No. 11,853. PATENTED OCT. 31, 1854.

A. M. & G. H. BABCOCK.

PRESS FOR PRINTING IN COLORS.

3 SHEETS—SHEET 1.

Fig 4.

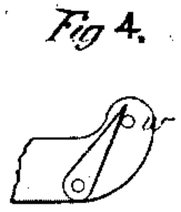

Fig 1.

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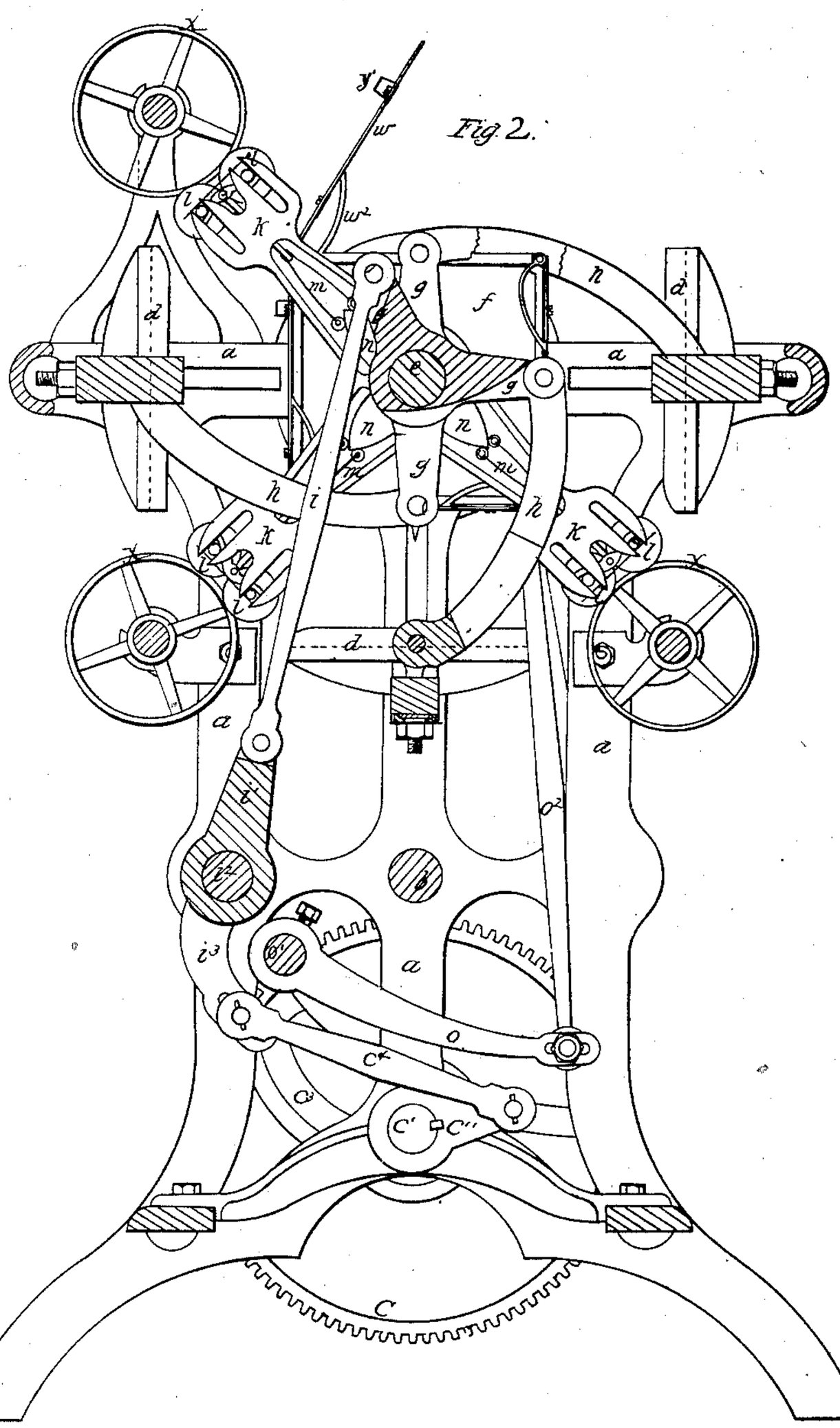
3 SHEETS—SHEET 2.

