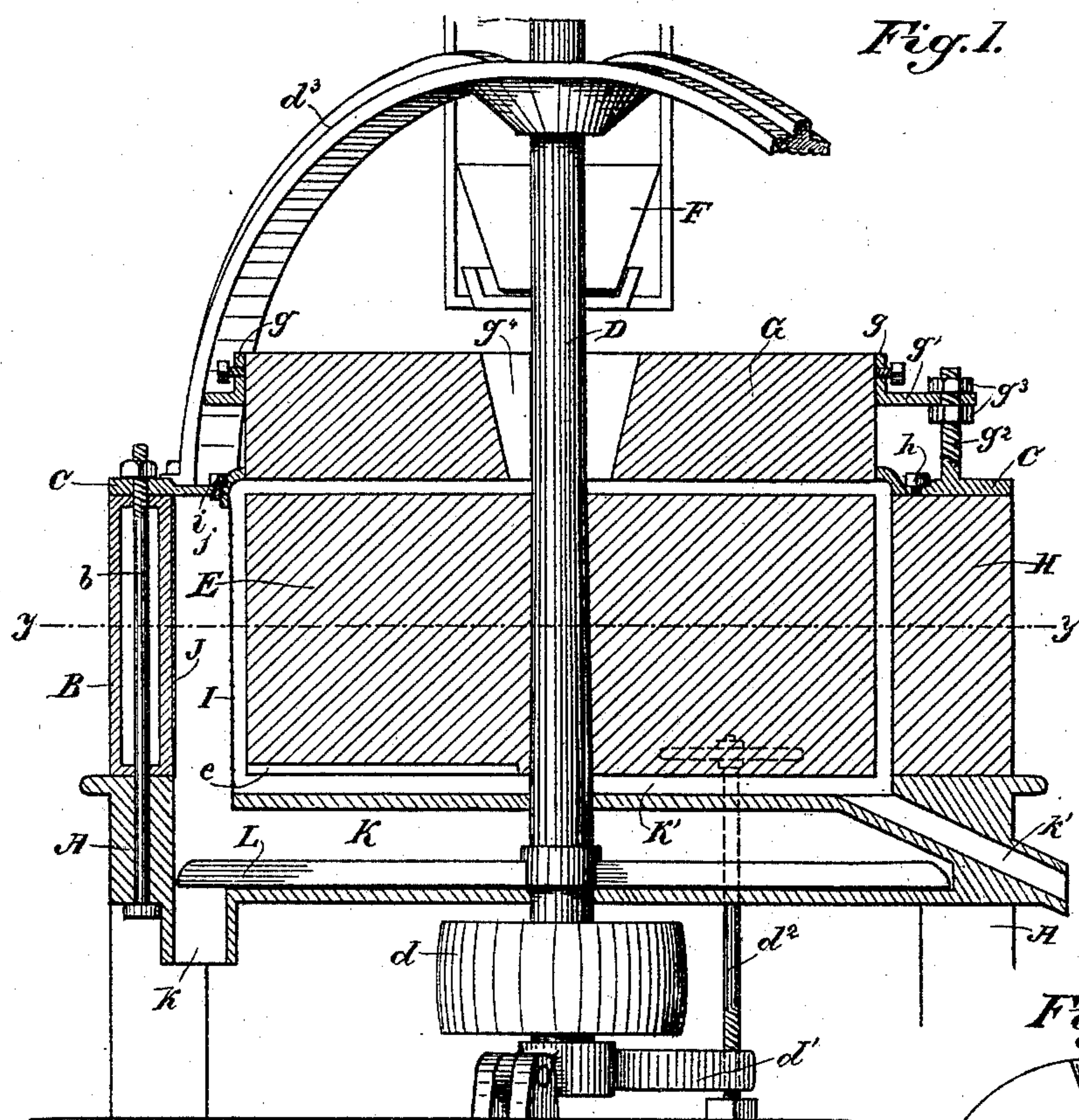


(No Model.)

