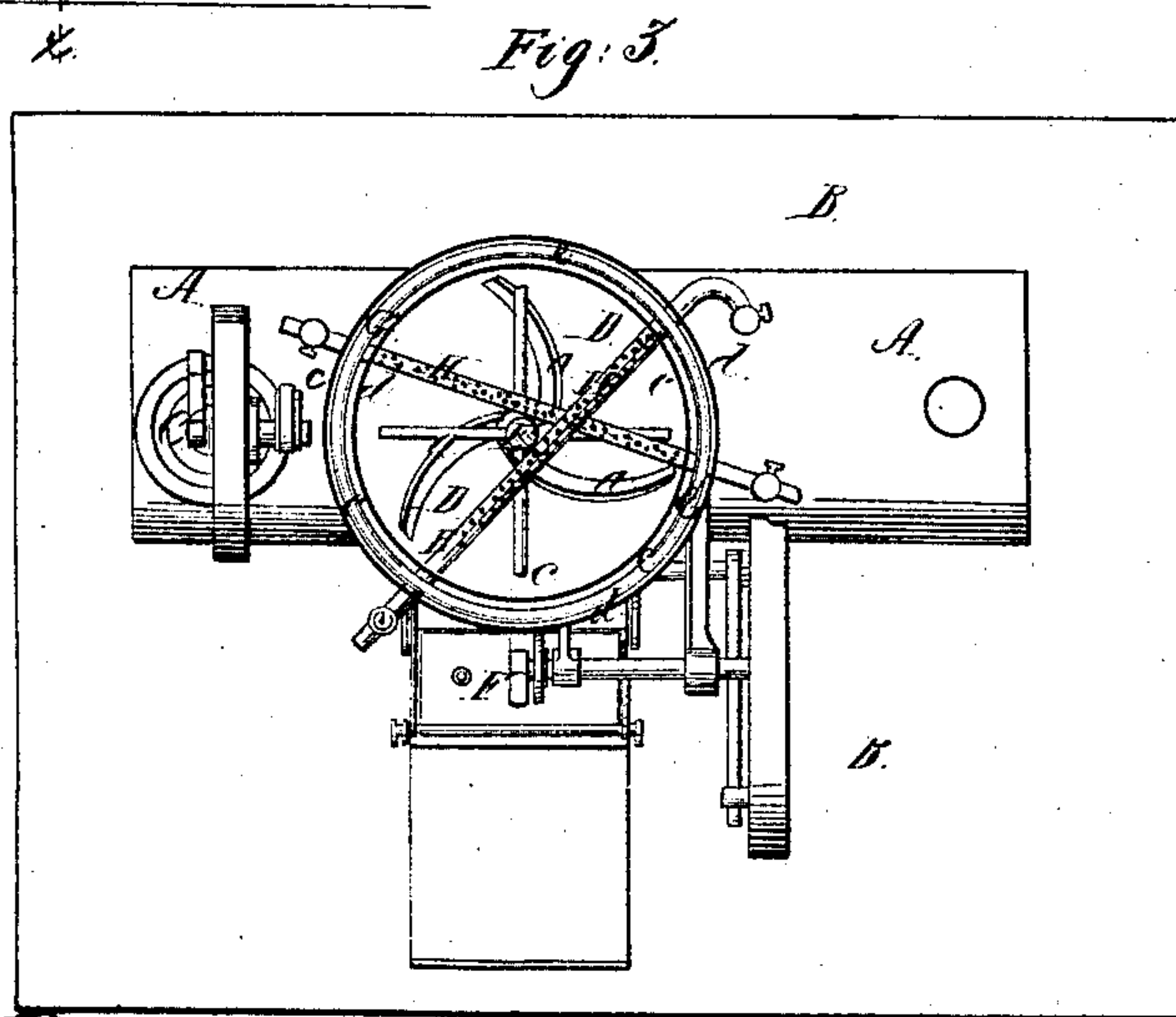
