

No. 677,821.

Patented July 2, 1901.

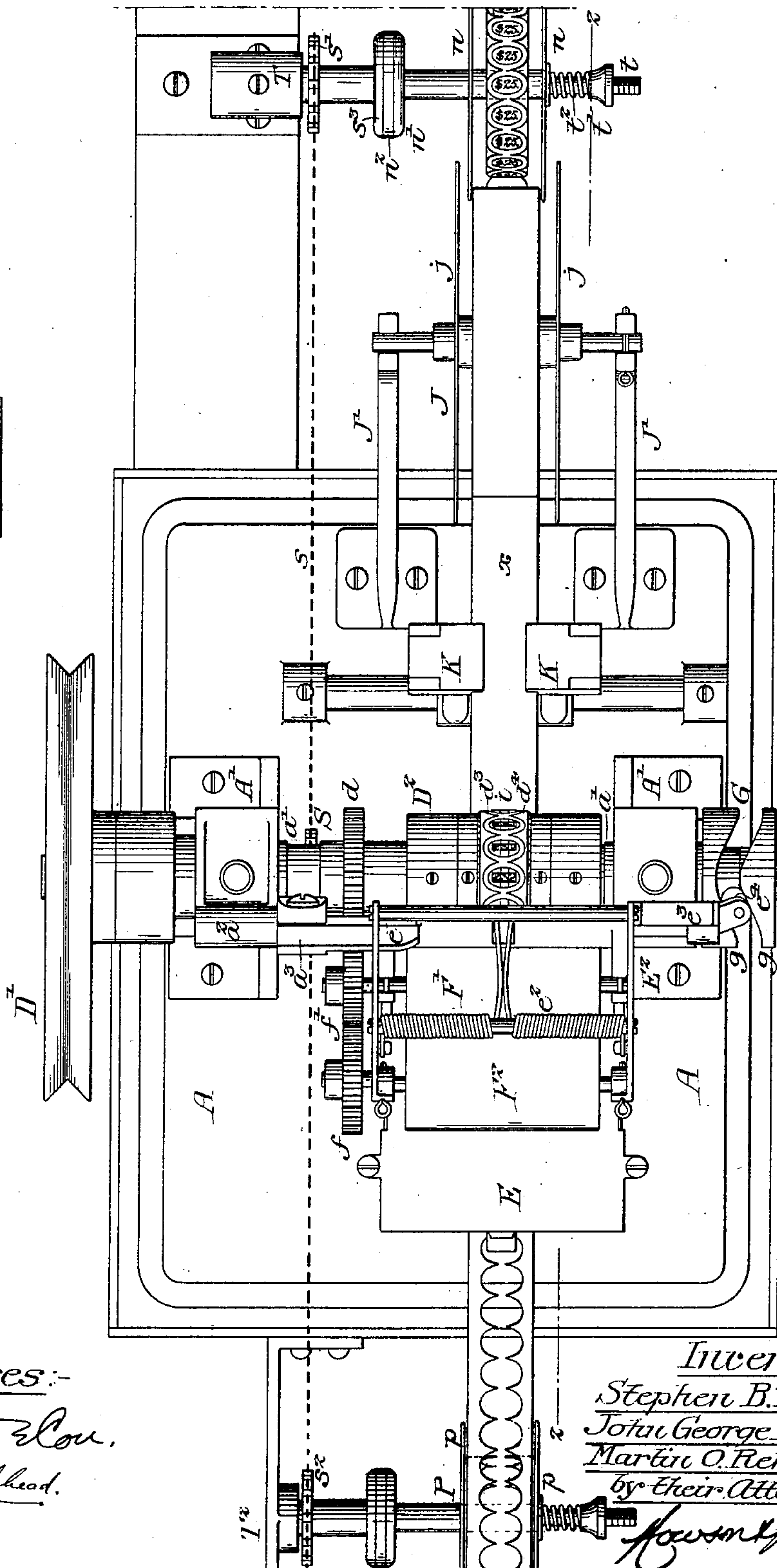
S. B TILY & J. G. & M. O. REHFUSS.
LABEL PRINTING MACHINE.

