A. H. Bangle. Sheet 1. 2 Sheets

Printing Press.

No. 103,961. Patented Jun. 7, 1870.

Fig: 1.

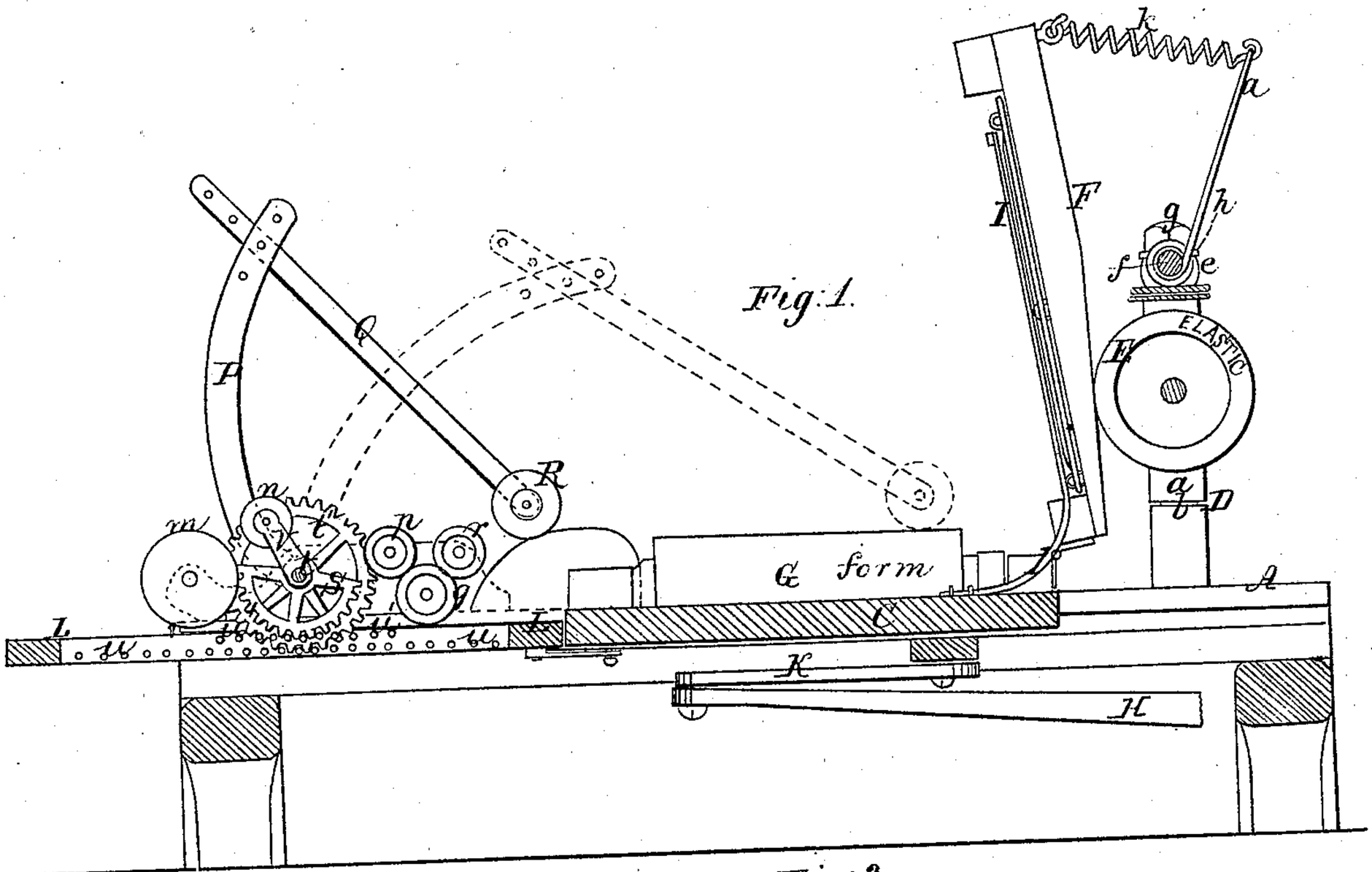
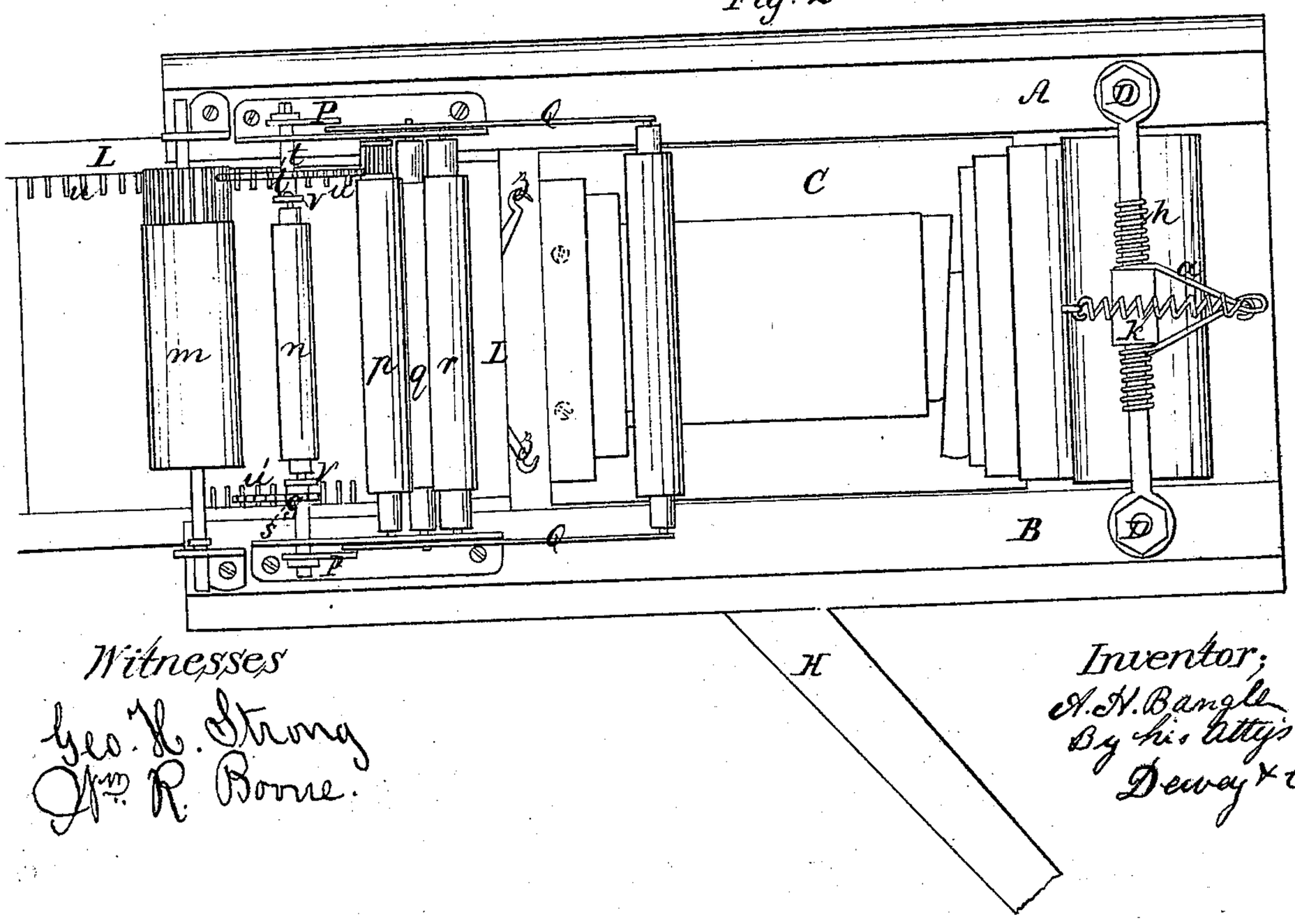


