(No Model.) 4 Sheets—Sheet 1.

S. STEINMETZ.

DECORTICATING AND SCOURING MACHINE.

No. 532,607. Patented Jan. 15, 1895.

Fig: 1

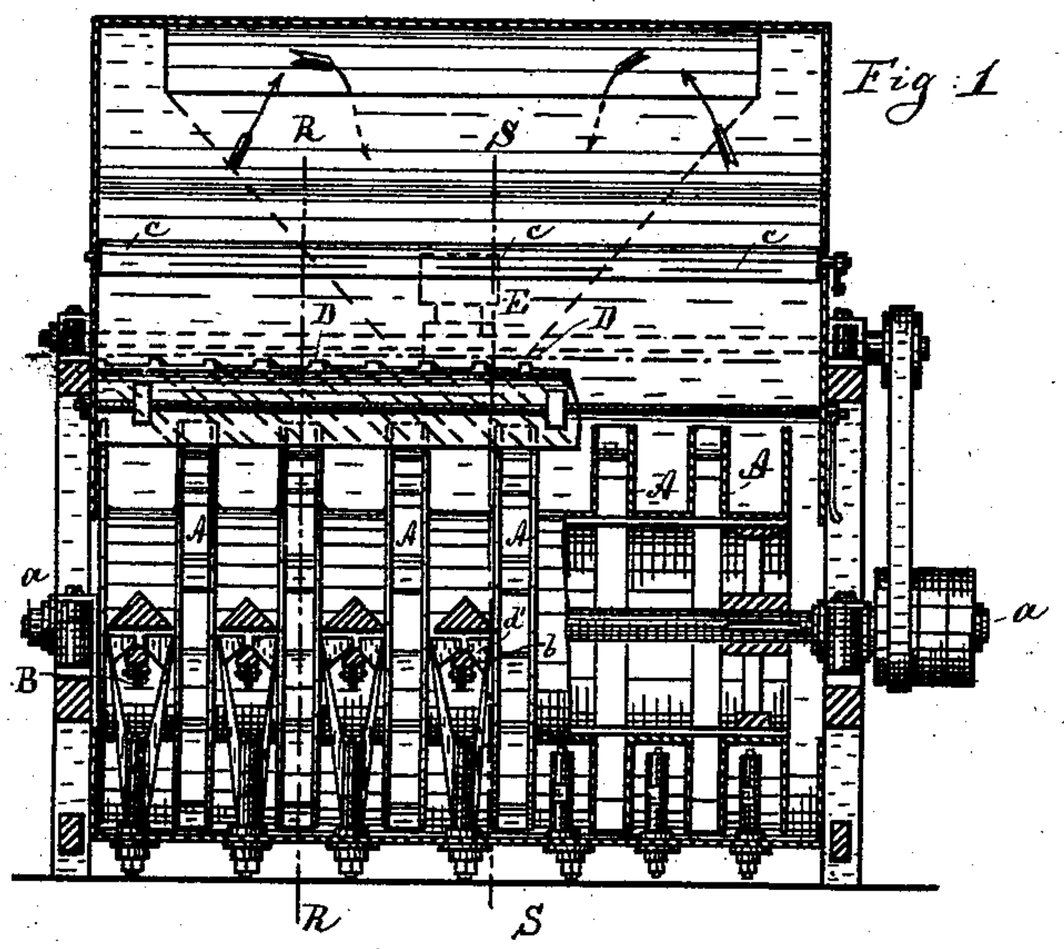
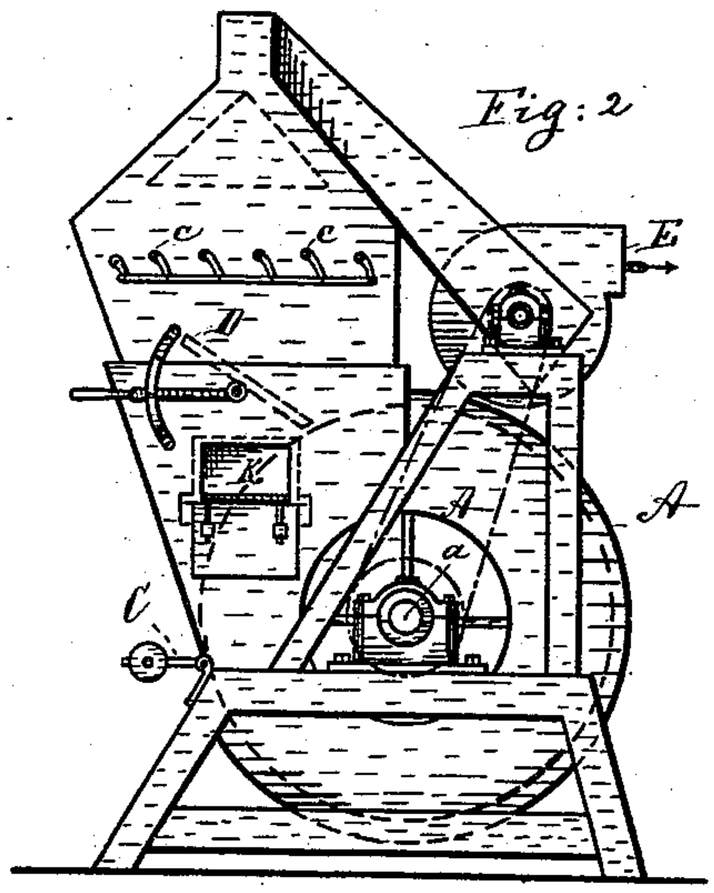


