No. 631,028. Patented Aug. 15, 1899.

E. McCONVILLE.

PRINTING ATTACHMENT FOR ROLL PAPER HOLDERS.

(Application filed Apr. 20, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

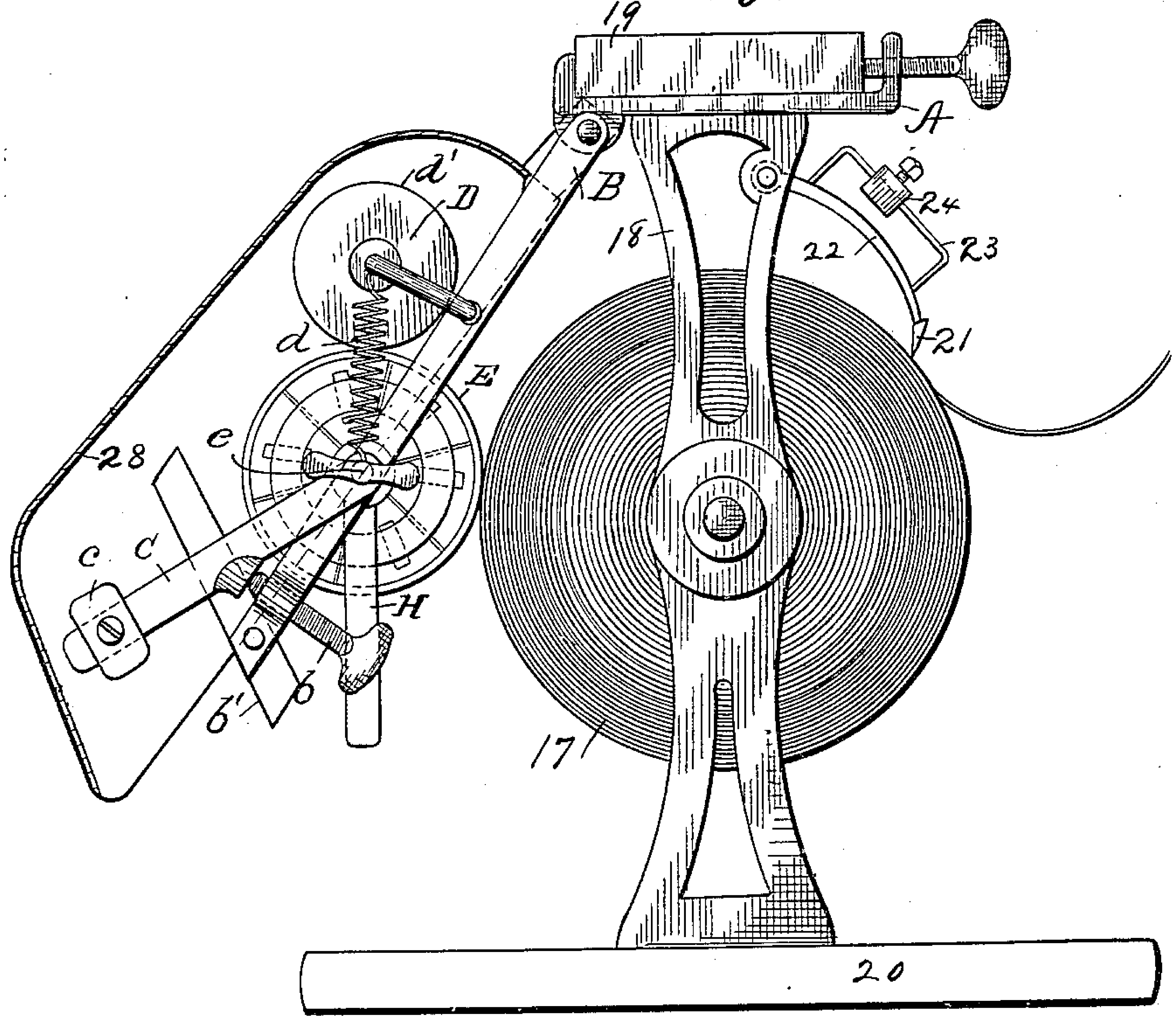
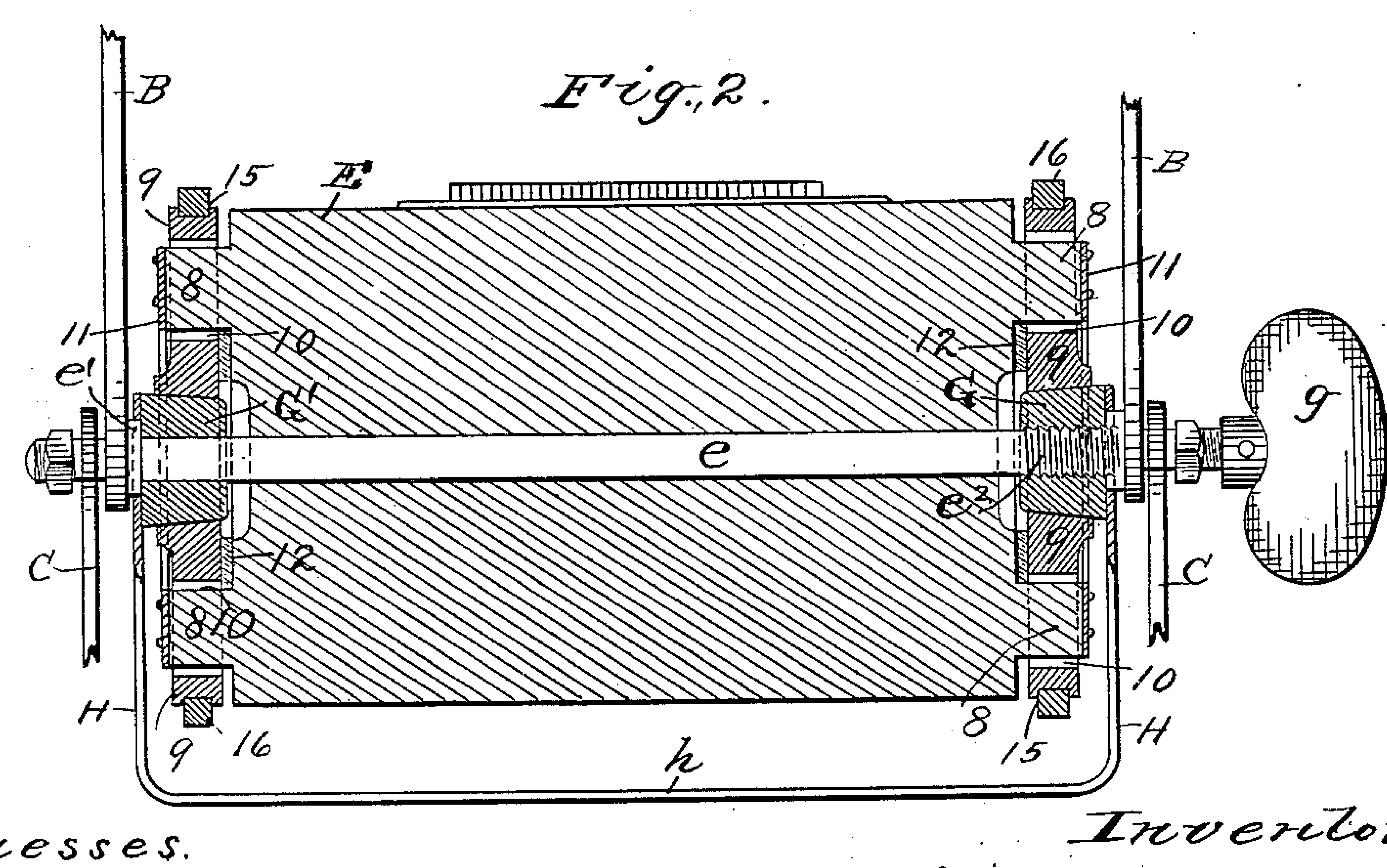