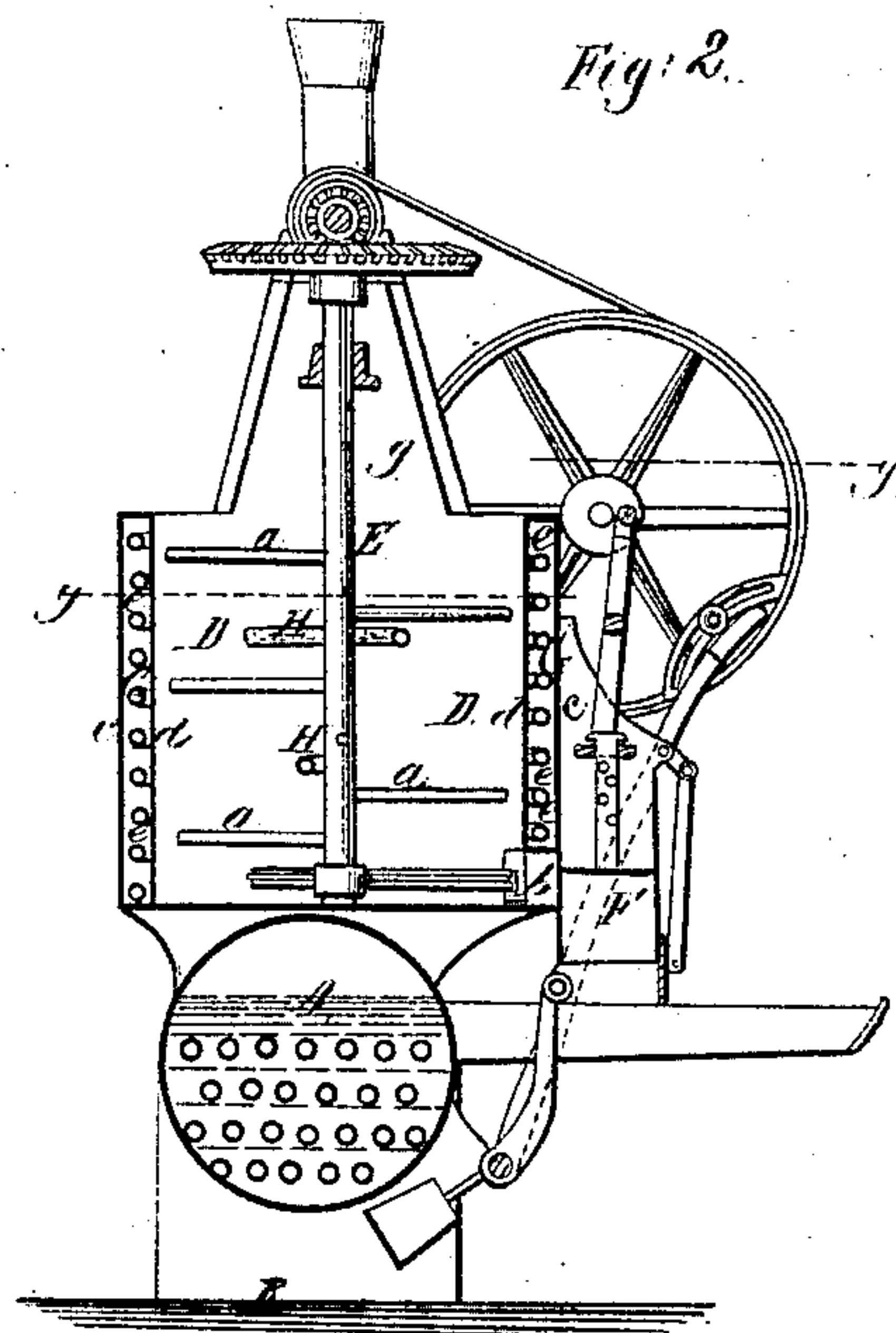