Fig: 2



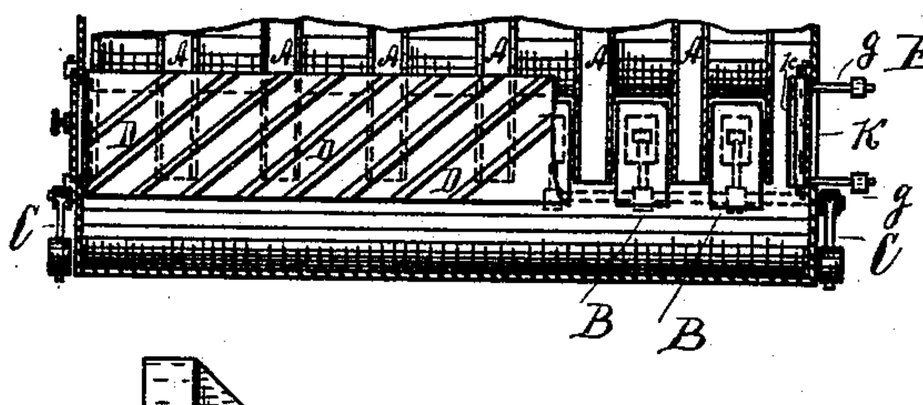


Fig: 5

Fig: 3

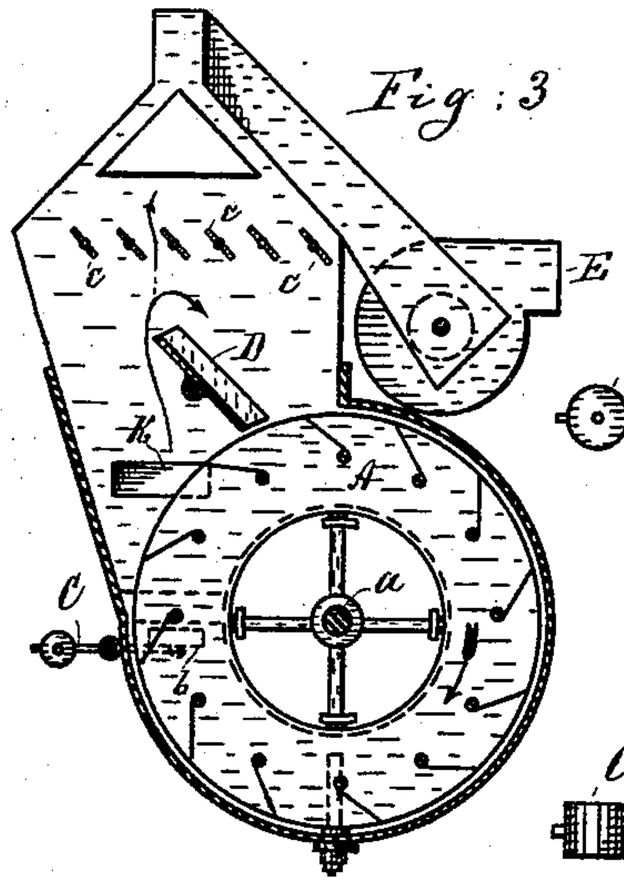


Fig: 6

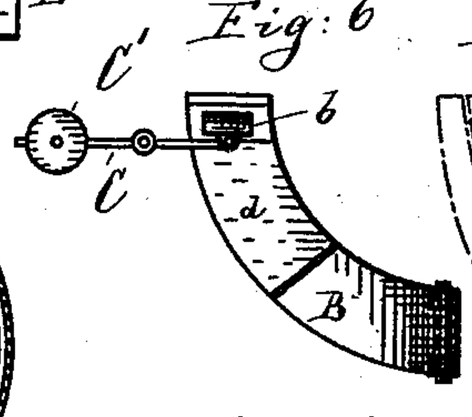


Fig: 7

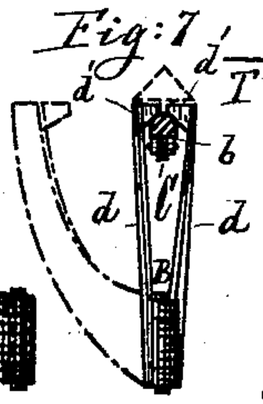


Fig: 8

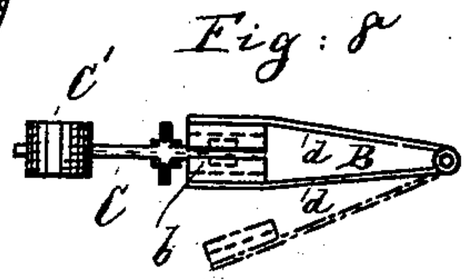
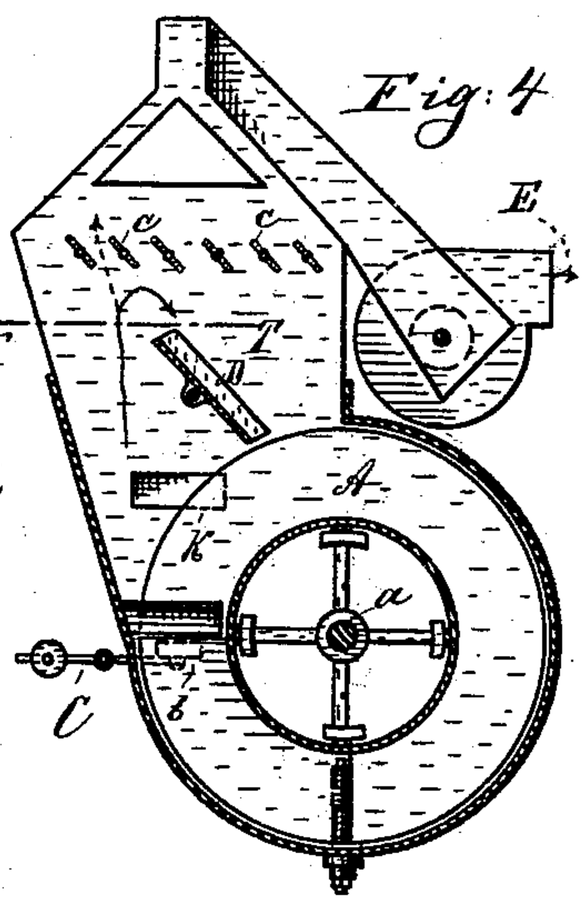


Fig: 4



Witnesses:
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Inventor:
S. Steinmetz
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(No Model.) 4 Sheets—Sheet 2.