Fig 2.



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3 SHEETS—SHEET 3.

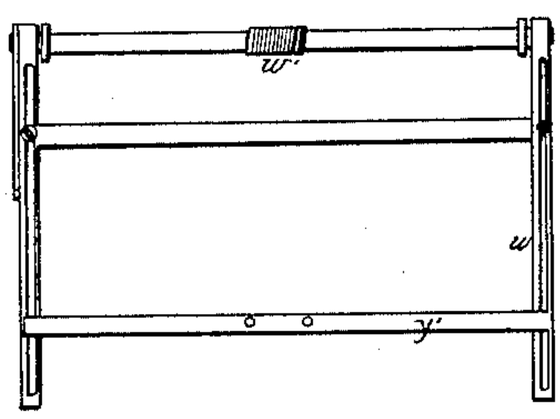
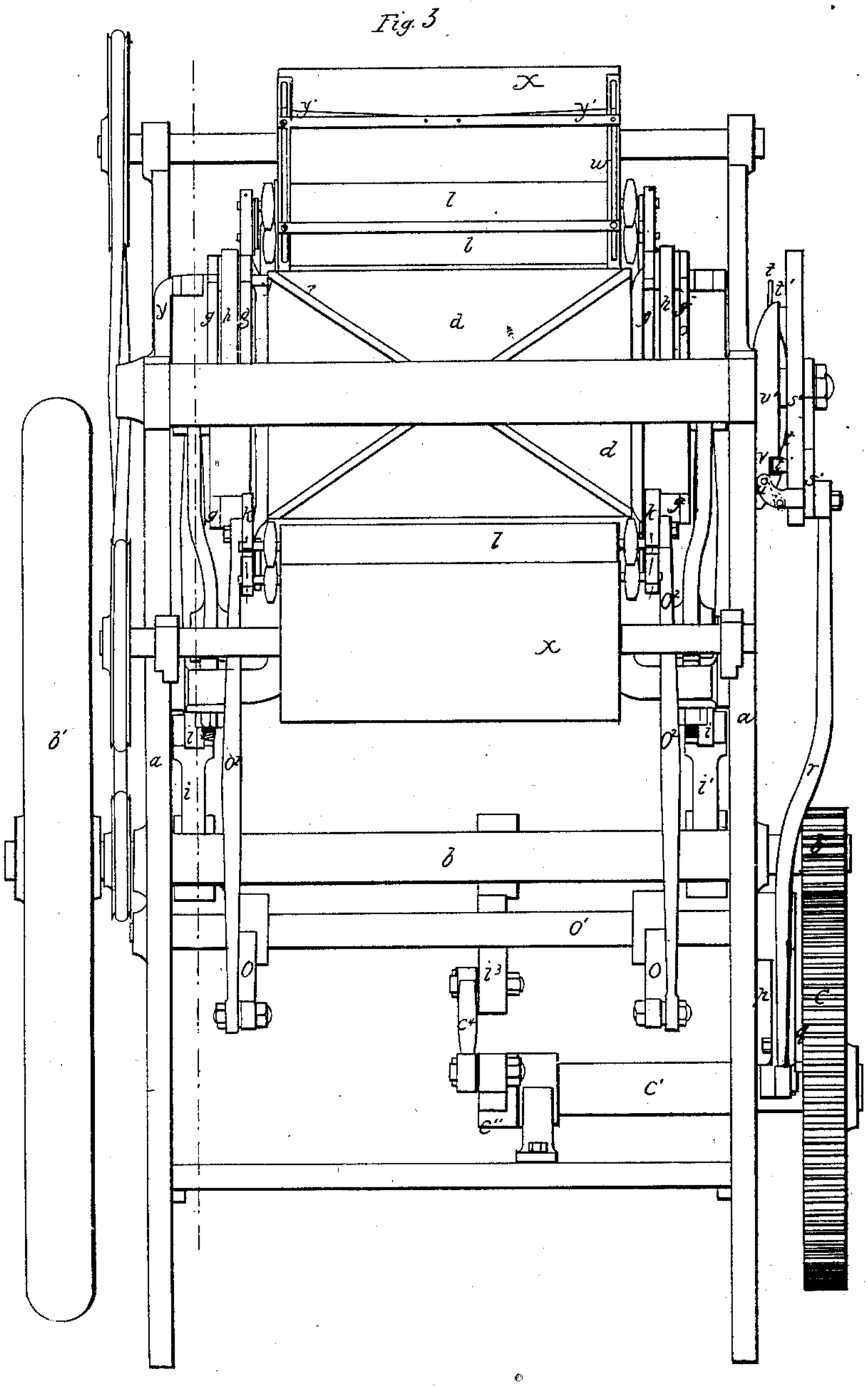



