

W. Bailey.

Making Stamp-Gilt Paper Hangings.

No. 71,120,

Patented Nov. 19, 1867.

Fig. 1.

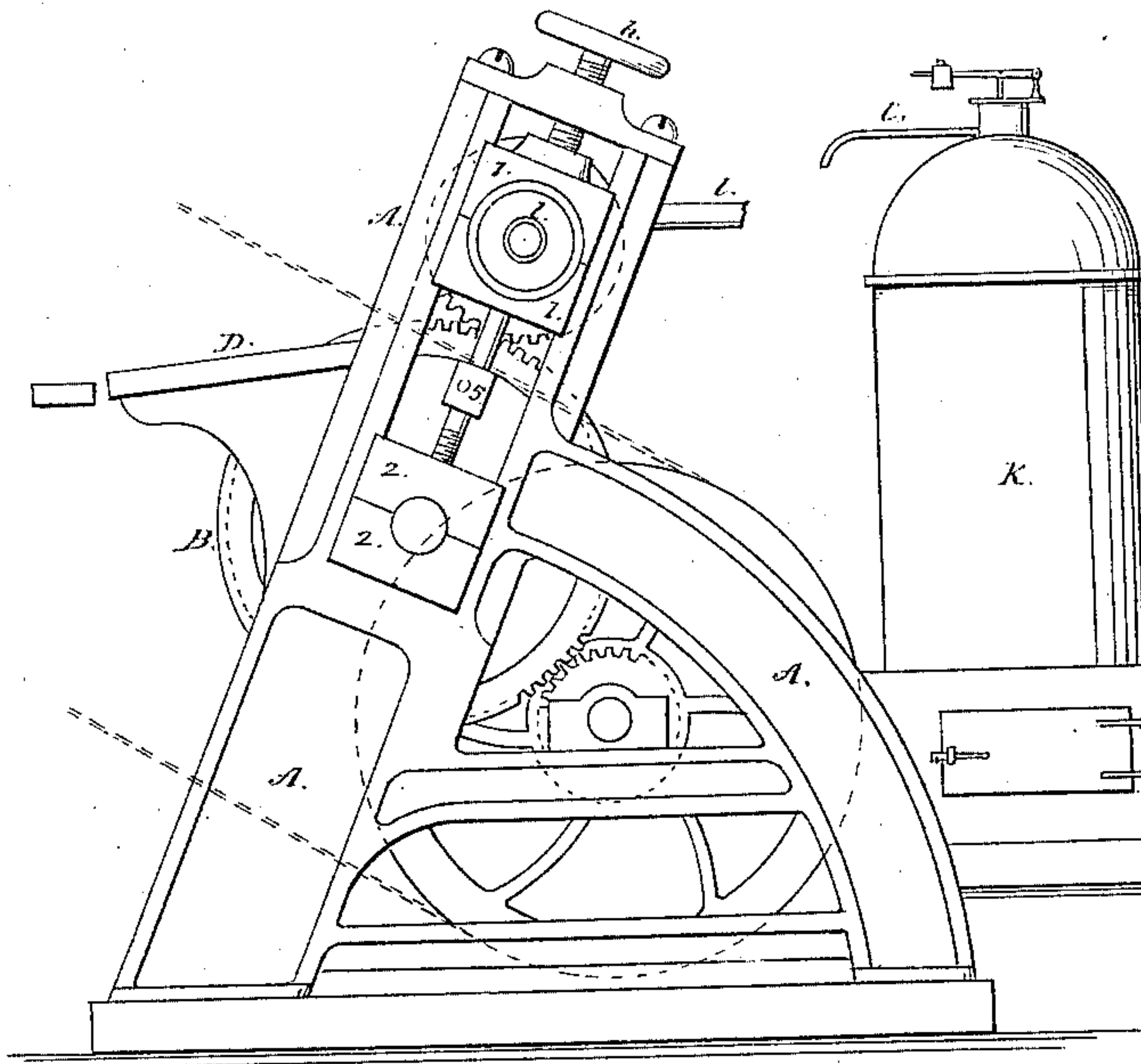


Fig. 2.