S. STEINMETZ.

DECORTICATING AND SCOURING MACHINE.

No. 532,607. Patented Jan. 15, 1895.

Fig: 9

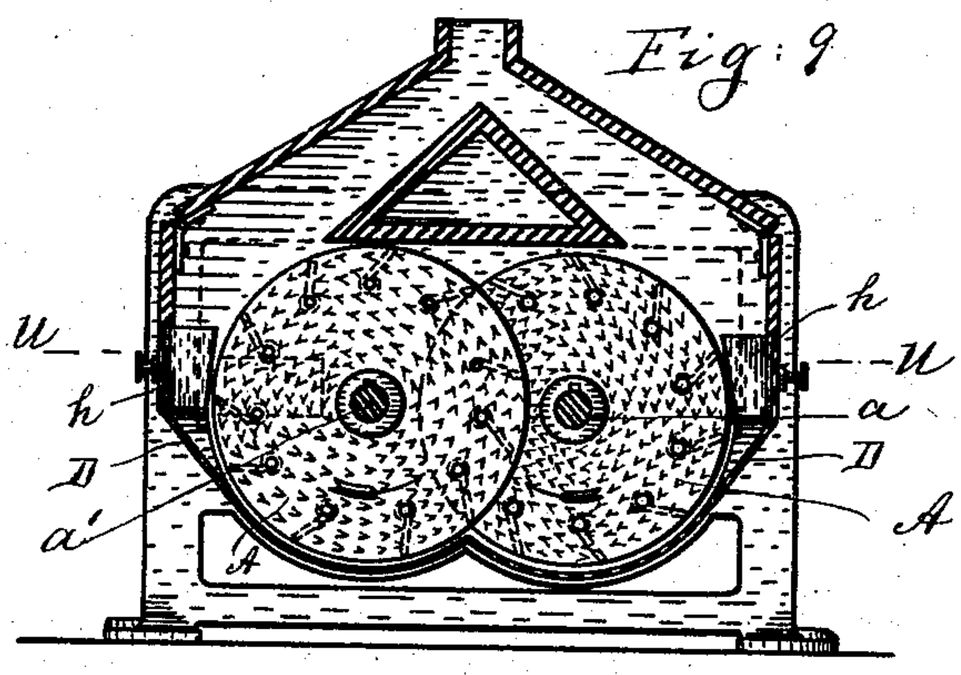


Fig: 11

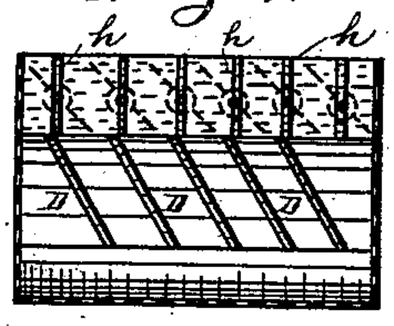
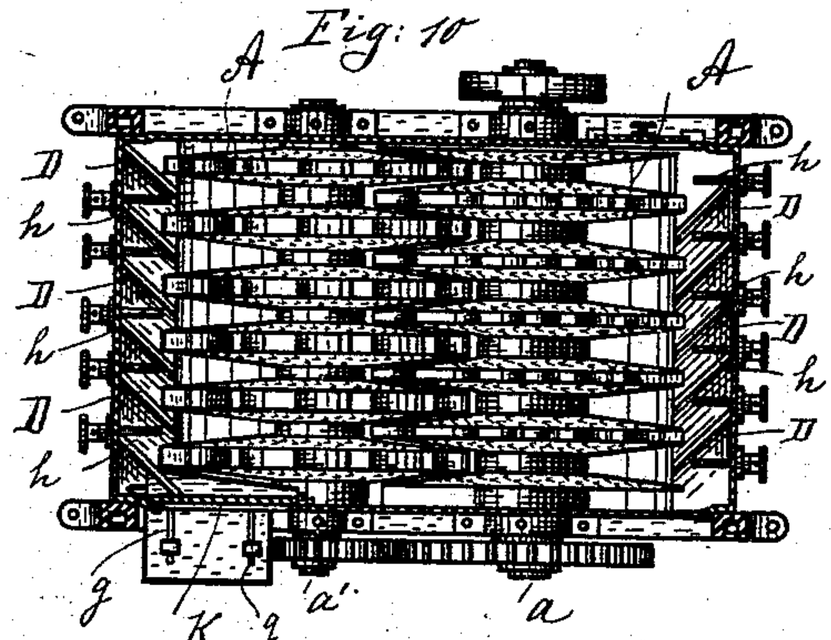