Fig. 2.



Witnesses.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

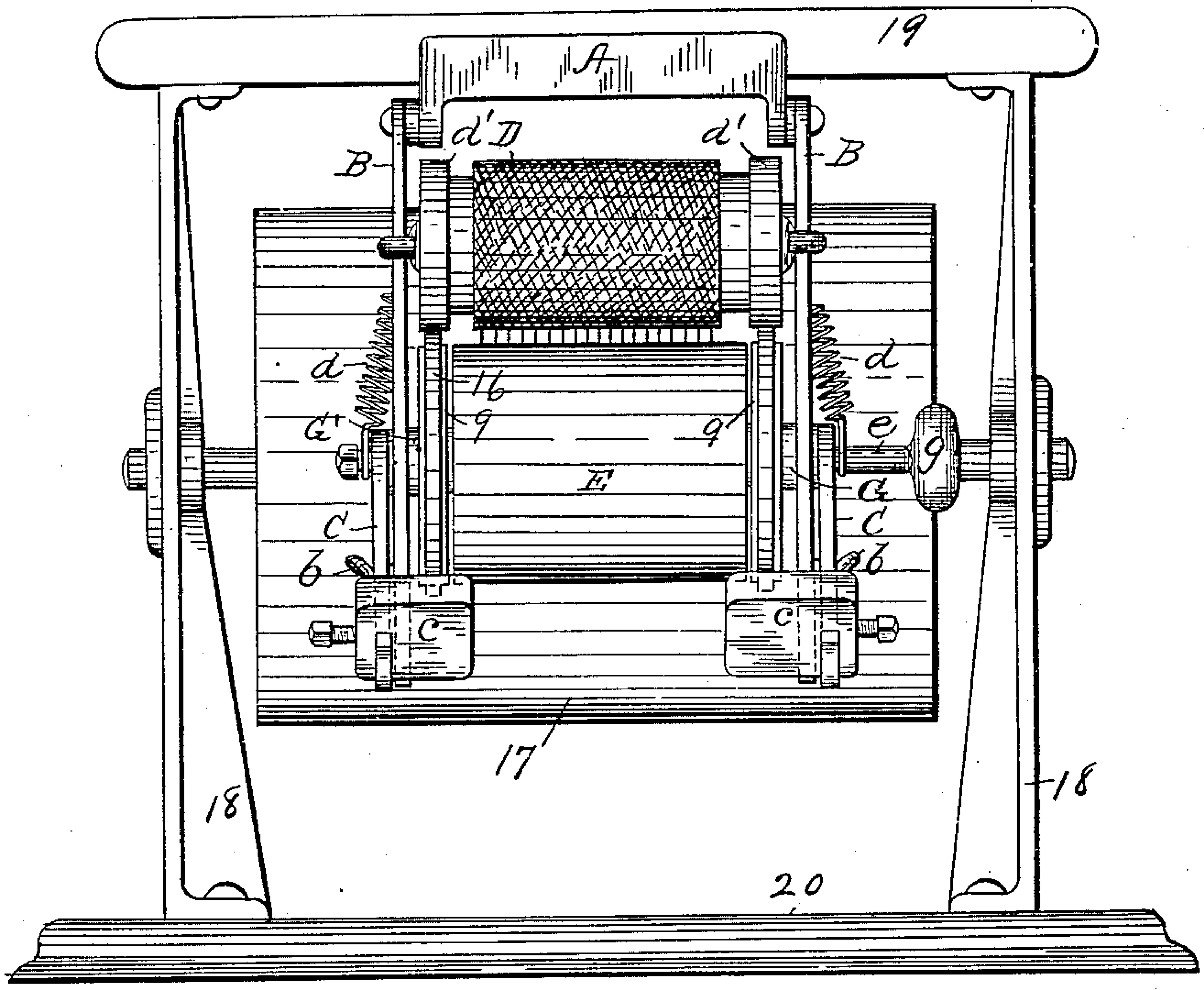


Fig. 4.