Fig. 3



# UNITED STATES PATENT OFFICE.

A. M. BABCOCK AND G. H. BABCOCK, OF WESTERLY, RHODE ISLAND.

## PRESS FOR PRINTING IN COLORS.

Specification of Letters Patent No. 11,853, dated October 31, 1854.

*To all whom it may concern:*

Be it known that we, A. M. BABCOCK and G. H. BABCOCK, of Westerly, in the county of Washington and State of Rhode Island, have invented certain new and useful Improvements in Printing in Colors; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1, is a side elevation; Fig. 2, is a vertical section; Fig. 3, a front view.

The same letters refer to like parts in all the figures.

Our improvements consist in certain devices for actuating the inking rollers; conveying the sheets to be printed to the successive forms, and in giving the impression; together forming a compact combination of forms, and the necessary accessories for the purpose of printing, with platens and beds.

The construction of the machine is as follows: The drawing represents three beds; but it is obvious a greater number than three can be added without changing the principle. The frame may be made of cast iron, of suitable form to contain the parts; in the drawing this is designated by letter (*a*). Through the center, or about that point, there is a driving shaft (*b*,) having a fly-wheel (*b'*,) on one end of it outside the frame, and on the other end is a pinion (*b''*,); this shaft may be driven by a pulley or crank, by manual power, or otherwise; the pinion gears into a spur wheel, (*c*,), on the main shaft (*c'*,), on which there is a crank (*c''*,), by which the impression is given, by means herafter described; at the spur-wheel there is a cam, ($c^3$,) most clearly shown in Fig. 1, by dotted lines; from these two elements all the motions of the machine are derived. The beds (*d*), on which types are affixed for printing, are placed around a polygonal prism, which forms the revolving platen and tympan; these beds are all made to slide in a straight line, perpendicular to the face thereof, by the following apparatus; on a central axis (*e*,) (on which the polygonal platen or tympan (*f*,) revolves) there is a set of arms (*g*,) placed at either end of the platen, which turn on the shaft or axis (*e*); these arms are as many in number as there are beds, and all revolve together around the central axis (*e*); the ends of these arms are connected by connecting rods (*h*), with the beds, so that by a partial revolution of the arms, the beds will all be drawn toward the platens, as shown in the drawings; the turning of the arms (*g*) is effected by connecting rods (*i*) attached thereto, and descending to arms (*i'*) on a shaft ($i^2$) at the rear side of the frame; near the center, on this shaft ($i^2$), a third arm, ($i^3$) is connected by a rod ($c^4$) with crank (*c''*) on the main shaft, above described. Inside of the arms (*g*), on the shaft or axis (*e*) is another series of radial arms (*k*), broader and lighter than those which give the impression, and sufficiently long to support the inking rollers; in the outer ends of these arms (*k*,) are slots, or deep channels, in which the axes of the inking rollers (*l*) are supported and play; the rollers are borne out toward the ends of the arms, by means of a double leaf spring (*m*), which presses against the two sides of a cam-shaped projection (*n*,), of a proper shape to keep up the requisite pressure, as clearly shown in Fig. 2. The two rollers of each set of inking apparatus are, when the arms are stationary, borne against the distributing cylinder (*x*) where they receive their supply of ink; and after each impression they are made to roll over the bed and back to their place, thus passing twice over the types to ink them. This motion is effected by connecting the arms (*k*,) with an arm (*o*), on a shaft (*o'*,) below, by means of rods ($o^2$), the shaft itself being turned by the cam ($c^3$,) acting on a lever (*p*,) by means of a wrist (*q*,), that works in the groove of the cam ($c^3$). To the end of the lever (*p*) there is another rod (*r*) extending up to an arm (*s*), turning loosely on the axis (*e*); inside of this arm there is a disk or wheel (*s'*,), around which on the inside there is a set of springs (*t*), equal in number to the sides of the polygon; these springs have pins (*t'*) attached to their ends, which enter holes in the disk; and when the springs are pressed down against the disk, said pins project through the opposite side, and enter a slot in the arm (*s*), by which the disk is turned, and with it, the prism; on the end of the arm (*s*), there is a stud projecting over the edge of the wheel, on which there is a pin (*u*) (see Figs. 3 and 4) against which lays one end of a spring turning-buckle; this is for pressing the spring (*t*,) inward, and forcing the pin into the