(Application filed Aug. 29, 1900.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses:-

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Martin O. Rehfuß.

by their Attorneys:-

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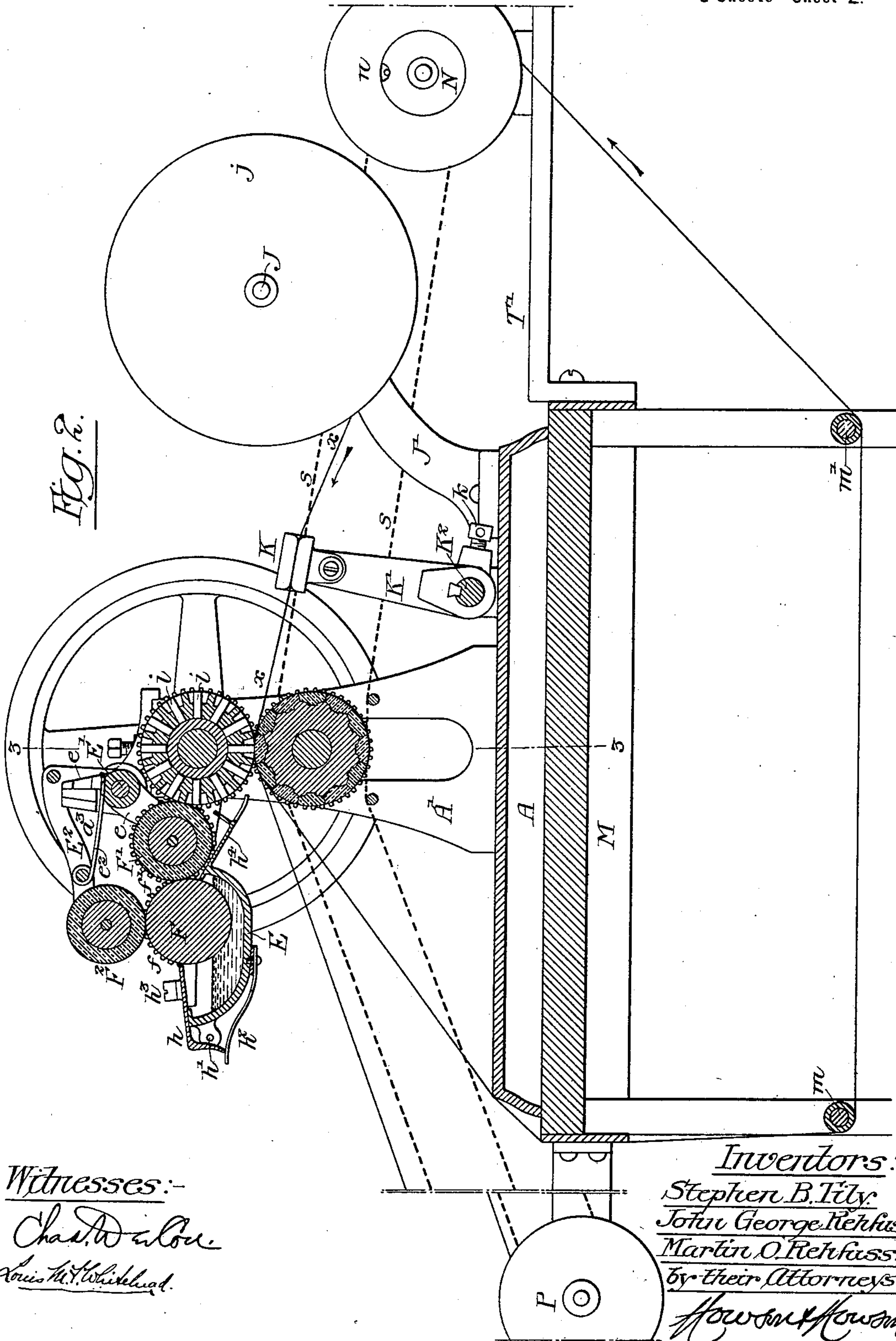
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3 Sheets—Sheet 3.

