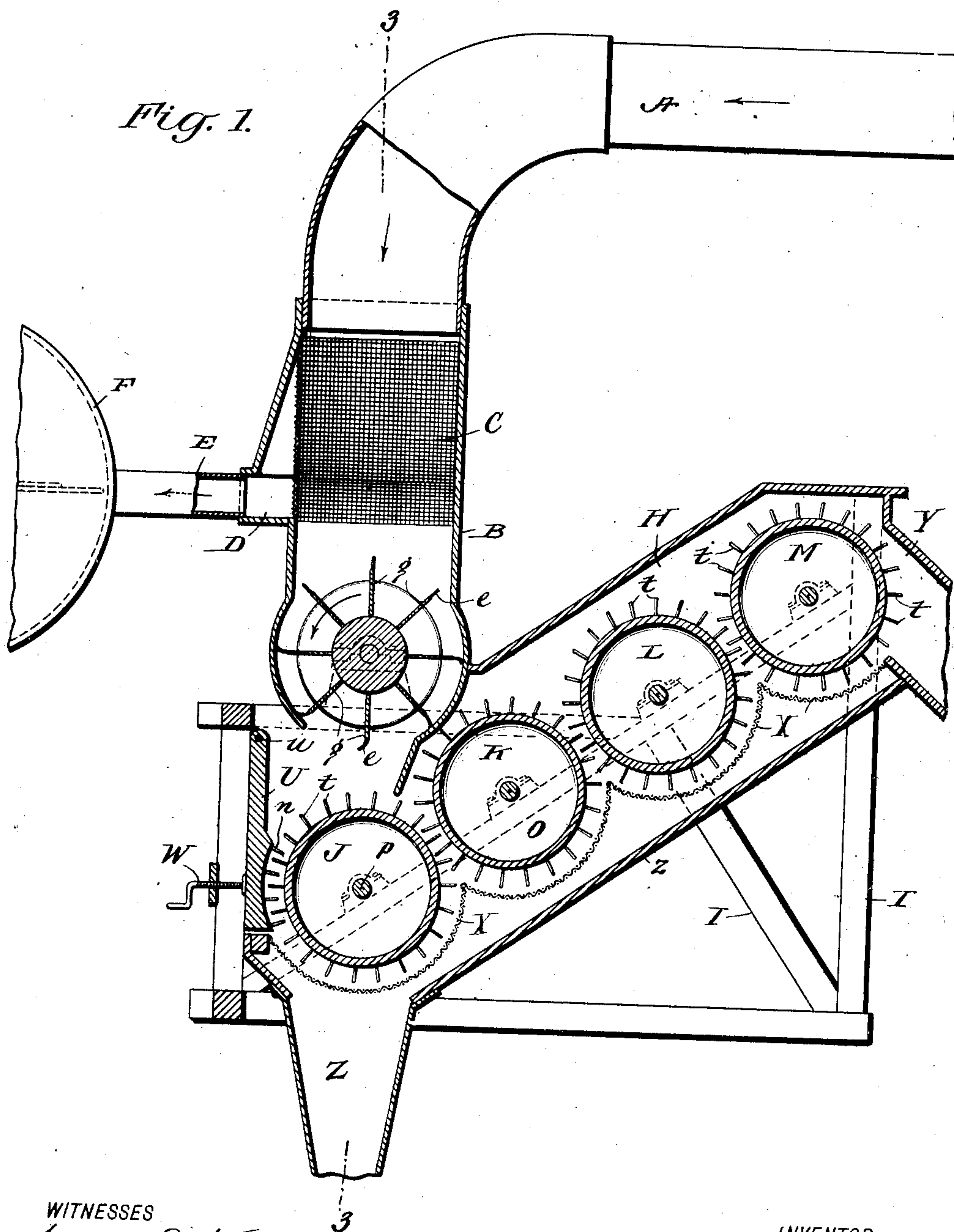


962,343.

J. L. HART.
COTTON HULLER AND CLEANER.
APPLICATION FILED APR. 12, 1909.

Patented June 21, 1910.
2 SHEETS—SHEET 1.



WITNESSES
Samuel E. Wade
C. A. Stanley

INVENTOR
JOSEPH L. HART,
BY *Wm. H. Co.*
ATTORNEYS.

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Fig. 2.

