

2 Sheets—Sheet 1.

W. HECKERT.
TAG-MACHINE.

No. 185,230.

Patented Dec. 12, 1876.

Fig. 1.

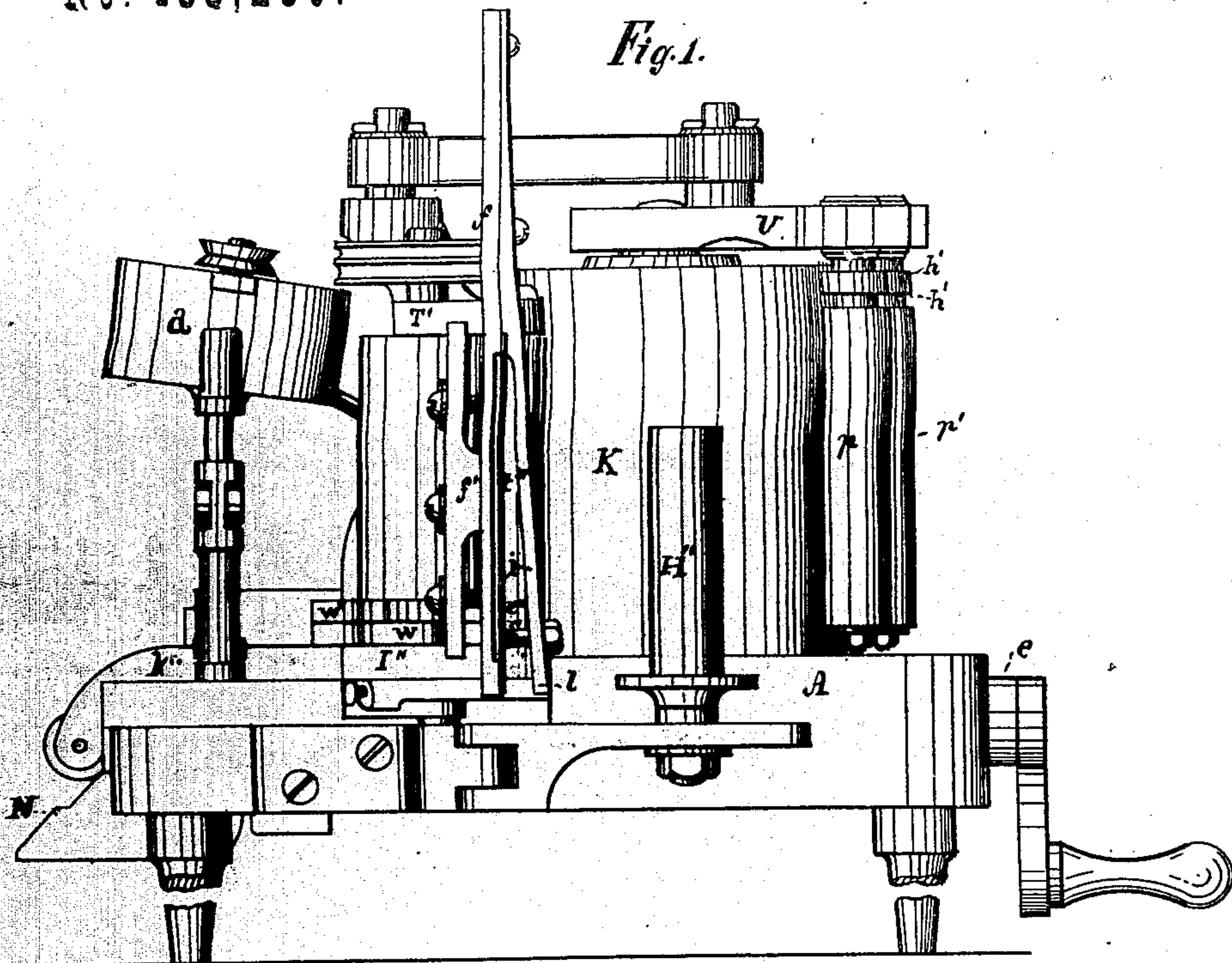
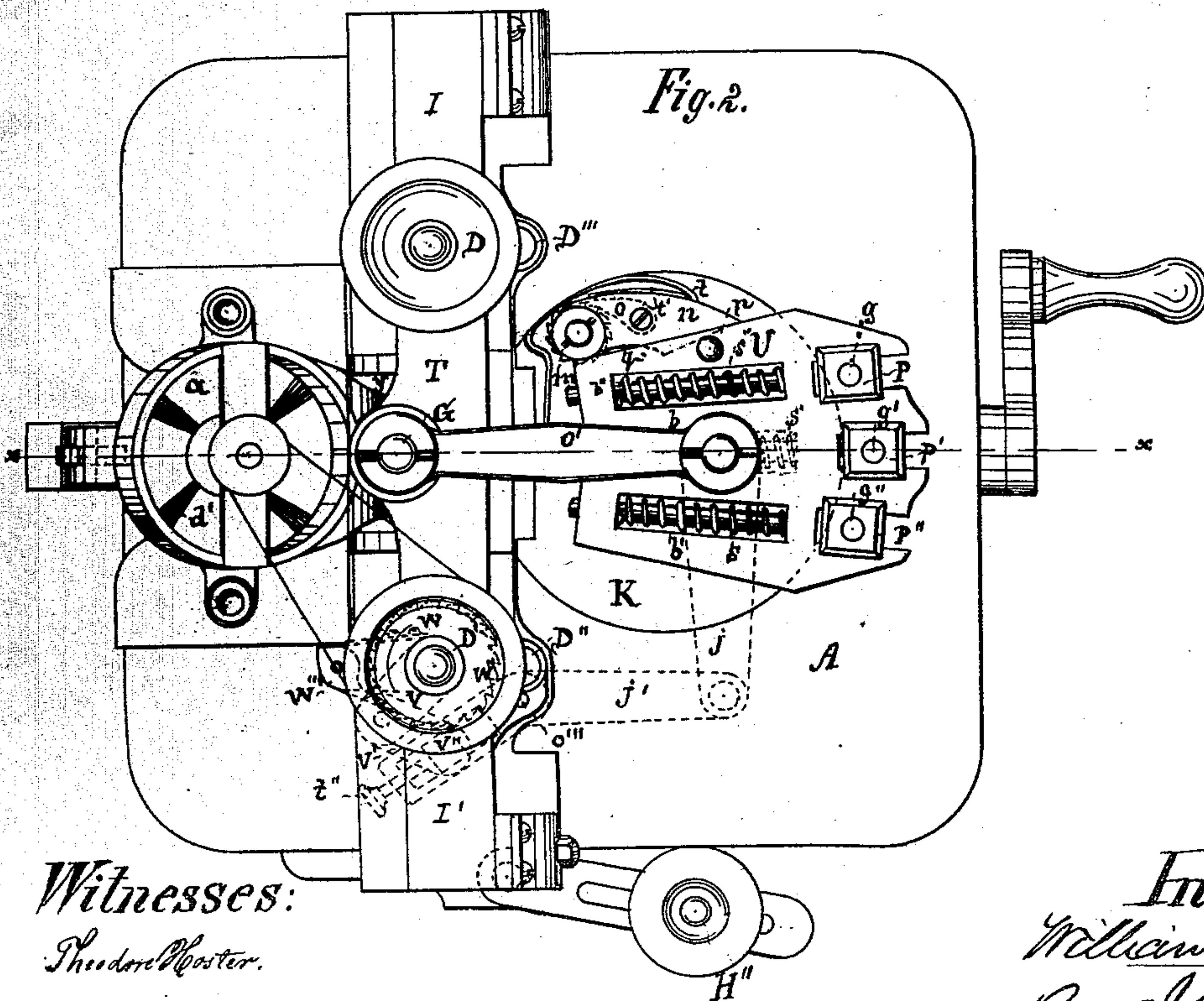