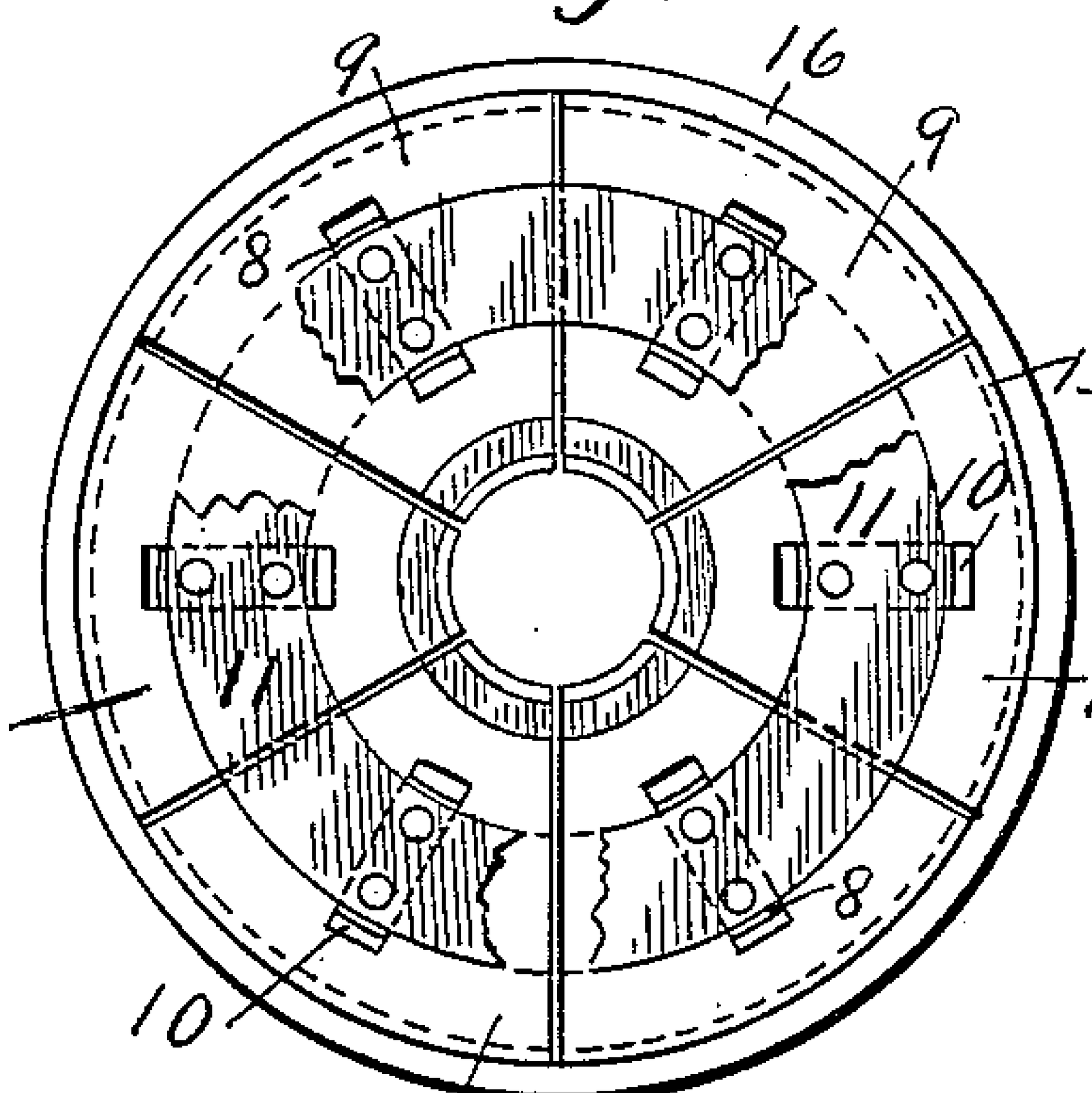


Fig. 6.

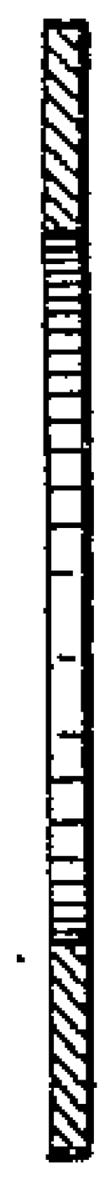


Fig. 5.