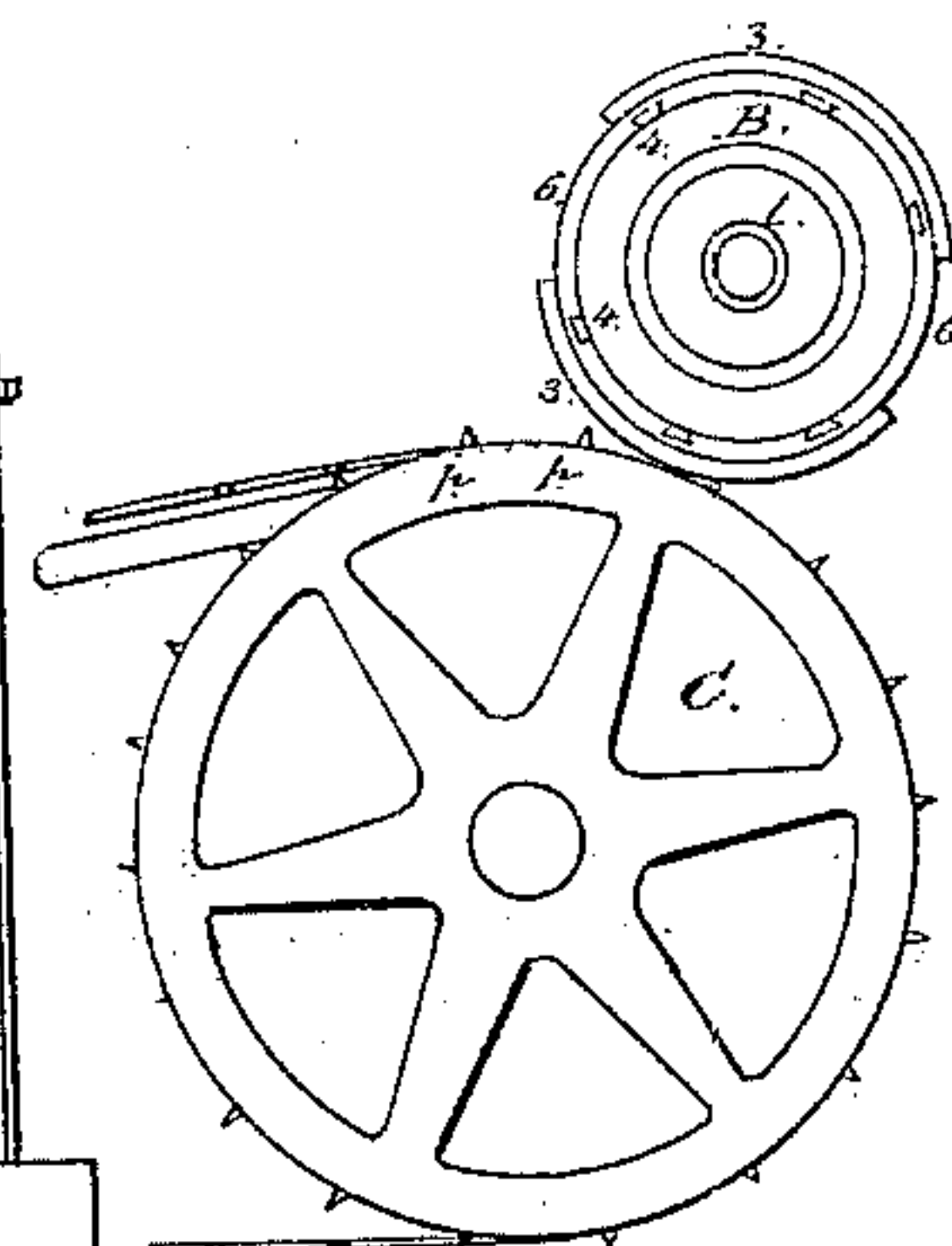


Fig. 4.



Fig. 3.

