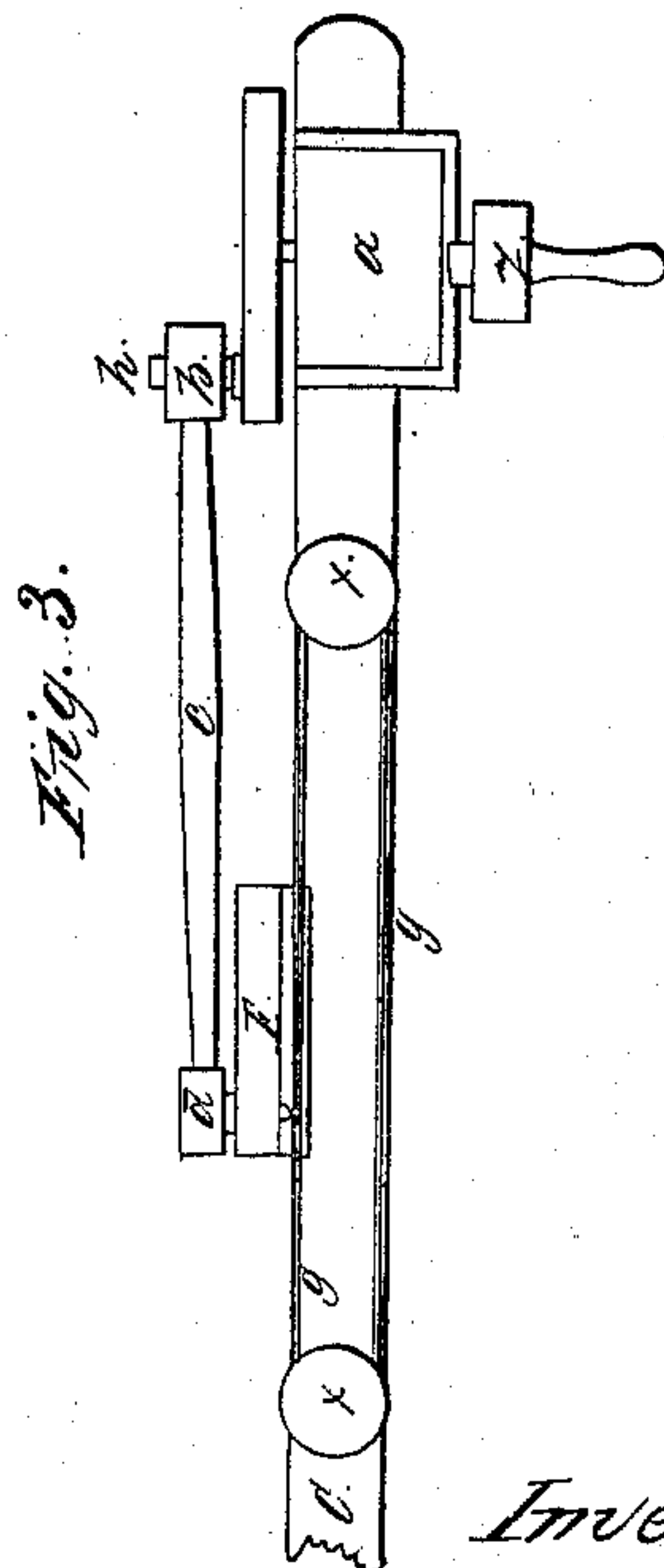