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM HECKERT, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN TAG-MACHINES.

Specification forming part of Letters Patent No. 185,230, dated December 12, 1876; application filed May 22, 1876.

To all whom it may concern:

Be it known that I, WILLIAM HECKERT, of Providence, in the State of Rhode Island, am the inventor of a Combined Printing-Press and Tag-Machine, of which the following is a specification, reference being had to the drawings hereto annexed, in which—

Figure 1 is a side elevation of a machine containing my invention. Fig. 2 is a plan, and Fig. 3 is a front elevation, of the same. Fig. 4 is a vertical section of the same on line *xx* of Fig. 2. Fig. 5 is an edge view of the spring shears or cutters. Fig. 6 is an end view of the ink-distributing cylinder, showing the ink-fountain and roller in the same. Fig. 7 is a detailed view, in section, of the device for inserting and heading eyelets in tags.

This invention relates to a printing-press in which the types are held at rest on a plane bed formed on the side of a stationary cylinder, and the paper is pressed upon them by a platen that has a right line reciprocating movement at right angles to said bed, while the ink is applied to the type by one or more inking-rollers, which, for the purpose of receiving and distributing the ink, have a continuous and forward movement entirely around the surface of a stationary cylinder, whereon the said plane bed is formed by cutting away a section of the cylinder; and consists of the special devices and combinations of devices hereinafter described, whereby the said movements and functions are performed. It also relates to the combination, with the mechanism of such printing-press, of feed and cutting devices, whereby the paper is fed from a roll into the press by an intermittent movement, and cut into any desired form. It relates, also, to the combination, with the mechanism above referred to, of certain other devices, whereby, simultaneously with the act of printing, the paper printed upon is manufactured into tags, by being cut into the desired form, and by the insertion of an eyelet; and consists in the devices and their combinations, hereinafter particularly described, whereby the above-named results are produced, which constitute my invention.

The several parts of the machine are mounted on a strong iron bed or frame, A. *e* is the driving-shaft, which should be provided with

a fast and loose pulley. K is a vertical stationary cylinder, secured to the bed A, the upper end of said cylinder being left free and unsupported. F is a shaft, passing through the center of the cylinder K, the ends of which project beyond the cylinder, as seen in Fig. 4. Upon the lower end is secured a beveled gear-wheel, *d*, which meshes into the gear *e'* on the end of the shaft *e*. Upon the upper end of the shaft F is secured an arm or plate, U, on which are mounted the inking-rollers *r r' r''*. *b b' b''* are bars or rods fitted to slide in recesses made in the plate or arm U, and each has on its outer end a head, P P' P''. (The middle bar is shown by dotted lines.)

There is a special purpose intended and secured by placing the inking-cylinder K and type-bed in a vertical position. In presses in which the inking-rollers are carried entirely around an ink-distributing cylinder, it is inconvenient, and involves great complication of parts, to support the rollers at both ends, and at the same time communicate motion to the platen from the same shaft which revolves the inking-rollers around the ink-distributing cylinder; but when said rollers extend horizontally from their supports at one end, and revolve around a horizontal ink-distributing cylinder, it is difficult or impossible to make them bear with equal pressure upon the surface of the cylinder and type throughout their entire revolution, as their axle-shafts will spring more or less at their fixed ends, thus causing imperfect distribution of the ink, and faulty inking of the type; hence I have placed the cylinder K upright, and arranged the inking-rollers to depend vertically from their points of support at their upper ends. By these means I secure a uniform pressure of the rollers upon the cylinder K, and upon the type along their whole length, throughout their entire revolution around the cylinder.

To these heads *g* are secured the axes *g g' g''* of the rollers *r r' r''*. (The latter not in sight in the drawing.) These axes are strong round shafts, fixed at the upper end rigidly in the heads P. From these heads they depend parallel to the cylinder K, leaving their lower ends free.

The inking-rollers are formed of hollow iron cylinders or stocks *h*, fitted to revolve on the

base-plate T''' of the platen, Fig. 3. The lower end of the said rod rests on the bed-plate, which is provided with an incline, whereby, as the box is carried back and forth with the platen, it is made to rise and fall as the lower end of S''' passes over the said inclined plane.

J is a punch for inserting the eyelets in the tags. It is pressed away from the paper by the spiral spring v''' , and driven toward the paper by the bell-crank lever K'' . This lever is pivoted at e'' in the base T' of the platen-frame, and is actuated by the end of its long arm (which is provided with a friction roller) passing over the irregular incline N , as the said platen-frame moves back and forth. The movements of these parts are so regulated and timed relatively that the lower end of the tube y drops into position to present an eyelet to the punch J just as the latter begins to make a forward movement toward the paper, and then immediately rises out of the way, and does not again descend until the punch has inserted the eyelet in the paper and receded to its first position. The punch J takes the eyelet upon its end, carries it into the perforations in the paper made by the perforator i' , and then onward against the header J' , and thereby heads it in the paper.