Fig: 10



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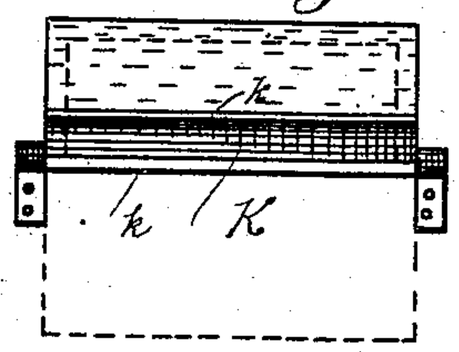
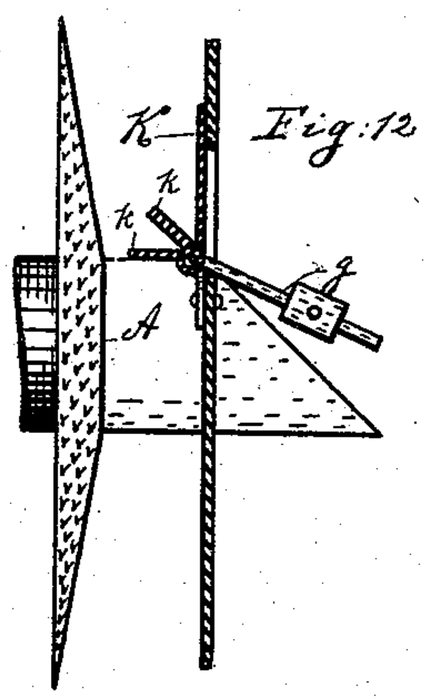


Fig: 12



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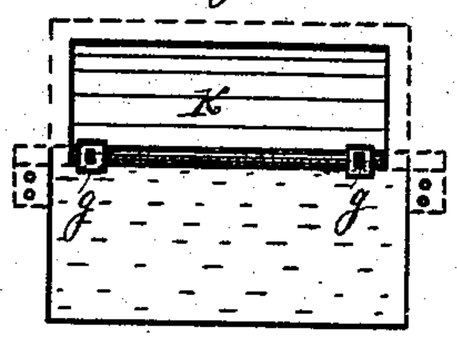
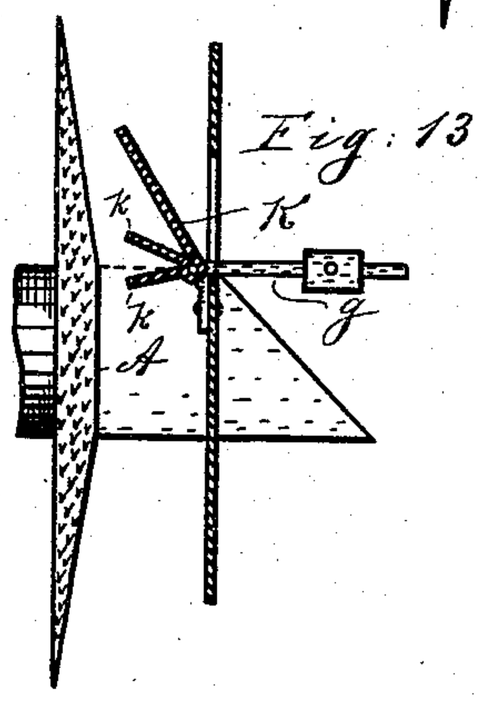


Fig: 13



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Inventor:
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(No Model.) 4 Sheets—Sheet 3.

S. STEINMETZ.

DECORTICATING AND SCOURING MACHINE.

No. 532,607. Patented Jan. 15, 1895.

