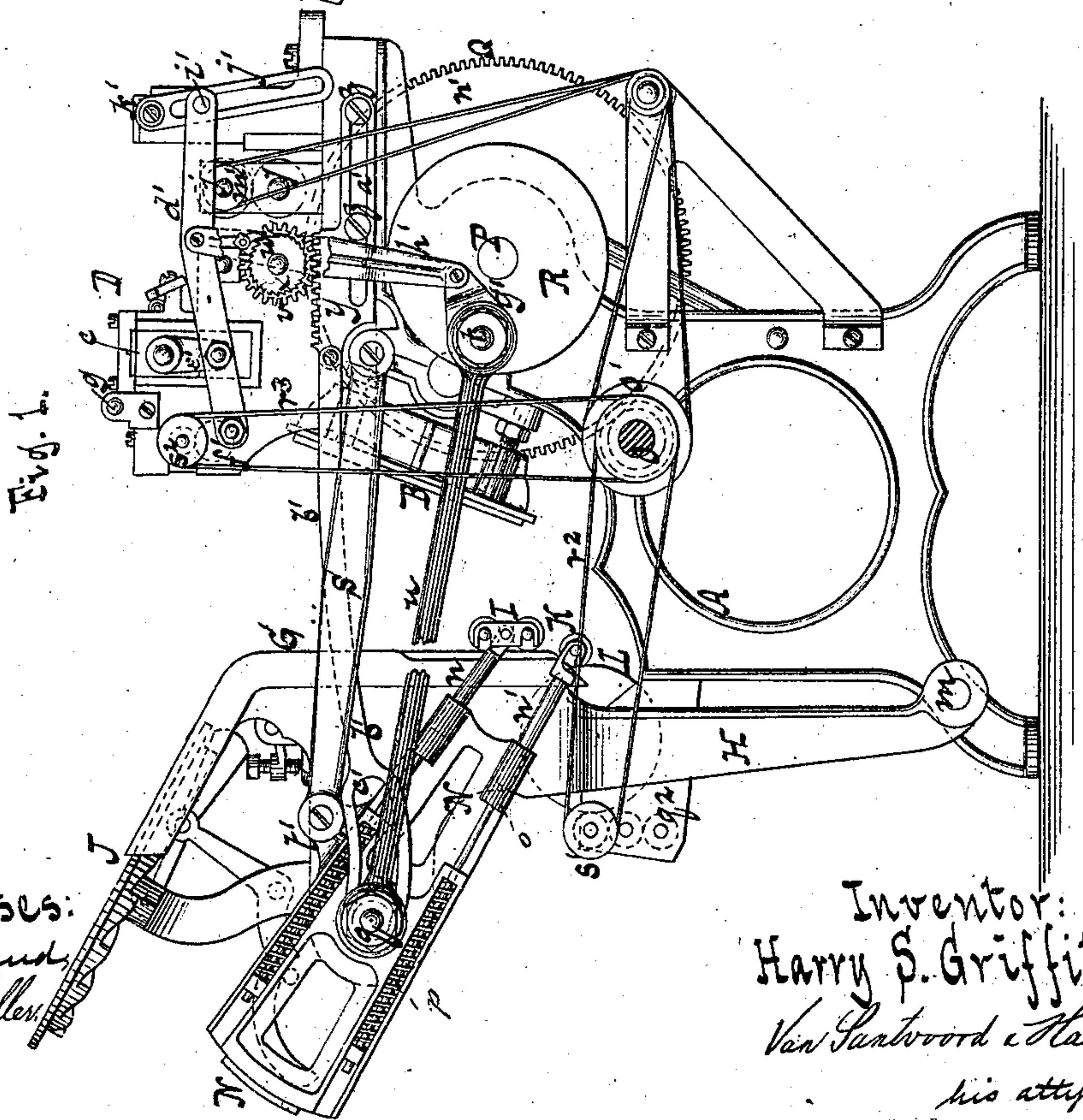
