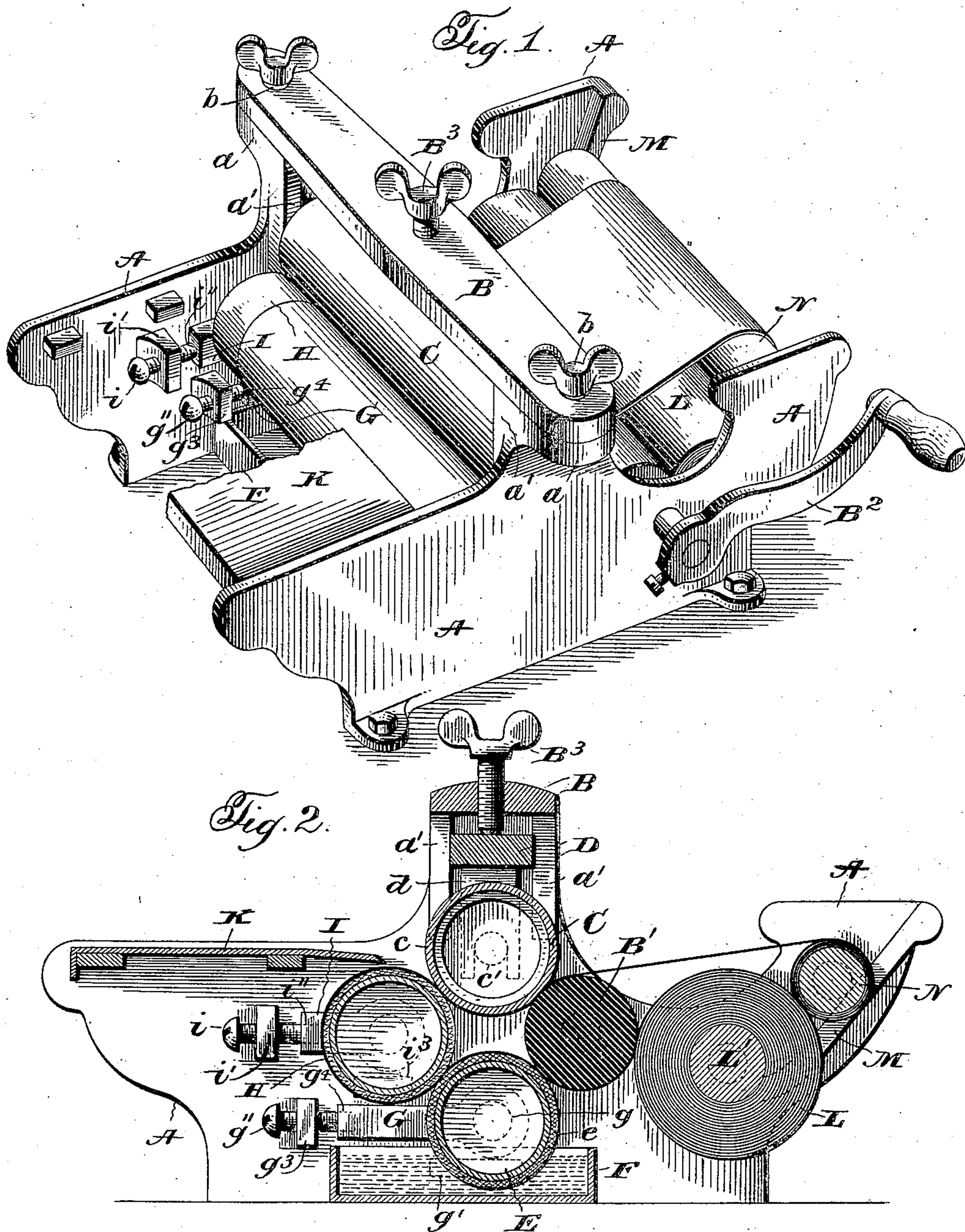


No. 880,492.

PATENTED MAR. 3, 1908.