Fig: 2



Witnesses

Geo. H. Strong

Wm. R. Bonne.

Inventor;

A. H. Bangle

By his Attys

Dewey & Co

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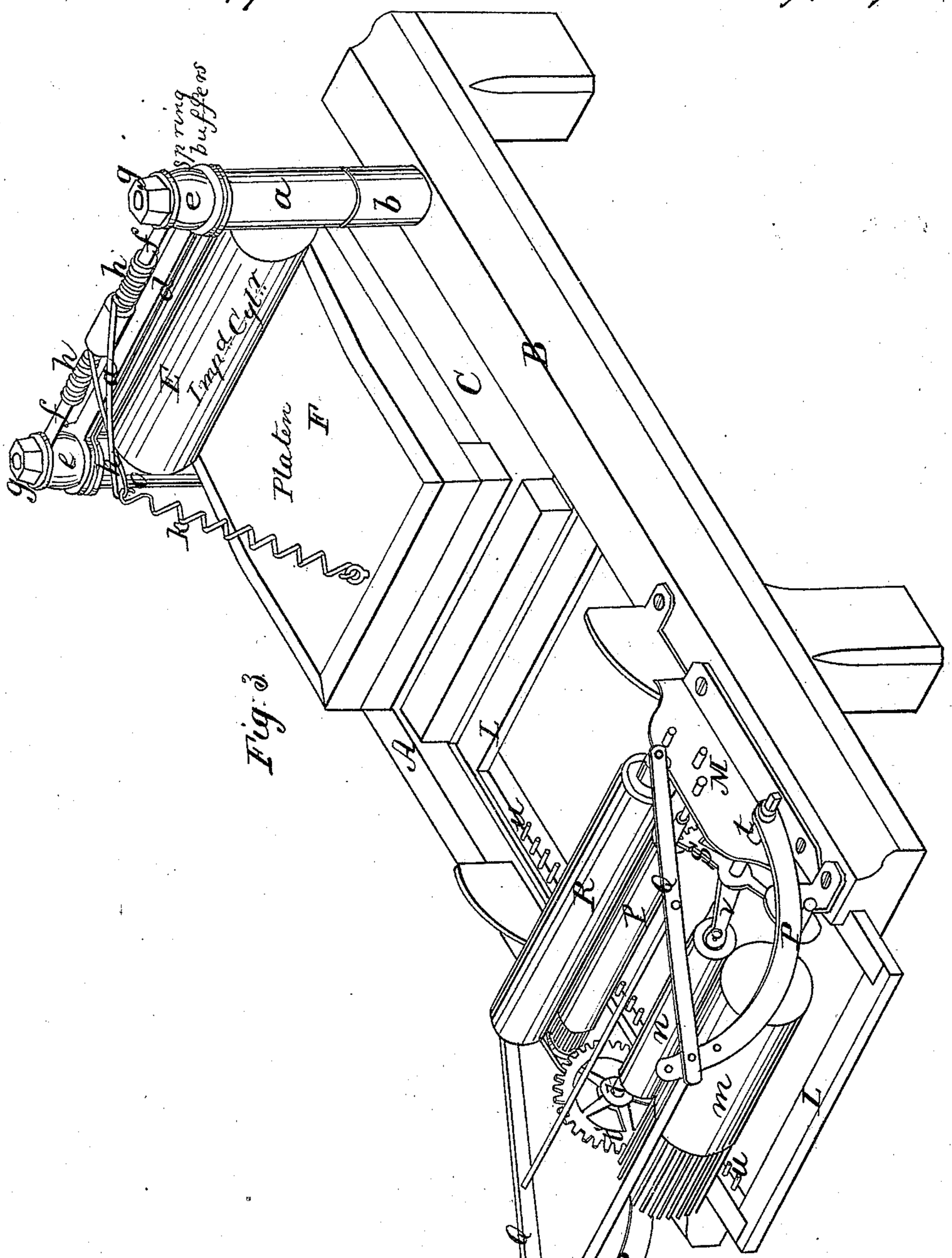

Fig. 3.

Witnesses
Geo. H Strong.
Jno. R Boone

Inventor;
A. H. Bangle
By his Att'y's
Dewey & Co

United States Patent Office.

AMOS H. BANGLE, OF BROOKLYN, CALIFORNIA.

Letters Patent No. 103,961, *dated June* 7, 1870.

IMPROVEMENT IN PRINTING-PRESSES.

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, AMOS H. BANGLE, of Brooklyn, county of Alameda, State of California, have invented an Improved Hand Printing-Press; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements, without further invention or experiment.

My invention relates to an improved automatically inking printing-press, which may be operated by hand or other power, and is intended more particularly to be used as a job-press for small work, and being cheap in construction, and complete in all its parts, is suited especially for tradesmen and professional persons who require large numbers of labels, cards, circulars, and other similar printed matter.

In order to explain my invention so that others can understand its construction and operation, reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1, sheet 1, is a side sectional elevation.

Figure 2, sheet 1, is a plan of the machine.

Figure 3, sheet 2, is a perspective view.

A and B represent the two side rails of any suitable frame. The inner edge of each of these rails is grooved so as to form a way along which the bed C moves.

Near one end of the frame, and secured to each of the rails A and B, are one or more vertical standards, D, rising upward to a suitable height.

Over these standards are slipped one or more metallic sleeves, *a b*, in one of which the journals of an elastic impression-roller, E, bear.

A plate or other suitable rod, *d*, having its ends formed into washers, is slipped down over the standard D, so that the washer ends will rest upon the upper ends of the sleeves, and the rod or bar will be parallel with the roller E.

Rubber buffers *e* are then slipped down and rest upon the washers, and upon these the washer ends of a rod, *f*, are placed, the rod lying parallel with the plate or rod *d*.

A nut, *g*, is then screwed down upon the upper ends of the standards D, and retains the various parts in place.