Fig: 16

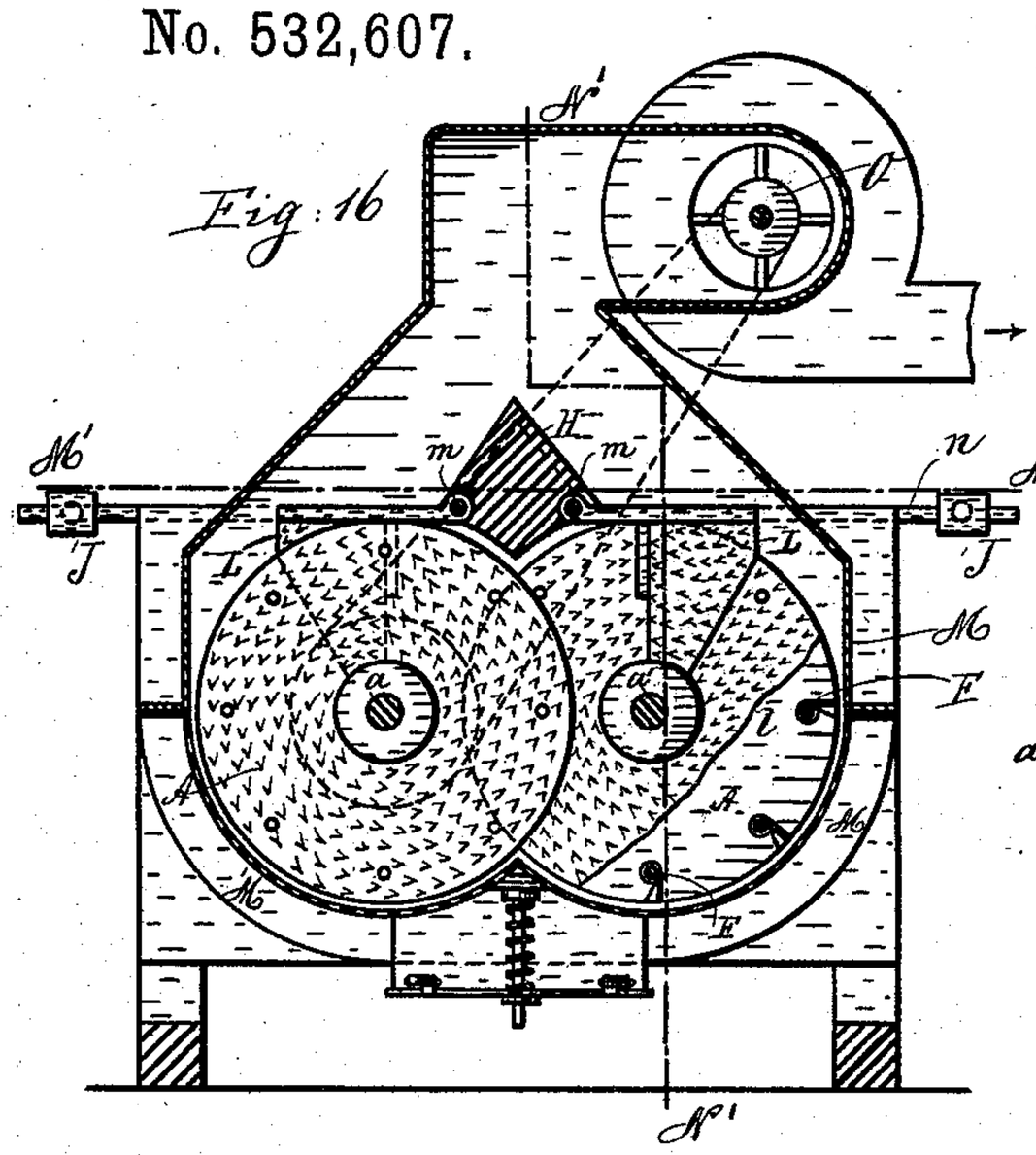
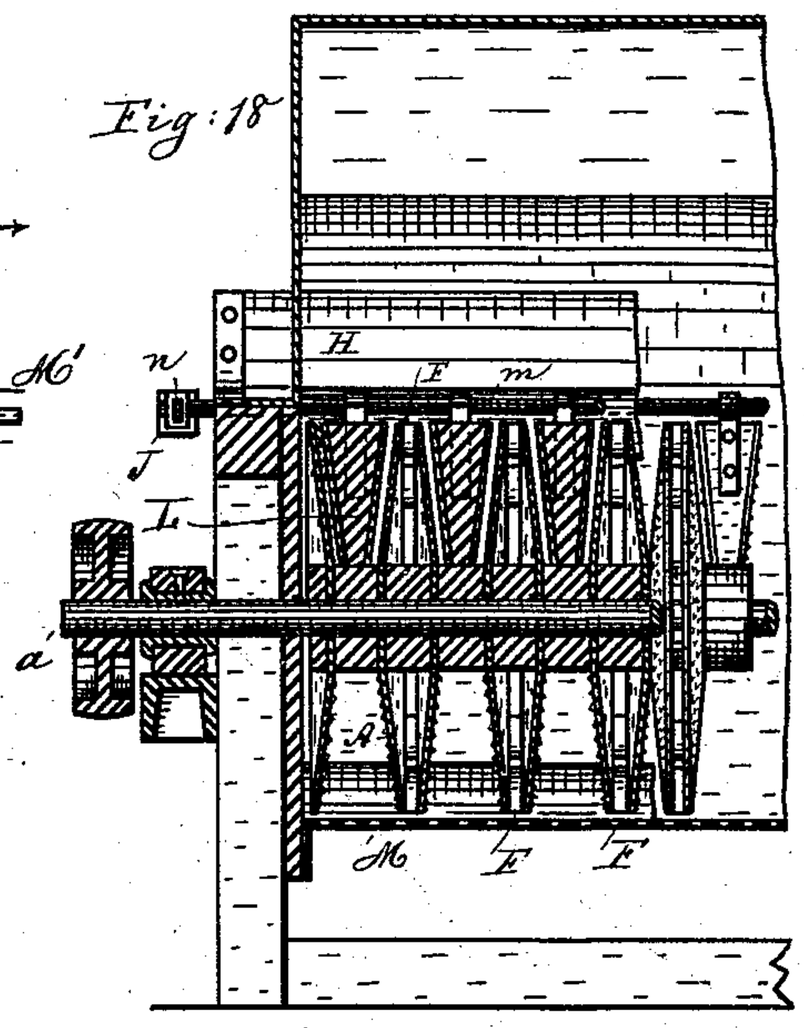


Fig: 18



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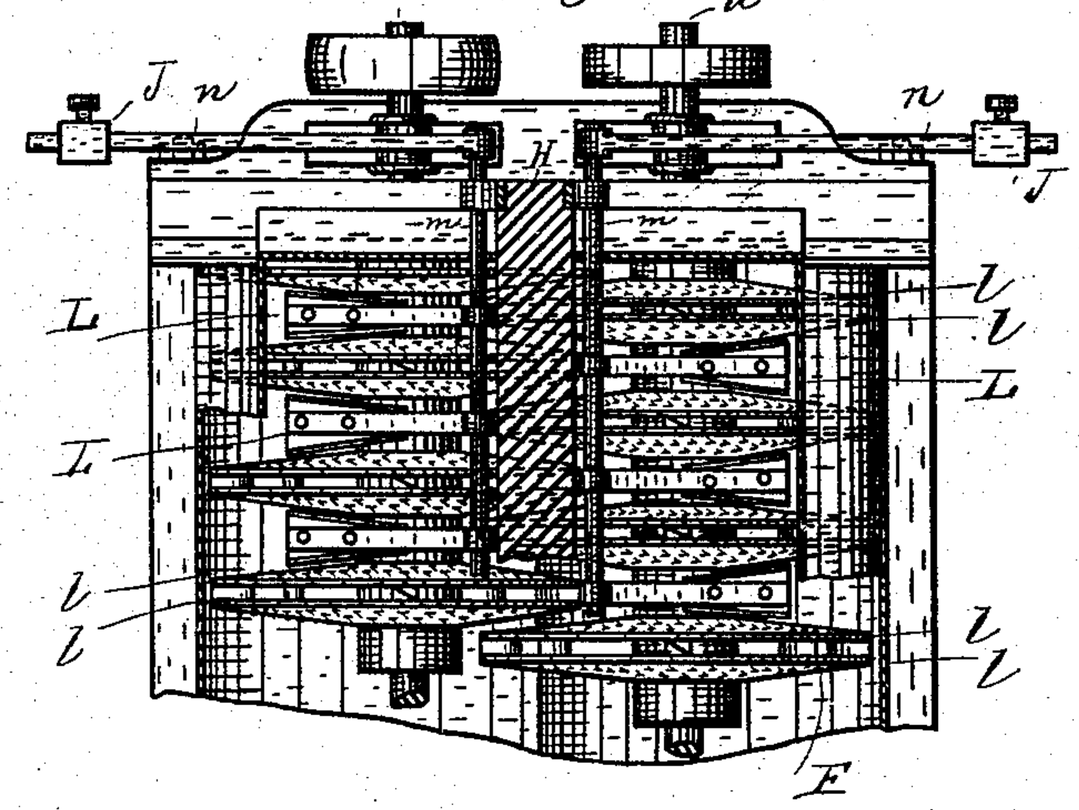