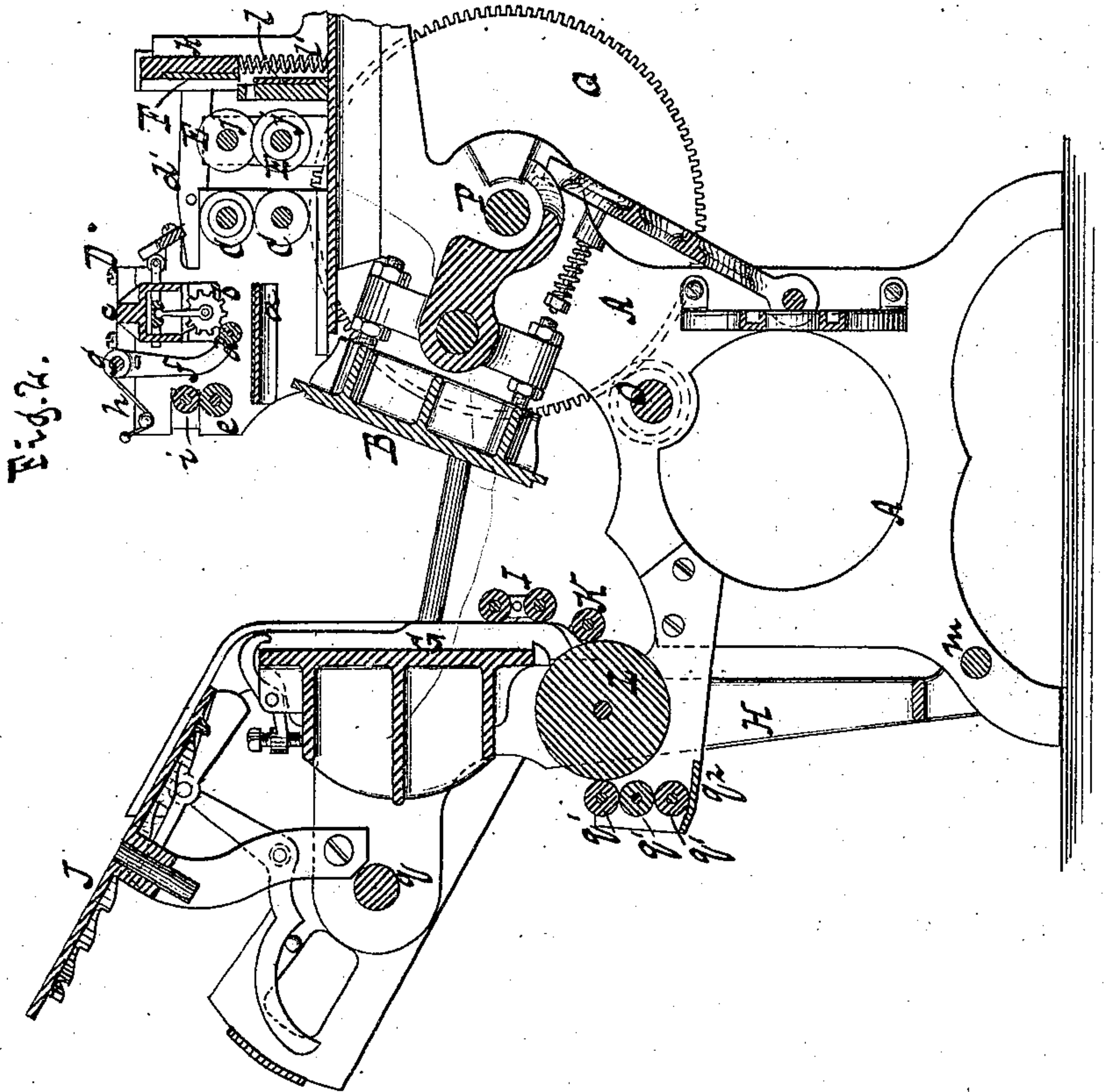