C. E. ADAMSON.
 ROTARY COPYING PRESS.
 APPLICATION FILED NOV. 29, 1905.

2 SHEETS—SHEET 1.



Witnesses:
Jas E Hutchinson
Calvin S. Milam

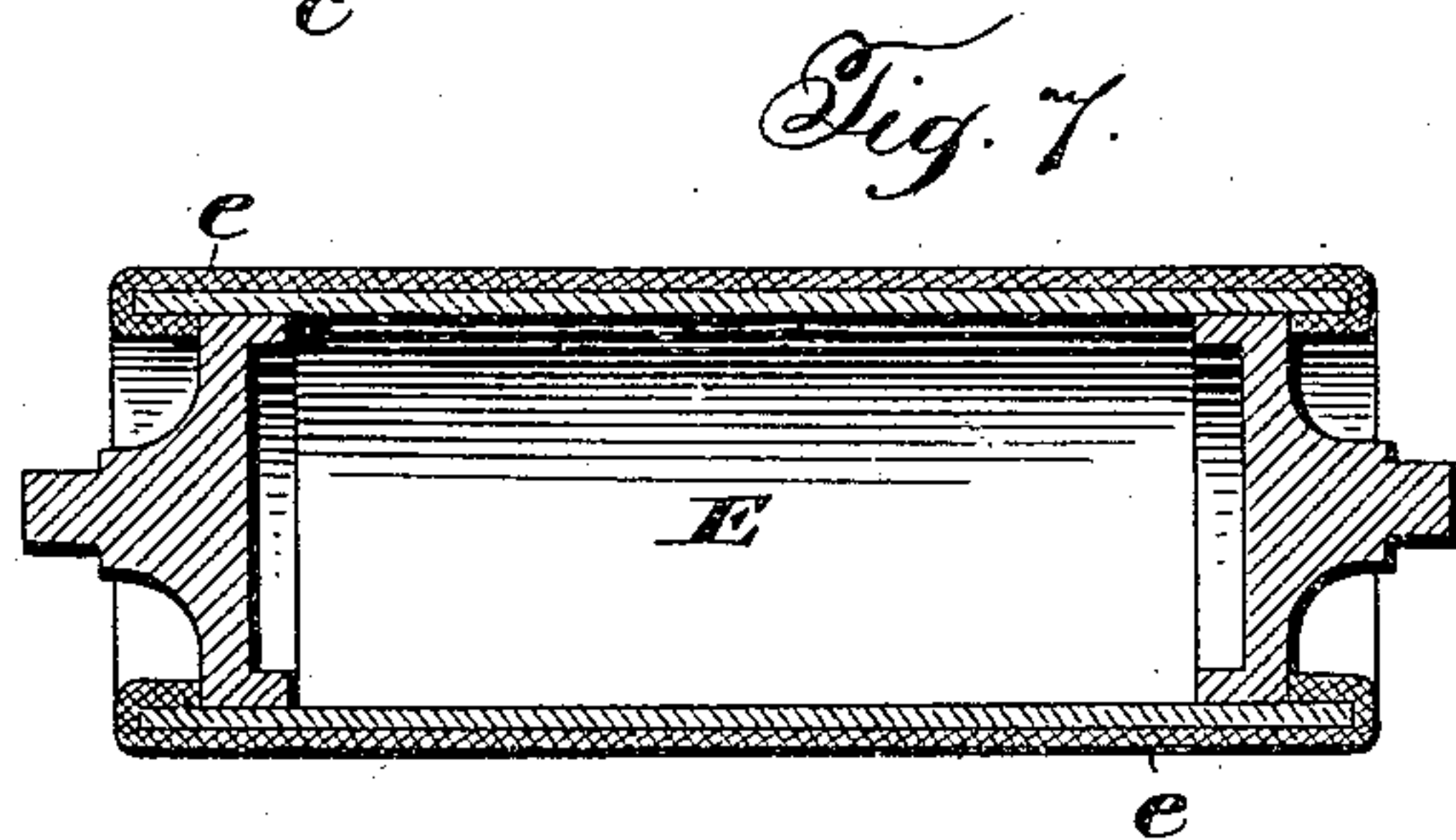
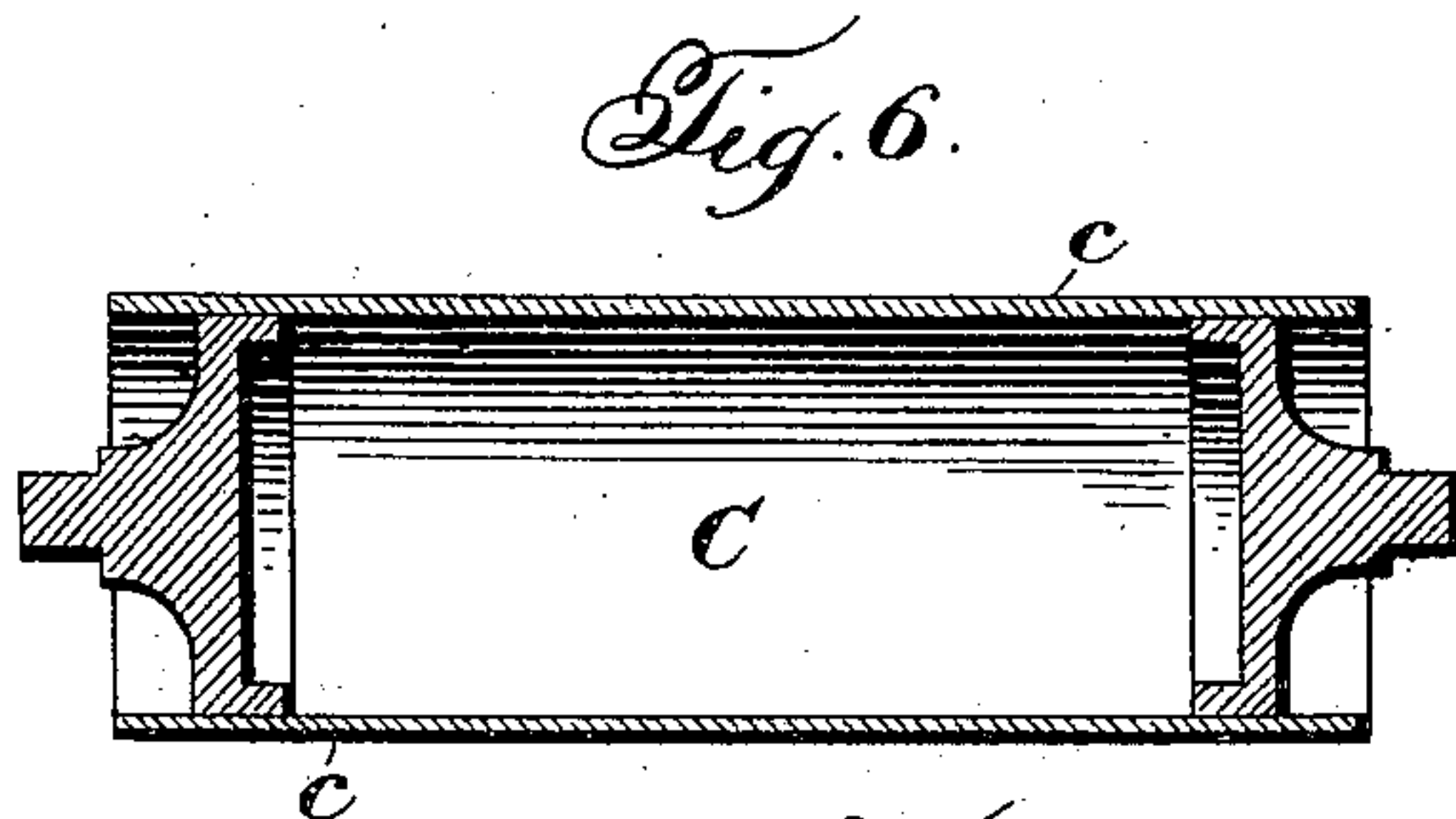
