

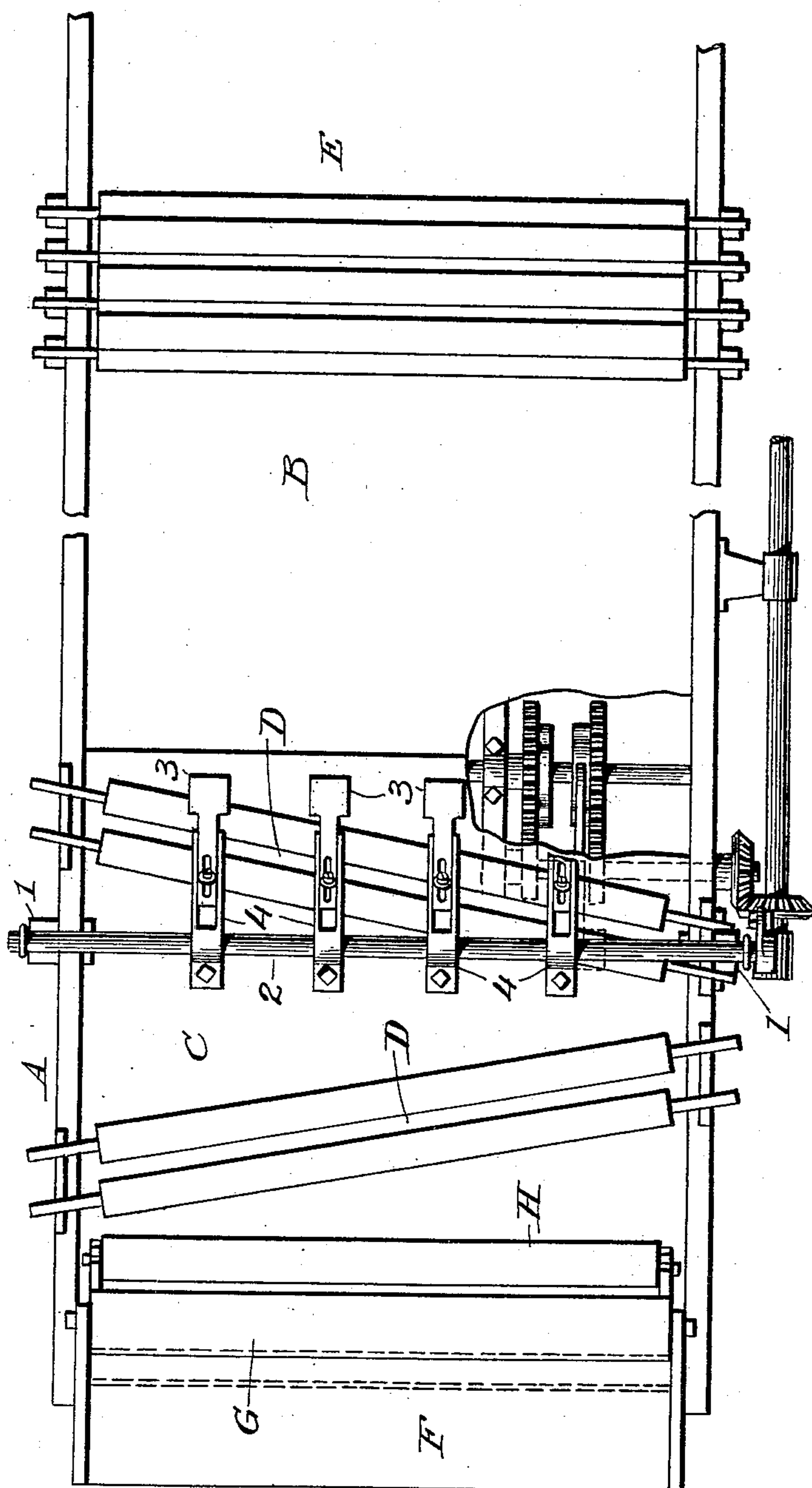
R. KLUCKEN.  
 INK DISTRIBUTING DEVICE FOR PRINTING PRESSES.  
 APPLICATION FILED NOV. 26, 1907.