H. S. GRIFFITHS.

Oscillating Printing-Press.

No. 227,520.

Patented May 11, 1880.



Witnesses:
Otto Hufeland,
William Miller.

Inventor:
Harry S. Griffiths,
Van Santvoord & Hauff,
his attys

H. S. GRIFFITHS.

Oscillating Printing-Press.

No. 227,520.

Patented May 11, 1880.

子

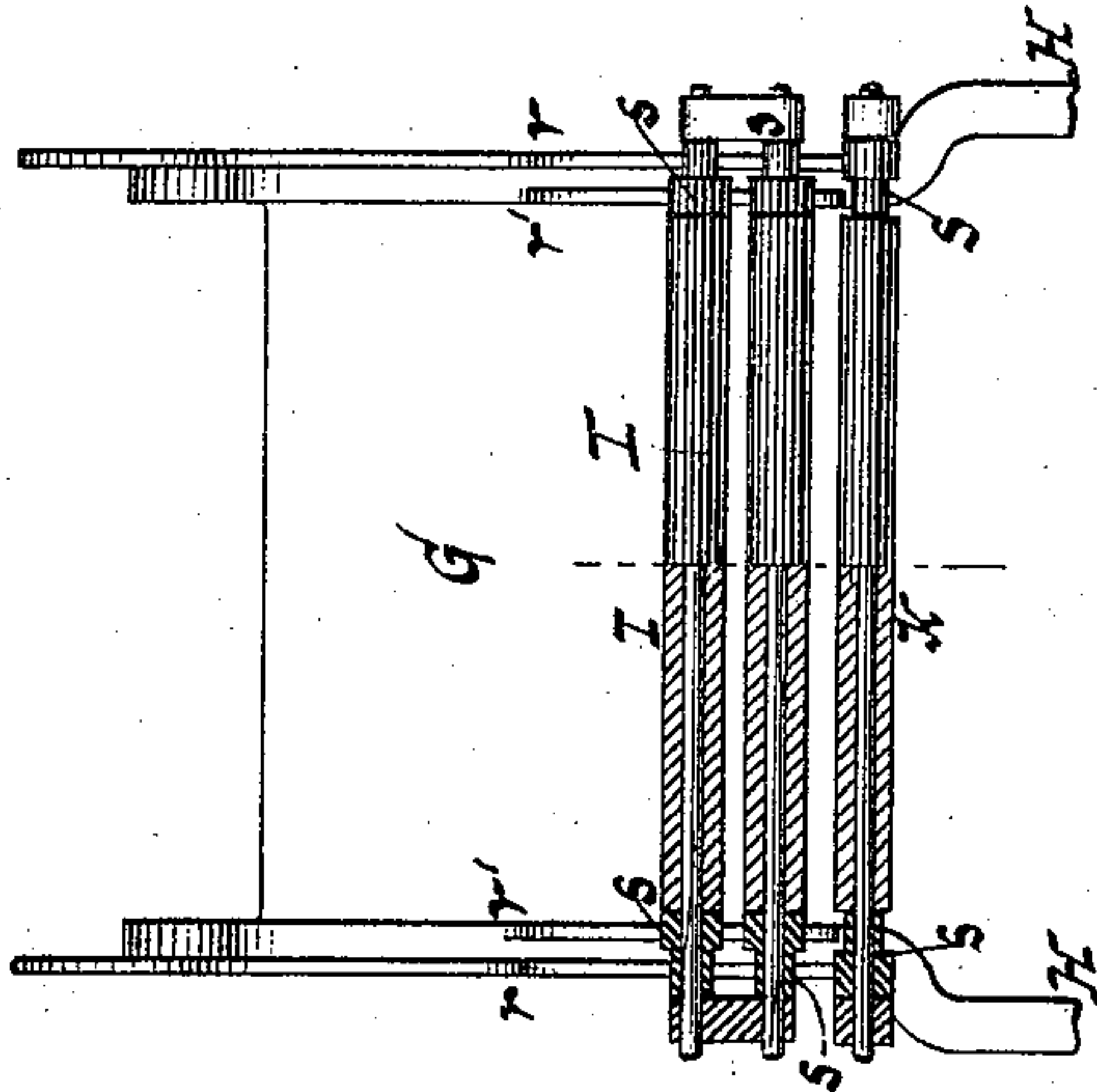
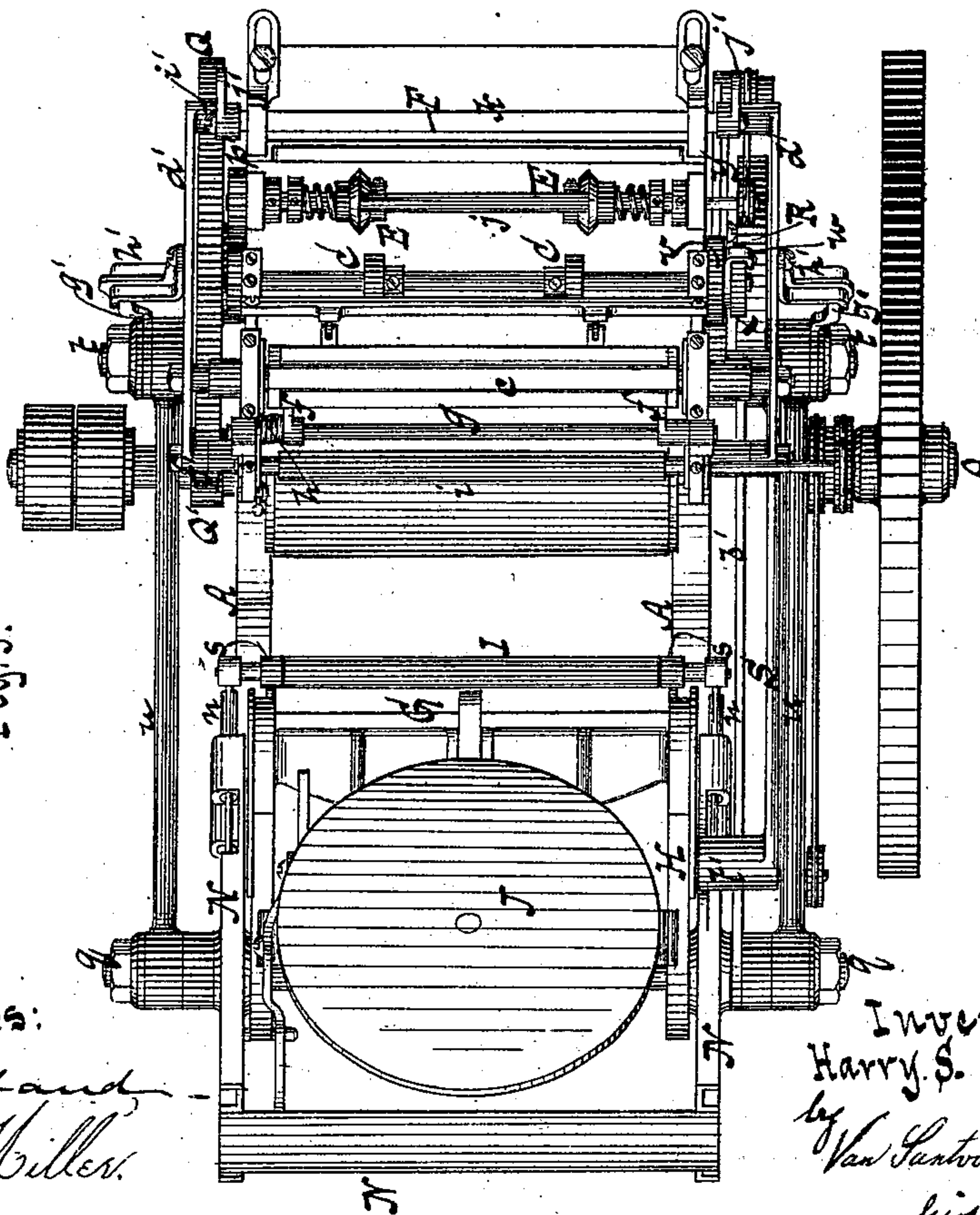


