

No. 892,782.

PATENTED JULY 7, 1908.

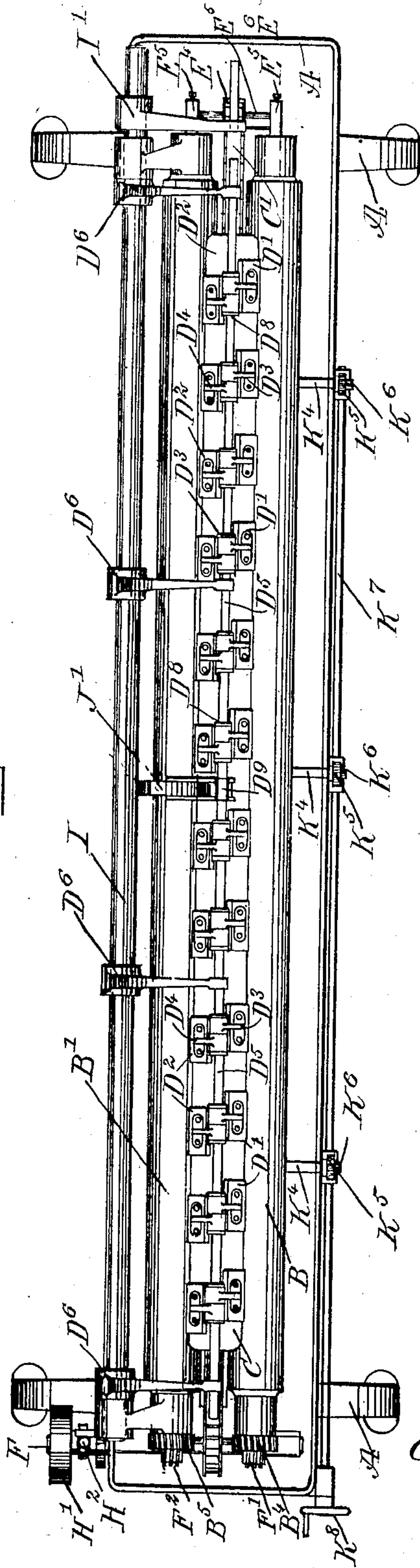
C. WAGNER.

MACHINE FOR CLEANING INKING ROLLERS.

APPLICATION FILED JULY 20, 1906.

4 SHEETS—SHEET 1.

Fig. 1.



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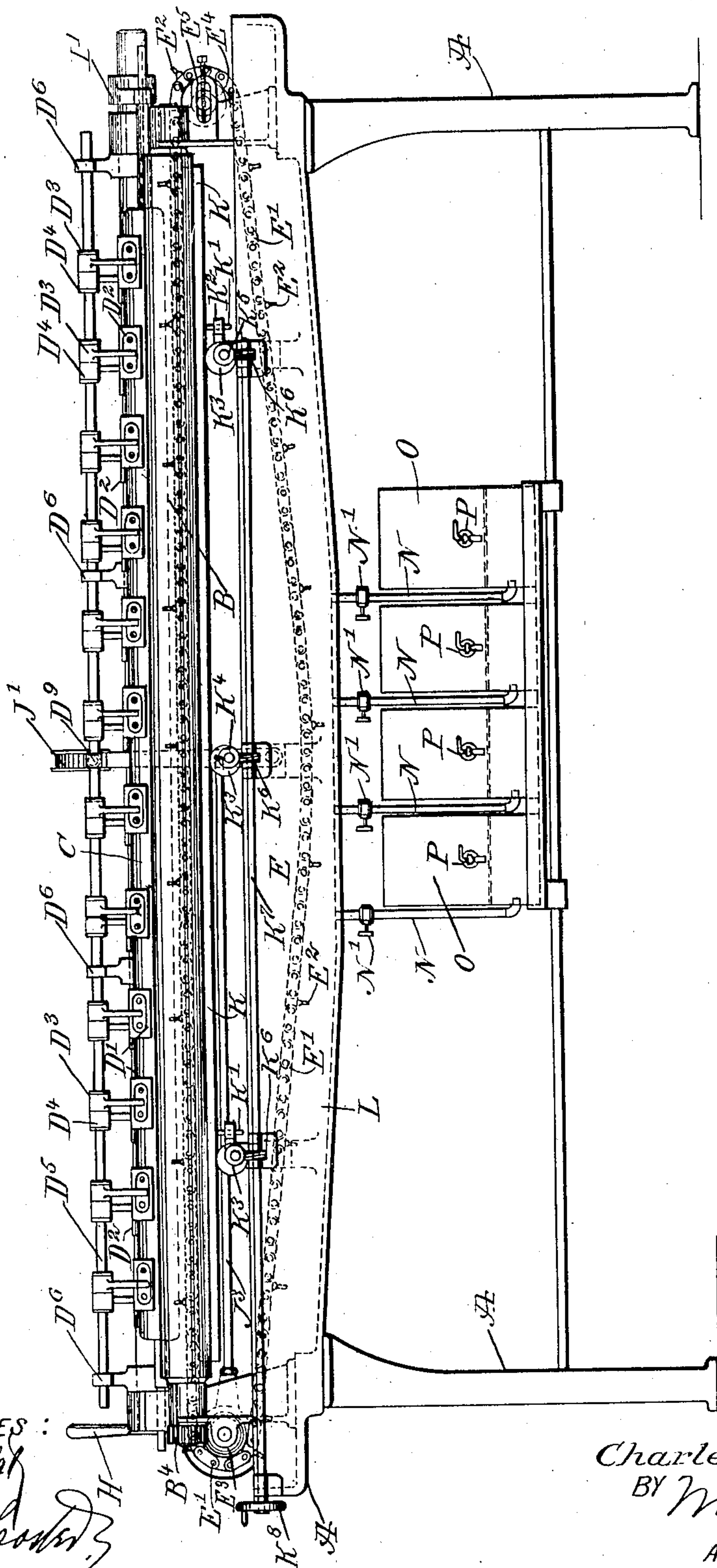
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4 SHEETS—SHEET 2.