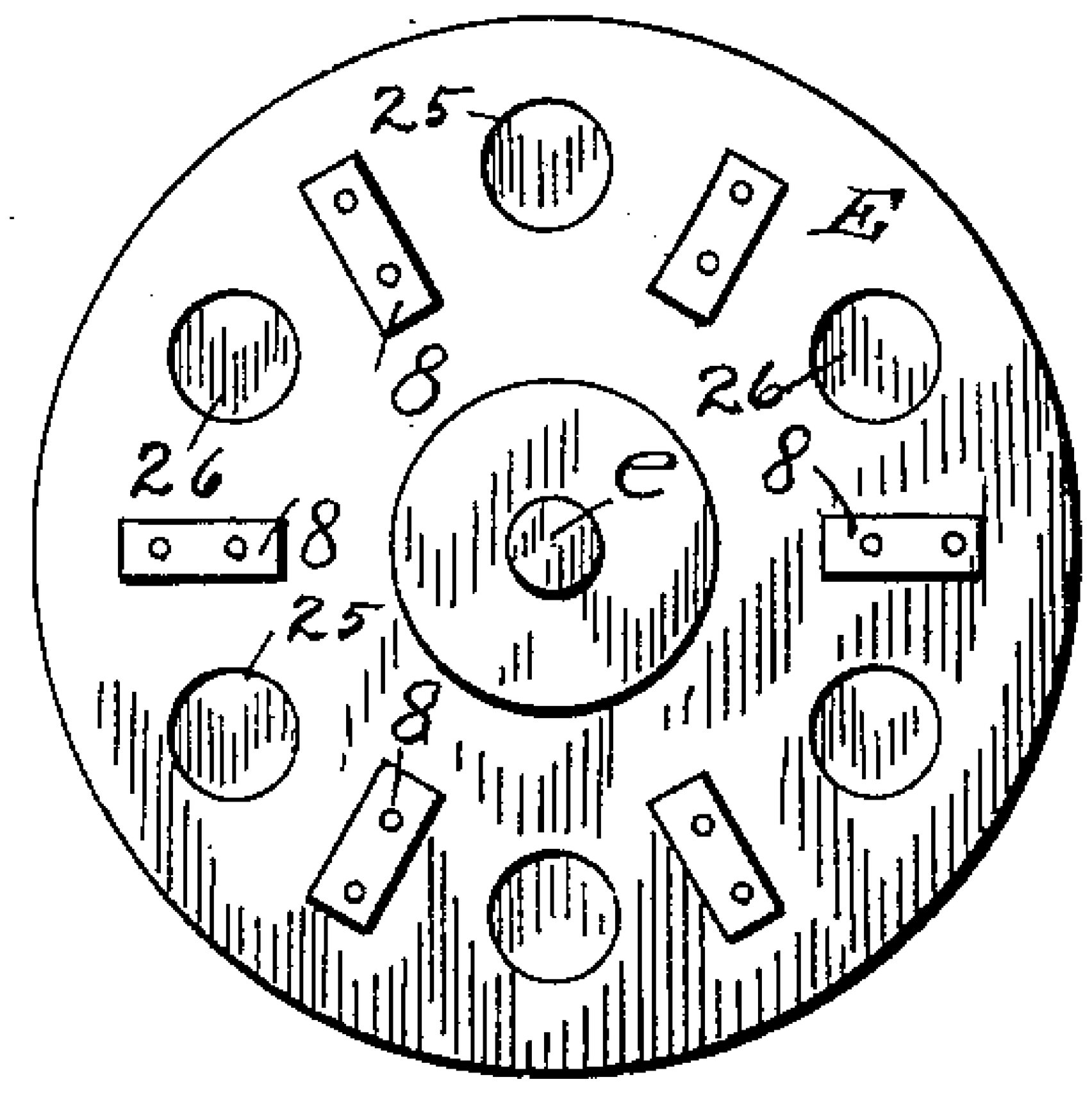
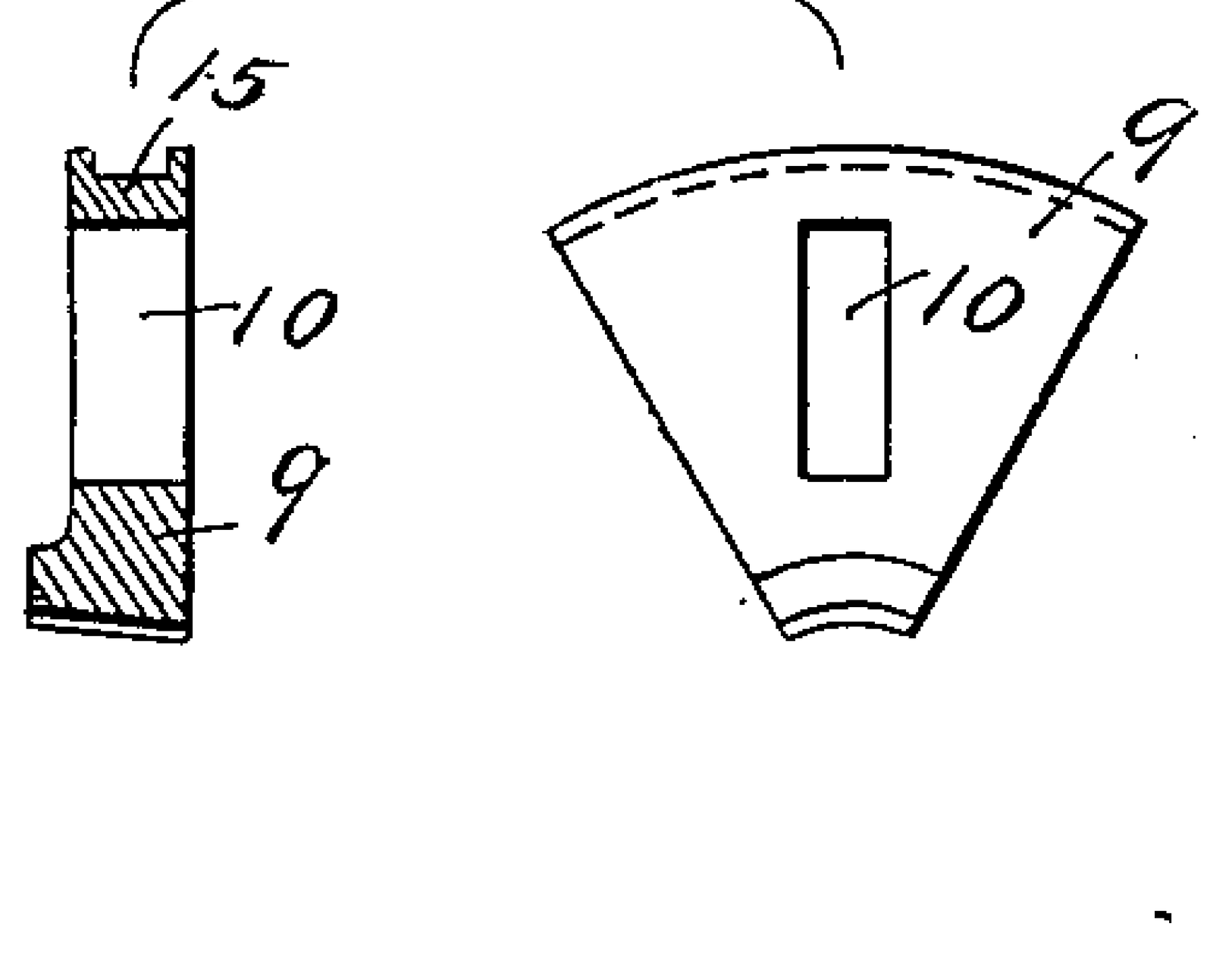