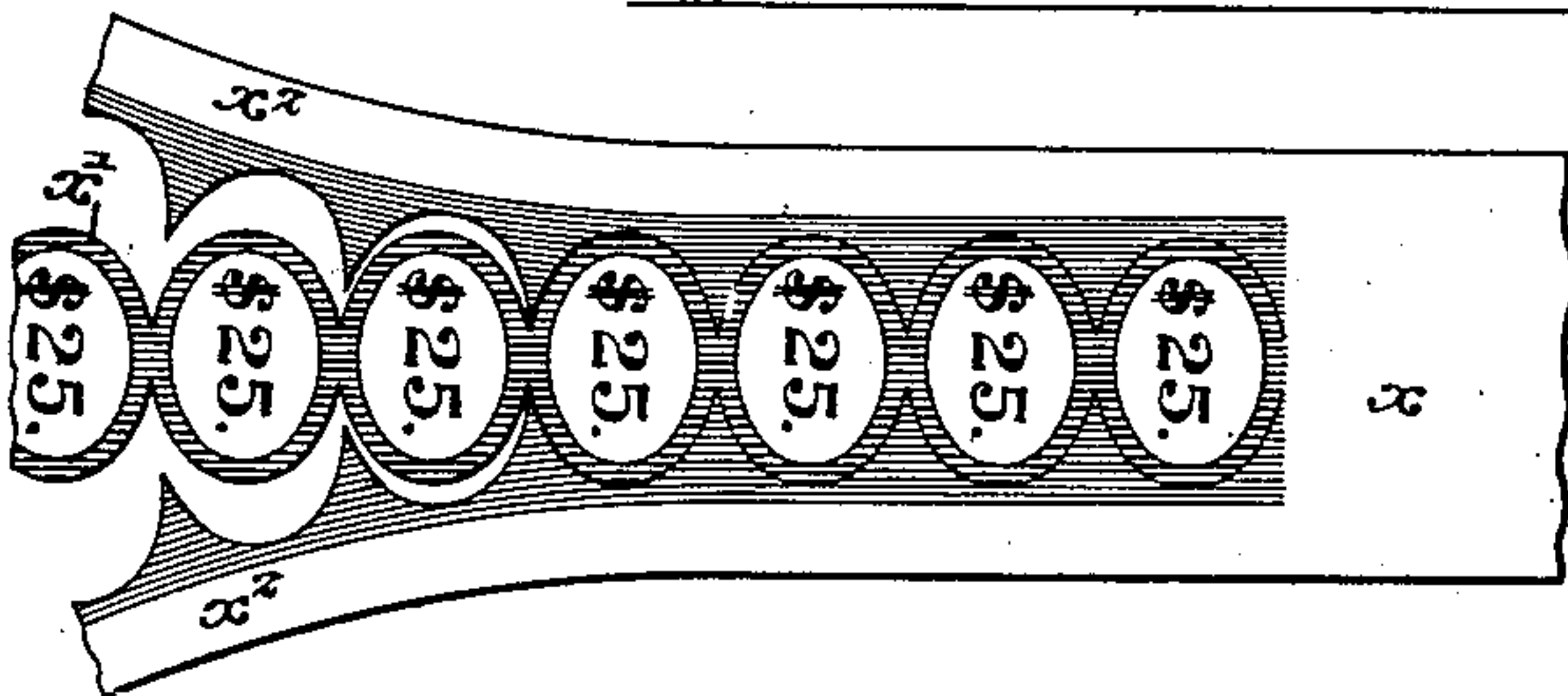
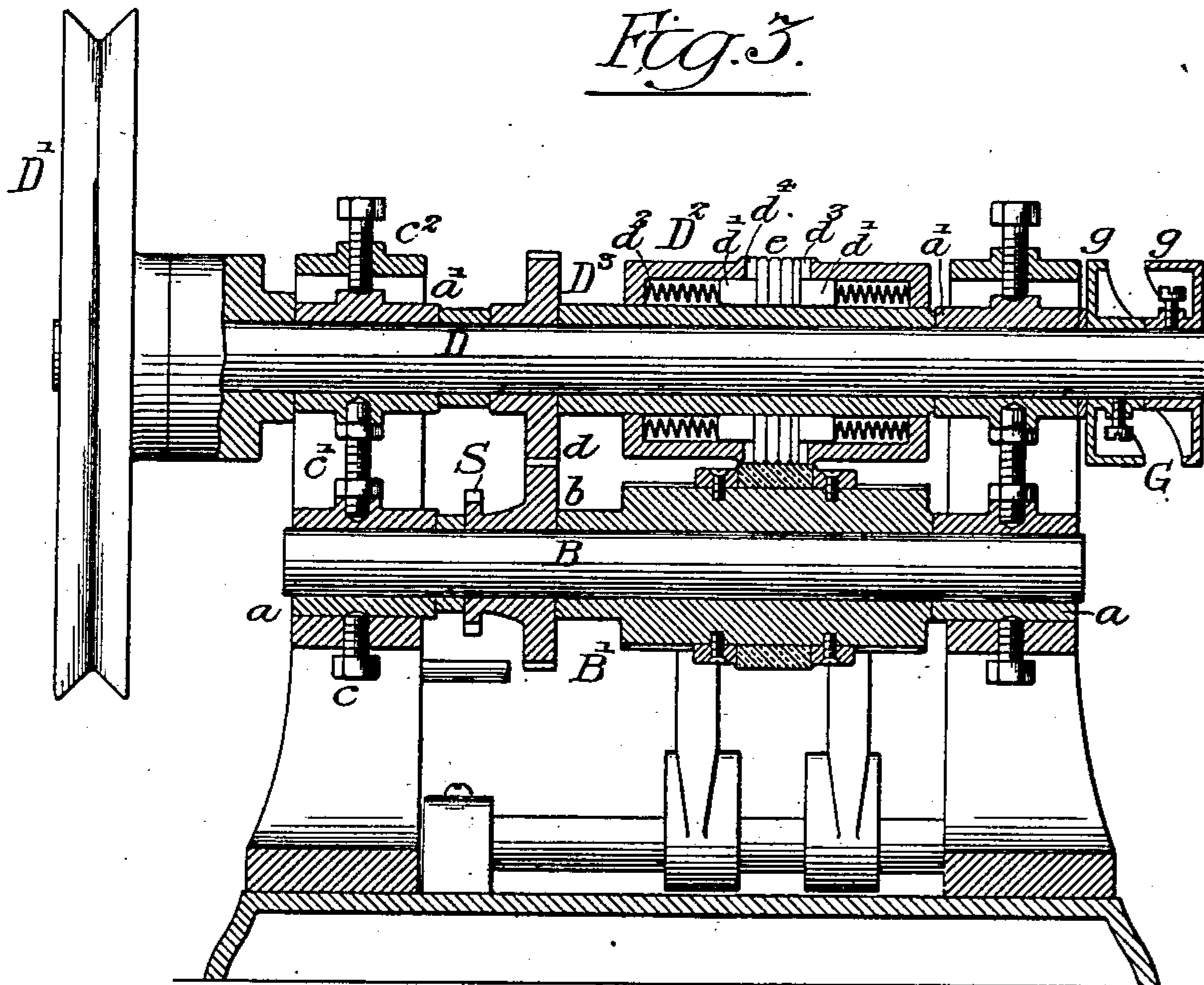