Fig: 22

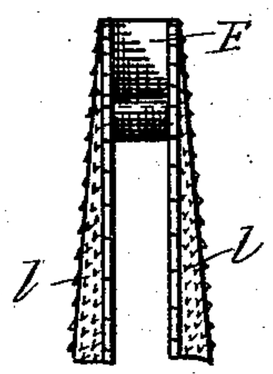


Fig: 23

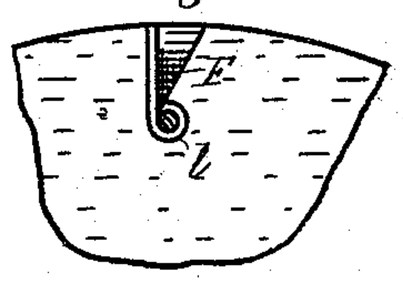
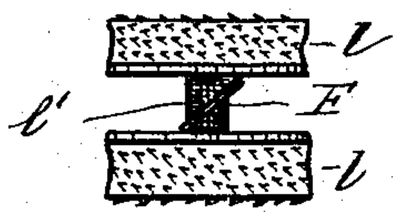


Fig: 24



Witnesses:
Chas. Schulz.
A. Goughmans.

Inventor:
S. Steinmetz
by his attorneys
Roeder & Briesen

(No Model.) 4 Sheets—Sheet 4.

S. STEINMETZ.

DECORTICATING AND SCOURING MACHINE.

No. 532,607. Patented Jan. 15, 1895.