Fig. 7.



Witnesses
[handwritten signatures]

Inventor
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by W. Rees Edelen
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UNITED STATES PATENT OFFICE.

EMMETT McCONVILLE, OF PITTSBURG, PENNSYLVANIA.

PRINTING ATTACHMENT FOR ROLL-PAPER HOLDERS.

SPECIFICATION forming part of Letters Patent No. 631,028, dated August 15, 1899.

Application filed April 20, 1899. Serial No. 713,700. (No model.)

To all whom it may concern:

Be it known that I, EMMETT MCCONVILLE, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Printing Attachments for Roll-Paper Holders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has reference to improvements in printing attachments for roll-paper holders; and it consists of certain novel features of construction, which will be hereinafter fully described in the specification in conjunction with the drawings and clearly pointed out in the claims.

The object of the present invention is to provide an efficient, cheap, and extremely simple printing attachment, with varied impressions according to the quality and surface of the paper to be printed upon, as paper varies so much, some being extremely soft and a great absorbent of ink, which in many cases is detrimental to goods wrapped in the same, as the ink may penetrate the paper. Other papers are of a glazy nature, consequently requiring more ink with less pressure upon the paper, while the softer paper requires a greater pressure with less ink.

To meet all the requirements in reference to the varied grades of paper in a single printing attachment is the object of this invention.