910,691.

Patented Jan. 26, 1909.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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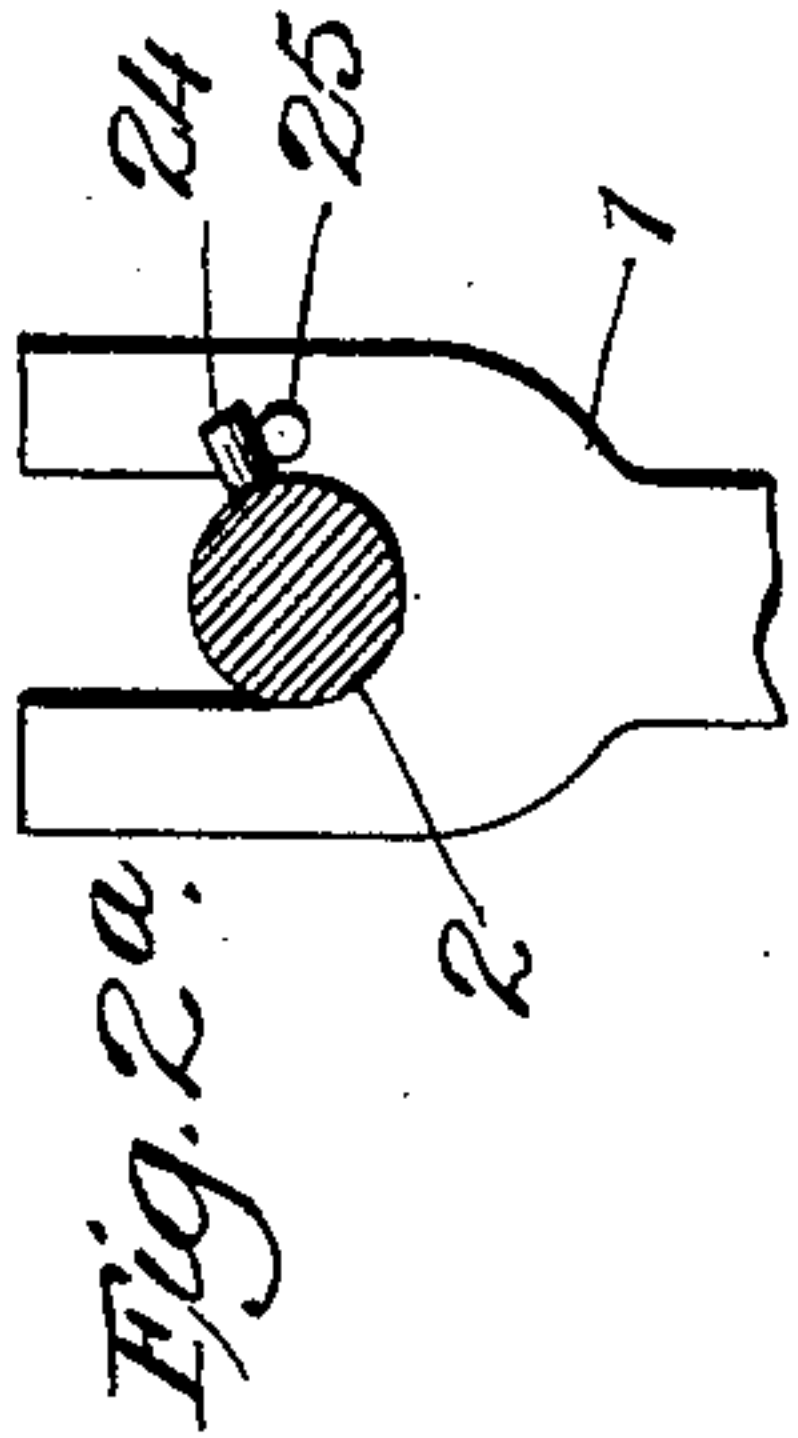
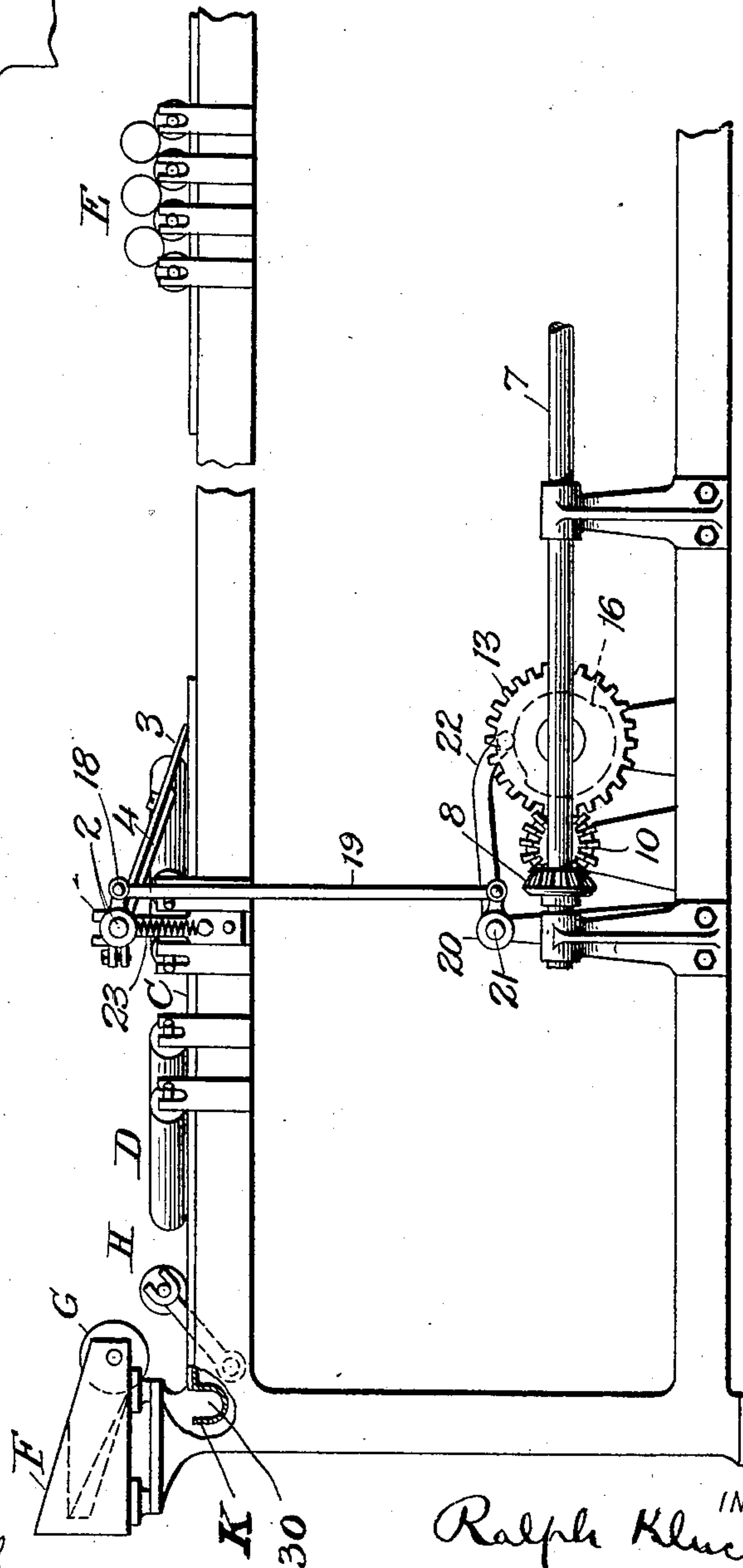


Fig. 2.