W'' is a plate secured on the upper end of the cylinder K , which provides a bearing for the loose rollers h on the axes of the inking-rollers. It is so formed and placed that, as the said rollers traverse the straight face of the type-bed, the surfaces of the inking-rollers will pass over the types with just the requisite pressure. H'' is a cylinder from which the paper is unrolled and fed into the press. The paper passes, first, between the legs $i f$ of the perforator i'' , then between the feed-rollers D' and D'' , then across the face of the type between it and the platen, then between the rollers $D D'''$, and on between the cutter on the left side of the machine. At each complete movement of the platen the inking-rollers revolve around the cylinder k , and ink the types. The paper is perforated for an eyelet, and an eyelet is inserted and headed down, the paper is pressed against the type and printed, and the tag or a printed portion is cut off of the desired shape.

The perforating apparatus is so constructed as to permit the insertion of cutters, punches, or stamps, whereby any desired shape of perforation may be made, or any figure embossed on the paper.

I do not limit myself to a single form on the stationary cylinder K , but I intend to make machines with a second type-bed on the opposite side of said cylinder, and provide it with a platen and other appliance, the duplicates of those above described. Neither do I limit myself to a solid inking-surface, over which the inking-rollers pass; but for the same may be substituted sections or rings, extending from on one side of the form around the cylinder to the other side, and said sec-

tions may be of any desired width and number, permitting inks of different colors to be distributed on the different sections, and, by the rollers $r r' r''$, deposited on the form.

The eyelet-punch J works in a hollow plunger, J''' , as seen plainly in section in Fig. 7, a spiral spring, v''' , acting to force said punch outward from the plunger, its movement in that direction being limited by the collar h'' .

The header J''' , for holding down the eyelets, is formed on the end of a sliding plate, J'' , having a large opening at its center, through which passes the shaft F . It lies immediately over the gear-wheel d , on the upper face of which is an eccentric annular groove, a pin, l' , in the said plate J'' projecting into the said groove. By this arrangement the revolution of the gear d gives a reciprocating movement to the plate J'' , and such movement is so timed that the punch J carries the eyelet against the header J''' . When the plate J'' is thrown to its limit of movement away from the punch, then the said plate J'' , with the header J''' , is thrown forward, forcing the punch J back into the plunger against the stress of the spring v''' , and thus effecting the complete heading of the eyelet in the paper.

What I claim as my invention is—

1. In a printing-press, the stationary vertical cylinder K , fixed solidly at its lower end to the bed-plate A , (the upper end being left free,) provided with a plane surface that serves as a bed for the type; the revolving plate U fixed to the upper end of the shaft F , arranged to revolve in the axis of the said cylinder; the heads $P P' P''$, (one or more,) arranged to slide in ways in said plate U , and in which are fixed the axle-shafts of the inking-rollers that depend from the said heads, and are pressed toward the said cylinder and type by the springs $s s' s''$ acting on said sliding heads, all constructed and combined to operate as and for the purpose described.
2. In a printing-press, the combination of the stationary cylinder K , provided with a plane surface that serves as a bed for the type, the reciprocating platen T , the revolving plate U , and a pitman pivoted at one end to the said plate, and at the other end to a crank-pin in said plate U , the said plate performing the double office of carrying the inking-rollers and communicating motion to the platen, all constructed and combined to operate as and for the purpose described.
3. The combination, in a printing-press, of the cylinder K , provided with a plane surface that serves as a bed for the type, the revolving plate U , the inking-rollers, carried by said plate, the platen T that carries on its arms $I I'$ the feed-rollers $D D' D'' D'''$, with the perforating apparatus $f t'''$, attached to and carried by said arms, all constructed to operate as and for the purpose described.
4. The combination, in a printing-press, of the cylinder K , provided with a plane surface that serves as a bed for the type, the revolv-

ing plate U, the inking-rollers carried by said plate, the platen T, that carries on its arms I I' the feed-rollers D D' D'' D''', with the cutting or shear blades i'' i''' , attached to and carried by said arms I I', all constructed and arranged to operate as and for the purpose described.

5. The feed mechanism consisting of the arm j the lever j' , the arm v , and the connecting-rod v' , all constructed and arranged to be actuated from the crank-pin G', in the gear d , whereby an intermittent movement is given to the feed-roller D', as and for the purpose described.