Fig. 2.



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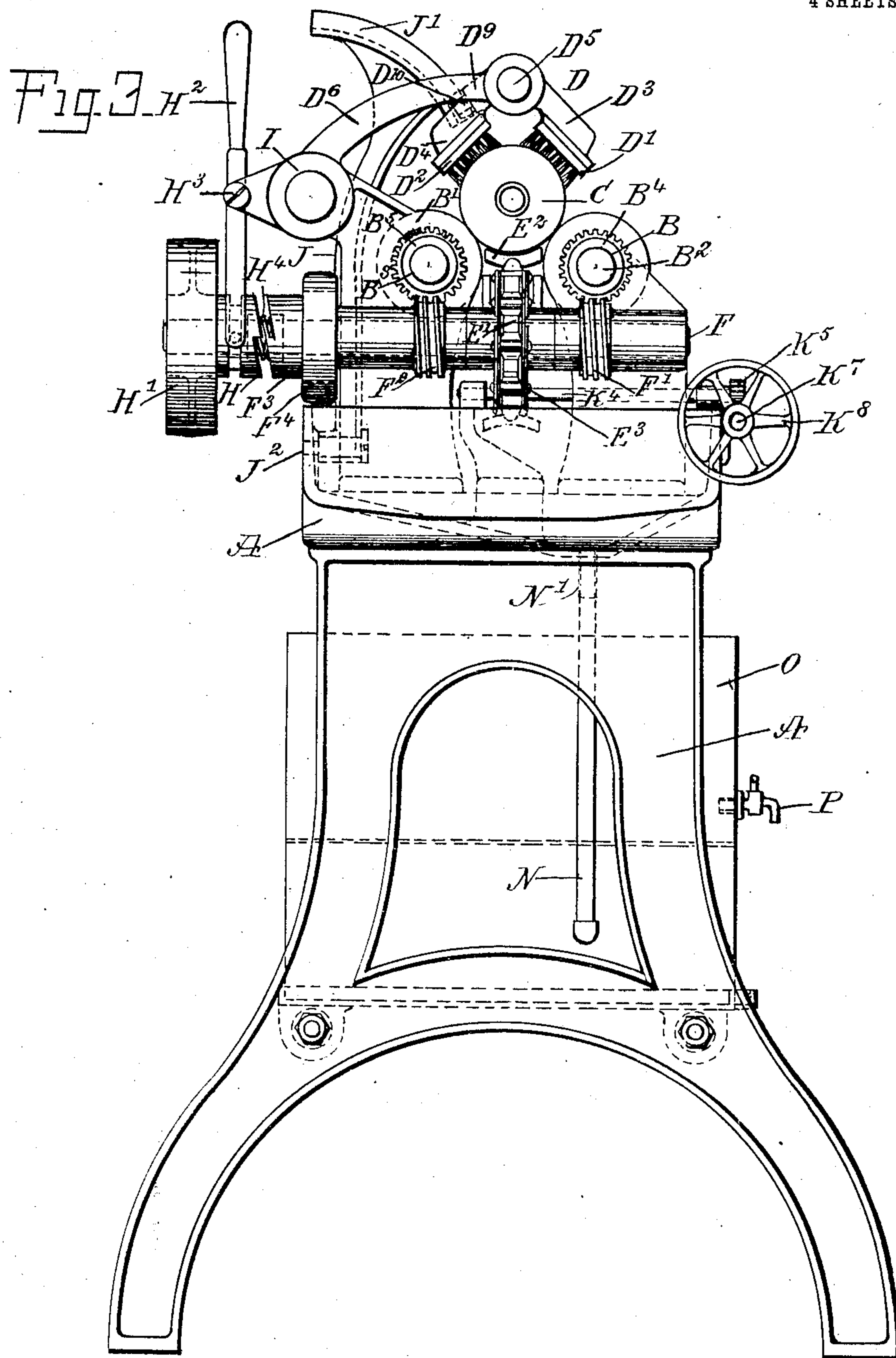
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4 SHEETS—SHEET 3.