My improved device for overcoming the objections referred to consists of an expansion-bearer on the type-cylinder. This bearer can be of a continuous piece of rubber on each end of a cylinder, (as indicated on the present invention,) or it can be of any non-elastic material and work equally as well. I employ sectors, which hold the bearers. Said sectors are forced outward simultaneously at both ends of the type-cylinder by means of cones, thus regulating the pressure coming upon the type. To increase the pressure of the type-cylinder on a roll of paper, I elevate the adjustable weight fulcrumed on the axle of the type-cylinder, thus increasing the pressure on the roll of paper.

Another object of my invention is to increase the weight of the cutting-knife when heavy paper is employed. To accomplish this, I employ adjustable weights on the arms of the knife, which may be regulated to meet all qualities of paper.

In the drawings forming part of this specification, Figure 1 represents a side elevation of my improved printing attachment. Fig. 2 is a detail of the printing-cylinder represented in a central vertical section. Fig. 3 is a rear view of the device. Fig. 4 is an end view of the printing-cylinder with the shaft and cones removed, the binding-ring broken away to more fully exhibit the sectors. Fig. 5 is an end view of the printing or type cylinder proper with the bearers and sectors removed. Fig. 6 is a section of the binding-ring for holding the sectors in place. Fig. 7 represents, respectively, a side elevation and a section of one of the sectors in detail.

My invention consists of a clamping device A, to which are pivoted arms B and supplemental arms C, the latter carrying adjustable weights *c*, which can be also adjusted by set-screws *b*, supported in arms B, previously referred to. Arms B also support an inking-roller D and a printing-cylinder E. The inking-roller is kept in contact with said printing-cylinder by spiral springs *d*. Also attached to the extreme end of said arms B are weights *b'*.

Referring more particularly to Fig. 2, printing-cylinder E is provided with radial tenons 8 on both ends thereof for assisting in supporting sectors 9. These sectors are provided with radial mortises 10 for the reception of tenons 8, the latter extending slightly through said mortises 10 for holding binding-rings 11. (See Figs. 4 and 5.) Interposed between the ends of the printing-cylinder and sectors are rubber gaskets 12, which will be hereinafter more fully set forth. Cylinder E is firmly secured to its shaft *e*, which extends somewhat beyond the cylinder for supporting arms B and C, previously referred to. Said shaft *e* also carries a thumb-plate *g* and a pair of cones G and G', respectively. Cone G' fits loosely on shaft *e* and is held from extending outwardly by a collar *e'*. Cone G and a portion of shaft *e* is screw-threaded at e^2. Se-

cured to the outside of each cone is a resilient steel strip H, bent outside of said cylinder, thus forming a yoke *h*. The steel strip H will yield very easily in the direction of the cylinder, but edgewise it has considerable depth and is sufficiently stiff for holding on to when necessary to operate the cones. On the extreme periphery of the sectors are grooves 15 for holding in position rubber bearers 16, which engage the bearers *d'* on the ink-roller D. Said bearers 16 also engage the roll of paper 17, which is mounted in a frame 18, having a top 19 and base 20, also a cutting-knife 21, mounted in said frame 18. Said cutting-knife is provided with arms 22, on which are mounted rods 23, which support adjustable weights 24 for reducing or increasing the pressure of said knife upon the roll of paper 17. Light or heavy paper can be used on said roll.

The bearers 16 can be of any desired material and terminate at the ends of each sector, but rubber is preferable on account of offering more friction to the roll of paper; otherwise when a person would jerk the paper the paper would slip over the type before the printing-cylinder could turn.

Printing-cylinder E is provided with a number of longitudinal holes or openings 25, which are filled with lead or iron rods 26 to increase the weight of said cylinder, as wood is not sufficiently heavy for the purpose desired. The device is protected by a case 28. When very porous or soft paper is employed for wrapping purposes, the pressure upon the roll of paper must be increased, but at the same time the bearers 16 must be set out by the sectors 9 and cones, so that very little ink will be used, otherwise the ink would be forced through the paper. When hard or glazed paper is employed, plenty of ink is required and slight pressure, which can be regulated by the adjustable weights. When necessary to expand or increase the diameter of sectors 9, including the rubber bearers 16, the operator with the right hand turns the thumb-plate *g* and at the same time with the left hand holds on to the flexible yoke *h*, and as the shaft *e* is turned the screw-threaded portion e^2 forces the core G forward, while the core G' is drawn inward by the same operation, thus forcing out radially the sectors, perhaps one or two hundredths of an inch, as occasion may require, as it is only necessary to adjust the sectors when a new roll of paper is put into the frame. The rubber gaskets 12 are for holding the sectors close against the cylinder, as they prevent end motion of said cylinder.