WITNESSES

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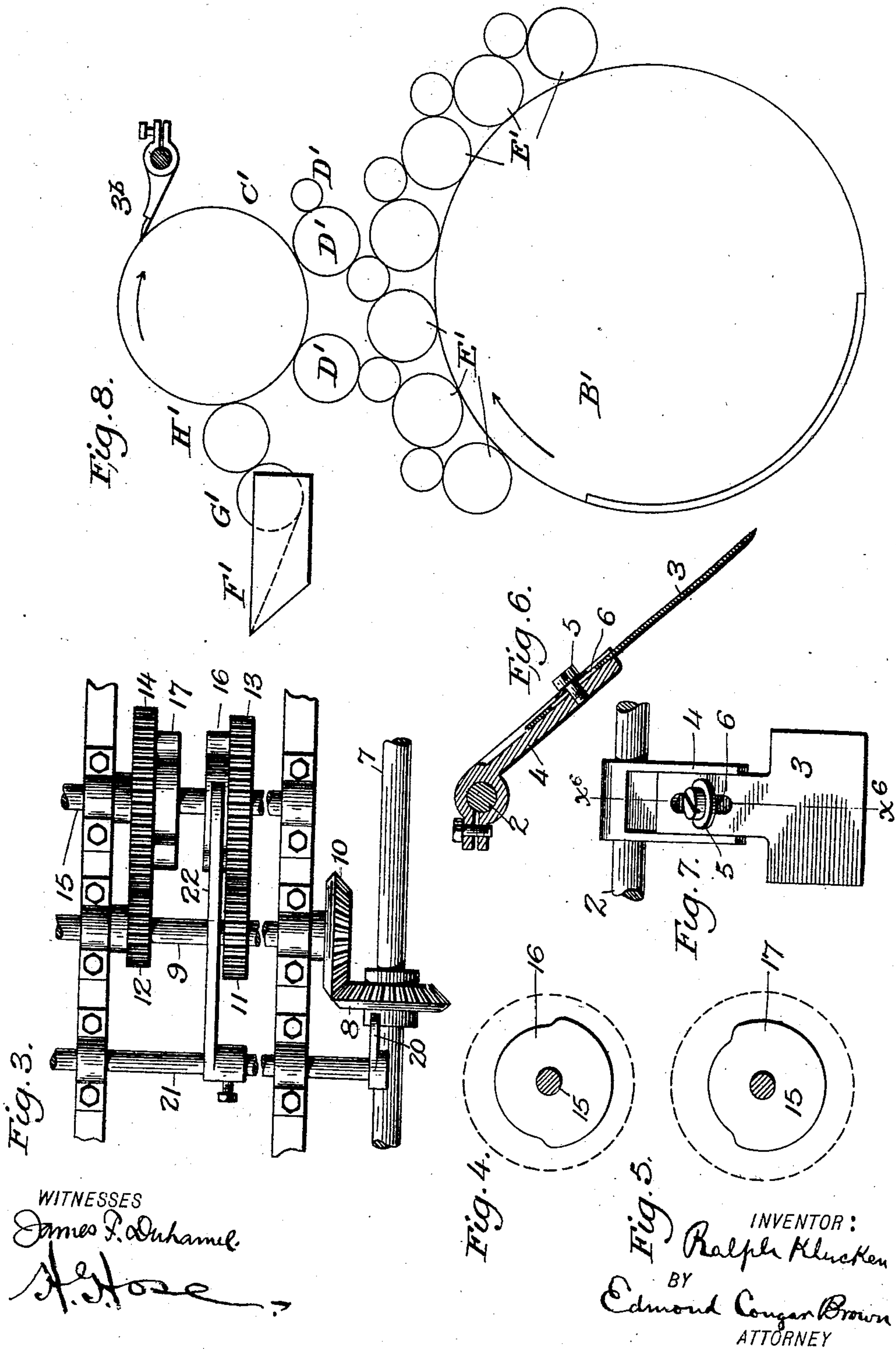
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Patented Jan. 26, 1909.