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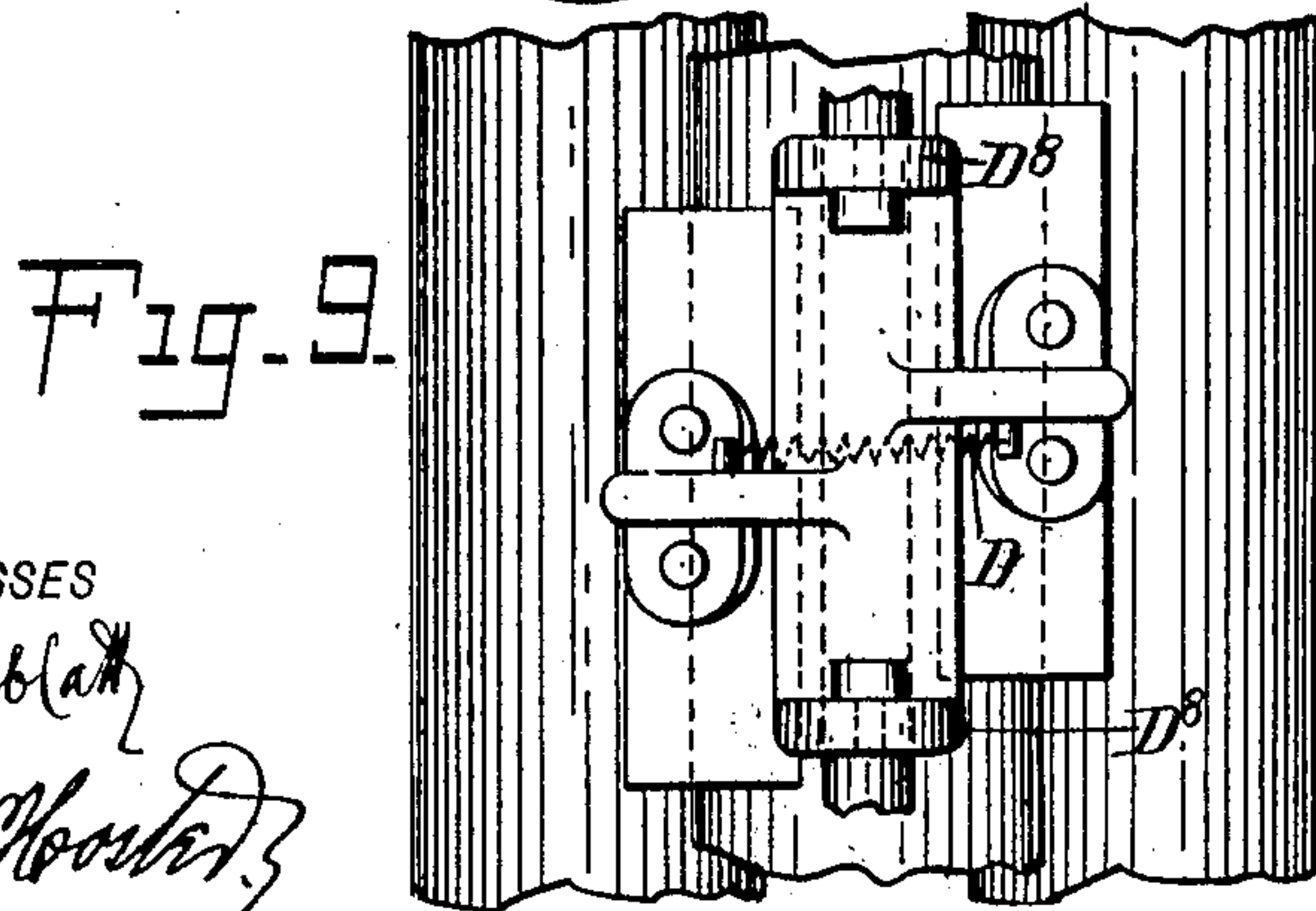
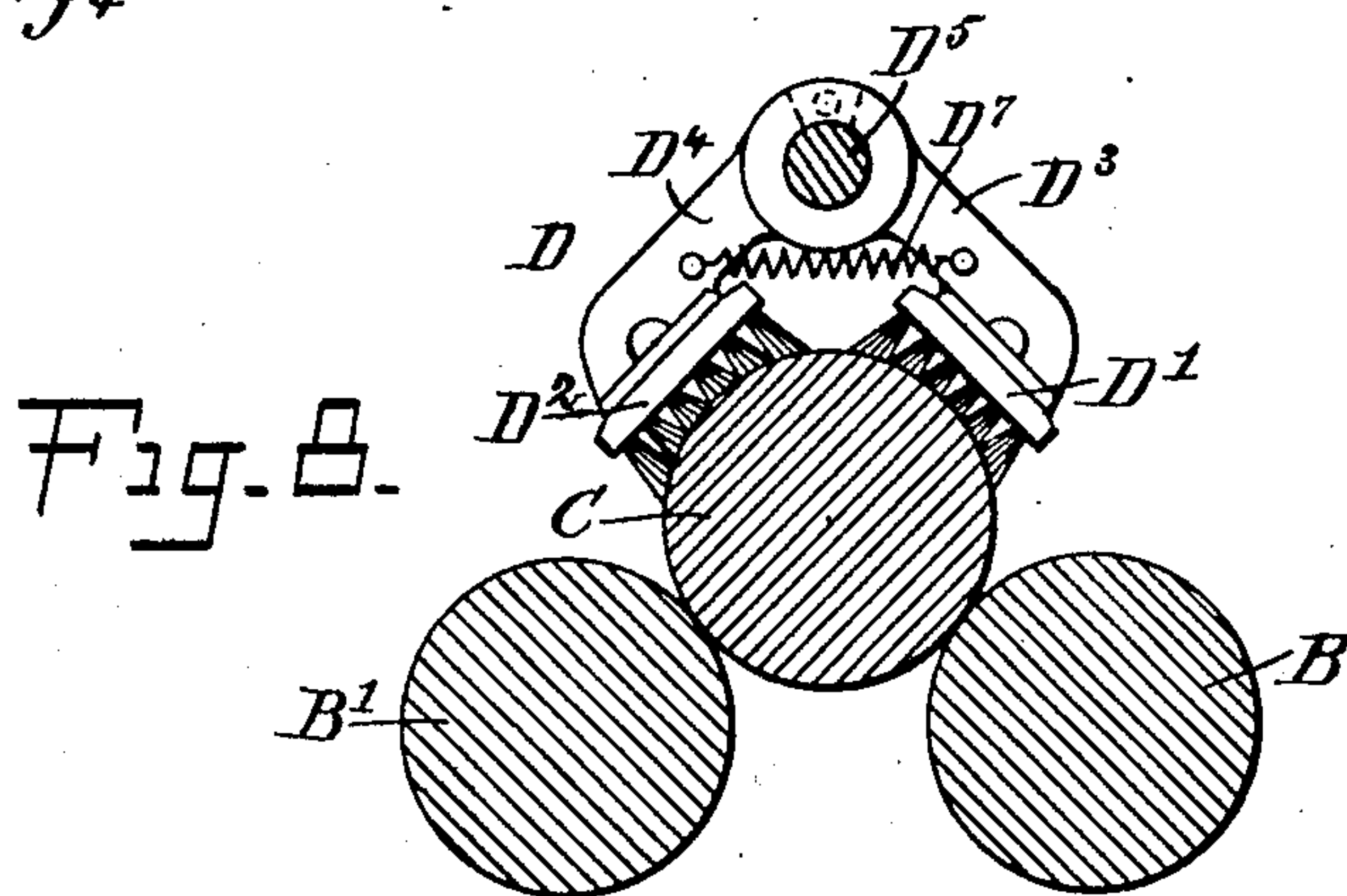