Fig. 3.



Witnesses:
 Otto Ruffel and
 William Miller.

Inventor:
Harry S. Griffiths.
by
Van Santvoord & Hauff,
his attys.

UNITED STATES PATENT OFFICE.

HARRY S. GRIFFITHS, OF BROOKLYN, NEW YORK.

OSCILLATING PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 227,520, dated May 11, 1880.

Application filed January 28, 1880.

To all whom it may concern:

Be it known that I, HARRY S. GRIFFITHS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Printing-Presses, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 is a vertical central section thereof. Fig. 3 is a plan or top view of the same. Fig. 4 shows the form and inking-rollers, partly in front view and partly in section.

Similar letters indicate corresponding parts.

My invention relates to that class of printing-presses embodying a bed and platen, of which the press commonly known as "Gordon's Franklin Press" is a representative; and it consists in certain novel combinations of parts, hereinafter fully described, and pointed out in the claim.

In the drawings, the letter A designates the machine-frame, in which is mounted the platen B in any usual or suitable manner, the same being stationary and the paper being drawn over it in a continuous sheet from a roll (not shown) by the action of feed-rollers C C, whose motion is such as to propel the paper a certain distance after each impression.

Between the platen B and the feed-rollers C C is situated a numbering mechanism, D, and beyond the feed-rollers are situated slitting-knives E E and a cutting-knife, F.

The numbering mechanism D may be constructed in any usual or suitable manner. In this example it consists of a bed, *a*, over which the paper passes as it leaves the platen, a numbering-wheel, *b*, (one or more,) mounted in a vertically-reciprocating carriage, *c*, above the bed, an inking-roller, *d*, and an ink-supply roller, *e*.

The numbering-wheel *b* obtains a step-by-step motion at the ascent of its carriage *c* after each impression, and the inking-roller *d* is mounted in parallel arms *f* secured to a shaft, *g*, to which is connected a spring, *h*, acting thereon with a tendency to swing the parallel arms in the direction of the wheel-carriage *c*, so that the inking-roller is caused to travel under the carriage and ink the numbering-

wheel, as indicated in Fig. 2, at the ascent of the carriage. When the wheel-carriage *c* descends it displaces the inking-roller *d* against the action of the spring *h*, and the ink-supply roller *e* is so arranged that when this takes place the inking-roller is brought in contact therewith, so as to receive a fresh supply of ink. Ink is furnished to the ink-supply roller *e* by hand, and with the same is combined a distributing-roller, *i*.

The slitting-knives E E are secured to revolving shafts *j j*, situated one above the other, and the cutting-knife F is attached to a stock, *k*, having a vertically-reciprocating motion, while it cuts against the edge of a stationary blade, *l*.

The letter G designates the movable bed. This bed is fastened to an oscillating frame, H, mounted on a shaft, *m*, and it is supplied with ink by the ordinary inking-rollers I and ink-plate J, in addition to which I make use of a supplemental inking-roller, K, (one or more,) which receives its ink from a supply-roller, L, having combined therewith suitable distributing-rollers *q'* and an ink-well, *q*².

All the inking-rollers move simultaneously; but they are so arranged that the main rollers I take their ink only from the ink-plate J, while the supplemental roller K takes its ink only from the supply-roller L, and, furthermore, the main rollers act on one half or portion of a form upon the bed G and the supplemental roller K on the other portion thereof. By this arrangement I am enabled to supply the form with ink of two different colors and to print with such colors—as, for example, railroad-tickets.

In applying my press to use I divide the form into two parts, the lower one adapted to print the background and the upper to print the face of the ticket or other article. I then furnish the supply-roller L with ink of a certain color—say yellow—and the ink-plate J with ink of another color—say blue. I furthermore so arrange the form upon the bed G relatively to the motion of the feed-rollers C C that when the press is put in operation the paper is first printed on by the lower portion of the form, then moved forward by the feed-rollers and a second impression made upon the first one by the upper portion of the form.

A double impression thus completes a ticket or a series of tickets, which are then acted on by the numbering mechanism D, severed longitudinally to the sheet of paper by the slitting-knives E E, and transversely thereto by the cutting-knife F. The numbering mechanism D prints with ink of a different color from those used on the form.

The action of the printing-rollers I and K is obtained as follows: The rollers I have their bearings in rods *n* and the roller K in rods *n'*, both sliding in guides *o* formed upon the sides of the frames N, and both connected to springs *p*, which act thereon with a tendency to draw or press the inking-rollers against the form on bed G and against the ink-plate J and supply-roller L, situated above and below the form.