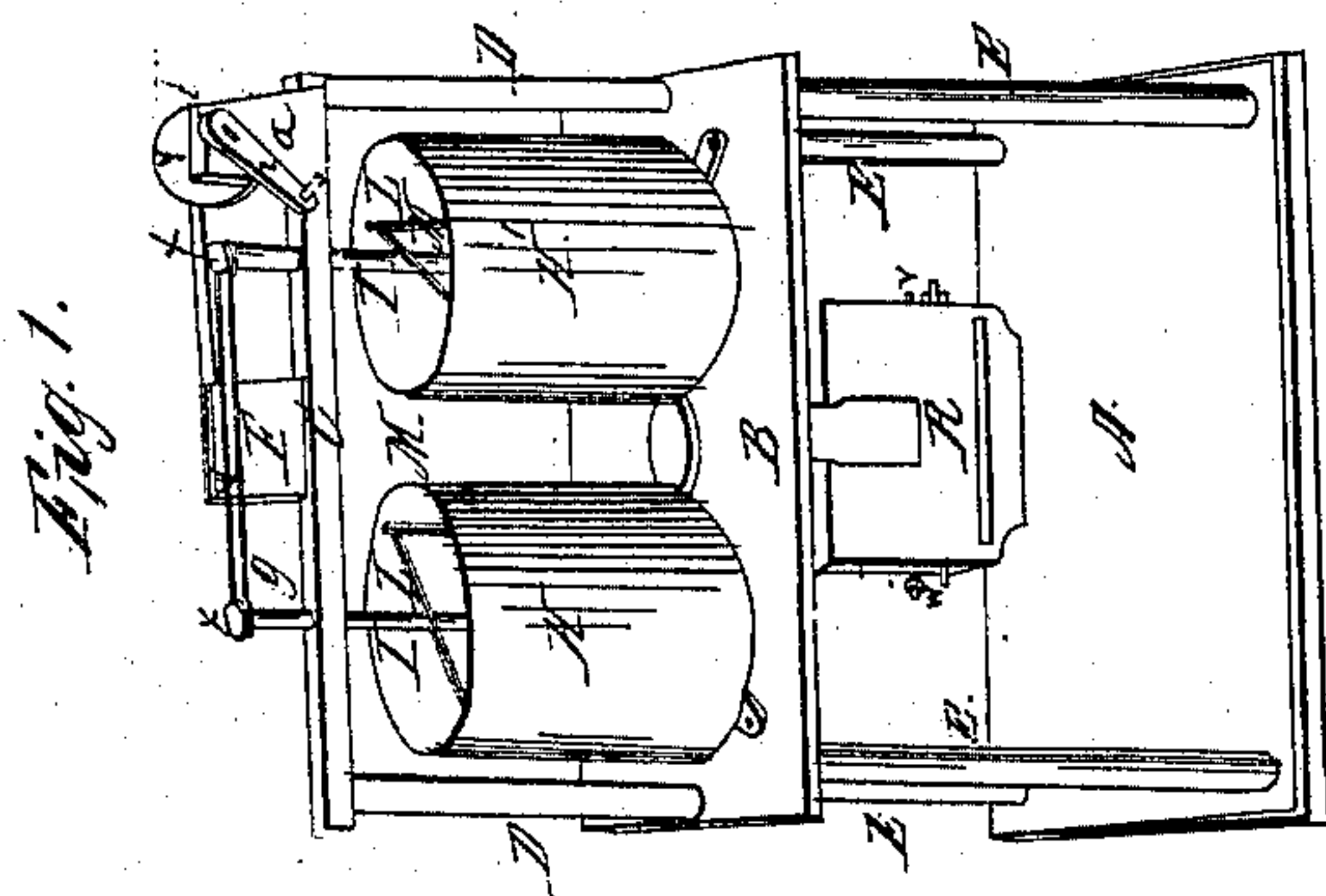
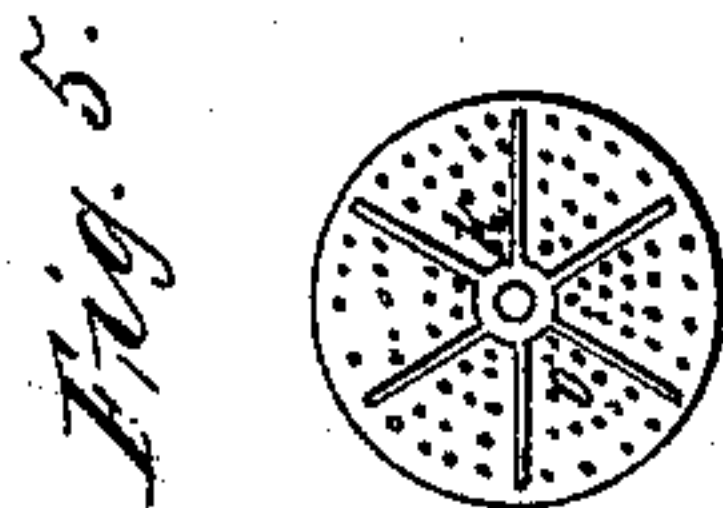