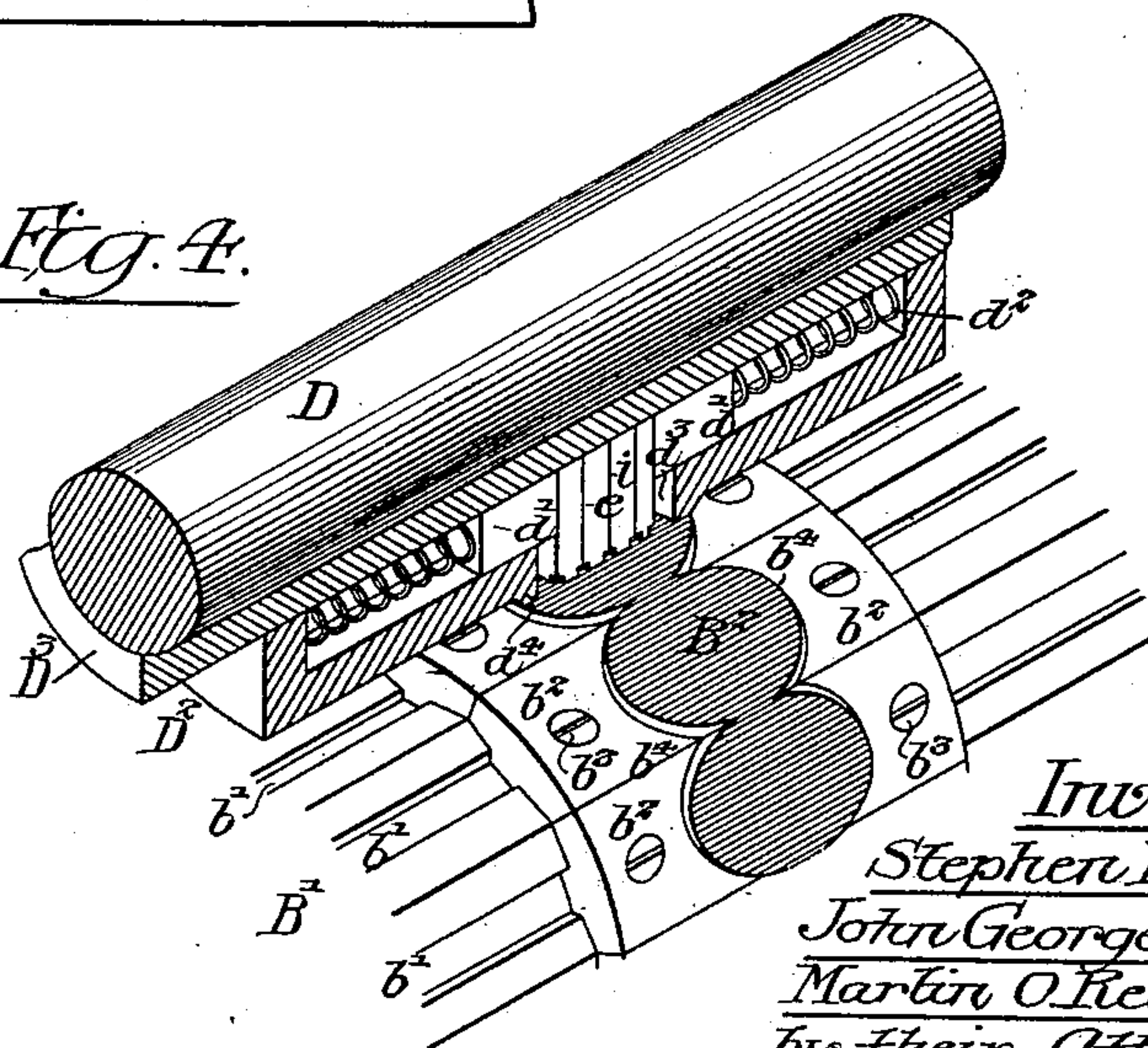