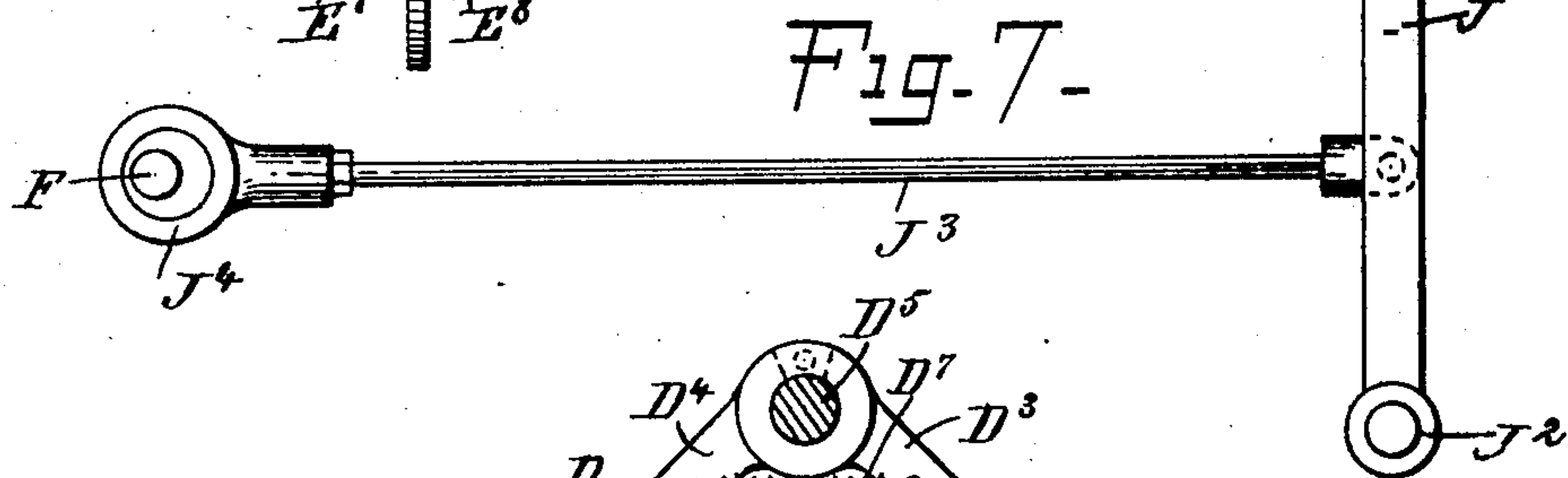
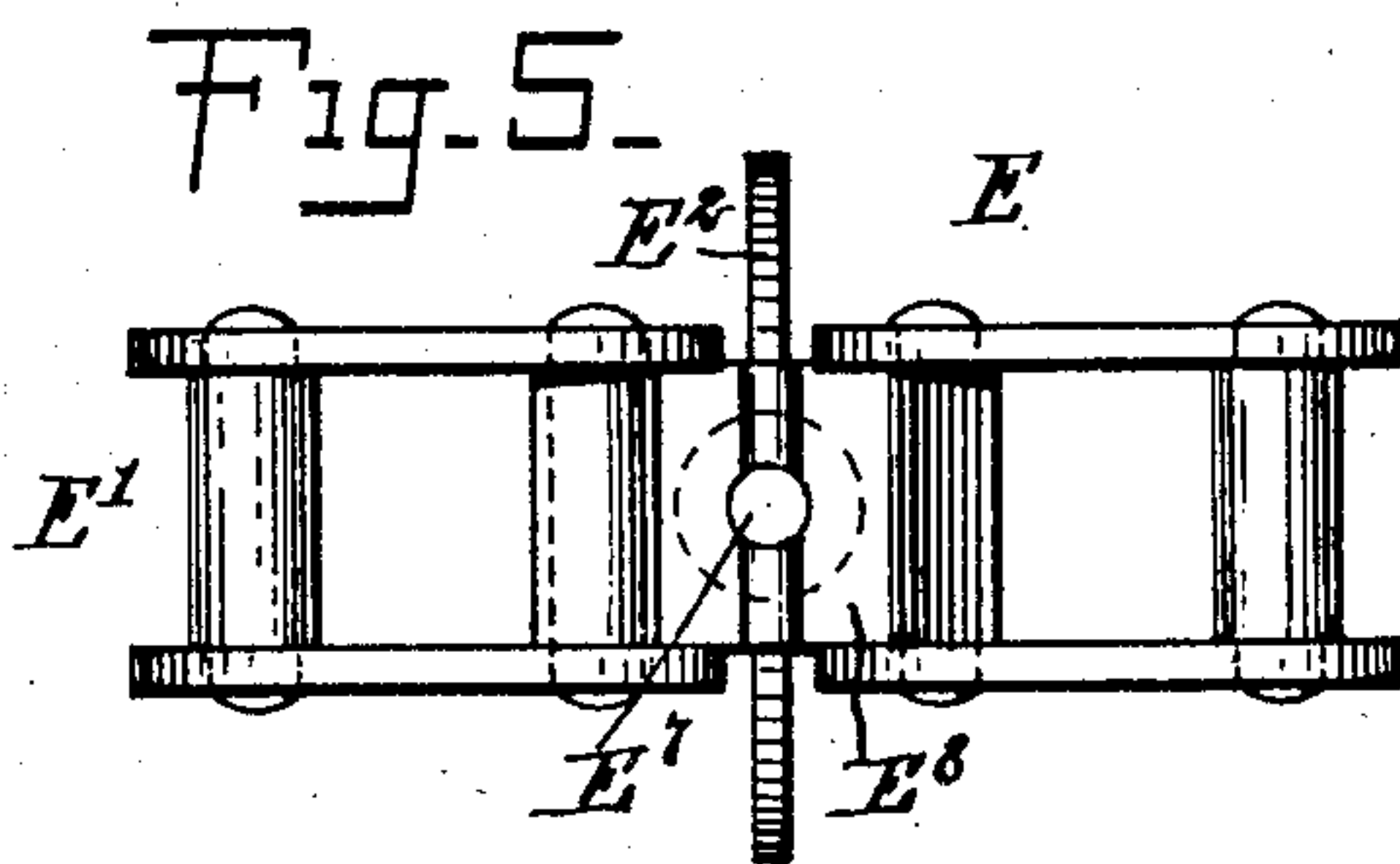
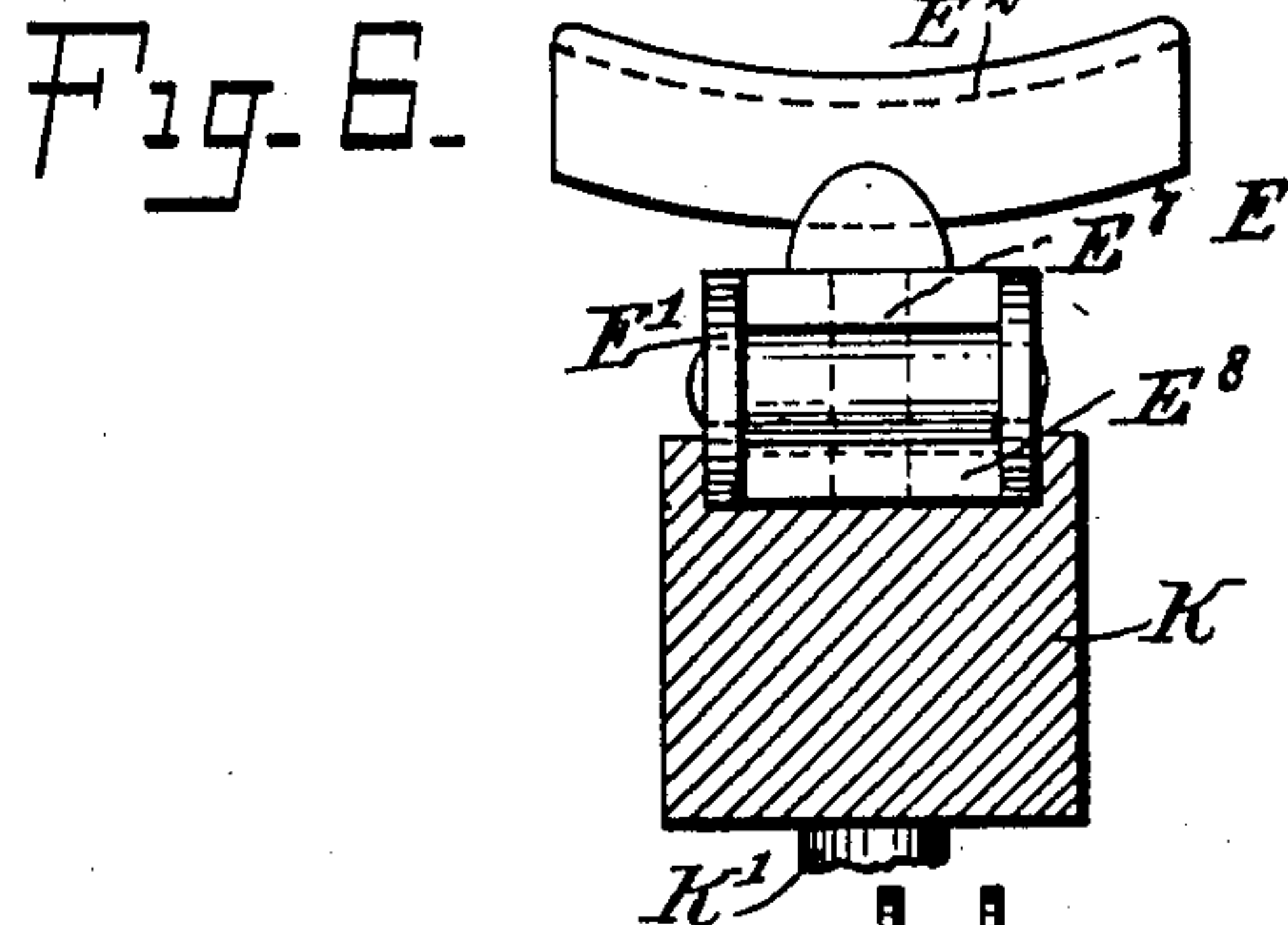