Fig. 19

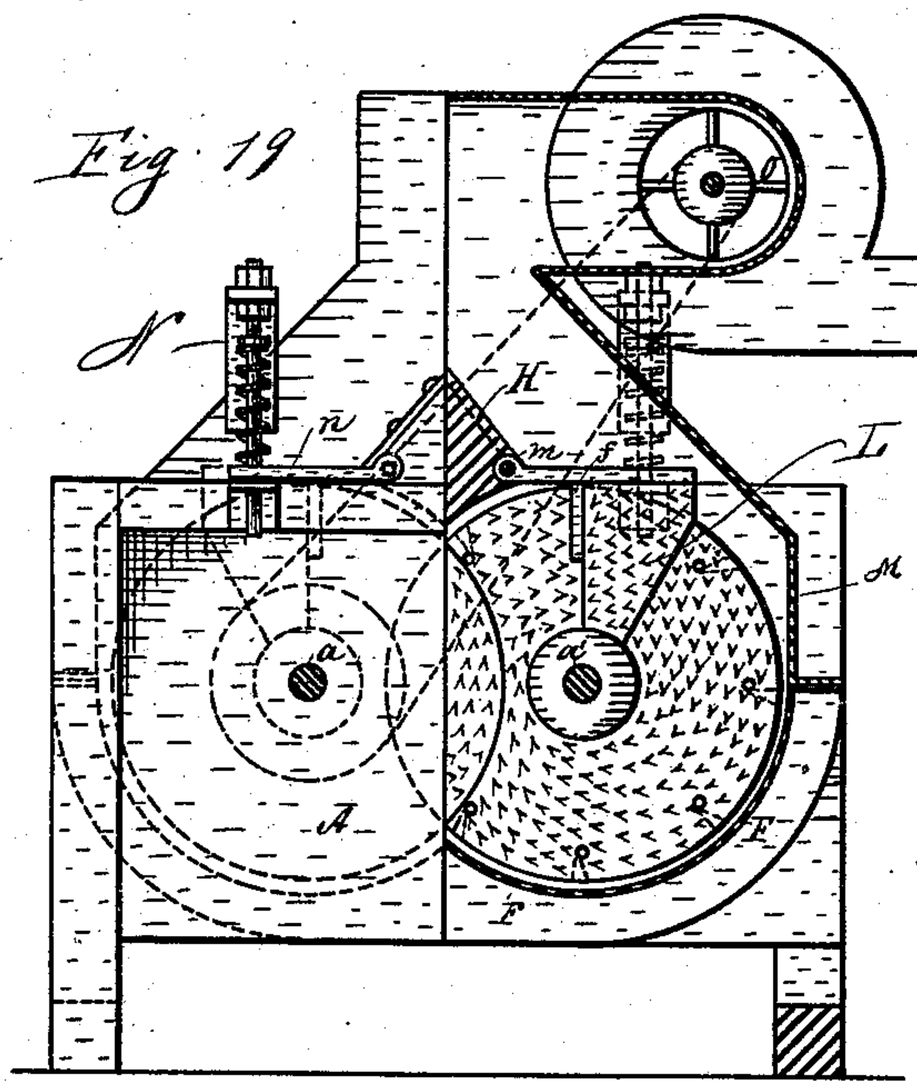


Fig: 21

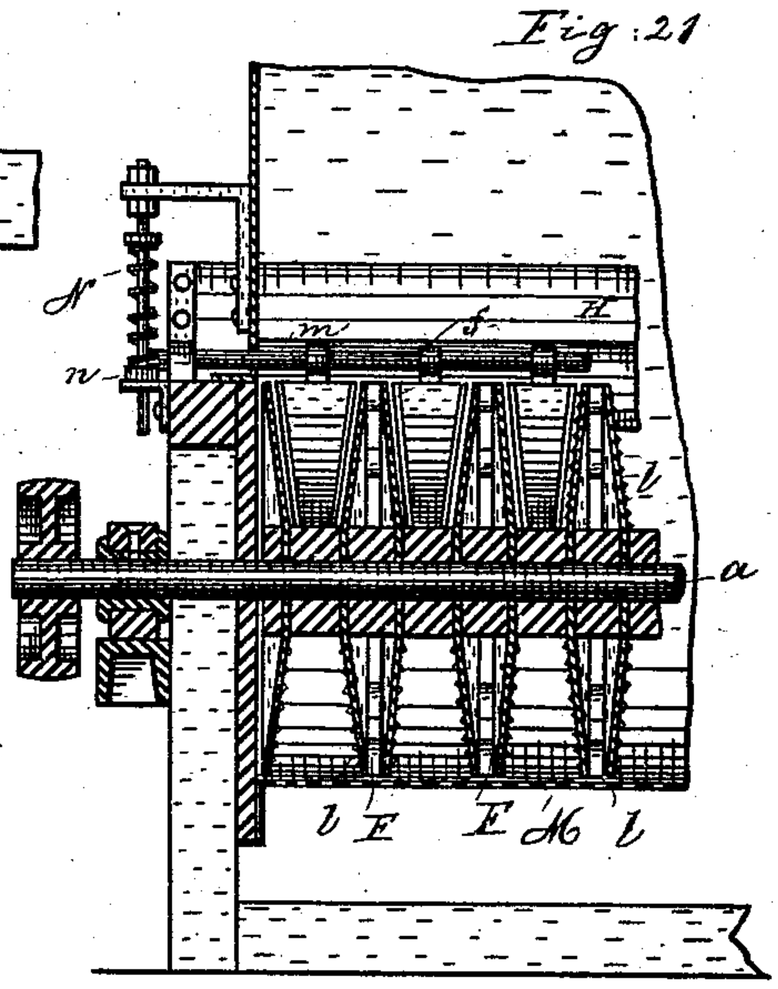
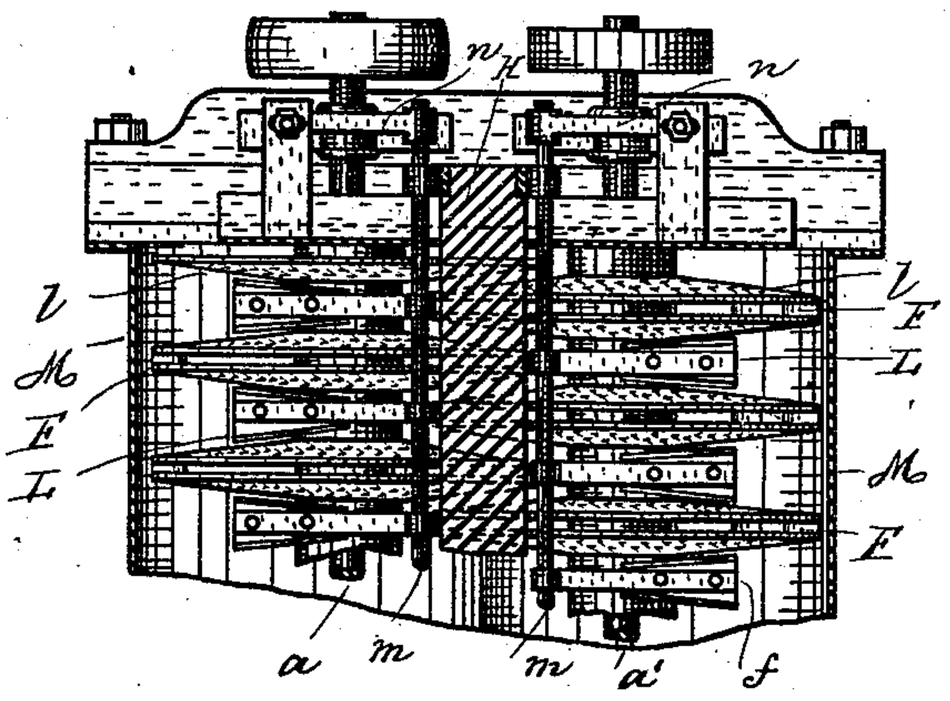


Fig: 20



Witnesses:
Wm. Schulz.
A. Souglmans

Inventor:
S. Steinmetz
by his attorneys
Roesler & Bissell

UNITED STATES PATENT OFFICE.

STEFAN STEINMETZ, OF LEIPSIC, GERMANY.

DECORTICATING AND SCOURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,607, dated January 15, 1895.

Application filed October 28, 1891. Serial No. 410,076. (No model.)

To all whom it may concern:

Be it known that I, STEFAN STEINMETZ, of Leipsic-Gohlis, in the Kingdom of Saxony, Germany, have invented an Improved Decorticating and Scouring Machine, of which the following is a specification.