Fig. 4.



Witnesses:-

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UNITED STATES PATENT OFFICE.

STEPHEN B. TILY, JOHN GEORGE REHFUSS, AND MARTIN O. REHFUSS, OF
PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO JOHN WANAMAKER, OF
SAME PLACE.

LABEL-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 677,821, dated July 2, 1901.

Application filed August 29, 1900. Serial No. 28,437. (No model.)

To all whom it may concern:

Be it known that we, STEPHEN B. TILY, JOHN GEORGE REHFUSS, and MARTIN O. REHFUSS, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Label-Printing Machines, of which the following is a specification.

The object of our invention is to accurately and rapidly print and cut labels. This object we attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of our improved label printing and cutting machine. Fig. 2 is a sectional elevation on the line 2 2, Fig. 1. Fig. 3 is a transverse section on the line 3 3, Fig. 2. Fig. 4 is a perspective view showing a detail of the invention. Fig. 5 is a view of a partly printed and cut blank.

A is the base of the machine, which is mounted on a suitable table or support M.

A' represents standards on which are the bearings for the two shafts of the machine. The bearings *a a* are for the lower shaft B and the bearings *a'* are for the upper or driving shaft D. The bearings can be adjusted toward or from each other by the set-screws *c c' c²*. While we have shown this particular means of adjustment, other devices may be used for accomplishing the same purpose, if desired.