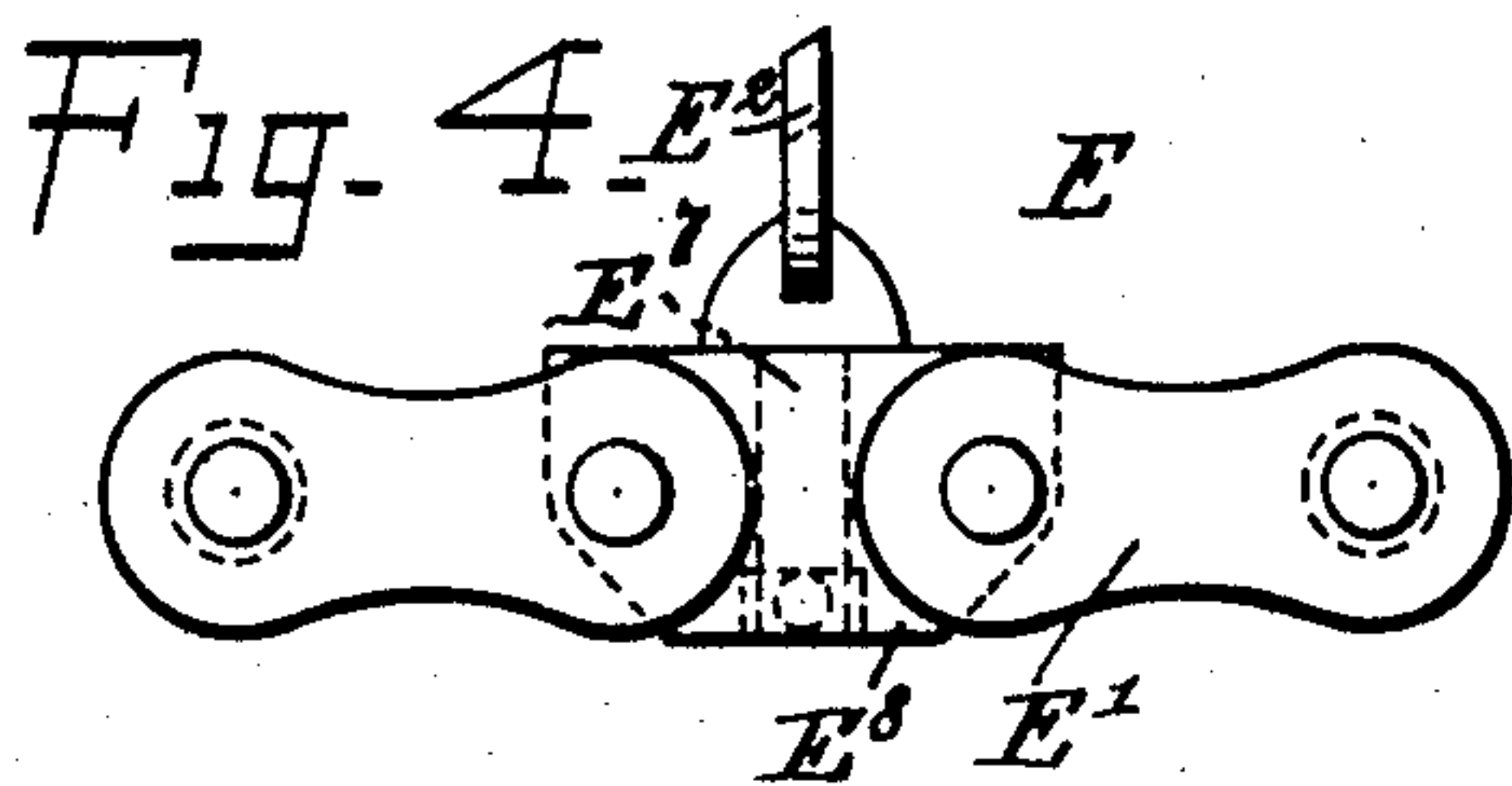
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4 SHEETS-SHEET 4.