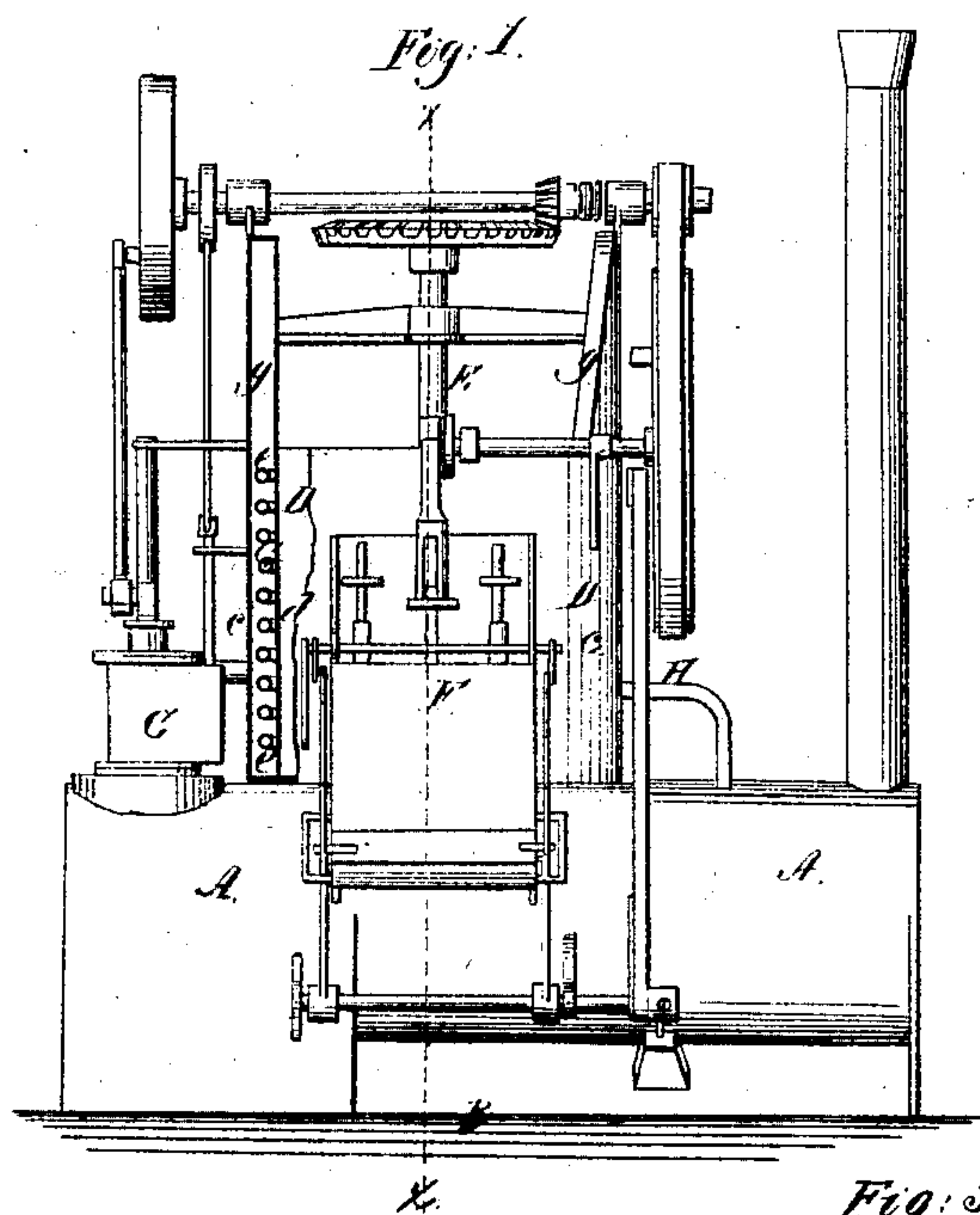