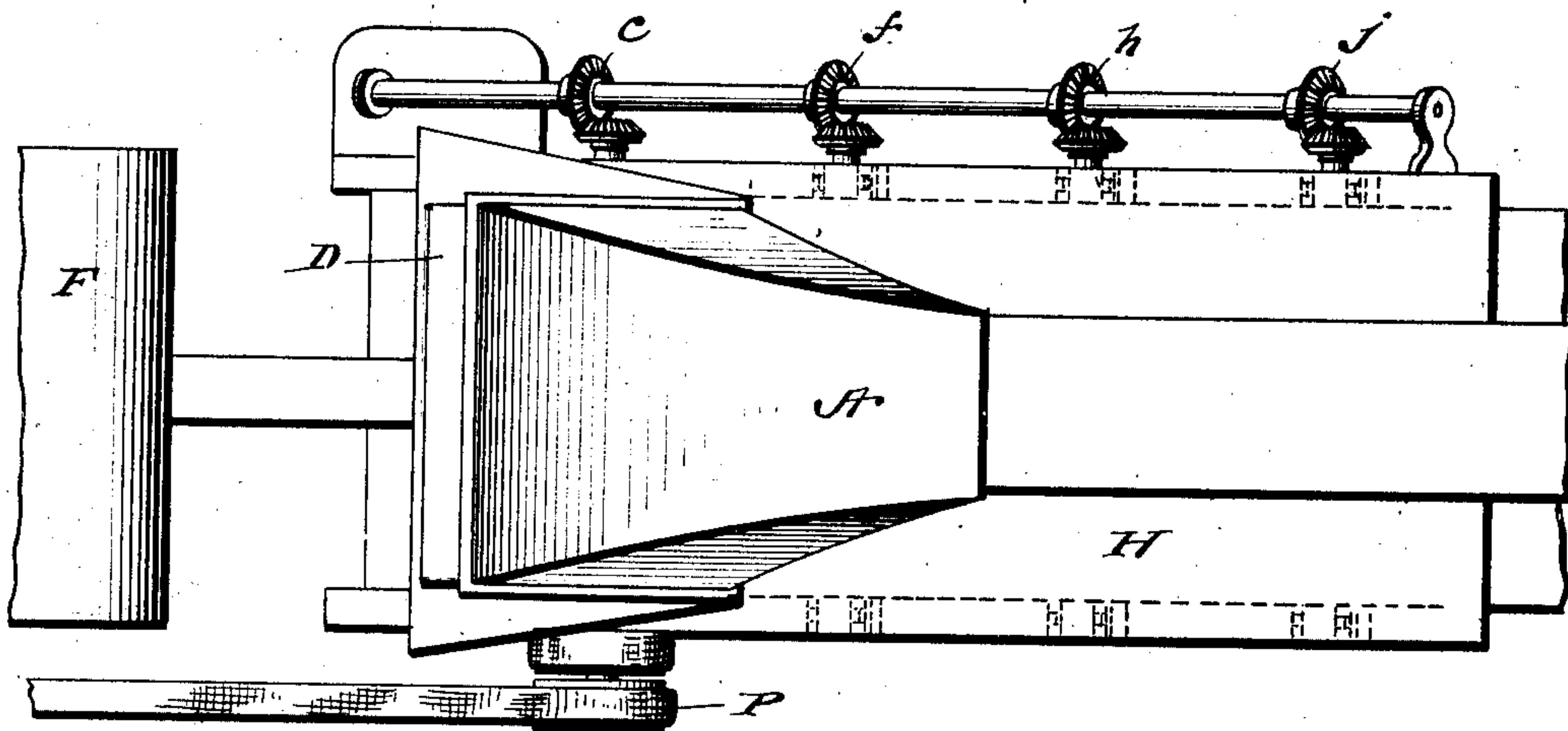
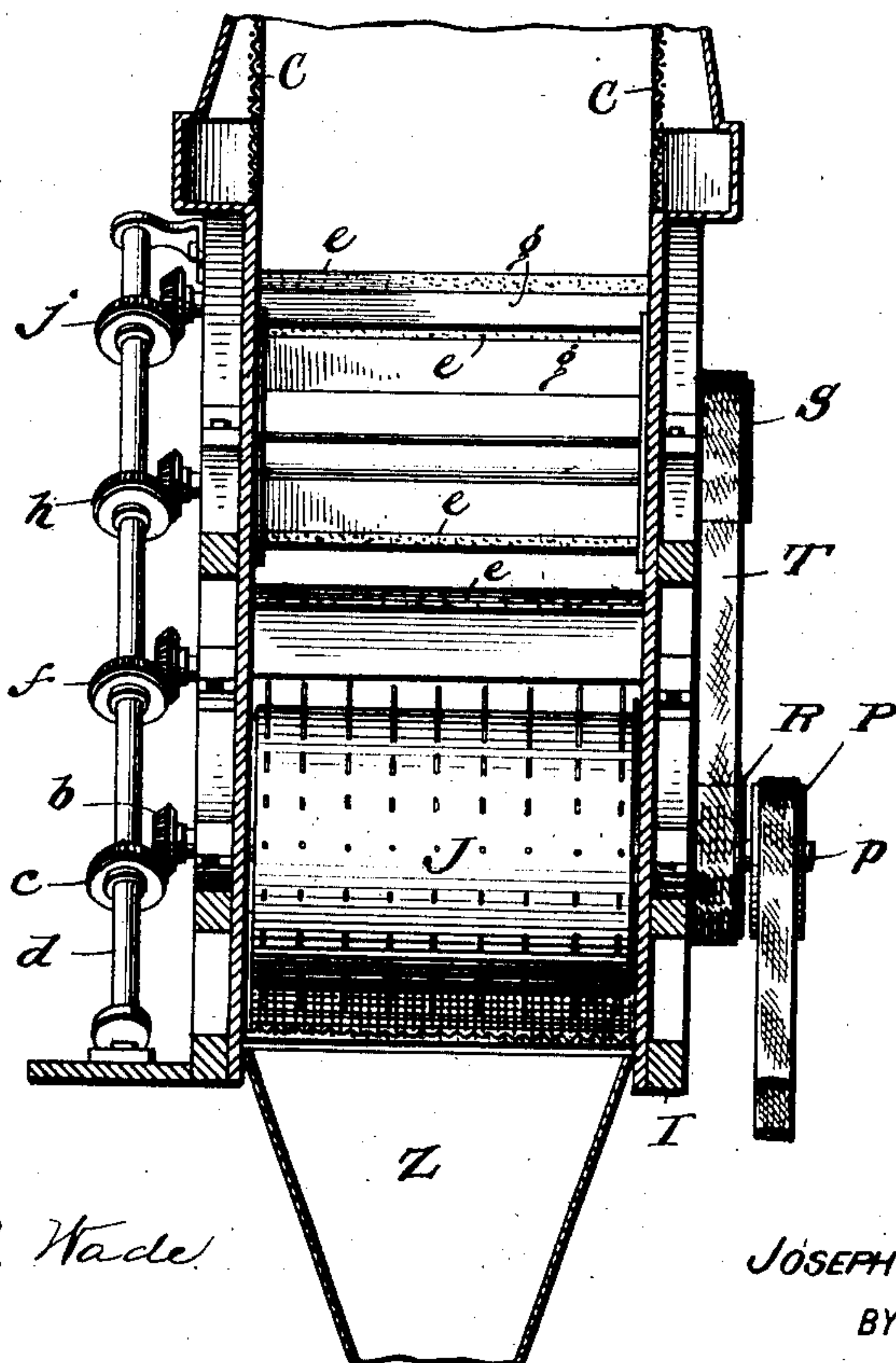


