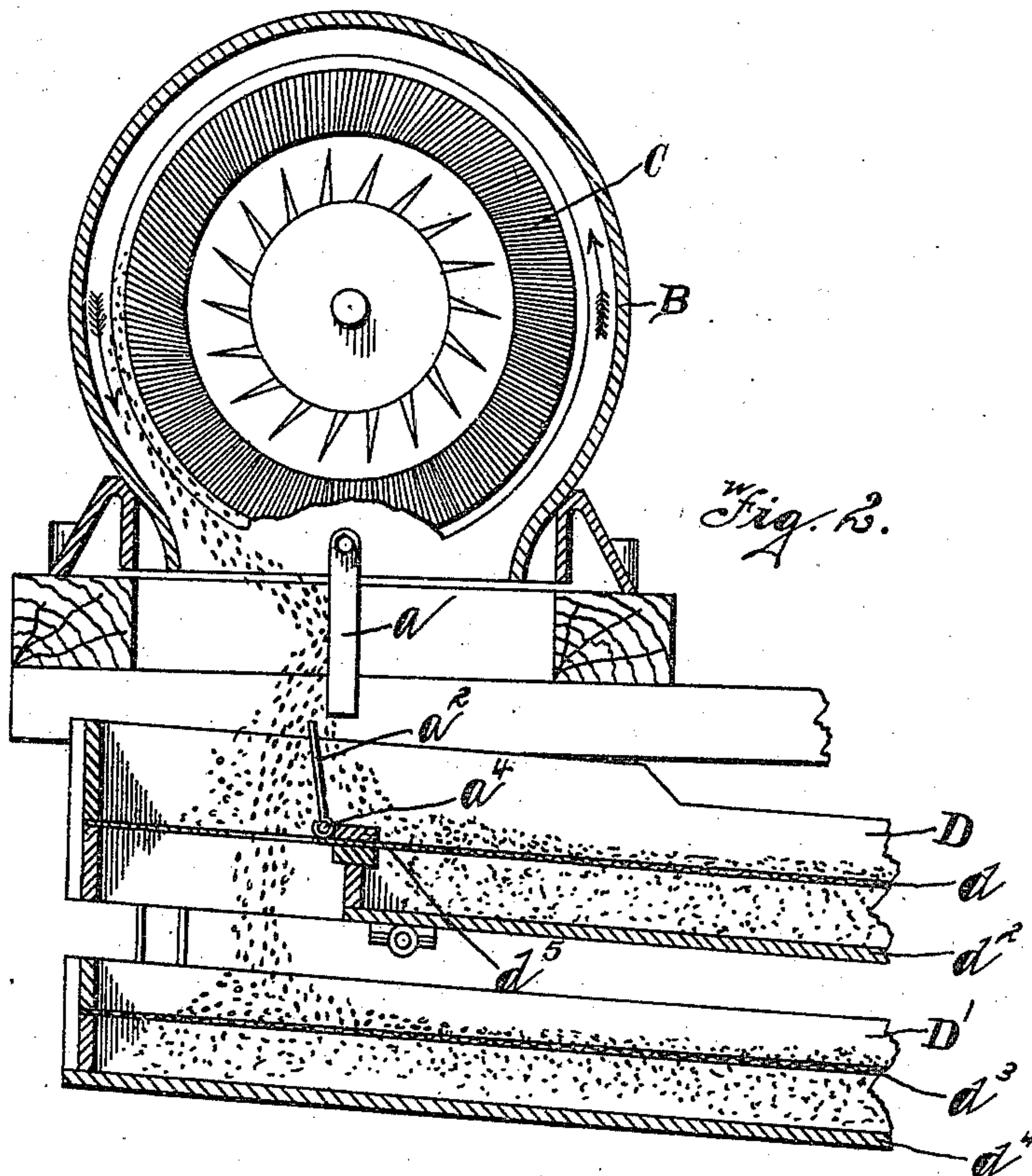
Attorneys

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Witnesses
Oliver T. Clarke
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UNITED STATES PATENT OFFICE.

DOW L. ADELSPERGER, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE BAUER BROTHERS COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

HULLING AND GRINDING MACHINE.

989,686.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed July 26, 1909. Serial No. 509,550.

To all whom it may concern:

Be it known that I, Dow L. ADELSPERGER, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Hulling and Grinding Machines, of which the following is a specification.

This invention relates to improvements in hullers or grinders, and especially to that class of machines which is adapted to hull such material as cotton seed hulls and thereafter separate the seeds from the hulls and also adapted for grinding the hulls and thereafter separate the bran from the lint.

The invention particularly relates to a combination of elements or devices whereby the capacity of the machines is greatly increased. In machines of this class there is necessarily combined hulling and grinding devices with screening devices, and the natural tendency of the hulling or grinding device when revolved in one certain direction, that is, in a direction toward the rear end of the machine, is to throw the ground material to a point on the screening device that will tend to lessen the capacity of the screening device. But in this improved arrangement there is employed a plurality of screens and a deflector and valves so located in reference to each other that the deflector and other mechanism will both increase the efficiency of the individual screens and also the capacity of the combined screens.