6. The eyelet-reservoir a , mounted upon the platform P''', constructed and arranged to be lowered and raised by the movement of the platen T, constructed and combined to operate as and for the purpose described.

7. The combination of the platen T, the lever k'' , incline N, and punch J, as and for the purpose described.

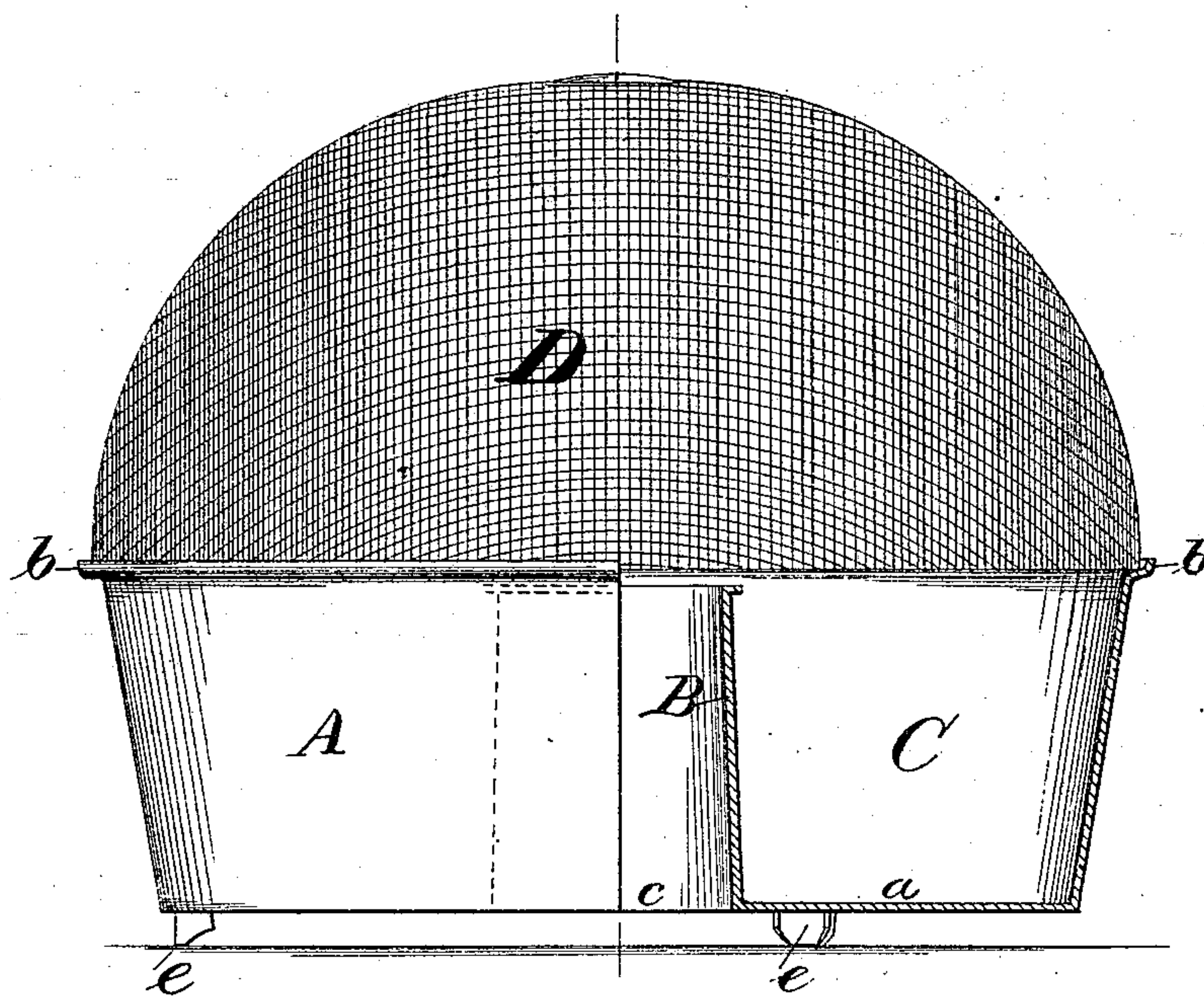
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FLY-TRAP.

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