When a roll of paper becomes considerably reduced in diameter, the printing attachment is suspended in a vertical line. Consequently there is no pressure of the printing-roll against the reduced roll of paper 17 to be printed upon. Therefore to overcome this difficulty the adjustable weights *c*, secured to the pivoted arms C, are thrown outwardly at an angle of considerable magnitude, with the arms B bearing the printing-cylinder, by means of the screws *b*, thus increasing the pressure of said printing-cylinder against the roll of paper.

Having described my invention, that which I desire to secure and claim by Letters Patent of the United States is—

1. In a printing attachment for roll-paper holders, comprising a clamping device, secured to the top of the paper-roll holder, pivoted arms extending from said clamping device, an inking and a printing cylinder with expansion-bearers adjacent to said printing-cylinder, supported by said pivoted arms, and adjustable weights for increasing or decreasing the pressure of said printing-cylinder on a roll of paper, for the purpose as shown and described.

2. In a printing attachment for roll-paper holders, comprising a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking and a printing cylinder supported by said pivoted arms, supplemental arms extending rearwardly from the shaft or axle of said printing-cylinder, and carrying adjustable weights, and the means for elevating said supplemental arms for the purpose as shown.

3. In a printing attachment for roll-paper holders, consisting of a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking-roller and a printing-cylinder supported by said pivoted arms, supplemental arms extending rearwardly from the axle of said printing-cylinder, and carrying adjustable weights thereon, set-screws for elevating or lowering said supplemental arms for the purpose as specified and described.

4. In a printing attachment for roll-paper holders, consisting of a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking-roller and a printing-cylinder supported by said pivoted arms; sectors arranged adjacent to the ends of the printing-cylinder, the shaft or axle of said printing-cylinder bearing cones for radially expanding the circumference of said sectors for the purpose as shown and described.

5. In a printing attachment for roll-paper holders, consisting of a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking-roller, and a printing-cylinder supported by said pivoted arms, said printing-cylinder having tenons radially arranged on the ends of said cylinder, sectors provided with mortises arranged to engage said tenons and rings secured to the free ends of said radially-arranged tenons, for retaining in position said sectors, cones on the shaft of the printing-cylinder for radially forcing said

sectors out and increasing the circumference thereby, for the purpose as shown and described.

6. In a printing attachment for roll-paper holders, comprising a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking-roller and a printing-cylinder supported by said pivoted arms, tenons radially arranged on the ends of said printing-cylinder, sectors having mortises adapted to coact with the tenons, and provided with grooves on their outer surfaces, rings secured to the free ends of said tenons, for holding in position said sectors, of rubber bearers, secured in the grooves around the circumference or arcs of said sectors, and the means for forcing out radially said sectors, and expanding said rubber bearers, for the purpose as specified.

7. In a printing attachment for roll-paper holders, comprising a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking-roller and a printing-cylinder supported by said pivoted arms, expansible sectors arranged on the ends of the printing-cylinder the shaft or axle of said printing-cylinder supporting cones for radially spreading said sectors through the medium of a screw formed on said printing-cylinder shaft and a cone, for the purpose as shown and described.

8. In a printing attachment for roll-paper holders, comprising a clamping device secured to the frame of a paper-roll holder, pivoted arms extending from said clamping device, an inking-roller and a printing-cylinder supported by said pivoted arms, expansible sectors arranged on the ends of the printing-cylinder, tenons radially arranged on the ends of said printing-cylinder, which loosely engage said mortises; rings secured to the free ends of said tenons, for holding in position said sectors, closely against rubber washers interposed between said sectors and cylinder; of rubber bearers resting in grooves formed in the periphery or arc surface of said sectors, and the means for forcing out radially said sectors with their accompanying rubber bearers, and a yoke secured to the end of the cones for preventing said cones from rotating when the printing-cylinder shaft is turned by the thumb-plate for spreading said sectors, for the purpose as specified.

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

EMMETT McCONVILLE.

Witnesses:

W. REES EDELEN,

RÉEVE LEWIS.