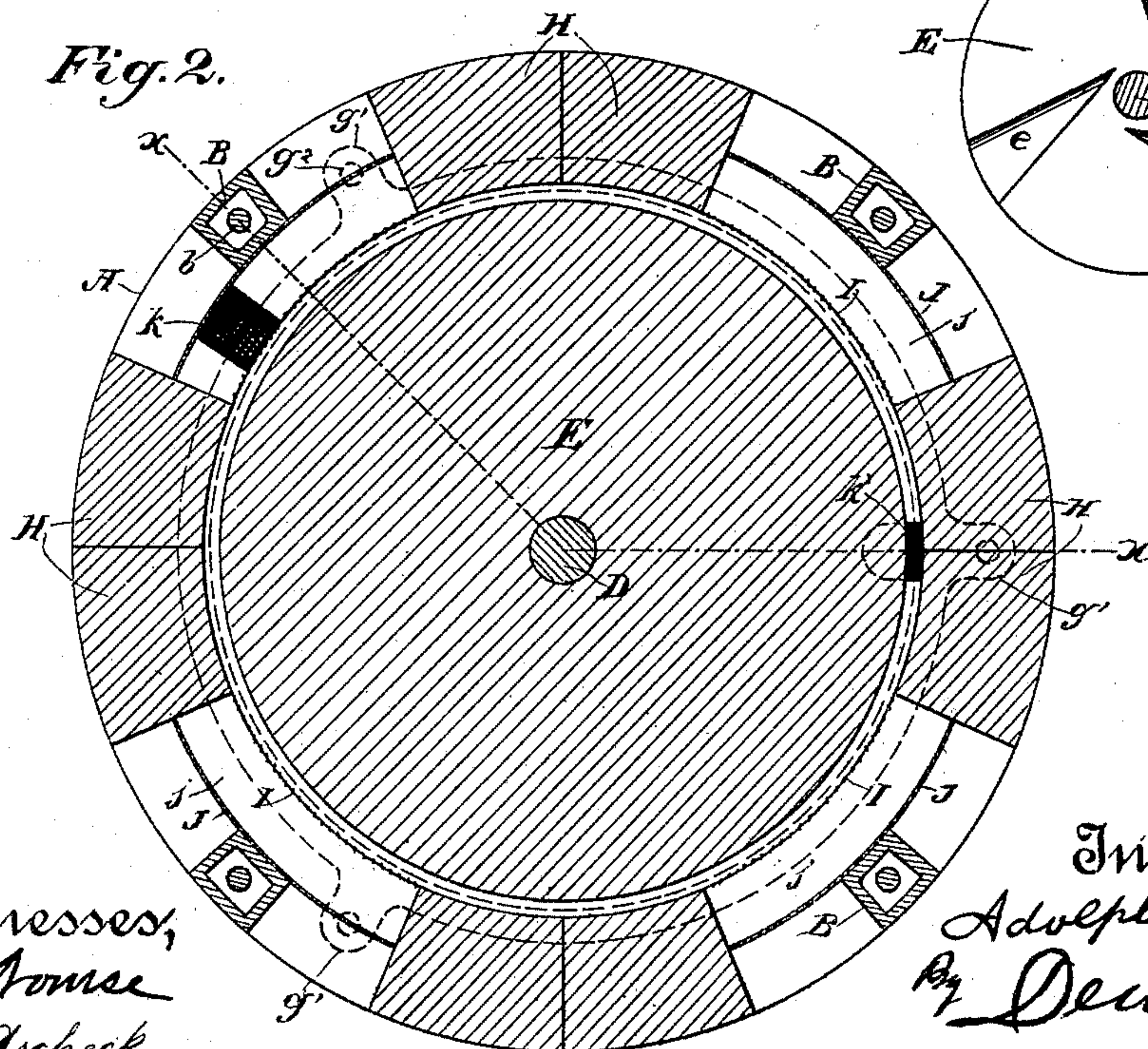
A. F. HINZ.  
COMBINED HULLER AND SCOURER.

No. 495,803.