The frame N is mounted on a shaft, *q*, in the oscillating frame H, and in the motions of this frame the frame N obtains an oscillating motion of such a nature as to impart the proper motion to the inking-rollers I K. At the respective ends of the bed G are two guideways, *r r'*, (see Fig. 4,) and the inking-rollers I K are provided with heads *s* at their opposite ends running on the guideways.

Each of the heads *s* has two different diameters, as clearly shown in Fig. 4, and one part thereof bears on the guideway *r*, while the other part bears on the guideway *r'*, and the heads of the rollers I, moreover, occupy a reverse position to those of the roller K.

Now, the guideways *r r'* are so shaped relatively to the heads *s* of the inking-rollers that when the rollers are swept over the form the roller K alone is permitted to touch the lower part of the form, while the rollers I alone touch the upper part thereof.

To give the required motions to the parts of my press I make use of the following mechanism:

The driving-shaft O is geared with a counter-shaft, P, by means of cog-wheels Q, and on the counter-shaft is mounted a disk, R, which, as well as the wheel Q, carries an eccentric wrist-pin, *t*, connecting with the shaft *q* of the oscillating frame H by means of a rod, *u*, so that the oscillating frame H obtains its motions from that source.

On the shaft of the lower feed-roller, C, is mounted a loose pinion, *v*, carrying a pawl, *w*, which engages a ratchet-wheel, *x*, fastened to said shaft. The pinion *v* meshes into a rack, *y*, which slides on pins *z* by means of guide-slots *a'*, and connects with the shaft *q* of the oscillating frame H by means of a link-arm, *b'*; the latter being provided with a slot, *c'*, to engage the shaft *q*. As the frame H oscillates a reciprocating motion is imparted to the rack *y*, and by this means the loose pinion *v* is turned in reverse directions, whereby the pawl is caused to act intermittently on the ratchet-wheel *x* to turn the lower feed-wheel, whence motion is given to the upper feed-wheel.

The numbering-wheel carriage *c* is connected

to two arms, *d'*, one on each side of the press, by means of links *e'*, which arms are respectively hung on a pivot, *f'*, at one end, and connect with a crank-arm, *g'*, on the wrist-pin *t* by a rod, *h'*, so that the arms *d'* are swung on their pivot *f* in the revolutions of the counter-shaft P, whence the numbering-wheel carriage receives a reciprocating motion.

At the outer or free end of the swinging arms *d'* are studs *i'*, one to each arm, engaging slotted arms *j'*, which are mounted on gudgeons *k'* at the ends of the stock *k* of the cutting-knife F. When the swinging arms *d'* move downward the studs *i'* act on the slotted arms *j'* to cause the descent of the knife-stock *k*, and thus produce the proper action of the cutting-knife F, while in the upward motion of the swinging arms *d'* the studs *i'* play in the slotted arms *j'* and set free the knife, which then is forced to its upper or normal position by the action of springs *l'*. (See Fig. 2.)

On the shaft *j* of the upper slitting-knife is mounted a pulley, *m'*, which connects by a belt, *n'*, with a pulley, *o'*, mounted on the driving-shaft O, so that the upper slitting-knife obtains a continuous revolving motion, which motion is transmitted to the lower slitting-knife by cog-wheels *p'*, whereby the knife-shafts *j j* are geared together. The driving-pulley *o'* is also geared with the ink-distributing rollers *i* and *q'* by means of belts *r² r³* and pulleys *s' s²*, so that these rollers receive a continuous revolving motion.

The frame N, carrying the inking-rollers I K, is provided with a lug, *t'*, to which is pivoted one end of a bar, S, the other end of which is pivoted to the machine-frame. In the oscillations of the frame H the bars S remain stationary, and thus act on the frame N to swing the same on the shaft *q*, thereby producing the proper motions of the inking-rollers.

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

In a printing-press of the character specified, the combination, with the oscillating bed and the separate inking devices, arranged to apply inks of different colors to the portions of the form from the upper and lower portions of said bed, respectively, of the stationary platen B, the feed-rollers C C, for drawing the paper intermittently a predetermined distance, and the numbering mechanism D, provided with inking devices distinct from those of the oscillating bed, and arranged to act upon the paper, all constructed and organized to operate substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 22d day of January, 1880.

HARRY S. GRIFFITHS. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.