4 SHEETS—SHEET 3.



WITNESSES  
James F. Duhamel.  
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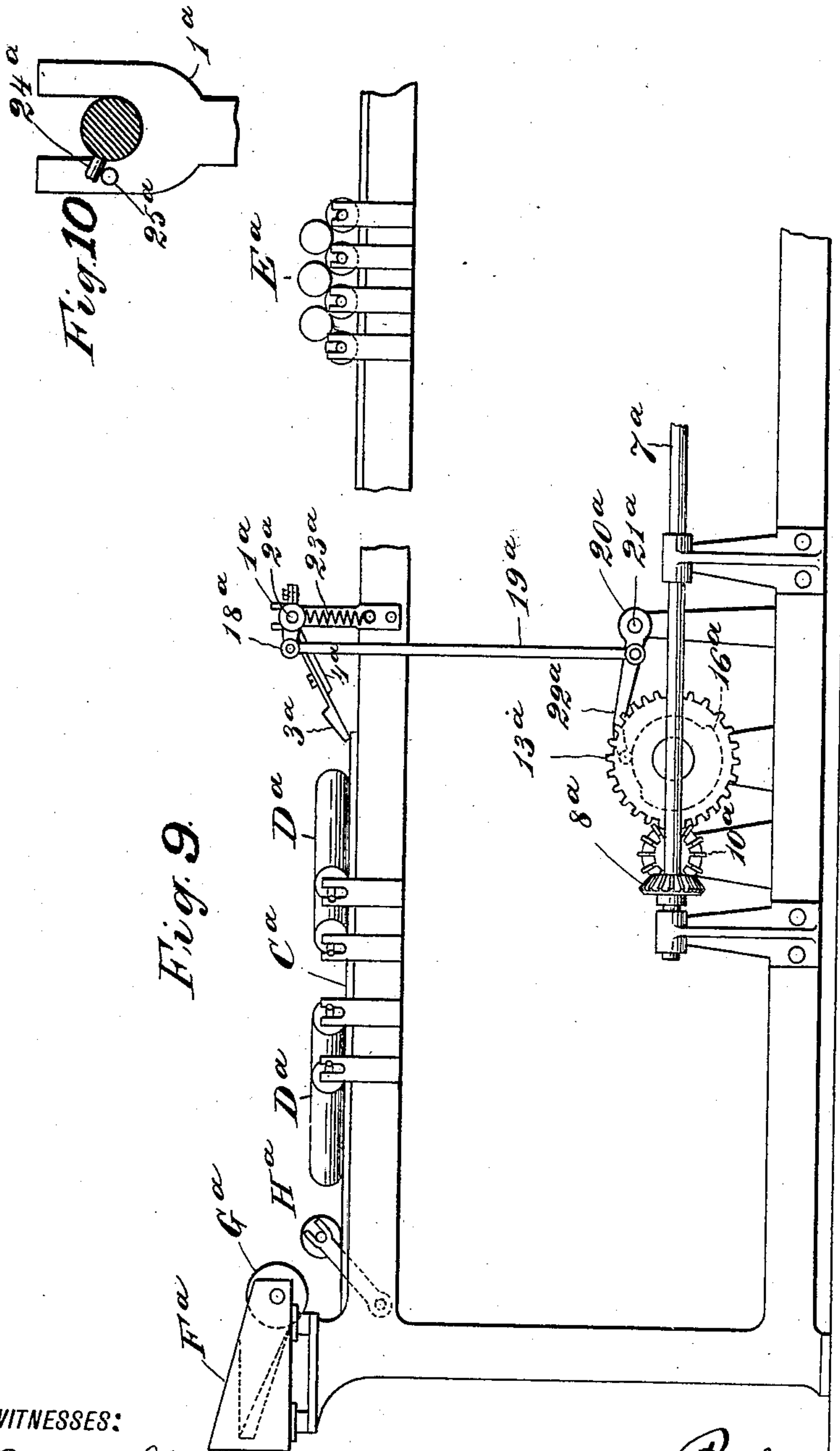
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 INK DISTRIBUTING DEVICE FOR PRINTING PRESSES.  
 APPLICATION FILED NOV. 28, 1907.