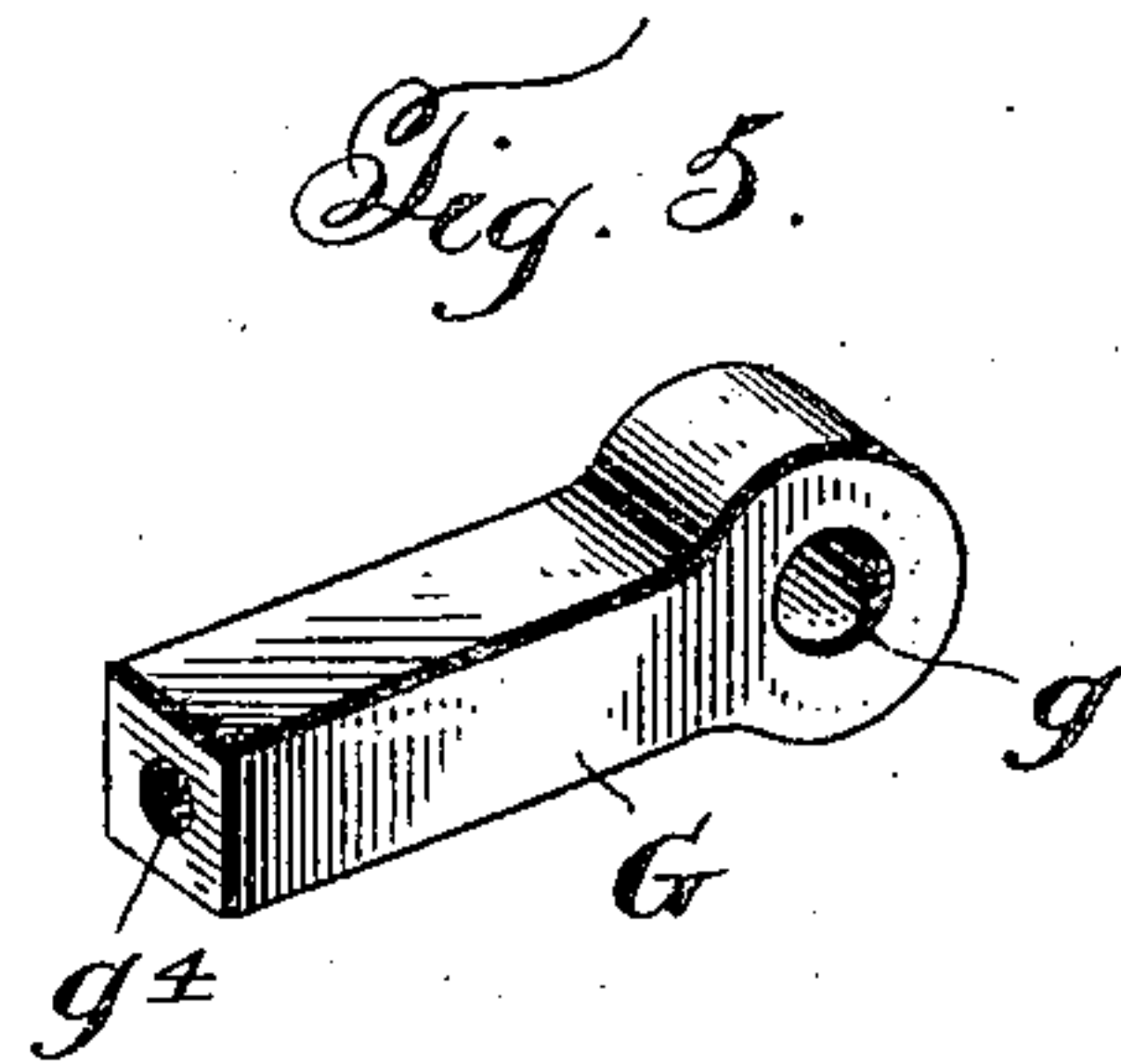
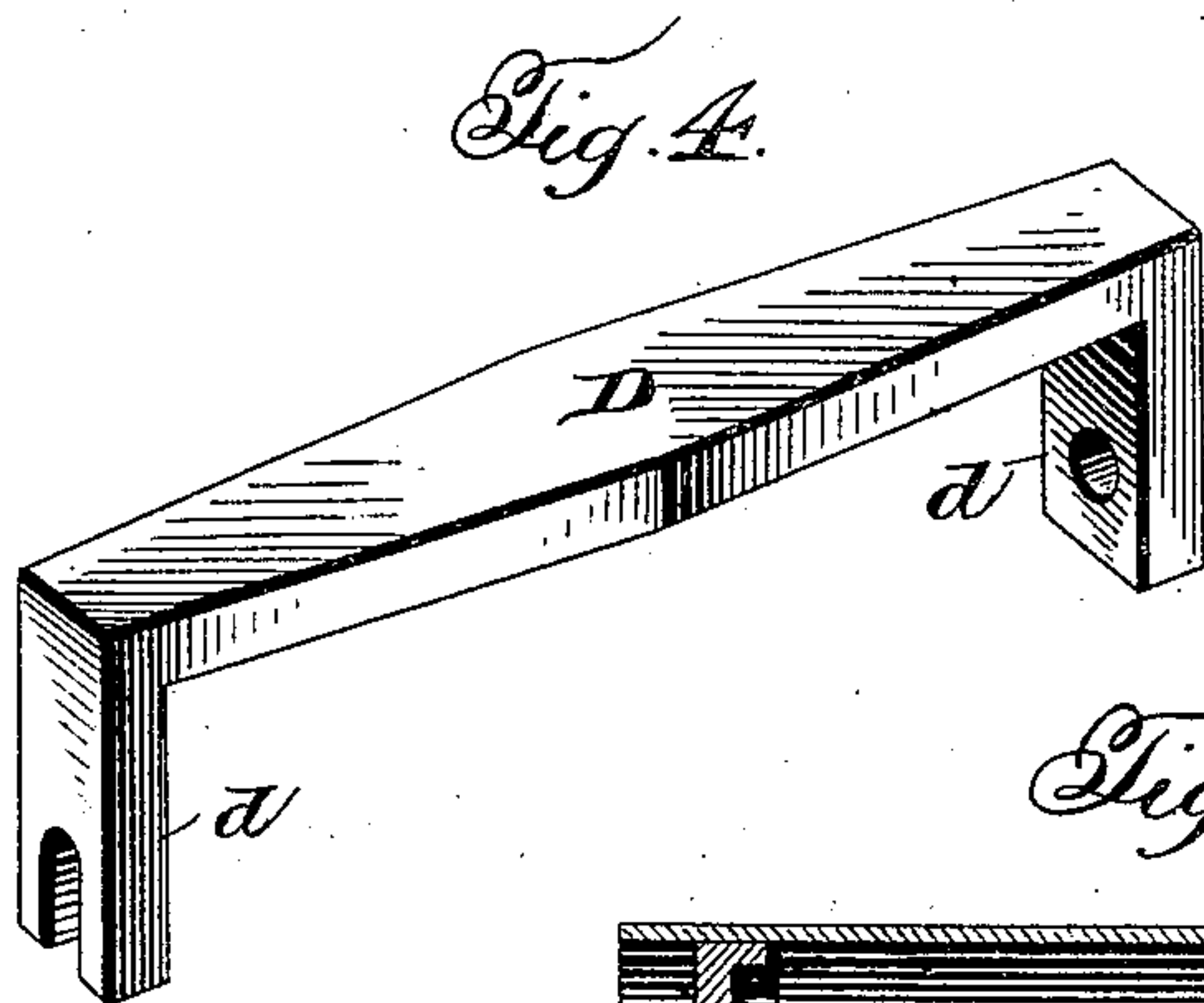
