

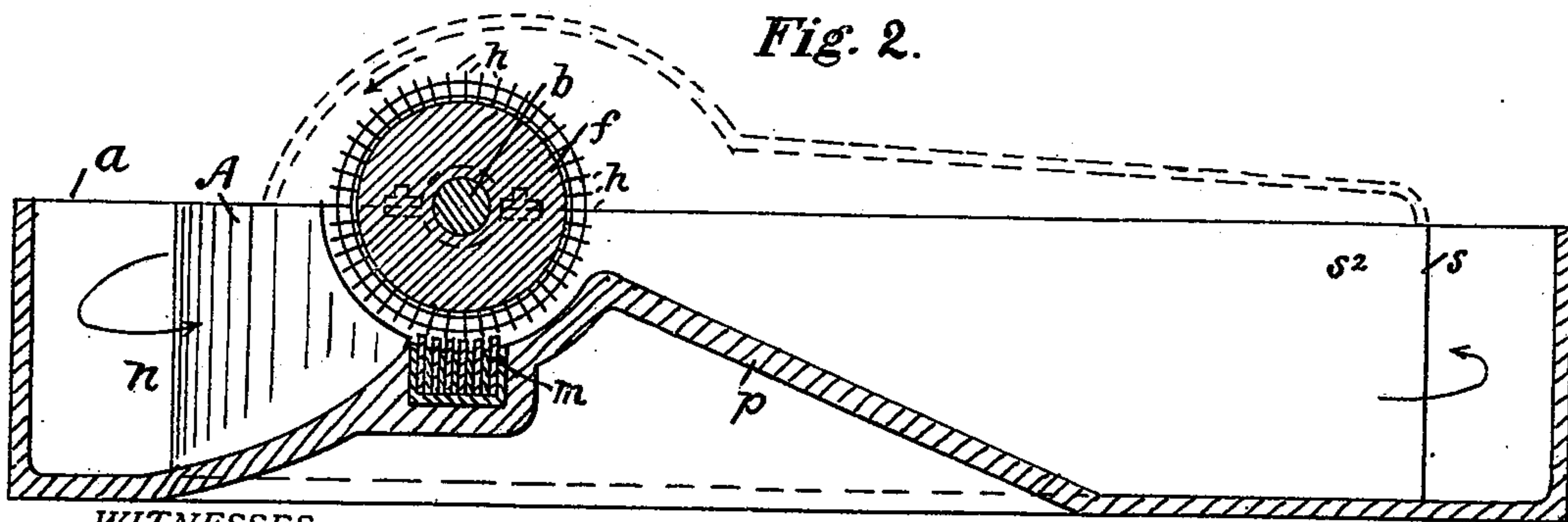