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Patented Jan. 26, 1909.

4 SHEETS—SHEET 4.



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# UNITED STATES PATENT OFFICE.

RALPH KLUCKEN, OF WEST SOMERVILLE, MASSACHUSETTS.

## INK-DISTRIBUTING DEVICE FOR PRINTING-PRESSES.

No. 910,691.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed November 26, 1907. Serial No. 403,973.

*To all whom it may concern:*

Be it known that I, RALPH KLUCKEN, a citizen of the United States, residing in West Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Ink-Distributing Devices for Printing-Presses, of which the following is a specification.

This invention relates to the devices employed on printing presses for inking the forms, and particularly to means for distributing the ink to be applied to the forms; and the object of the present invention is to provide a means or device whereby the ink may be applied to the form in bands having different densities or quantities of ink; or in other words, whereby one portion of the form shall have applied to it less ink than another portion adjacent thereto. This is very important in printing from many forms, where the best results from the impression require that the form shall have the ink thereon disposed variably as to quantity, and not uniformly, as to quantity, all over the printing surface.

In the accompanying drawings, which illustrate an embodiment of the invention as applied to a lithographic press, Figure 1 is a plan and Fig. 2 a side elevation of a part of such a press or machine to which the present invention is applied. Fig. 2<sup>a</sup> is a detail view to be hereinafter described. Fig. 3 is a plan view of the gearing on a larger scale than the principal views. Figs. 4 and 5 show the cams, detached. Figs. 6 and 7 are detail views of the scraper, the former being a section at line X<sup>e</sup> in Fig. 7. Fig. 8 is a diagrammatic view showing the invention applied to a cylinder press, and with a scraper of modified form as hereinafter described. Fig. 9 is a side view similar to Fig. 2 but showing a modification of the invention, and Fig. 10 is a detail view of part of the same.

A designates a part of the frame of the press; B designates the reciprocating bed to receive the form; C is the ink-distributing slab, which reciprocates with the bed; D designates the distributing rollers and E the inking rollers; F designates the ink fountain, G the fountain roller, and H the duck roller. All the above features are common in presses, in some form, and are herein shown, without detail, merely to illustrate the present invention.

In the ordinary operation of the press the fountain—which may be one of any of the

well known kinds—supplies ink to the slab C and the roller D distributes it. As the slab is moved under the rollers E the ink is taken up by the latter, and they, in turn, transfer it in the usual way to the form. The oblique rollers D have considerable endwise movement as they are rotated by the slab C; and the riders shown above the inking rollers E may have also a moderate endwise movement as they are rotated by the form.

In order that the slab C may not apply the ink to all parts of the rollers E equally, but on the contrary apply it in such a way that the form may be inked in the manner best suited to bring out in the impression each part properly on the printed sheet, means are provided that will now be described. Mounted in forked supports 1 on the press-frame, is a shaft 2, on which are adjustably mounted scrapers 3, adapted to bear on the slab C, and to rest thereon at or near its forward edge when the slab is at the ink receiving point seen in Figs. 1 and 2. As the slab moves forward—to the right in Figs. 1 and 2—the scrapers 3 remove the ink—or the major part thereof—so that, when the slab passes under the inking rollers E, the ink will be transferred from the slab to said rollers in full quantity and strength at all points except along the lines or bands where it has been removed by the scrapers; along these latter lines or bands there will be a less quantity of ink applied to the form inking rollers.