This invention relates to a machine for removing the bran from moistened grain and for simultaneously drying and polishing the kernels, by one continuous operation. The grain admitted at one end of the machine is subjected to the action of a series of disks and intermediate pressure blocks. From these the grain is thrown up by scoops and an exhaust to fall upon an oblique guide or deflector which conducts the grain from one of the disks to the next adjoining disk or disks. Here the action is repeated and in this manner the grain is made to traverse laterally the entire machine. Thus the grain is thoroughly spread and is repeatedly subjected to the action of the air current to be properly decorticated, dried and polished.

In the accompanying drawings: Figure 1 is a longitudinal section of the machine; Fig. 2, an end view thereof; Fig. 3, a section on line R, R, Fig. 1; Fig. 4, a section on line S, S, Fig. 1; Fig. 5, a horizontal section on line T, T, Fig. 4. Figs. 6 to 8, are details of the pressure block B; Fig. 9, a vertical cross section of a modification of the machine; Fig. 10, a horizontal section on line U, U, Fig. 9; Fig. 11, a face view of the deflector D. Figs. 12 to 15 are details of the exit gate; Fig. 16, a vertical cross section of a further modification of the machine; Fig. 17, a section on line M′, M′, Fig. 16; Fig. 18, a section on line N′, N′ Fig. 16; Fig. 19, an end view partly in section of the machine; Fig. 20, a plan of Fig. 19; Fig. 21, a vertical longitudinal section thereof. Figs. 22 to 24 are details of the scoop F.

In Figs. 1 to 8, the letter *a*, represents a shaft driven from a suitable pulley and provided with a series of disks A, mounted upon the shaft at even distances apart. The disks are provided with shovels and between the disks there are placed decorticating pressure blocks B, that bear against the disks to subject the grain to a proper pressure. Each block B, is composed of a pair of jaws *d*, hinged together at one end and diverging toward the other end. To the free ends of the jaws *d*, are secured the inwardly projecting wedge shaped cheeks *d*′, that may be spread to a suitable extent by an intermediate spreader block *b*. This block is vertically adjustable by a lever C, to which it is connected and that carries a sliding counterweight C′. Thus it will be seen, that the degree of force with which the blocks B, bear against the disks A, may be readily adjusted.

The grain is admitted by a hopper at one end (left end) of the machine and on falling upon the nearest disk is acted upon by the same, after which it is thrown up by the shovels and the air blasts or vane E. The grain thus thrown up is intercepted by stops *c*, that permit the dust to pass up, while the heavier matter falls upon the inclined guide D, which is provided with a series of oblique ledges and intermediate oblique channels. The grain falling into the channels is conducted laterally to the next or one of the next disks to be acted upon in the same way, as it has been acted upon by the first disk. In this way the grain traverses the entire machine to be acted upon by all the disks and to be repeatedly spread and subjected to the air currents, after which it is discharged by gate K.

In Figs. 9 to 13, I employ two shafts *a*, *a*′, provided with alternating disks A, and driven toward each other. Here the pressure blocks are dispensed with, and the disks are made tapering or lens shaped so as to snugly fit against each other. The guide D, is placed at the sides of and below the disks, and the grain is conducted into the channels by means of deflectors *h*, which can be laterally inclined. The grain is discharged by a door or lid K, counterbalanced by weighted lever *g*, that normally holds the door in its upright or closed position. On its inner side the door K, is provided with a number of inclined wings *k*. Against these wings the grain is blown and when the pressure is sufficient to overcome the weighted arm *g*, the door will open to permit the escape of the grain. In this way the door will not open until the machine is in full operation.

In Figs. 16 to 24, each disk A, is composed of two tapering rings *l*, connected by pins *l*′, to which the oblique shovels F, are attached. Below the disks there is placed a perforated jacket M, and the rotation of the disks and

shovels will cause air to be drawn up through this jacket. These shovels will also force the air through the grain and cause the lateral motion of the grain along the bottom of the machine. Thus grain and disks are properly cooled and the former is thoroughly cleaned and separated from the bran and dust that is drawn out by the exhaust. The disks may be either separately or collectively surrounded by the jacket.

Between the disks A, there are placed the blocks L, secured by arms *f*, to the rods *m*. These rods are free to turn in a cross piece H, and are provided at the ends with levers *n*, carrying the adjustable weights J, or they are acted upon by springs N. Thus the pressure of blocks L, against the disks A, can be readily adjusted. The grain on being thrown up, is deflected by the cross piece H, and is made to traverse the machine in the manner described. The waste is drawn off by exhaust O.

The blocks L, cause a uniform action upon the grain, independent of the quantity fed into the machine as when set, the blocks will automatically regulate the pressure.

What I claim is—

1. The combination of a shaft with a series of disks mounted thereon laterally expanding pressure blocks that bear against the sides of the disks and an inclined guide, for feeding the grain from one disk laterally to the following disks, substantially as specified.

2. The combination of a shaft with a series of disks mounted thereon, an inclined guide having channels for feeding the grain in a lateral direction, laterally expanding pressure blocks that bear against the sides of the disks and a blower, substantially as specified.

3. The combination of a shaft with a series of disks mounted thereon, a grooved guide, adjustable deflectors *h*, and with weighted door K, having wings *k*, substantially as specified.

4. The combination of a shaft with a series of disks mounted thereon and composed of the tapering rings *l*, and with the connecting pins *l'*, and the inclined shovels F, secured thereto, substantially as specified.

5. The combination of a shaft with a series of disks mounted thereon and with pressure blocks L, arms *f*, rods *m*, cross piece H, and weighted levers N, substantially as specified

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STEFAN STEINMETZ.

Witnesses:

MAX MATTHÂI,

CARL BORNGRAEBER.