On the end of the shaft D is a driving-wheel D', V-shaped in the present instance for the reception of a round driving belt or band. On the shaft B is the platen-roll B', and on the shaft D is the type-carrying roll or cylinder D². The shaft B is driven from the shaft D through the gears *d* and *b*, the teeth of the gears being of sufficient depth to allow for a limited amount of adjustment of the shafts. The platen-roll B' has a series of grooves *b'* in its periphery, and fitting in these grooves are segments *b²*, secured in place by screws *b³*, and between the opposite segments are yielding platen-blocks B², of rubber or other suitable material. The edge *b⁴* of each segment is raised, so as to form a cutter for severing the strip upon which the label is printed. We have shown in Fig. 5 a label having the form of an oval; but it will be un-

derstood that the form of the label may be varied, as desired, by simply changing the shape of the cutters.

The type-carrying roll or cylinder D² is hollow and has a series of chambers for the slide-blocks *d'* and their springs *d²*, the springs resting back of the slide-blocks and tending to force them toward the type *i*. The type extend through an opening *d³* in the carrying-roll D', and around the edge of the opening is a sharp flange which meshes with the flange *b⁴* on a platen-roll B', so that when the two rolls come together to print the label the two cutting edges *b⁴* and *d⁴* sever the strip on the lines clearly shown in Fig. 5, the type at the same time making an impression upon the portion of the blank to form the label. In the present instance the flange *d⁴* is flat, so that a border is printed around the label, as indicated by the shaded lines *x'*, Fig. 5.

The type-cylinder D² in the present instance is made in four sections, as shown in Fig. 1, and these sections are secured to a sleeve D³ on the shaft D, so that the sleeve and the type-carrying roll can be removed intact from the shaft, if desired, for the purpose of making any alterations or for reassembling the sections. The type *i* are held in place on the roll by the pressure of the springs back of the slide-blocks, so that when it is desired to change the type the blocks can be forced back, the type readily removed, and other type inserted.

Our invention is especially applicable for printing small labels for use on merchandise, and a large number of labels are required with simply the amounts changed, so that by the construction shown the type can be readily removed and other type, indicating other values, substituted therefor.

Any suitable inking device may be used. In the present instance we have shown an ink-reservoir E in front of the machine, and this reservoir is carried by arms *e*, pivoted to a stud E, projecting from a bearing *a²* on one of the standards A'. An arm *e'* rests against a stop *e³* on a bearing *a²*, so that while the reservoir is free to be turned upward on a pivot its downward movement is limited by the stop *e³*. Within the ink-reservoir E is a roller F, geared to a distributing-roll F' by means of

gears $f f'$. The gear f' in turn gears with the wheel d on the shaft D. The distributing-roll F is adjusted in contact with the type, so that as the type-roll revolves ink will be distributed over the surface of the type. Above the roll F in the present instance is a doctor-roll F^2 , hung from the stud E by a frame E^2 . A spring e^2 tends to force the doctor-roll F^2 down upon the roll F. This upper roll and its frame is given a lateral motion over the surface of the roll F by means of a cam G, secured to the shaft D. In the present instance this cam is made in two parts, as clearly shown in Fig. 3. An arm e^3 on the frame E^2 has a roller e^4 , which enters the slot in the cam, as clearly shown in Fig. 1, so that the ink by this arrangement is thoroughly distributed over the rolls $F F'$ before the type-cylinder is inked. The cover-plate h of the reservoir E is pivoted at h' to the reservoir, a spring h^2 tending to hold it down, while set-screws h^3 act as stops for the cover-plate, as the cover-plate not only protects the ink-reservoir, but also acts as a scraper for removing the surplus ink from the roll F. Directly under the roll F' is a guard h^4 , projecting from the reservoir, which prevents the strip as it is printed from coming in contact with the inking mechanism.