There may be one or more of the scrapers 3, and they may be of various widths; or indeed of any width desired. Figs. 6 and 7 show a simple form of the scraper, the latter being a face view. In this construction, 4 is a holder, adapted to be clamped on the shaft 2 at any point desired. The scraper 3 is mounted adjustably in the holder 4 by a screw 5, which passes through a slot 6 in the scraper. This scraper is shown in a simple, adjustable form, but the invention is not limited to any particular detailed form of the scraper, or to its width, and different printing forms will require scrapers of different widths, and usually, also, different numbers of scrapers. At the rear end of the reciprocating bed is a trough 30 which catches the ink scraped from the slab as the trough's knife like edge K passes under the scrapers 3 thereby removing the ink from them. This trough is attached in some suitable manner so as to be readily removed for emptying and cleaning.



The shaft 2, resting in the forks 1, is a rock-shaft, so disposed that by rocking it, the scraper or scrapers may be raised clear of the surface of the slab C; and mechanism is herein shown for automatically rocking said shaft and thus lifting the scrapers into their inoperative position at such times as this may be desired. This mechanism will now be described. (See particularly Figs. 2 and 3.)

7 designates the main driving shaft of the printing press, and 8 a miter gear-wheel thereon which drives a shaft 9, through a miter gear-wheel 10; on the shaft 9 are keyed two pinions, 11 and 12, which gear respectively with two spur-wheels 13 and 14, loose on a journal-shaft 15. As herein shown the diametrical relation between the pinion 11 and wheel 13 is 1 to 2, and the said relation between the pinion 12 and the wheel 14 is 1 to 3. Carried by the wheels 13 and 14, respectively, are cams 16 and 17, seen detached in Figs. 6 and 7.

On the scraper shaft 2 is a crank-arm 18, to which is coupled the upper end of a connecting-rod 19, the lower end of which is coupled to a crank-arm 20 on a rock-shaft 21; and on this rock-shaft is adjustably mounted a cam-arm 22, adapted to be set in either of three positions, namely, so as to rest on either of the rotating cams 16 and 17, or occupy a position between them.

The operation of this mechanism is as follows: If the arm 22 rests on the cam 16, (as in Figs. 1 and 3) then the scrapers will be held up out of operative relation with the slab at each alternate reciprocating movement of the slab; if the said arm rests on the cam 17, then the scrapers will come into operation only at every third reciprocating movement of the slab. This operation is governed by the fact that the shaft 9 makes one rotation at each reciprocating movement of the slab, as the mechanism is herein shown.

Obviously the invention is not limited to the specific mechanism herein shown for effecting the intermittent operation of the scraper or scrapers, nor to any particular number of mutations or changes in such operation. The scraper-shaft 2 may be held down yieldingly by springs 23; and there may be a stop device to prevent the scrapers from dropping down too far when the slab C moves out from under them in its advance. In the drawings, Fig. 2<sup>a</sup>, such device comprises a radial pin 24 on the shaft 2, adapted to engage a limiting stop 25 on the bearing or support 1. It is obvious also that the scrapers 3 may point in the reverse direction so that instead of dragging or sweeping over the inked surface they may push forward and remove the ink by a scooping-up operation. In that case it may be advisable to provide the upper surface of the scrapers with side walls which may serve to confine the scooped-

up ink laterally. This modification is shown in Fig. 8 as applied to a machine having a cylindrical form, and in Figs. 9 and 10 to a machine of the ordinary reciprocating type.

Although the invention is herein shown merely for illustration, as applied to a printing press having a flat, moving slab for effecting the distribution of the ink, the scrapers removing a certain portion of the ink from the plane surface of the slab, it should be understood that the moving distributing device or part need not be one with a flat or plane surface, as the scrapers will remove the ink as well from a surface that is not a plane. Hence this invention is not limited in the respect named.

Fig. 8 illustrates the last-named application of the invention. In this figure, B<sup>1</sup> designates the form-cylinder; C<sup>1</sup> the distributing cylinder; D<sup>1</sup> the distributing rollers; E<sup>1</sup> the form-inking rollers; F<sup>1</sup> the ink-fountain; G<sup>1</sup> is the fountain roller; H<sup>1</sup> the duck roller, and 3<sup>b</sup> a scraper for scraping the ink from the roller C<sup>1</sup>.