WITNESSES

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MACHINE FOR CLEANING INKING-ROLLERS.

No. 892,782.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed July 20, 1906. Serial No. 327,021.

To all whom it may concern:

Be it known that I, CHARLES WAGNER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Machine for Cleaning Inking-Rollers, of which the following is a full, clear, and exact description.

The invention relates to machines employed for cleaning inking rollers, mainly such as are leather covered and used in lithographic and other printing machines.

The object of the invention is to provide a new and improved machine for cleaning inking rollers which is simple and durable in construction and arranged to permit of conveniently and quickly placing the inking roller in position for cleaning the same, to thoroughly and quickly clean the inking roller of the ink and other undesirable matter, and to leave the peripheral surface of the inking roller in condition for properly receiving and applying the printer's ink to the surface to be inked when the inking roller is used in the printing machine.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement; Fig. 2 is a side elevation of the same; Fig. 3 is an enlarged end elevation of the improvement; Fig. 4 is an enlarged side elevation of part of the scraper; Fig. 5 is a plan view of the same; Fig. 6 is an end elevation of part of the scraper and its support and guide, the latter being shown in section; Fig. 7 is a side elevation of the means for reciprocating the brushes; Fig. 8 is an enlarged transverse section of the inking roller in position on the supporting and driving rollers and the brushes for cleaning the inking roller, and Fig. 9 is a plan view of the same.

On a suitably constructed frame A are journaled the revoluble supporting rollers B, B' disposed parallel one with the other and adapted to receive support and rotate a printing roller C to be cleaned of its printer's ink by the use of a brushing device D and a scraping device E, both devices acting simultaneously on the printing roller C while the

latter is rotated and while use is being made of benzin, turpentine and other cleaning agent poured over the printing roller C during the time the machine is in action, as hereinafter more fully described. In order to rotate the supporting rollers B and B' their shafts B², B³ are provided at one end with worm wheels B⁴, B⁵ in mesh with worms F¹, F² secured on a transversely extending shaft F journaled in suitable bearings arranged on one end of the frame A. On the shaft F is secured a clutch member F³ (see Fig. 3) adapted to be engaged by a clutch member H mounted to rotate loosely on the shaft F and provided with a pulley H' connected by a belt with other machinery, for imparting a continuous rotary motion to the said pulley H'. The clutch member H is engaged by a shifting lever H² fulcrumed at H³ on the main frame A and under the control of the operator, for throwing the clutch member H into engagement with the clutch member F³, to drive the shaft F and consequently the supporting rollers B and B' by the worms F¹, F² and the worm wheels B⁴, B⁵. Now, it is evident that as the printing roller C extends between and rests on the rotating supporting rollers B and B', it is evident that a rotary motion is given to the printing roller C from the supporting rollers B and B'. A spring H⁴ interposed between the clutch members F³ and H serves to normally hold the clutch member H out of engagement with the clutch member F³.