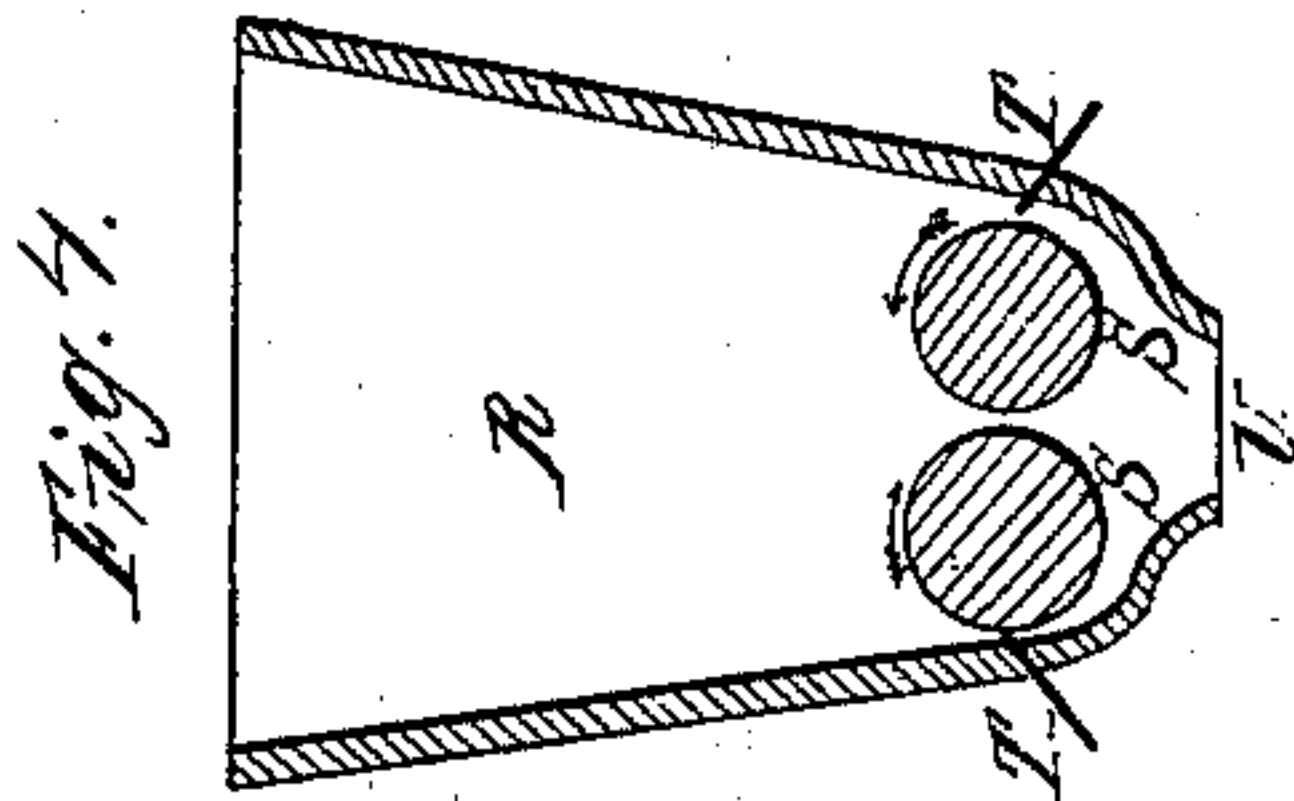