In the form of my invention shown in Fig. 9, the modified form of scraper which pushes forward instead of dragging and therefore scoops-up the ink, is shown applied to a machine similar to that shown in Fig. 2. In Fig. 9 the scraper 3<sup>a</sup> is shown with side walls at the lower end, to confine the scooped-up ink. All the parts of the machine shown in Fig. 9 and designated F<sup>a</sup>, G<sup>a</sup>, &c., correspond to the parts shown in Fig. 2 and designated by the same letters without the index letter *a*, and perform similar functions, and they need not therefore be here fully described.

Having thus described my invention, I claim—

1. In a printing press or machine, the combination with a moving part provided with an ink-distributing surface; means for supplying ink to and distributing it over said surface; and form-inking rollers to take up the ink from said surface; of means for removing ink from a portion only of said distributing surface before the latter supplies the form-inking rollers.

2. In a printing press or machine, the combination of a reciprocating part provided with an ink-distributing surface; means for supplying ink to and distributing it over said surface, and form-inking rollers which take up the ink from the said distributing surface; of scraping means bearing on said surface and adapted to remove ink from a portion of such surface when the latter moves under the scraping means.

3. In a printing press or machine, the combination of a reciprocating part provided with an ink-distributing surface; means for supplying ink to and distributing it over said surface, and form-inking rollers which take up the ink from the said distributing surface;



of scraping means bearing on said surface and adapted to remove ink from a portion of such surface; said means comprising a scraper or scooping-up device adapted to push forward as the ink-distributing surface passes under it.

4. In a printing press or machine, the combination of a reciprocating part provided with an ink-distributing surface; means for supplying ink to and distributing it over said surface, and form-inking rollers which take up the ink from the said distributing surface; of scraping means bearing on said surface and adapted to remove ink from a portion of such surface; said means comprising a scraper or scooping-up device adapted to push forward as the ink-distributing surface passes under it; said device being provided with lateral walls for confining the scooped-up ink.

5. In a printing press or machine, the combination of a part provided with an ink-distributing surface; means for supplying ink to and distributing it over said surface; and form-inking rollers which take up the ink from said surface, of means for removing ink from a part of said distributing surface during the movement of the press; and automatic means for rendering intermittent the operations of said ink-removing means.

6. In a printing press or machine, the combination with a moving part with an ink-distributing surface; means for supplying ink to said surface, means for distributing the ink over said surface; and form-inking rollers which take up the ink from said surface; of means for removing ink from a part of said

distributing surface; said means comprising a rocking shaft; a scraper mounted adjustably on said shaft and resting normally on said surface, and means for raising said scraper clear of said surface during certain periods in the operation of the press.

7. In a printing press or machine, the combination with a reciprocating ink-distributing slab; means for supplying ink to and distributing it over the surface of said slab; and form-inking rollers adapted to take ink from said slab; of means for removing ink from a part of the surface of the slab, comprising a rock-shaft 2, mounted over said slab, a rock-shaft 21, means between the last-named shaft and the shaft 2 whereby the shaft 21 rocks the shaft 2, a rotating cam, and an arm 22, adjustable on the shaft 21, and adapted to rest on said cam.

8. In a printing press or machine, the combination with an ink-distributing surface, provided with a trough or receptacle for receiving ink scraped off from the same; means adapted to supply ink to and distribute it over said surface; and form inking rollers adapted to take up the ink from said surface; of means adapted to scrape ink from a portion only of said ink distributing surface into said trough.

In witness whereof I have hereunto signed my name this 9th day of November 1907, in the presence of two subscribing witnesses.

RALPH KLUCKEN.

Witnesses:

WILLIAM B. BROWN,  
HOWARD B. BLEWETT.