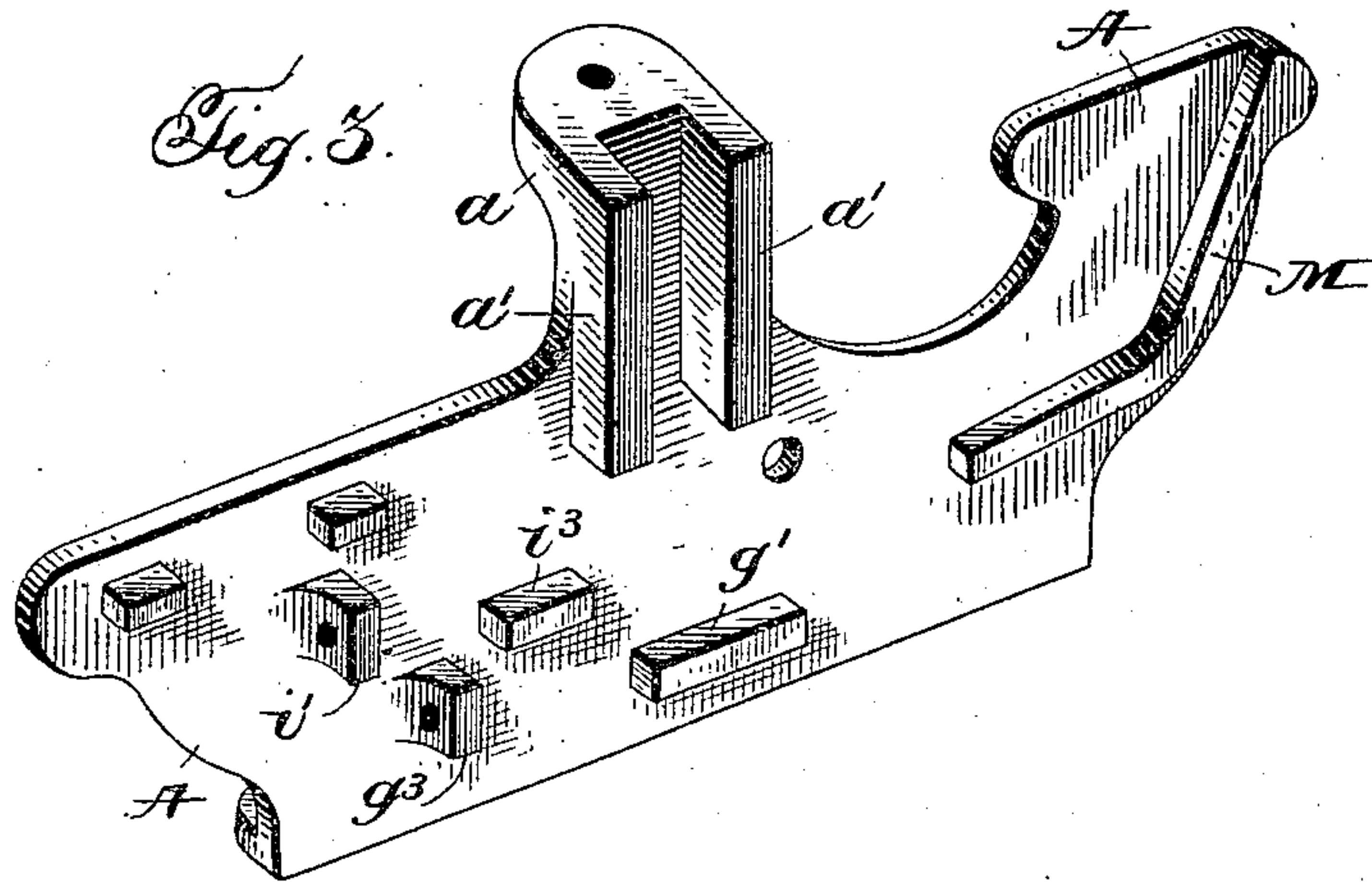
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2 SHEETS—SHEET 2.