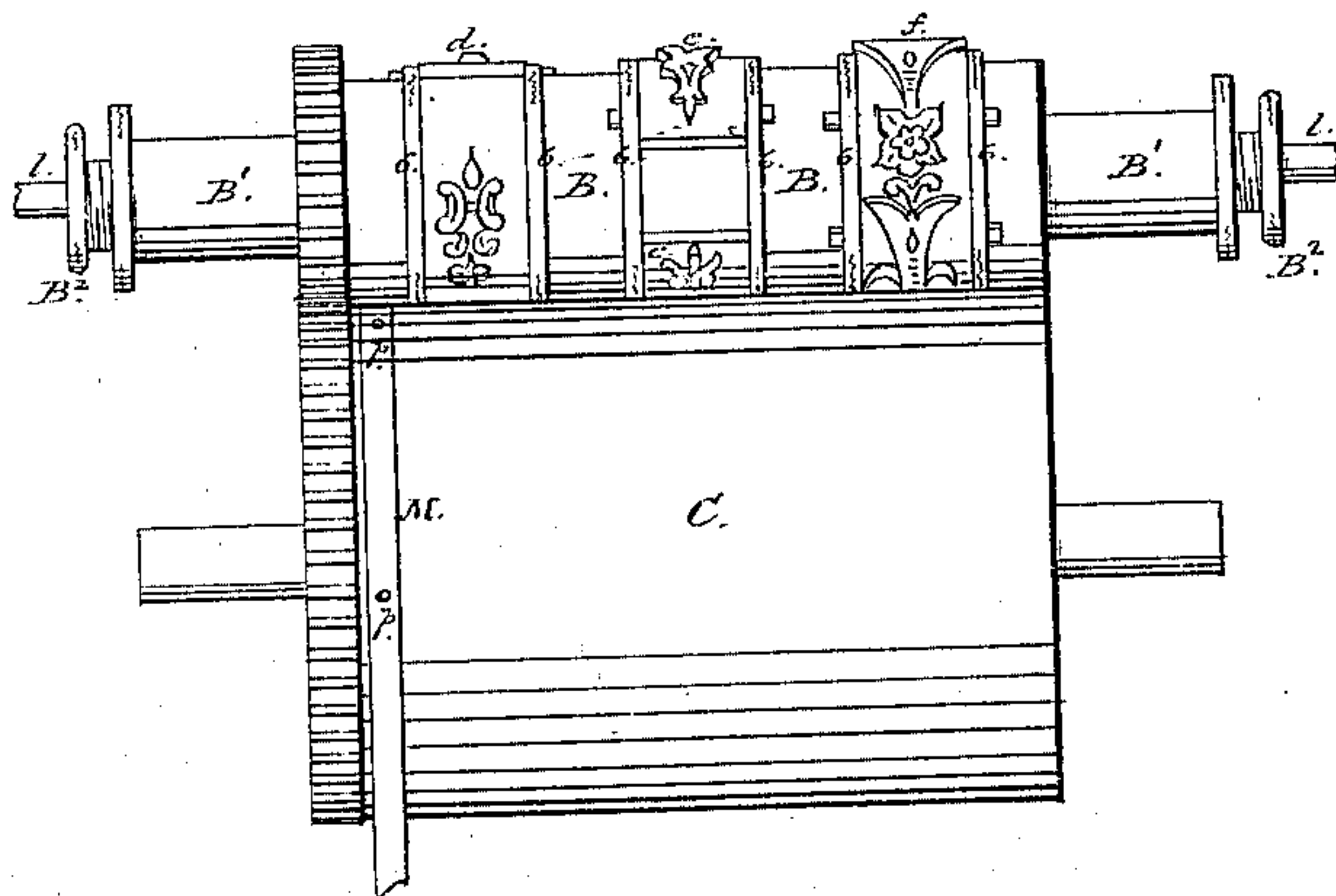
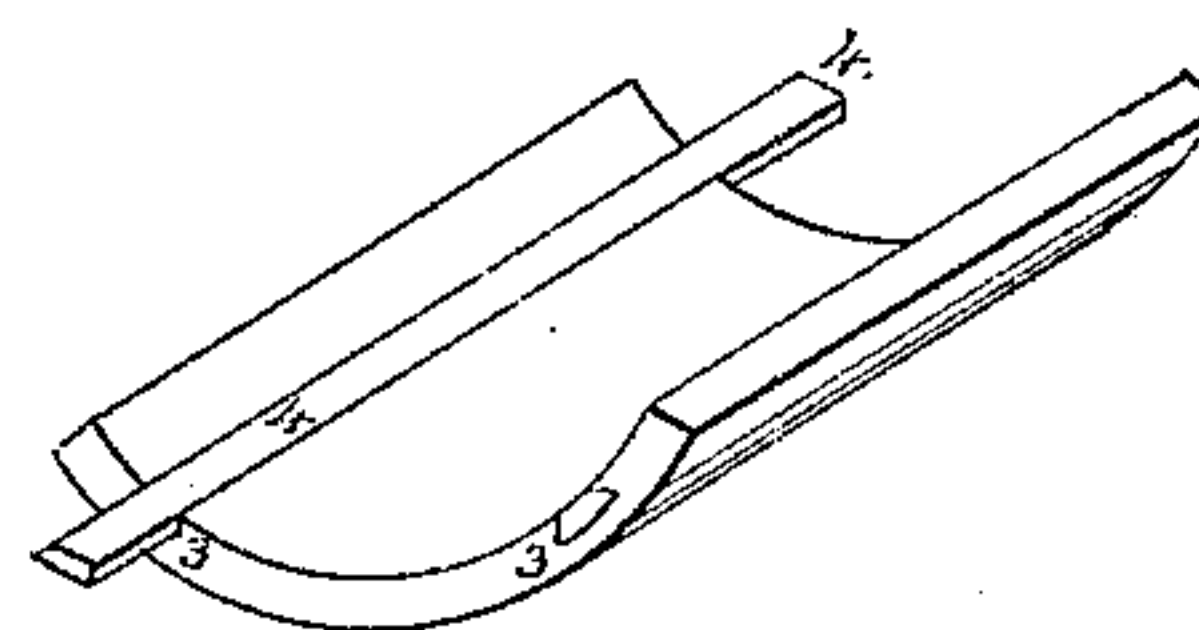