slot on the arm, while at the same time it relieves it from a notch ($v$) in the permanent frame, by which it is held steady; from the notch there is a curved piece ($v'$,) extending upward to prevent the spring ($t$) from releasing the pin, so as to insure the prism to be turned to the proper place before the impression can be taken if the machine is turned either way; as the arm ($s$) reaches the point of vibration, the pin springs out of the slot, and the next pin is caught below, while the buckle on returning is lifted off the pin ($u$), and passes back without disturbing the spring ($t$) or pin attached thereto. The ink fountains, distributors, are of ordinary construction, and not represented in the drawing.

The platens are all connected together in the form of a prism of as many sides as there are to be colors, with one additional side for the purpose of laying on and taking off the sheet; to each corner there is a frisket frame ($w$) hung , which is kept pressed down against the platen by a spring ($w'$,); on the shaft of this frisket, on one side, there is a projection ($w^2$), that as the face of the prism comes up, strikes a pin on the frame at ($y$), which raises up the frisket to deliver the printed sheet and receive a new one; at the next turn the frisket closes down, and the succeeding one rises, the sheet is held fast, when once taken on, till all the colors are printed. We attach to the upper end of the frisket a spring ($y'$,), which the bed, in giving the impression bears against; this insures its holding the sheet firm while drawing off from the type.

Having thus fully described our improvements, what we claim therein as new, and for which we desire to secure Letters Patent, is—

1. The arrangement and combination of the polygonal platen and beds, substantially in the manner and for the purposes set forth.

2. We also claim the construction and arrangement of the inking-rollers, consisting of the vibrating arms and springs for holding out the rollers in place, as described.

3. We also claim the combination of arms $g$, $h$, $i$, 1, 2, 3 and $c'^2$ or their equivalents and connecting rods $i$, $c^4$, or their equivalents, for giving a series of impressions, forming progressive levers in the manner specified.

4. We also claim the apparatus for turning the prism, consisting of the vibrating arm $s^4$ disk $s'$ springs and pins $f'$ or their mechanical equivalents, with the apparatus for engaging and disengaging the same, as set forth.

5. We also claim the arrangement and combination of the friskets, with the platens, as above specified, and the springs $y'$ attached thereto for giving a firm hold while drawing the sheet from the type.

A. M. BABCOCK.
G. H. BABCOCK.

Witnesses:
E. G. CHAMPEN,
JAMES H. HOYT.