Witnesses
Jas. Hutchinson.
Calvin V. Milam.

Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES ELLSWORTH ADAMSON, OF MUNCIE, INDIANA.

ROTARY COPYING-PRESS.

No. 880,492.

Specification of Letters Patent.

Patented March 3, 1908.

Application filed November 29, 1905. Serial No. 289,624.

To all whom it may concern:

Be it known that I, CHARLES ELLSWORTH ADAMSON, a citizen of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented certain new and useful Improvements in Rotary Copying-Presses, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to an improvement in rotary copying presses and the object of the invention is the provision of a simple and durable machine of this character in which the copying paper is fed from a supply to a delivery or receiving roller, the letters to be copied being fed to the paper during its travel from the feed to the storage roll and pressure applied thereto to effect the copying, whereby the operation of copying a number of letters may be made practically a continuous one.

20 A further object of the invention is the provision in a copying press of this character of means for subjecting the letter to be copied and the dampened copying paper to a slight preliminary pressure to cause the adherence of the letter to said paper and subsequently to a greater pressure to effect the copying of the letter.

30 Other objects of the invention will be apparent from the detailed description hereinafter, when read in connection with the accompanying drawings forming a part hereof, wherein like numerals of reference refer to similar parts in the several views and wherein a preferable embodiment of my invention is shown.

40 In the drawings, Figure 1 is a perspective view of my improved copying press, a portion of the feed table being broken away; Fig. 2 is a longitudinal section of my improved copying press; Fig. 3 is a perspective view of one of the side rails, and Figs. 4, 5, 6 and 7 are detail views.

45 Referring now more particularly to the drawings, the framework of my copying press comprises the side pieces A, A and the cross bar B, which serves to space the side pieces a suitable distance apart. The cross bar B is preferably secured to the side pieces A, A by means of the bolts b, which pass through apertures in the end thereof and engage threaded apertures in the ears a, which project laterally from the upper central portion of the side pieces A, A.

55 B' designates the copying roller, which is

preferably formed of rubber or other elastic material and which is journaled in any suitable manner between the side pieces A, A of the frame at one side of the cross bar B thereof. The shaft of the copying roller B' projects through one side of the frame and has keyed thereto an operating crank or handle B², by which the machine is actuated.