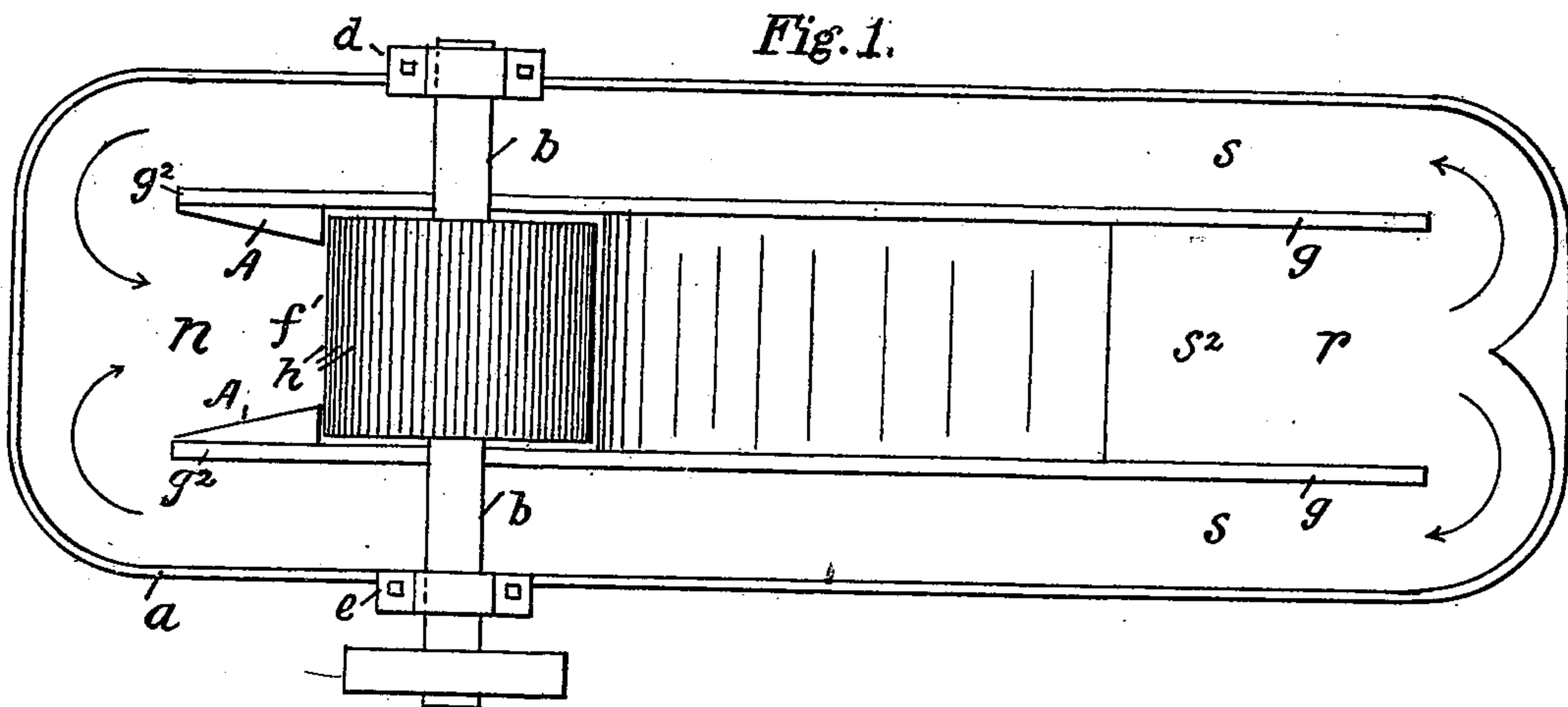
No. 672,170.