*C. A. Winn,*  
*Brick Machine,*  
*No 78,632.      Patented June 2, 1868.*



Witnesses:  
*W. C. Ashketto*  
*for A. Morgan*

Inventor:  
*C. A. Winn*  
*Per M. W. Phelps*  
*Attorney*

# United States Patent Office.

CHARLES A. WINN, OF LOCKHAVEN, PENNSYLVANIA.

*Letters Patent No. 78,632, dated June 2, 1868.*

## IMPROVED BRICK-MACHINE.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES A. WINN, of Lockhaven, in the county of Clinton, and State of Pennsylvania, have invented a new and improved Brick-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon, in which—

Figure 1 represents a front elevation of the machine, partly in section.

Figure 2 represents a vertical transverse section of the same, and

Figure 3 a plan or top view of the same, partly in section.

Similar letters of reference indicate the same parts.

The nature of my invention consists in constructing, on wheels, or otherwise, a clay-mill, steam-boiler, cylinder, and pump, so combined as to form in themselves one complete and portable apparatus for the manufacture of bricks, and the introduction of heat, steam, and hot water to the clay-mill in such a manner, and in conjunction with knives or kneaders, so arranged as to thoroughly temper, disintegrate, and prepare the clay for moulding.

To do this, I construct my boiler with a suitable steam-cylinder and pump on a portable bed, with a vertical or other clay-mill fitted directly upon the boiler. Through the clay-mill I fix a shaft, which receives a rotary motion by suitable connection with the steam-cylinder. This shaft is provided with knives and kneaders, to knead and stir the clay, and the usual scroll-shaped arms on its lower end, to force the clay through an aperture in the front of the mill into a press-box, wherein it is pressed into moulds, placed by the operator underneath the said press-box.

Through the mill, horizontally, are run two stationary pipes, connected with the boiler. The portions of these pipes which are inside the mill are perforated, so that the steam from the boiler may enter the clay, and by the action of the knives or kneaders be thoroughly mingled with it, thereby heating it, and by condensation softening and disintegrating and tempering the clay.

I construct my clay-mill of boiler-iron, or other suitable material, and with double walls, so as to form an annular chamber between the two walls which constitute the clay-mill, as shown by the drawings. Around and within this annular chamber I place a coiled tube, of such diameter as not to divide the annular chamber into sections, or choke up or prevent the free circulation of water with which the annular chamber is at all times to be kept full, in order to supply the boiler, as well as to furnish water, by means of suitable cocks, to temper the clay.

Into the coiled tube is admitted steam direct from the boiler, by which means the water in the annular chamber surrounding the coiled tube is heated preparatory to entering the boiler, and the water required to temper the clay, in conjunction with the steam from the perforated pipes, is also heated.

By this arrangement my clay-mill also serves as a "heater," to prepare the water to enter the boiler, and also heats the water to be used in tempering the clay, and, by its walls being themselves heated, serves to retain the heat imparted to the clay by the steam from the perforated pipes, in conjunction with the hot water from the cocks.

Portions of the sides of this annular chamber, opposite to each other, rise above the remainder of the sides like the handles of a wash-tub, and form both the support for the driving-shaft and chambers for the water in the annular chamber to rise above the clay in the clay-mill, and are provided with suitable cocks, by which the water is allowed to fall over the clay when steam alone is insufficient to temper the clay; thus, by employing heat, steam, and hot water, the clay will be more thoroughly tempered, and the bricks, when moulded and delivered on the yard, will be quite warm, and by the radiation of the heat the bricks will dry in less time than is usually required, consequently a great saving of time will be effected in preparing the bricks for burning in the kiln.

The following is a description of the accompanying drawings:

A is the boiler; B is the portable bed upon which the boiler A is placed; C is the steam-cylinder; D is the



clay-mill, fitted directly upon the boiler A, (the pump is not shown in the drawings.) E is the shaft, which runs through the clay-mill, and *a a* are its knives or kneaders, for stirring the clay. *b* is the aperture in the front of the mill, through which the clay is forced by the usual scroll-shaped arms on the lower end of the shaft E, into the press-box F, wherein it is pressed into moulds, placed underneath said press-box by the operator, as before stated. *c d* are the inner and outer walls of the clay-mill, which form the annular or water-chamber. G is the spiral tube, running around the clay-mill in the annular water-chamber, into which steam is introduced from the boiler with which it is connected, for the purpose of heating the water in said annular chamber, as before stated. *g g* are the portions of the sides of the annular chamber *e*, which rise above the remainder of the sides, and form both the supports for the driving-shafts and chambers for the water in the annular chamber to rise above the clay in the clay-mill, and are provided with suitable cocks, (not seen in the drawings,) by which the water is allowed to fall over the clay when steam alone is insufficient to temper the clay, as hereinbefore described. H H are the stationary steam-pipes connected with the boiler, which run through the clay-mill horizontally, with that part of them inside the clay-mill so perforated that the steam from the boiler may enter the clay, and, by the action of the knives or kneaders *a a* on the shaft E, be thoroughly mingled with it, thereby heating it, and by condensation softening and disintegrating and tempering the clay, as before stated.

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

1. A complete and portable brick-machine, composed of the steam-boiler A, cylinder C, clay-mill D, constructed as described, combined and arranged in one portable apparatus, in the manner and for the purpose herein set forth.

2. The formation of the annular chamber *e* of the clay-mill D, with the elevated chambers *g g*, the spiral steam-tube G, as connected with the boiler, and arranged in the annular chamber E, and the stationary perforated steam-pipes H H, passing directly from the boiler through the clay-mill, horizontally, all combined in the manner and for the purpose herein set forth and described.

CHARLES A. WINN.

Witnesses:

GEO. W. MCGILL,  
CHARLES ENNIS.