60 C designates the impression roller, the gudgeons of which are journaled in the downwardly extending arms d of a yoke D, the arms d of said yoke being arranged to slide vertically between guides a', which project inwardly from the side pieces A, A of the frame and are preferably formed integral therewith. The impression roller C engages the copying roller B' at one side of the center thereof and is held against the copying roller at the desired pressure by means of a thumb screw B³, which passes through the top of the cross bar B and engages the upper side of the yoke D. The impression roller C is preferably formed of a brass tube c in the ends of which are secured the metallic gudgeons c'. 65 70 75 80

E designates the moistening roll, which is arranged in the frame directly below the impression roll C and in frictional engagement with the copying roll B', so as to be driven thereby. The moistening roll is similar in structure to the impression roll C, with the exception that the outer surface thereof is covered with several layers of fabric e, which serves to carry the water up against the copying paper from the water pan F, which is placed on the support carrying the machine directly under the moistening roll so that the same will be partially submerged in the water contained therein. The gudgeons of the moistening roller E are journaled in apertures g of the arms G, the forward ends of said arms being supported on horizontally disposed lugs g', which extend inwardly from the side pieces A, A of the frame and are preferably formed integral therewith, and the rear ends of which are supported by screws g'', which pass through threaded apertures in lugs g³, which extend inwardly from the side pieces A, A of the frame and are preferably formed integral therewith, and engage apertures g⁴ in the ends of the arms G. 85 90 95 100 105

It will be apparent that by adjusting the screws g'', the moistening roll can be brought with any desired pressure against the copying roll B.

110 H designates a feed roll which is arranged in the frame at one side of the impression

and moistening rolls and in frictional engagement therewith.

The gudgeons of the feed roll H are journaled in apertures in the forward ends of arms I, the rear ends of said arms being supported by screws *i*, which pass through threaded apertures in the lugs *i'*, which extend inwardly from the side pieces A, A of the frame and are preferably formed integral therewith, and engage apertures *i''* in the ends of the arms I.

In order to prevent the guide roll from dropping when the screws *i* are actuated to withdraw the same from frictional engagement with the impression rolls C and E, I provide the side pieces A, A with the inwardly extending lugs *i³*, which underlie the forward ends of the arms I and form a support therefor.

K designates a feed table, which is secured to the side pieces A, A of the frame in any suitable manner, and the forward end of which extends into proximity to the upper surface of the feed roll H.

L designates a supply roll of copying paper, which is mounted on a spindle L' which is supported on inclined tracks M, which extend inwardly from the forward portion of the side pieces A, A of the frame and are preferably formed integral therewith, so that the outer surface of the paper roll will always be in frictional engagement with the copying roll B'.

N designates a receiving roll for the copying paper. The ends of the spindle shaft of this roll are also supported upon the inclined tracks M, so that the outer surface of the roll will always be held in frictional engagement with the outer surface of the supply roll L. As the receiving roll N is always maintained in frictional engagement with the outer surface of the supply roll L, it will be apparent that said rolls will always be driven in unison regardless of the changes in the diameter thereof due to the amount of paper contained thereon. Furthermore, as the moistened paper winds about the receiving roller N it will, owing to its contact with the supply roll L, be partially dried, as a portion of the moisture contained therein will be absorbed by the dry paper on the supply roll L, thereby lessening the tendency of the copies on the paper from offsetting when wound upon said receiving roller.

In the use of my device, the thumb screw B³ is first adjusted to bear with considerable pressure upon the yoke D, causing impression roll C to frictionally engage the copying roll B'. The moistening roll E is then adjusted to frictionally engage the copying roll B'. The moistening roll E is then adjusted to frictionally engage the copying roll B' and the feed roll H is adjusted to engage the impression roll C with a very slight pressure. The paper passes from the supply roll L under the copying roll B' over the moistening roll E,

around the feed roll H and under the impression roll C and onto the receiving roll N, said paper being moistened or dampened at two points, namely at the point where the moistening roll engages the copying roll and at the point where the moistening roll engages the feed roll. If now a letter is placed face down on the feed table K and fed forward between the impression and guide rollers, and the crank B² operated, the letter and the dampened copying paper will be fed first between the impression and guide rolls and subsequently between the impression and copying rolls. The letter can then be removed and the copy will be wound up on the receiving roll. The pressure between the impression roll C and the feed roll H is too slight to cause the copying of the letter. The pressure between these rolls is just sufficient to cause the letter to adhere to the copying paper. The adhering letter and paper are then carried between the impression and copying roller, where the pressure is sufficient to effect the copying of the letter. By subjecting the letter and dampened paper to first a slight pressure and subsequently a greater pressure the letter will not become wrinkled or creased as is the case where all the copying pressure is applied at one place and at one time. The letter after receiving its first light pressure is held against the moist copying paper, slightly swelling the dry letter paper before it comes to the final copying pressure, which prevents the wrinkling and creasing resulting from making a single pressure copy.