Patented Apr. 16, 1901.

R. J. KISSOCK.  
WASHING AND BEATING ENGINE.

(Application filed Dec. 1, 1900.)

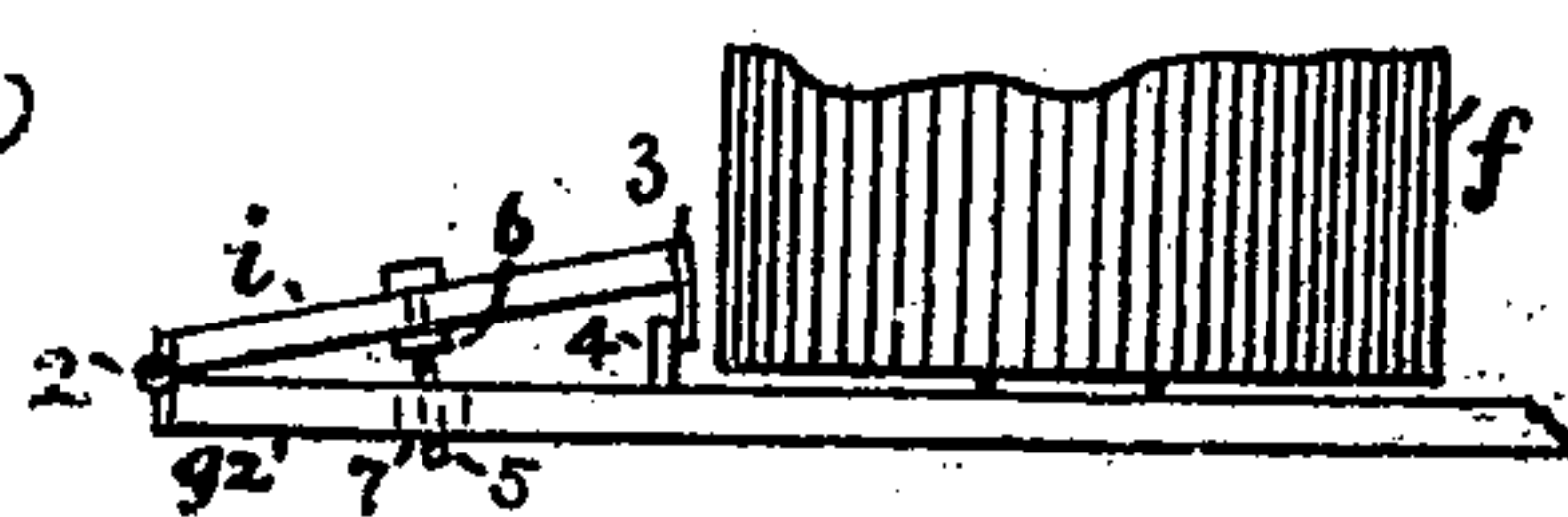
(No Model.)



WITNESSES:

Ellen E. Ingalls  
Mary S. Pierce

*Fig. 3.*



INVENTOR.

Robert J. Kissock  
BY  
H. W. Miller  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

ROBERT J. KISSOCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO JOHN W. B. THOMPSON, OF SAME PLACE.

## WASHING AND BEATING ENGINE.

SPECIFICATION forming part of Letters Patent No. 672,170, dated April 16, 1901.

Application filed December 1, 1900. Serial No. 38,291. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT J. KISSOCK, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain  
5 Improvements in Washing and Beating Engines, of which the following is a specification.

This invention relates to washing and beating engines employed in paper-making; and it consists in improvements in such engines  
10 by means of which the work of washing and of beating the "stuff" is greatly facilitated.

Of the drawings which illustrate the invention, Figures 1 and 2 are respectively a plan and a sectional view of such an engine embodying my improvements, and Fig. 3 is a  
15 modification of the invention.

*a* represents the tub of a washing or beating engine, which may be twenty feet long, seven feet wide, and three feet high, having  
20 rounded corners.

*b* is a shaft supported in bearings *d* and *e* and provided at its outside end with a pulley, by means of which power is applied thereto, and upon the shaft, between the bearings,  
25 is a roller *f*, having longitudinal knives *h*, secured in its periphery. The roller is adapted to be raised or lowered by suitable means and revolves in the direction of the arrow in the operating passage-way *s*<sup>2</sup>.

*n* is the inlet to the roller, and that part of the floor of the tub of the width of the roller is inclined toward the roller, and back of the same it sweeps up in a curve and then falls away to the ordinary floor-level, and directly under the roller are secured the teeth *m*,  
35 which extend across the tub parallel with the knives in the roller and coöperate therewith to abrade and rub the stuff and toward which the latter knives are adapted to be regulated.

In Figs. 1 and 2 the roller is represented as midway of the sides of the tub, and there is a mid-feather *g* on each side thereof, dividing the tub into the central operating passage-way *s*<sup>2</sup> and the two side passage-ways *s s*, and  
45 when the roller is in motion the stuff, after passing under the roller and down the back-fall *p*, when it reaches the end of the tub *r* divides and one-half thereof passes down each side passage *s s* and meets at the inlet *n* of the  
50 operating passage-way to undergo the same operation again.