The strip to be printed is in the form of a roll, which is mounted on a shaft J, having flanges $j j$. The shaft J rests in sockets in arms J' , secured to the base A of the machine. In order to guide the strip x from its roll to the printing-cylinder, we mount on each side of the strip jaws K K. These jaws are on the ends of arms K' , which are arranged to slide upon a bar K^2 , secured to the base A of the machine. Set-screws k are arranged to secure the arms in the adjusted position. This adjustment is for the purpose of accommodating wide or narrow strips. The groove in each jaw through which the strip passes can be regulated according to the thickness of the material to be printed upon. The strip as it passes between the type-cylinder D^2 and the platen-roll B' is not only printed, but also cut, as shown clearly in Fig. 5. The cutters in the present instance do not sever the strip entirely, but are so formed as to leave a connection between the labels, so that the labels and the waste at each side will come from the printing mechanism in three strips. The central or label strip passes around the edge of the table or support down to a roller m , then under the table in the present instance to a roller m' , and up to a reel N, having flanges $n n$. This reel is driven and wraps the continuous strip of labels in roll form. The time consumed in passing from the printing mechanism to the reel is sufficient to partly dry the ink, so that it will not blur when the strip is reeled.

The waste strips x^2 at each side of the label-strip are rolled upon a reel P, having flanges $p p$, although in some instances the reel may be dispensed with and the paper simply allowed to collect on the floor or in a

suitable receptacle. We prefer the reel, however, as it tends to separate the label-strip from the waste strips.

The reels N and P are driven from a sprocket-wheel S—in the present instance formed on the hub of the gear-wheel b , which is secured to the shaft B. A drive-chain s passes from the sprocket-wheels s' , secured to the stud projecting from a bearing T on a bracket T' , secured to the table upon which the machine is mounted, and this chain also passes around a sprocket-wheel s^2 on a stud projecting from a bearing T^2 , secured to the table on which the machine is mounted. We prefer to drive the two reels by friction, and we mount between a friction-face s^3 on the hub of the wheel S and a friction-face n' on the hub of the wheel N a friction-disk n^2 . The stud t is screw-threaded, and on the stud is a nut t' , and between the nut and the reel is a spring t^2 , which tends to force the friction-face n' against the friction-disk n^2 . By this means in case the mechanism should prevent the proper unreeling of the strip the friction-disk will slip, yet there will be sufficient friction to cause the label-strip to be wound properly on the reel. This mechanism is duplicated at the opposite end of the machine in connection with the reel P when it is used.

We claim as our invention—

1. The combination in a label printing and cutting machine, of two rollers, hollow cutters carried by each roller, type carried by one roller independently of the cutters, means for inking the type, and a platen made of a resilient material carried by the other roller, substantially as described.

2. The combination in a label-printing machine, of two rollers, hollow cutters carried by said rollers, one of said rollers having a border-printing face, type carried by said roller independently of the cutter and of the border-printing face, means for inking said type, and a platen composed of a yielding material carried by the other roller, substantially as described.

3. The combination in a label-printing machine, of two rollers each having hollow cutters, a platen composed of a resilient material mounted in the hollow cutters of one roller, detachable type mounted in the hollow cutter of the other roller and independently of said cutter, and means for inking said type, substantially as described.

4. The combination in a label-printing machine, of two rollers, cutters thereon, type on one roller, and a platen on the other whereby the label is printed and cut simultaneously, the cutters being so arranged as to only partially cut the label, and means for winding said partly-cut strip of labels on a spool or roll, substantially as described.

5. The combination in a machine for printing and cutting labels, a series of type carried by one roll, a series of platens carried by the other roll and cutters carried by each

roll, each cutter being scalloped in form and constructed to incompletely sever a label from the one next to it, the labels being thereby delivered from the machine in the form of
5 a strip, substantially as described.

6. The combination in a combined label cutting and printing machine, of a platen-roll, a printing-cylinder, cutters on the platen-roll and printing-cylinder, means for ink-
10 ing the printing-cylinder, the cutters being so arranged as to cut the waste from the label and leave an uncut portion connecting each label, substantially as described.

7. The combination in a label printing and
15 cutting machine, of a platen-roll having a series of longitudinal grooves therein, segments arranged to fit said grooves, means for nor-

mally holding the segments to the platen-roll independently of the grooves, said segments having a cutting edge, a yielding platen sur- 20 rounded by the cutting edges, a type-cylinder, a cutting edge thereon, and type detachably secured to the type-cylinder, substantially as described.

In testimony whereof we have signed our 25 names to this specification in the presence of two subscribing witnesses.

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JOHN GEORGE REHFUSS.
MARTIN O. REHFUSS.

Witnesses:

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JOS. H. KLEIN.