Fig. 3.



WITNESSES
Samuel E. Wade
L. A. Stanley

INVENTOR
JOSEPH L. HART,
BY *Munn & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH L. HART, OF CHICKASHA, OKLAHOMA.

COTTON HULLER AND CLEANER.

962,343.

Specification of Letters Patent. Patented June 21, 1910.

Application filed April 12, 1909. Serial No. 489,306.

To all whom it may concern:

Be it known that I, JOSEPH L. HART, a citizen of the United States, and a resident of Chickasha, in the county of Grady and State of Oklahoma, have made certain new and useful Improvements in Cotton Hullers and Cleaners, of which the following is a specification.

This invention relates to a machine for removing the hulls from cracked and unopened cotton bolls and for partially cleaning the cotton from dirt and other impurities.

An object of my invention is to provide a device in which the bolls are broken up and the hulls removed therefrom without cutting or tearing the cotton, and thereby preserving the fiber in its natural state, and at the same time breaking up the hulls so that they can be readily removed without mashing or grinding them and thus adding further impurities and increasing the inconvenience of cleaning the cotton when the hulls have been removed.

A further object of my invention is to provide a suction pipe conveyer with a screen so arranged that the cotton cannot become clogged up above the feed mechanism.

A further object of my device is to provide means for regulating the engaging parts of the breaking mechanism so as to accommodate bolls of various sizes and to regulate the breaking action of the machine.

Other objects and advantages will appear in the following specification.

My invention is illustrated in the accompanying drawing, in which—

Figure 1 is a central sectional view of my improved cotton huller. Fig. 2 is a plan view thereof, and Fig. 3 is a vertical sectional view of a portion of the device along the line 3—3 of Fig. 1.

Referring now to Fig. 1, A denotes a suction pipe leading from a hopper, not shown, through which the cotton is conveyed. The suction pipe A is joined with a vertical pipe B. At the upper end of the vertical pipe B I arrange a screen C. In the drawings I have indicated this screen as extending on three sides of the pipe B, but obviously it could extend all around the pipe, or around as much of the pipe as seemed desirable.

Communicating with the pipe B is a laterally extending suction box D connected

by means of the pipe E with a suction fan F. The bottom of the pipe B is flared to form a casing for a distributing or feeding cylinder G. This cylinder is located centrally of the pipe B and is provided with blades or paddles *g* extending the full length of the cylinder. Each of the blades *g* is provided with soft rubber ends *e*, which engage the walls of the outer casing, thereby preventing the cotton from falling down before it is discharged by the movement of the cylinder.