Fig. 5.



Witnesses:

Charles H. Smith
Asa Johnson

Inventor:

William Bailey

United States Patent Office.

WILLIAM BAILEY, OF NEW YORK, N. Y.

Letters Patent No. 71,120, dated November 19, 1867; antedated July 27, 1867.

APPARATUS FOR MAKING STAMP-GILT PAPER-HANGINGS.

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, WILLIAM BAILEY, of the city of New York, have invented certain new and useful Machinery and Apparatus for the Manufacture of "Stamp-Gilt" Paper-Hangings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form part of this specification.

"Stamp-gilt" paper-hangings are so called from the fact of their being produced by an operation or process of stamping. This process differs materially from all others in the line of this manufacture, and has heretofore been carried on exclusively with a press having a reciprocating and intermittent action, the paper being moved along at intervals by hand, two features which render the operation one of very limited speed, and practically involves the use of two thicknesses of the gilding metal.

In my new machinery, the stamping process is continuous, one thickness only of the gilding metal being required, and four times the amount of work is accomplished than the former machines were capable of doing in the same length of time.

My said invention consists, first, in the combination of a rotating impression-cylinder, a rotating pattern-cylinder, and the heating apparatus described, or the equivalent thereof for supplying the pattern-cylinder with heat; second, in the combination of the rotating impression-cylinder and the rotating pattern-cylinder with the devices, or the equivalent thereof, substantially as herein described, for securing and adjusting the pattern-plates on the pattern-cylinder; third, in the combination with the impression and pattern-cylinders of a registering belt, constructed and used substantially as and for the purposes herein specified; fourth, in the special devices hereinafter described for securing the pattern-plates to the pattern-cylinder.

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

In the drawing hereto annexed, A represents a frame, in which are mounted in suitable boxes 1 1, 2 2, the journals of the cylinders B C. The upper cylinder B is the pattern-cylinder, and carries the patterns or designs *d e f*. The lower is the impression-cylinder, and is larger (twice, thrice, or in that proportion,) than the upper one, and is arranged at one side of the vertical centre of the impression-cylinder. The boxes 1 1, 2 2, are set in a slot in the frame A, which is inclined to the line of the centres and point of contact of the two cylinders. The boxes of one, (it may be either, but generally the pattern-cylinder,) are connected with screws *h*, one at each end of the machine, by which to move and hold said cylinder in such contact with its fellow as to insure the impression on the paper being stamped. The force of contact or pressure is limited and governed by the stop-screw 5, Figure 1. The paper is presented to the surface of the periphery of the impression-cylinder, on that side of the vertical centre thereof which is opposite the point of impression, as shown in Figure 3. When so presented it is supported by an inclined table or apron, D. The object of the inclined position of the cylinders and frame, in connection with the relative position of the apron, is to cause the paper, before entering the machine, to pass over a portion of the rotund surface of the impression-cylinder for the purpose of smoothing the paper, as it is important to remove all wrinkles from the paper before it enters the machine.