The brushing device D, shown in detail in Figs. 8 and 9, consists of pairs of brushes D¹, D² engaging opposite sides of the printing roller C above the supporting rollers B, B', and the said brushes D¹, D² are provided with arms D³, D⁴ mounted to swing on a longitudinally extending rod D⁵ held on arms D⁶ fulcrumed on a rod I journaled in suitable bearings on one side of the frame A, the said rod I carrying at one end an arm I' for engaging the shoulder end of the shaft C' of the printing roller C, to hold the latter against longitudinal movement while the machine is in operation. The brushes D¹, D² of each pair of brushes are pressed towards each other by a spring D⁷, so as to hold the bristles of the brushes D¹, D² with sufficient force in contact with the peripheral surface of the rotating printing roller C, to cause a thorough cleaning of the same. The brushing device D has a reciprocating movement in a longitudinal direction and for this purpose the

following device is provided: The arms D^3 , D^4 of the brushes D' , D^2 besides being mounted to swing transversely on the rod D^5 move longitudinally with the same by the use of collars D^8 secured on the rod D^5 and engaging opposite ends of the hubs of the arms D^3 , D^4 . On the rod D^5 is secured an arm D^9 carrying a friction roller D^{10} extending into a segmental guideway J' formed on the upper or free end of a rocking lever J fulcrumed at J^2 on the main frame A . The rocking lever J is pivotally connected with the eccentric rod J^3 of an eccentric J^4 held on the clutch member F^3 , so that when the latter is rotated a longitudinal swinging motion is given to the rocking lever J which by the guideway J' and friction roller D^{10} imparts a longitudinal reciprocating motion to the rod D^5 and consequently to the brushes D' , D^2 . When it is desired to move the brushes D' , D^2 out of engagement with the printing roller C , it is only necessary for the operator to swing the rod D^5 rearwardly, whereby the friction roller D^{10} travels in the segmental guideway J' and consequently the brushes D' , D^2 although out of engagement with the printing roller C keep on reciprocating but are out of the path of the printing roller C , to allow removal of the latter from the supporting rollers B , B' and the replacing of another one without stopping the machine. The amount of movement given to the brushes D' , D^2 in a longitudinal direction is such that the range of movement of one brush overlaps the range of movement of the next adjacent brush and hence each and every part of the peripheral surface of the rotating inking roller C is brushed to insure removal of all the undesirable matter.

The scraping device F , shown in detail in Figs. 4, 5 and 6, is arranged as follows: A traveling endless chain E' is provided at intervals with scrapers E^2 extending transversely and segmental in form, to fit the peripheral face of the inking roller C , and the said endless chain passes around segmental sprocket wheels E^3 , E^4 , of which the former is secured on the shaft F and the sprocket wheel E^4 is secured on a shaft E^5 journaled in bearings E^6 held longitudinally adjustable on the rear end of the frame A (as plainly indicated in Fig. 1), to give the desired tension to the upper run of the endless chain E' . Each scraper E^2 is provided with a pivot-pin E^7 , journaled in a block-link E^8 of the endless chain E' , to allow the scraper E^2 to readily turn, with a view to properly fit the peripheral face of the inking roller C . It is understood that for inking rollers of a diameter less than that for which the scraper is fitted, the scraper E^2 assumes an oblique position relative to the chain E' , to properly fit the smaller inking roller. The upper run of the chain E' travels in a longitudinal guideway K , having depending pins K' slidingly engag-

ing bearings K^2 held on the frame A , and the under side of the guideway K rests on the peripheral faces of eccentrics K^3 secured on transverse shafts K^4 , journaled on the main frame A , and on the outer ends of the said shafts K^4 are secured worm wheels K^5 in mesh with worms K^6 attached to a longitudinal shaft K^7 journaled on the main frame A and provided at one end with a hand-wheel K^8 , under the control of the operator, to permit the latter to turn the shaft K^7 , the worms K^6 , the worm wheels K^5 , the shafts K^4 and the eccentrics K^3 to raise or lower the guideway K and the upper run of the chain E' and scrapers E^2 , according to the direction in which the hand wheel K^8 is turned. Thus, by the arrangement described, the scrapers E^2 can be moved into proper relation to the peripheral face of the inking roller C , to thoroughly scrape the same, it being understood that each scraper E^2 is in contact with the inking roller C throughout the length thereof and while the ink roller is rotated by the supporting rollers B , B' and the brushing device D is in action and holds the inking roller down onto the supporting rollers B , B' . In order to collect all the matter removed from the inking roller C a pan L is provided, preferably formed on the bed of the frame A and extending throughout the length thereof, below the rollers B , B' , the brushing device D and the scraping device E , so that all the matter loosened and removed from the inking roller drops down into the pan L , to flow from the latter by way of one of a number of pipes N into a corresponding collecting tank O , the several tanks O being mounted on the lower portion of the frame A . Each of the pipes N is provided with a valve N' and each tank O is provided with a faucet P for drawing off the ink. Use is made of several tanks O and valved pipes N to allow of running all the ink of one color into one tank O , it being understood that in successively cleaning differently colored inking rollers it is desirable to keep the removed colors separate, to facilitate the separation of the cleansing agent used from the tank.

The operation is as follows: When the main shaft F is running and the printing roller C is supported on the supporting rollers B and B' and the brushes D' , D^2 are in engagement with the peripheral face of the printing roller C and the scraping device is in action, as previously explained, then the inking roller C is rotated and the brushes D' , D^2 are reciprocated and held in firm frictional contact with the peripheral surface of the printing roller C by the action of their springs D^7 and their own weight. It will be seen that as the printing roller C is rotated and the brushes D' , D^2 reciprocate lengthwise on the peripheral face of the printing roller C , a thorough brushing of the entire peripheral surface of the printing roller