The foregoing description relates to what is old and well known in the engines for the purposes set forth, in the operation of which I have found a serious difficulty. In all such  
55 engines that I am aware of the approach or inlet-space to the roller is arranged as shown in Fig. 1—that is to say, there are two walls *g*<sup>2</sup> extending outward at right angles to the axis of the roller, forming the inclosed space or inlet *n*, and during the rotation of the roller in the stuff, some of which is brought over the top of the roller by the knives *h*, the stuff becomes packed in front of the same and especially at the right-angled corners *B* between the walls  
60 *g*<sup>2</sup> and the face of the roller, and the stuff remains in a "dead" state there and blocks the passage to the roller, so much so that the circulation of the stuff becomes very slow, and a man has frequently to assist the circulation  
70 with a paddle.

My improvement consists in gradually narrowing the inlet-space *n* from the entrance toward the roller horizontally, as shown in Fig. 2, and I find that by so doing the former  
75 dead-corners are eliminated and that when the roller is revolving the stuff is carried along under the roller with comparatively great rapidity. For instance, I find that in operating the ordinary engine without my im-  
80 provement attached the stuff completes the cycle from the roller over the backfall to the inlet and roller again in about sixty seconds, but in the same engine provided with a narrowing inlet, as shown in Figs. 1 and 2, the  
85 cycle is completed in eighteen seconds.

The means by which the inlet-passage *n* is narrowed may be widely varied without departing from the spirit of the invention. When such engines are made in standard  
90 sizes, the correct angle for the inlet can be and is determined by experiment for any certain kind of stuff, and the means may be simply a solid angle-block *A* properly secured to the walls *g*<sup>2</sup> at each end of the roller; as  
95 shown in Fig. 2. In some cases, however, it may be desirable to make the angle-piece adjustable, so that the angle of the inlet may be varied, as shown in Fig. 4, in which *i* is a wing pivoted at one edge by a hinge 2 to the  
100 wall *g*<sup>2</sup> and having secured at its free end a flange 3, which is adapted to slide upon the



face of a projection 4 from the walls  $g^2$ . 5 is a bolt passing through the wing into a nut 7 in the wall  $g^2$ , and 6 is a set-nut on the bolt to prevent the wing  $i$  from closing up, and the head of the bolt prevents the wing from swinging out.

I find in adjusting the angle-piece A that the operation of the engine is more favorable—that is, the stuff passes to the best advantage when the inner end of the said piece is inside the end of the knives  $h$  or toward the center of the passage-way, and also that better results are obtained when the angle-piece is made so that none of the stuff can get inside or behind it, and thus create a dead space.

I claim as my invention—

1. A washing or beating engine for the purpose set forth, consisting of a tub, one or more mid-feathers in said tub dividing the same longitudinally to form two or more passage-ways, a shaft provided with rotating means, suitable bearings for said shaft, a roller carried by said shaft, knives on said roller, which coincide with stationary teeth secured in the bottom of the tub, the said roller being located in the operating passage-way and at right angles to the same, with means for horizontally narrowing the passage-way from its entrance toward the roller.

2. A washing or beating engine for the purpose set forth, consisting of a tub, one or

more mid-feathers in said tub dividing the same longitudinally to form two or more passage-ways, a shaft provided with rotating means, knives on said roller which coincide with stationary teeth secured in the bottom of the tub, the said roller being located in the operating passage-way and at right angles to the same, with adjustable means for horizontally narrowing the passage-way from its entrance toward the roller.

3. A washing or beating engine for the purpose set forth, consisting of a tub, one or more mid-feathers in said tub dividing the same longitudinally to form two or more passage-ways, a shaft provided with rotating means, suitable bearings for said shaft, a roller carried by said shaft, knives on said roller adapted to coincide with cooperating or rubbing stationary teeth in the bottom of the tub, the said roller being located in the operating passage-way and across the same, with means for horizontally narrowing the passage-way from its entrance toward the roller.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of November, 1900.

ROBERT J. KISSOCK.

Witnesses:

GEO. WILLIS PIERCE,  
MARY I. PIERCE.