The bottom of the pipe B opens into an inclined casing H, which is supported upon the framework I, in which are located four rotary breakers or beaters J, K, L, M. These beaters all consist of hollow drums or cylinders, and are provided on their periphery with radially extending teeth *t*. The four drums J, K, L and M are in inclined relation one to the other and are supported to revolve in bearings upon the framework O, as shown in Fig. 1. The lowermost cylinder J is arranged to be driven by means of a pulley P on the shaft *p*. The other end of this shaft is provided with a bevel gear *b* arranged to mesh with a similar gear *c* on a shaft *d*. On the shaft *d* are arranged similar bevel gears *f*, *h* and *j*, which turn the drums K, L and M, respectively. The feed drum G is driven by means of a pulley R on the shaft *p*, which is connected to the pulley S on the shaft of the distributing drum G, by means of a belt T.

In close proximity to the teeth on the lowermost drum J is a pivoted concave or breast plate U, suspended from a pivot *u*, and provided with teeth *v* arranged to enter between the teeth *t* on the drum J. The depending concave U may be adjusted toward and away from the drum J by means of the crank and screw W.

Disposed underneath each of the drums J, K, L and M is a continuous screen X, which follows closely the circular outline of the drums, but allows a certain clearance between the screen and the ends of the teeth. At the upper end of the inclined casing H there is a discharge chute Y, while at the lower end of said casing and immediately beneath the drum J is a discharge chute Z. The bottom *z* of the casing H is inclined and extends from the upper end of the screen X to the discharge pipe Z, as clearly shown in Fig. 1.

From the foregoing description of the

various parts of my improved device, the operation may be readily understood. The cotton is conveyed from the hopper, not shown in Fig. 1, along the pipe A in the direction indicated by the arrow, being drawn therealong by the suction fan F. When the cotton reaches the downward bend of the pipe it is traveling at a considerable speed, and as it passes the screen C the dust or fine loose dirt is drawn by the air into the suction box. Owing to the extended surface of the screen, there is comparatively little air pressure on any given area, and the cotton, therefore, is not held up against the screen, but is permitted to fall into the spaces between the arms of the feed drum G. This is a distinct advantage over other devices in which the screen is of comparatively small area, and is located in the path of the traveling cotton, which tends to stick to the screen, thereby clogging up the supply pipe and resulting in inconvenience and delay in clearing the passage. The cotton is then fed downwardly into the casing H and drops upon the drum J. The teeth of the drum carry the bolls around until they reach the teeth on the concave U, when the bolls are broken open in passing between the rotating drum and the pivoted concave. The concave may be regulated as already explained to permit a closer engagement of the teeth with those of the drum J, thereby breaking up the hulls to a still smaller size. The cotton, together with the broken hulls, is then carried over the screen X by the teeth of the drum J, the greater part of the hulls being screened out and falling into the discharge chute Z. The cotton is then passed on to the next wheel K where the same screening action takes place and then in turn to the drum L, and finally to the drum M. By this time the greater part of the crushed hulls are screened out and falling upon the inclined bottom z, these impurities are delivered to

the chute Z. In the meantime the cotton, which is now free from the hulls, is delivered by the uppermost drum M to the discharge chute Y, from whence it is conveyed to appropriate receptacles.

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I claim—

1. In a cotton huller, a vertically arranged feed pipe, a feed drum in the bottom thereof, a vertical screen arranged above said feed drum in the walls of said pipe, a suction box surrounding said screen and communicating with a suction fan, a casing communicating with said vertical feed pipe, and provided with means for breaking up and hulling cotton bolls, a series of drums arranged in inclined relation, each drum provided with teeth on its periphery, a breast plate having teeth arranged to coact with the teeth on the lowermost drum, means for adjusting said breast plate toward and from said lowermost drum, an inclined screen extending underneath said drums, a discharge passage for refuse at the lower end of said casing, and a discharge passage for cotton at the upper end of said casing.

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2. In a cotton huller, a feed pipe, a feed drum therein, a screen arranged above said feed drum in the walls of said pipe, a suction box surrounding said screen and communicating with a suction fan, a casing communicating with said feed pipe and provided with means for breaking up and hulling cotton bolls, a series of drums arranged in inclined relation, each drum being provided with teeth on its periphery, a breast plate hinged at its upper edge having teeth arranged to coact with the teeth on the lowermost drum, a screw for adjusting said breast plate toward and away from said lowermost drum and an inclined screen extending beneath said drum.

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JOSEPH L. HART.

Witnesses:

F. R. HARRISON,

W. W. HAYNES.