My improved machine is intended and used for stamping any required design, with the same pair of cylinders. I therefore have the patterns forming the design engraved on plates, in the form of segments, (Figure 5,) of more or less of the circle, according to circumstances, and then secure them to the periphery of the pattern-cylinder in such position and relation as to give the required design when stamped on the paper.

The mode of attaching the patterns is not material; I prefer, however, a set of devices which will admit of securing and adjusting the pattern-plates in any desired location on the surface of the cylinder, as I am not then confined in the arrangement of the different plates which make up a given design—a desideratum, particularly where the design consists of what are known as "set figures." Such a mode of fastening is shown in the drawings, figs. 1, 2, 3, and also in fig. 5, where a pattern-plate or segment is shown enlarged, under side up. Dove-tailed grooves 3 are formed on the under side, which have bars 4, of corresponding shape (in cross-section) fitted therein, and sufficiently long to project at the sides of the plate. The projecting ends are embraced by rings or hoops 6, which are driven over them, and thus clamp the plates firmly on the surface of the cylinder in any desired location thereon.

In the manufacture of stamp-gilt paper-hangings, the "size" for causing the metal-leaf to adhere to the

paper is used in the form of a dry powder, which is applied to the paper before the gold is laid on, the purpose of the machine being to affix the leaf to the paper in the form or configuration of the required design. This is done by heating the pattern-plate, and impressing the same on the leaf and paper, when the heat causes the powdered size under the leaf to melt, and the gold to adhere to the paper wherever impressed by the pattern-plate, while the remaining size and leaf being dry, is easily brushed off, leaving the paper intact, except where stamped with the design.

In my machine, the stamping or impressing action is continuous, and a heating agency is required as a part of the apparatus. I therefore provide a steam-boiler, *k*, fig. 1, located within connecting distance from the machine, and carry a steam pipe, *l*, therefrom to the pattern-cylinder B, which is made hollow, and has hollow journals B¹, provided with stuffing-boxes B², around the steam pipes. The supply of steam to the cylinder B heats the pattern-plates and maintains an equal temperature of the required degree.

In fig. 3, I have shown a design in which one figure *f* is continuous, completely encircling the cylinder, and hence in the operation of the machine some part of that figure is always in contact with the paper being stamped. In this case such continuous contact of the design will carry the paper through the machine. In these designs, however, which consist of what are known as "set figures," there is no such continuous contact of the pattern with the impression-cylinder, yet the paper must be moved through the machine with a speed corresponding to that of the surface of the design in the rotation of the cylinder, in order to bring the figures in proper relation on the paper to sustain the design. I therefore provide a registering belt, M, in which are small staples or eyes *i*, in which wedges or keys *j* are driven, for the purpose of securing the edge of the paper thereto. The belt is endless, and passes around the impression-cylinder, as seen in figs. 2 and 3. As the paper passes along, before entering the machine, an attendant inserts the keys *j*, and removes them after the paper emerges from between the cylinders, so as to release the paper from the belt. The speed of this belt in uniformity with that of the surface of the cylinders is insured by a number of pins, *p*, in the impression-cylinder, which take into holes in the belt. Motion is communicated to the machine by a driving-belt, R, (dotted.)

The above-described machinery and apparatus constitutes a new and very important combination for the purpose intended. The operation being continuous, the time lost in the stamping action of the reciprocating press is economized, the machine is never stopped during the stamping of several hundred yards, and the contact of the pattern-plate with the gold-leaf being only momentary, the size is not drawn through the leaf by the heat, so as to require two thicknesses of leaf, hence the work is done with a single instead of a double thickness, as always heretofore required, thus saving one-half the gold or metal-leaf.

In this invention I do not confine myself to the use of steam as a heating agency, nor to special construction, where that may be varied without varying the character and principles of the invention.

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

1. The combination of the rotating impression-cylinder, the rotating pattern-cylinder, and the heating apparatus, or the equivalent thereof, as specified, for supplying the pattern-cylinder with heat.
2. The combination of the rotating impression-cylinder and the rotating pattern-cylinder with the devices, or the equivalent thereof, substantially as described, for securing and adjusting the pattern-plates on the pattern-cylinder.
3. The combination with the impression and pattern-cylinders of a registering belt, constructed and used substantially as and for the purposes herein specified.
4. The special devices herein described, for securing the pattern-plates to the cylinder,

WILLIAM BAILEY.

Witnesses:

EARL H. SMITH,
ASA JOHNSON.