When the machine is not in use the thumb screw B³ should be loosened so as to withdraw the impression roll from the copying roll to prevent the same from becoming misshapen.

I do not desire to limit myself to the precise form and construction shown in the drawings, as it is obvious that many minor changes might be made therein without departing from the spirit of the invention.

What I desire to secure by Letters Patent is:—

1. In a copying press, a moistening roll, an impression roll positioned thereabove and spaced therefrom, a copying roll at one side of said moistening and impression rolls and in frictional engagement therewith, and a feed roller at the opposite side of said moistening and impression rolls and in frictional engagement therewith.

2. In a copying press, a moistening roll, an impression roll positioned thereabove and spaced therefrom, a copying roll at one side of said moistening and impression rolls and in frictional engagement therewith, a feed roller at the opposite side of said moistening and impression rolls and in frictional engagement therewith, and means for adjusting said feed roll relative to said impression roll.

3. In a copying press, a moistening roll, an impression roll spaced therefrom, a copying roll in frictional engagement with said moistening and impression rolls, a feed roll in frictional engagement with said moistening and impression rolls, means for adjusting the moistening roll relative to the copying roll, and means for adjusting the feed roll relative to the impression roll.

4. In a copying press, a moistening roll, a copying roll, an impression roll arranged to cooperate with said copying roll, and a paper supply roll, said paper supply roll being maintained by gravity in frictional engagement with said copying roll.

5. In a copying press a frame, moistening, copying, and impression rolls mounted in said frame, inclined guideways at opposite sides of said frame, and a paper supply roll supported upon said inclined guideways and having its outer surface in frictional engagement with said copying roll.

6. In a copying press, a frame, moistening, copying, and impression rolls mounted in said frame, inclined guideways at opposite sides of said frame, a paper supply roll supported upon said inclined guideways and having its outer surface in frictional engagement with said copying roll, and a paper receiving roll supported upon said inclined guideways above said paper supply roll.

7. In a copying press, a copying roll having an operating crank secured thereto, an impression roller adapted to cooperate with said copying roll and in frictional engagement therewith, a moistening roll in frictional engagement with said copying roll, a feed roll in frictional engagement with said impression and moistening rolls, a paper supply roll in frictional engagement with said copying roll, and a paper receiving roll in frictional engagement with said paper supply roll.

8. In a copying press, a frame, a moistening roller secured in the lower portion thereof, an impression roller secured in said frame above said moistening roller, a copying roller secured in said frame at one side of said im-

pression and moistening rolls and in frictional engagement therewith, a feed roll secured at the opposite side of said impression and moistening rolls and in frictional engagement therewith, inclined guideways at opposite sides of said frame beyond said copying roll, a paper supply roll supported upon said guideways and having its outer surface in frictional engagement with said copying roll, and a paper receiving roll supported upon said guideways above said paper supply roll.

9. In a copying press, a paper supply roll, a receiving roll in frictional engagement therewith, and instrumentalities for dampening said paper and subjecting the same to pressure to effect a copy thereon, during its travel from the paper supply roll to the receiving roll.

10. In a copying press, a paper supply roll, a receiving roll movably supported above said paper supply roll and adapted to be maintained by gravity in frictional engagement therewith, and instrumentalities for dampening the paper and subjecting the same to pressure to effect a copy thereon, during its travel from the paper supply roll to the receiving roll.

11. In a copying press, separated copying and feed rolls, an impression roll in frictional engagement with said copying and feed rolls, means for adjusting the impression roll relative to the copying roll, and means for adjusting the feed roll relative to said impression roll.

12. In a copy press, a frame, moistening, copying and impression rolls mounted in said frame, inclined guideways at opposite sides of said frame, a paper supply roll, and a paper receiving roll supported in said inclined guideways above said paper supply roll and in frictional engagement therewith.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES ELLSWORTH ADAMSON.

Witnesses:

CLARA A. PRIDDY,
JOHN J. HARTLEY.