July 7, 1931. C. J. McGARRY 1,813,307

PAPER ROLL HOLDER FOR PRINTING PRESSES

Filed Jan. 30, 1930 5 Sheets-Sheet 1

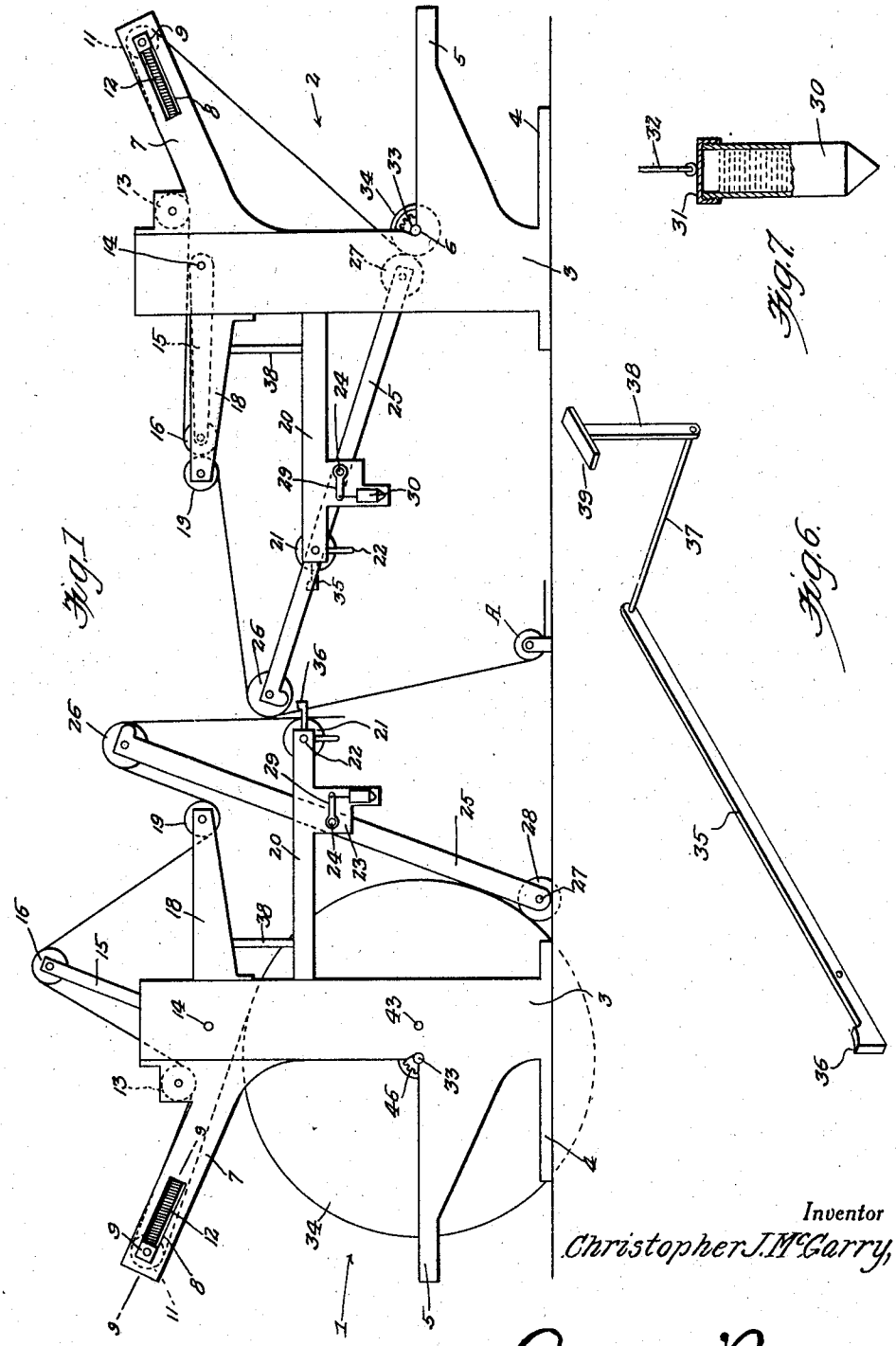


Fig. 7



Fig. 7



Fig. 6.