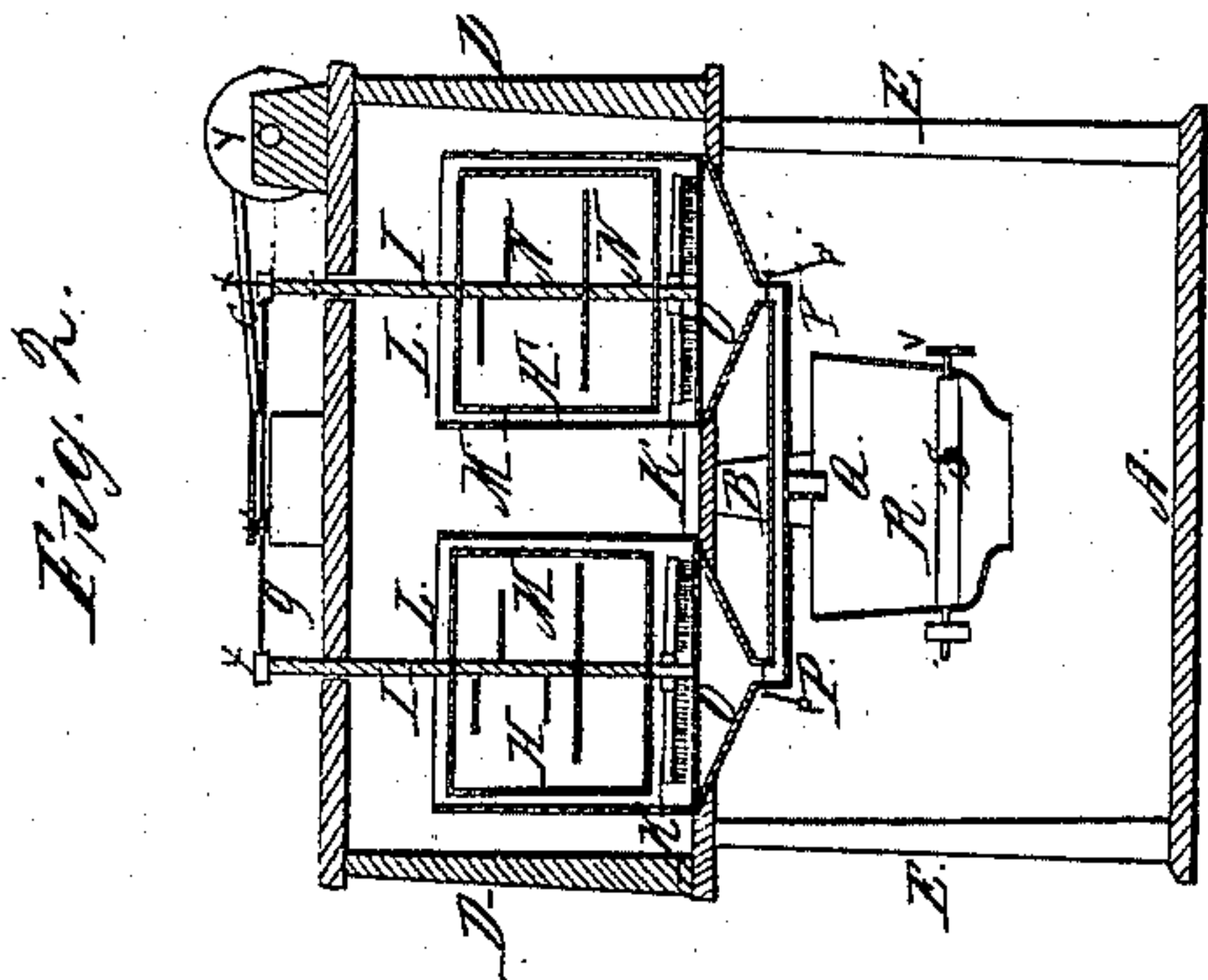