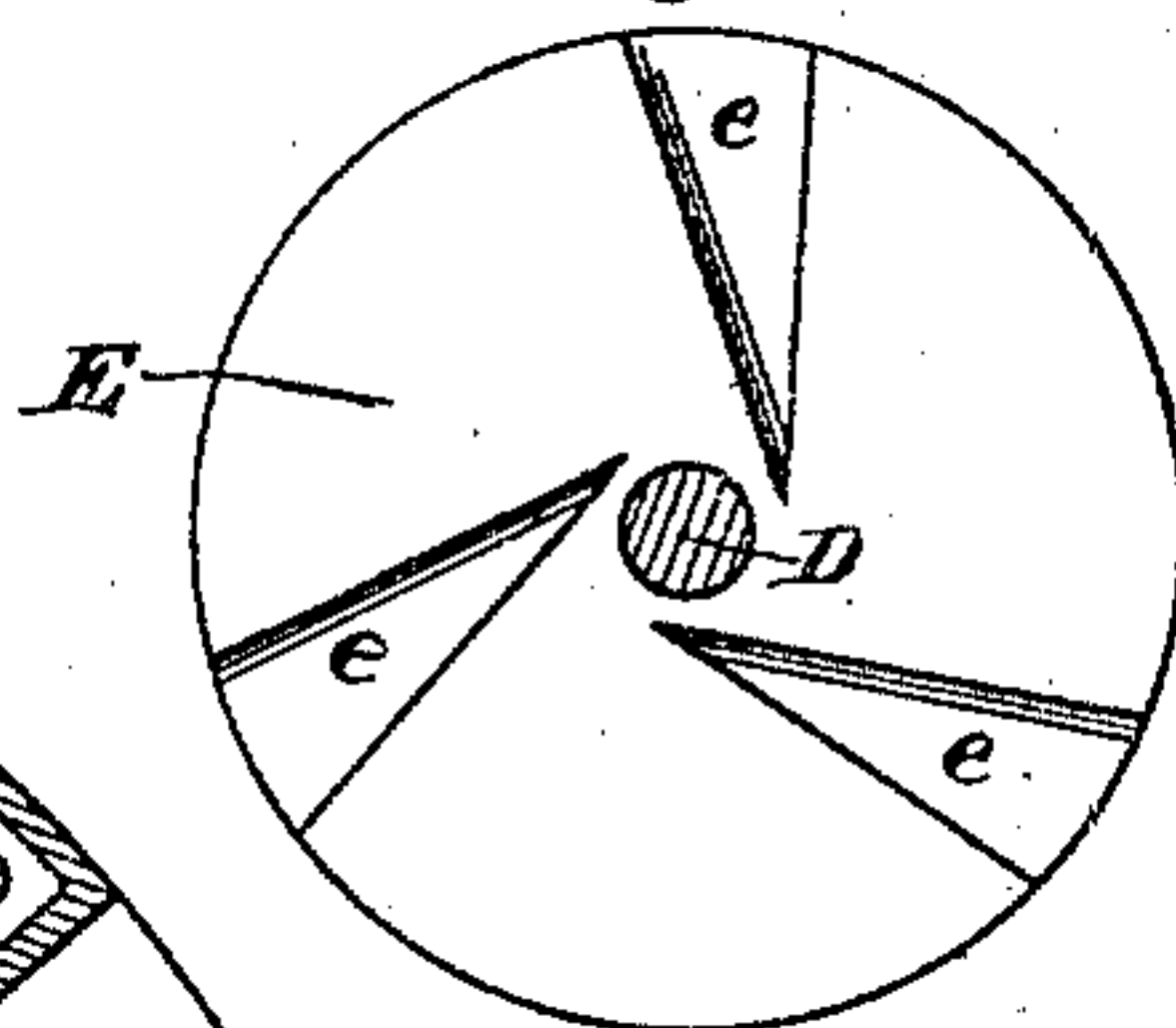
Patented Apr. 18, 1893.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

Witnesses,  
B. House  
H. F. Aschek.

Inventor,  
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By Dewey & Co. atty



# UNITED STATES PATENT OFFICE.

ADOLPH FREDERICK HINZ, OF SAN FRANCISCO, CALIFORNIA.

## COMBINED HULLER AND SCOURER.

SPECIFICATION forming part of Letters Patent No. 495,803, dated April 18, 1893.

Application filed December 24, 1892. Serial No. 456,273. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLPH FREDERICK HINZ, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in a Combined Huller and Scourer; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the general class of hulling and souring machines for mill-stock.

It consists in a combined huller and scourer, the essential features of which are a horizontally disposed opposing stone and runner, and alternating sections of stone and screen encircling the periphery of the runner.