The invention consists in the constructions and combinations of parts hereinafter described and set forth in the claims.

In the accompanying drawings Figure 1 is a side elevation of a machine embodying the invention. Fig. 2 is a longitudinal sectional view of a portion of the same. Fig. 3 is a perspective view of the upper screen or shaker and its valve mechanism. Fig. 4 is a perspective of the deflector. Fig. 5 is a portion of the valve operating mechanism. Fig. 6 is a front elevation of the machine, some of the parts being partly broken away and shown in section.

Like parts are indicated by similar characters of reference in the several views.

The frame of the machine is indicated by the reference character A. Upon this stationary frame A, there is supported a casing B and within this casing there are revolubly mounted hullers or grinders C.

D D¹ represents two reciprocating screens. The arrangement of these parts is that of the ordinary and well known machine in which the hulling or grinding devices are continuously revolved and the screens D D¹ are given a reciprocating shaking motion. As indicated in Fig. 2 it will be seen that such material as cotton seed hulls and the broken seeds would by the action of the grinders C be thrown rearwardly or toward the discharge end of the machine; this being a machine in which the grinders or hullers are revolved in a forward direction or in the direction indicated by the arrows. This action of the grinders in thus tending to throw the ground or hulled material rearwardly would cause it to be deposited on the upper screen at a point somewhat removed from the upper end of the screen and for this reason the upper part of the screen would not be effective to perform in the screening operation and the efficiency of the screen would be thereby very materially reduced. Moreover, in employing a plurality of screens it is desirable to so arrange the parts that the lower screen will receive half of the material and in this way the capacity of the entire machine be greatly increased. To this end and in order to overcome the foregoing difficulties, there is combined with the mechanism of the plurality of screen devices, a deflector *a* (Figs. 2 and 4), which is centrally located in the discharge opening of the grinder casing and projecting downward toward the bottom of the upper shaker D at a point thereon located well toward the upper end thereof.

The upper shaker D is provided with a screen *d*, which extends from the lower end to a point substantially beneath the deflector. Extending from the screen to the upper end of the deflector there is a solid portion *d*¹. In practice the screen *d* and the solid portion *d*¹ may be formed from one single sheet of metal, a portion of which may be perforated to form the screen portion *d*. As shown in Fig. 6 the width of the shaker D is much greater than that of the deflector *a*. Located in the solid portion *d*¹, on each side of the deflector is an opening *a*³, the size of which is adapted to be regulated by a valve *a*². These valves *a*² are secured to a rod *a*⁴, which extends transversely across the shaker and has therein as at one end an arm *a*⁵ adapted to be secured in any position of adjustment

in a slotted segment a^6 , (Fig. 5), so that the amount of material that may pass through the said openings a^3 may be regulated. The bottom of the shaker D is provided with a floor d^2 , which extends entirely beneath the screen d , but terminates at the point where the solid portion d^1 begins so as to leave the shaker entirely open beneath this solid portion.

10 The lower shaker D^1 has a screen d^3 , extending throughout the entire length of the shaker.

Extending transversely across the upper shaker just back of the valves a^1 and above the screen is a bar d^5 adapted to act in the nature of a dam for the material to be separated. Extending rearwardly from the central portion of this dam in an angular direction are two deflector strips d^6 for the purpose of distributing the material more uniformly on the screen.

As shown in Fig. 2 the hulled material will be delivered from the grinders or hullers in such a manner that the material will strike the deflector, a , and cause the greater part of the same to be deposited on the portion d^1 of the upper shaker. The dam d^5 causes this material to be held back more or less and accumulate on this portion d^1 . As the shaker is vibrated some of the material will find its way through the openings a^3 and be deposited on the lower shaker D^1 while the balance of the material will find its way across the dam, not only between the respective openings, but also between the openings and walls of the shaker. The operator may, by regulating the size of the openings

a^3 through the medium of the valves a^1 , cause the material to be equally divided between the respective shakers, this being very desirable in order that each shaker may have its highest efficiency.

Having thus described my invention, I claim:—

1. In a machine of the character described, vibratory screening devices, grinding mechanism located at the upper end of said screening devices comprising rotatable grinding devices adapted to throw the ground material away from the upper end of said screening devices, and a flat vertically arranged deflector supported independent of said screening devices in the path of the ground material and adapted to deflect said material toward the upper end of said screening devices, substantially as specified.

2. In a machine of the character described, vibratory screening devices, grinding mechanism located above the upper end of said screening devices comprising rotatable grinding devices adapted to throw the ground material in a direction away from the upper end of the screening devices, and a flat vertically arranged deflector centrally supported in the discharge opening of the grinding mechanism in the path of the ground material, substantially as and for the purpose specified.

In testimony whereof, I have hereunto set my hand this 20th day of July, 1909.

DOW L. ADELSPERGER.

Witnesses:

CHAS. I. WELCH,
EFFA M. SMITH.