C. H. BLANCHARD.  
MACHINE FOR MAKING STARCH, PASTE, SIZE, &c.  
No. 66,121. Patented June 25, 1867.



Witnesses:  
A. L. Bury  
Frank G. Parker

Inventor:  
C. H. Blanchard

# United States Patent Office.

CHARLES H. BLANCHARD, OF BOSTON, MASSACHUSETTS

Letters Patent No. 66,121, dated June 25, 1867.

## IMPROVED MACHINE FOR MAKING STARCH, PASTE, SIZE, &c.

The Schedule annexed to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES H. BLANCHARD, of Boston, in the county of Suffolk, and State of Massachusetts, have invented an Improved Machine for Making Paste, Starch, Size, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the combination and arrangement of the several parts of a machine for making paste, starch, size, &c.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and use.

#### Drawings.

Figure 1 represents a perspective view of my machine for making paste.

Figure 2 is a vertical section of the same.

Figure 3 is a plan showing the arrangement for giving reciprocating motion to the mixers.

Figure 4 is a cross vertical section through the cooking-tank, represented by R, figs. 1 and 2.

Figure 5 is a horizontal section, showing the radial brushes and the diaphragm.

I construct my machine as follows: A E E B D D and C, fig. 1, form together a frame or support, to which the several parts of my apparatus are attached. H H, figs. 1 and 2, are metallic tanks, made with a conical-formed bottom, and connected together by the pipes P P, shown in fig. 2; these tanks have near their bottoms the perforated diaphragms O O, fig. 2. I I represent two vertical shafts, to which are attached, by means of the arms L, two upright slats M M, and also some stirrers N N. The object of the vertical slats M M is to scrape off any flour that may adhere to the walls of the tanks, and also to act together with the arms N N as stirrers. At the lower ends of the shafts I I are attached a number of radial arms, K K, figs. 2 and 5. The under sides of these arms are provided with stiff brushes, which rub over and upon the diaphragms O O. The action of these radial brush-arms thoroughly mixes and crushes any lumps of flour which may have reached the diaphragms, so that nothing but thoroughly mixed fluid shall pass into the lower part of the tanks. In fig. 2 p p are two stop-cocks, by means of which the fluid in either of the tanks may be allowed to pass into the pipes P P. Q is a nozzle, into which the pipes P P enter, and from which the fluid from either of the mixing-tanks may flow into the cooking-tank R. The mixing-shafts I I do not have a continuous revolving motion, but a reciprocating motion; that is, they make a partial revolution in one direction, and then the motion is reversed. This motion is produced by the cord G G, which passes around the pulleys X X. The ends of this cord are attached to the knob k; this knob k forms part of a slide, which is worked back and forth in the guide F by the crank-shaft Z. The crank-shaft Z is operated by the pin h in the wheel Y, fig. 3. The object of this reciprocating motion is to give a greater agitation to the flour and water in the tanks, and thus cause a more thorough mixing of the ingredients. The cooking-tank R is made of any suitable metal, and is provided with two hollow metallic rollers S S, which are connected through their journals to steam pipes, which keep them constantly hot, and, being made to revolve in the direction indicated by the arrows in fig. 4, the uncooked material is drawn down between them, and, being cooked in its passage, falls through the orifice U into the receptacle below. T T represent metallic plates, the object of which is to scrape the cooked paste from the rollers, and thus cause it to fall through the orifice U.

#### Claim.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the perforated diaphragms O O of the mixing-tanks with the revolving brushes K K, substantially as described and for the purpose set forth.
2. The device, or its mechanical equivalent, for giving the shafts I I of the stirrers their reciprocating motion, substantially as described and for the purpose set forth.
3. The combination and arrangement of the hollow steam-heated cooking-rolls S S, substantially as described and for the purpose set forth.
4. The combination and arrangement of the cooking-tank R, the rolls S S, and the scrapers T T, substantially as described and for the purpose set forth.
5. The general construction, combination, and arrangement of the several parts of the machine, substantially as described and for the purpose set forth.

Witnesses:

A. HUN BERRY,  
FRANK G. PARKER.

C. H. BLANCHARD.