It also consists in the novel details of construction, arrangement and combination of the parts of the machine which I shall hereinafter fully describe and specifically point out in the claims.

The object of my invention is to provide a simple and effective machine which will both hull and scour.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is a vertical section on the irregular line  $x-x$  of Fig. 2. Fig. 2 is a horizontal section on the line  $y-y$  of Fig. 1. Fig. 3 is a bottom view of the runner.

A are supporting timbers or frame-work from which rise pillars B, upon the tops of which is supported the ring C secured thereto by vertical tie-bolts  $b$ .

D is a shaft having the usual driving pulley  $d$  below and mounted so that it may be vertically adjusted by means of the usual appliances, consisting of the lever  $d'$  and hand-screw  $d^2$ . The upper end of said shaft D is guided in a suitable yoke  $d^3$  rising from the ring C.

F is a feeding device of suitable character. Upon shaft D is the runner E.

G is the stone opposing the runner. This is supported by means of an encircling ring  $g$  from which extend radial flanges  $g'$  which receive supporting and adjusting screws  $g^2$  and nuts  $g^3$ , the lower ends of said screws being supported on the ring C. Thus the stone G is upheld and its distance from the runner

regulated. The stone G has the usual cen-

tral feed aperture  $g^4$  adapted to receive the material from the feeding device F above, and carry it down between the stone and runner. About the circumference of the runner E are arranged the segments H of stone. These segments may be each in one or more pieces, usually in two, as I have here shown. The lower ends of these segments rest upon the foundation below, while their upper ends are held in place by set screws  $h$  passing down through the ring C and binding on the tops of said segments.

Alternating with the stone segments H, and in the line of their inner surfaces, are the sections of screen I, said screens being supported suitably below and connected with the ring C above as by the screws  $i$ . Between the stone sections H and behind and removed from the screen sections I are partition plates J, thus forming chambers  $j$  between the screens and plates, the lower ends of said chambers being in communication with the compartment K formed in the bottom under the machine, said compartment having an outlet  $k$  at one side.

The space between the runner and the screens and stone segments communicates with a compartment  $K'$  in the bottom and directly under the runner, said compartment having an outlet  $k'$  at one side. Upon the shaft D, and operating within the compartment K, is a scraper L for forcing the refuse around to the discharge  $k$ .

As shown in Fig. 3, the bottom of the runner E is grooved. These grooves  $e$  are best located and shaped as shown. They are directed substantially tangential to the vertical center of the runner, or radial thereto, and are made outwardly flaring. These grooves are for the purpose of creating a current of air within the compartment  $K'$ , and otherwise disturbing and advancing the material in said compartment to the outlet  $k'$ .

The operation of the machine is as follows: The grain to be hulled and scoured is fed down through the horizontal stone G into the space between the stone and runner, and working outwardly in this space is hulled. It then passes down around the periphery of the runner E and in the space surrounding said run-



ner, it is thoroughly scoured against the stone segments H, and the hulls and matter scoured pass through the screen sections I into the chambers j, and thence fall into the compartment K, in which by the rotating scraper L, they are gradually worked out through the discharge k. The hulled and scoured grain unable to pass the screens I passes down into the compartment K' from which it is discharged through the outlet k'.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a hulling and scouring machine the combination of the upper stationary stone, the vertically movable runner having radial grooves on its under side the separated segments of stone arranged around the periphery of the runner, theseparated sections of screen alternating with the stone segments and continuing their inner surface, plates or partitions between the stone segments outside of the screens and forming chambers, a compartment below communicating with said chambers and a separate compartment below the

runner communicating with the space immediately around its periphery, substantially as herein described.

2. A combined huller and scourer consisting of a frame-work, a bottom with separate horizontal compartments, each provided with an outlet, a runner above said bottom and having its under surface grooved and exposed to one of the compartments of the bottom, alternating sections of stone and screen arranged about the periphery of the runner, the space without the screen sections communicating with one of the compartments of the bottom and the space within communicating with the other, under the runner, the overlying stone, and the scraper attached to the shaft of the runner and operating in the lower compartment of the bottom, substantially as herein described.

In witness whereof I have hereunto set my hand.

ADOLPH FREDERICK HINZ.

Witnesses:

S. H. NOURSE,

J. A. BAYLESS.