As the pressure comes under the roller, the sleeves *a* are moved upward, the rubber buffers serving to allow it to move under a pressure. This pressure can be regulated as desired, by means of the nuts *g*.

A wire, *h*, has its opposite ends wound around the rod *f*, upon each side of the center, its middle portions extending from the rod, and serving as a lever.

To the end of this lever a coiled wire or other spring, *k*, is attached, its outer end being secured to the outer end of the platen, so that the combined springs will gradually lift it as the form-bed is moved from under the impression-roller.

In place of the rubber buffers *e*, a half or entire elliptic or spiral spring might be used, and serve the same purpose as the buffers.

The wedge-shaped platen F may be dispensed with, if desired, and the tympan only used, so that the impression will be communicated directly from the impression-roller to the type.

This tympan-frame is shown in the drawing as hinged to the form-bed, and the frisket *l* consists of a spring wire, which is also secured to the bed, and bent upon a curve so as to bear upon the platen as the tympan-frame closes down upon the form.

G represents the form.

The form-bed and its connected parts are moved back and forth in its track or way, by means of levers H and K, or a crank with rack and pinion may be employed, as most convenient.

Attached to the form-bed by any suitable device is a frame, L, which also moves in the ways in the pieces A B. This frame communicates motion to the inking apparatus, which is worked automatically in the following manner:

As the press is at rest with platen up, the hooks 3, which lock the bed C and frame L, are unhooked. The roller R is then placed in position on the nest of rollers. A crank is then attached to either journal of roller *m*, on which the ink is first placed. The crank is turned, and while doing so the arms or levers Q, with roller R, are turned over and back by hand, bringing R upon *m*, and the small roller *n* is thereby thrown forward upon the nest, communicating and equally distributing the ink in a rapid and efficient manner.

Secured to the pieces A and B are upright plates M, in which the journals of the inking-rollers bear. These rollers are arranged as follows:

m is a large roller, upon which the ink may be placed by means of a small hand-roller. *n* is a small roller, which is caused to travel back and forth from the roller *m* to the distributing-rollers *p q r*, and supply them with the necessary quantity of ink.

Upon the inside of one of the rails of the frame L is arranged a long series of teeth, forming a rack, *u*.

A shaft, *t*, bears in the opposite upright plates M, and has an independent toothed wheel, *t'*, which engages with the teeth of the rack, causing it to revolve in either direction, according to the direction in which the frame moves. This wheel engages with teeth upon the ends of the rollers *m* and *p*, and by its back and forth revolutions keeps the distributing-rollers and feeding-roller at work.

The shaft *t* carries two arms, V, in the ends of which the journals of the traversing-roller *n* bear, so that the partial revolution and return of the wheel *t'*

causes it to travel back and forth between the rollers *m* and *p*.

To each extremity of the shaft *t*, outside of the upright plates M, is attached a curved arm, P.

At the opposite ends of these arms are secured loosely other arms Q, in the end of which the roller R, which inks the type, is placed.

A toothed segment, S, is firmly secured to the shaft *t*, so as to work in the limited or short-toothed rack *u'*, on the side of the frame opposite to the rack *u*. As the frame L moves back and forth, the toothed segment S causes the shaft *t* to be partially rotated each way, thus, by means of the arms P and Q, causing the inking-roller R to be moved over the face of the type, and back again to its position on the three distributing-rollers *p q r*.

This press can be used for any kind of printing, but is more especially adapted for small work. The inking is performed automatically, and each part is so constructed as to constantly and thoroughly do its duty. Or it can be used as a simple, cheap press to ink by hand without the combination of rollers.

The press can be constructed at a small cost, and can easily be operated by a boy.

Having thus described my invention,

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

1. The elastic impression-roller E, in combination with the sleeves *a b*, and elastic buffers *e*, and wedge-shaped platen, substantially as and for the purpose above described.

2. The coiled wire *h*, its center forming a lever, as described, in combination with the spring *k*, for elevating the tympan-frame, substantially as specified.

3. In combination with the sliding form-bed C, the sliding frame L, with its inside racks *u* and *u'*, substantially as and for the purpose specified.

4. Operating the distributing and supply-rollers by means of the independent toothed wheel *t'*, substantially in the manner as herein specified.

5. The combination, with the roller *n*, of the rack *u*, shaft *t*, wheel *t'*, and arms *v*, when arranged to operate substantially as described.

6. The arms P and Q, secured to the extremities of the shaft *t*, in combination with the toothed segments S, for operating the inking-roller, substantially as above specified.

In witness that the above-described invention is claimed by me, I have hereunto set my hand and seal.

AMOS H. BANGLE. [L. S.]

Witnesses:

GEO. H. STRONG,

WM. R. BOONE.