takes place, it being understood that a suitable cleansing agent such as benzin, turpentine or the like is poured over the top of the printing roller C to assist the brushes in completely removing every vestige of the ink on the inking roller. At the same time that the brushing action takes place the scrapers E² travel lengthwise and in engagement with the peripheral surface of the inking roller C at the bottom thereof, to scrape the peripheral surface of the inking roller from one end to the other and practically in a spiral direction as the printing roller C is rotated, while the scrapers E² travel in the direction of the length of the rotating inking roller. By the combined action of the cleansing agent the brushing device D and the scraping device E a thorough cleaning of the inking roller C takes place, and at the same time the peripheral face thereof is left in the proper condition for receiving the ink when the roller is again used in the printing machine for its legitimate purpose. When the inking roller C has been cleaned, as described, then it is only necessary for the operator to take hold of the rod D⁵ and swing the same rearwardly without, however, disengaging the friction roller D¹⁰ on the segmental guideway J', and when the brushes are thus moved to one side and away from the inking roller C the latter can be readily moved lengthwise to disengage its shoulder shaft C' from the arm I', after which the inking roller can be removed and a new one to be cleaned can be placed in position on the supporting rollers B and B'. The operator now again swings the rod D⁵ downward to engage the brushes D', D² with the peripheral surface of its inking roller, and the above described operation is repeated, that is, the machine is kept running continually while removing a clean inking roller and replacing the same by one to be cleaned. When it is desired to stop the machine the operator can conveniently do so by shifting the clutch member H out of mesh with the clutch member F³. The impurities removed from the printing roller C drop down into the pan L and flow by the open pipe N into the corresponding tank O in which the benzin or other cleaning liquid readily separates from the ink and the cleansing liquid can be withdrawn from time to time through the faucet P.

The machine shown and described is comparatively simple in construction and arranged to permit of thoroughly cleaning a large number of inking rollers C in a comparatively short time.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller

throughout its length and rotating the inking roller, a plurality of longitudinally spaced brushes for contact with the peripheral face of the inking roller, and means for reciprocating the said brushes in the direction of the length of the said inking roller a distance greater than the space between the brushes.

2. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout its length and rotating the inking roller, a plurality of longitudinally spaced brushes for contact with the peripheral face of the inking roller, means for reciprocating the said brushes in the direction of the length of the said inking roller a distance greater than the space between the brushes, a scraping device having scrapers engaging the peripheral face of the inking roller, and means for moving the scrapers along the inking roller from one end thereof to the other.

3. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout its length and rotating the inking roller, brushes for contact with the peripheral face of the inking roller, means for reciprocating the said brushes in the direction of the length of the said inking roller, and manually controlled means for moving the brushes simultaneously in and out of contact with the said inking roller.

4. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout its length and rotating the inking roller, brushes for contact with the peripheral face of the inking roller, means for reciprocating the said brushes in the direction of the length of the said inking roller, and manually controlled means for swinging the brushes out of contact with the inking roller and to one side of the machine to gain access to the inking roller.

5. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking roller, and a brushing device comprising a reciprocating rod and a plurality of longitudinally spaced brushes held thereon and engaging the inking roller at the sides above the said supporting rollers and means for reciprocating the rod a distance greater than the space between the brushes.

6. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking roller, and a brushing device having a reciprocating rod and brushes held thereon and engaging the inking roller at the sides above the said supporting rollers, the range of movement of the respective brushes being overlapping.

7. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking roller, a brushing device having a reciprocating rod and brushes held thereon and engaging the inking roller at the sides above the said supporting rollers, and a scraping device having an endless traveling chain extending lengthwise of the said rollers and having spaced segmental scrapers for engagement with the peripheral face of the inking roller.

8. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking roller, a brushing device having a reciprocating rod and brushes held thereon and engaging the inking roller at the sides above the said supporting rollers, and a scraping device having an endless traveling chain extending lengthwise of the said rollers and having spaced segmental scrapers for engagement with the peripheral face of the inking roller at the bottom portion thereof.

9. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking roller, a brushing device having a reciprocating rod and brushes held thereon and engaging the inking roller at the sides above the said supporting rollers, a scraping device having an endless traveling chain extending lengthwise of the said rollers and having spaced segmental scrapers for engagement with the peripheral face of the inking roller, and a guide arranged between the supporting rollers and in which travels the upper run of the said endless chain.

10. A machine for cleaning inking rollers, provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking roller, a brushing device having a reciprocating rod and brushes held thereon and engaging the inking roller at the sides above the said supporting rollers, and springs pressing the brushes into contact with the said inking roller.

11. A machine for cleaning inking rollers provided with a pair of driven supporting rollers for supporting an inking roller throughout the length thereof, and rotating the said inking rollers a brushing device having a reciprocating rod and brushes held thereon and engaging the inking roller at the sides above the said supporting rollers, and a rocking lever having a segmental guide way engaged by an arm on the said rod to reciprocate the latter and to allow of swinging

the rod and brushes transversely to one side of the machine.

12. A machine for cleaning inking rollers, provided with a scraping device, comprising an endless traveling chain extending lengthwise of the inking roller, and segmental scrapers secured to the chain and spaced apart, the said scrapers being pivoted on axes perpendicular to the axis of the inking roller engaging the peripheral face of the inking roller.

13. A machine for cleaning inking rollers, provided with means for rotating an inking roller about its axis, a scraping device for the inking roller, comprising an endless traveling chain and segmental scrapers held thereon and engaging the peripheral face of the inking roller from one end to the other, a support for the upper run of the said endless chain, and means for raising and lowering the said support to move the scrapers into proper relation with the inking roller.

14. A machine for cleaning inking rollers, provided with a means for rotatably supporting an inking roller, and scraping devices comprising a plurality of independent segmental scrapers mounted to travel longitudinally of the roller, and each pivoted upon an axis perpendicular to the axis of the roller, whereby said scrapers may turn to fit inking rollers of different diameters.

15. A machine for cleaning inking rollers, provided with means for rotating an inking roller about its axis, a scraping device for the inking roller, comprising an endless traveling chain and segmental scrapers held thereon and engaging the peripheral face of the inking roller from one end to the other, a support for the upper run of the said endless chain, means for raising and lowering the said support to move the scrapers into proper relation with the inking roller and adapted to move up and down, eccentrics engaging the said support for raising and lowering the same, and manually controlled means for turning the said eccentrics.

16. A machine for cleaning inking rollers, provided with means for removing the impurities from the inking roller, a receiving pan for receiving the impurities, a plurality of collecting tanks, and valved connections between the said tanks and the said pan for discharging the contents of the pan into any one of the said tanks.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES WAGNER.

Witnesses:

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