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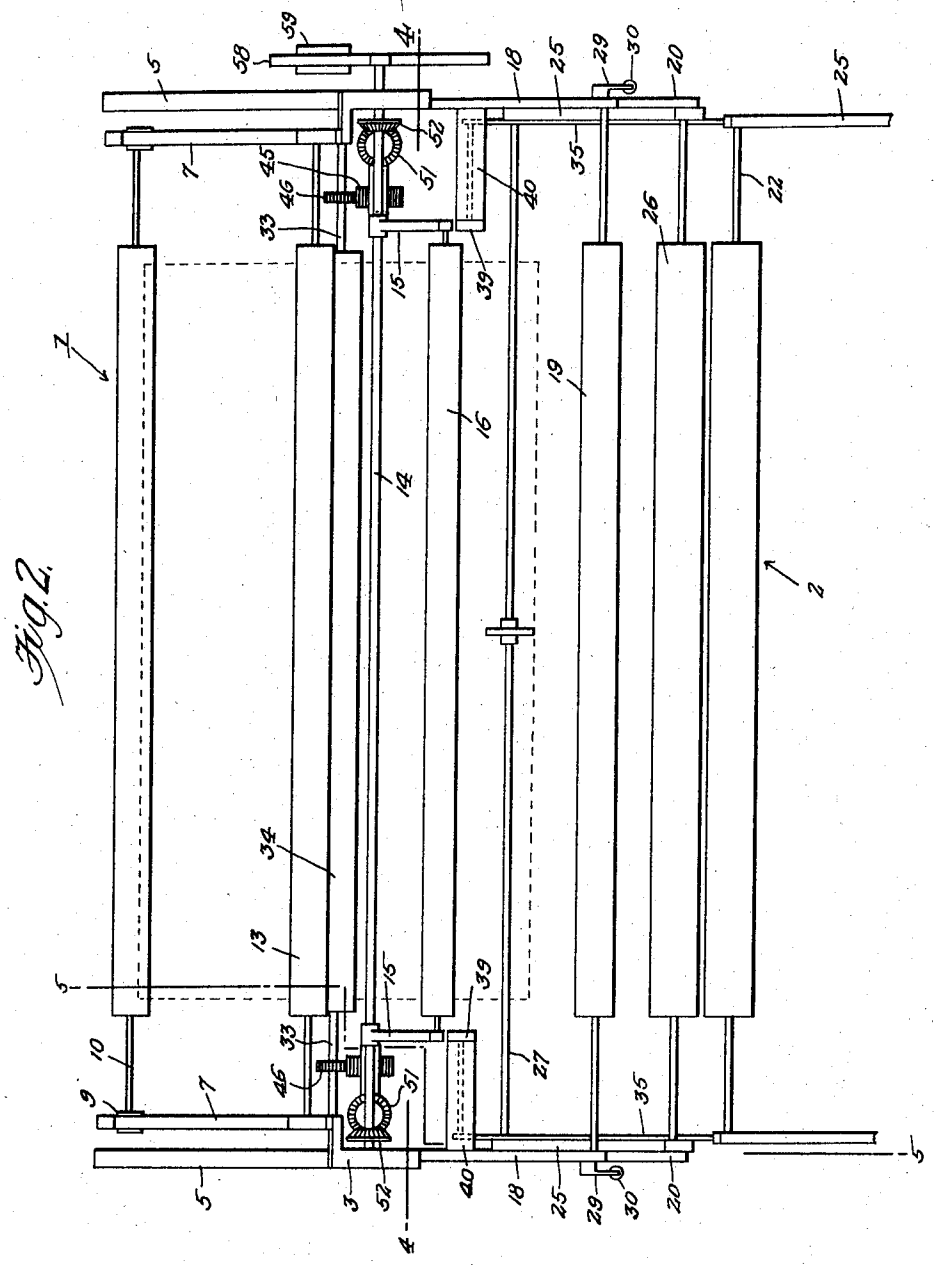


Fig. 2.

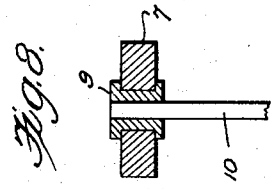


Fig. 8.

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PAPER ROLL HOLDER FOR PRINTING PRESSES

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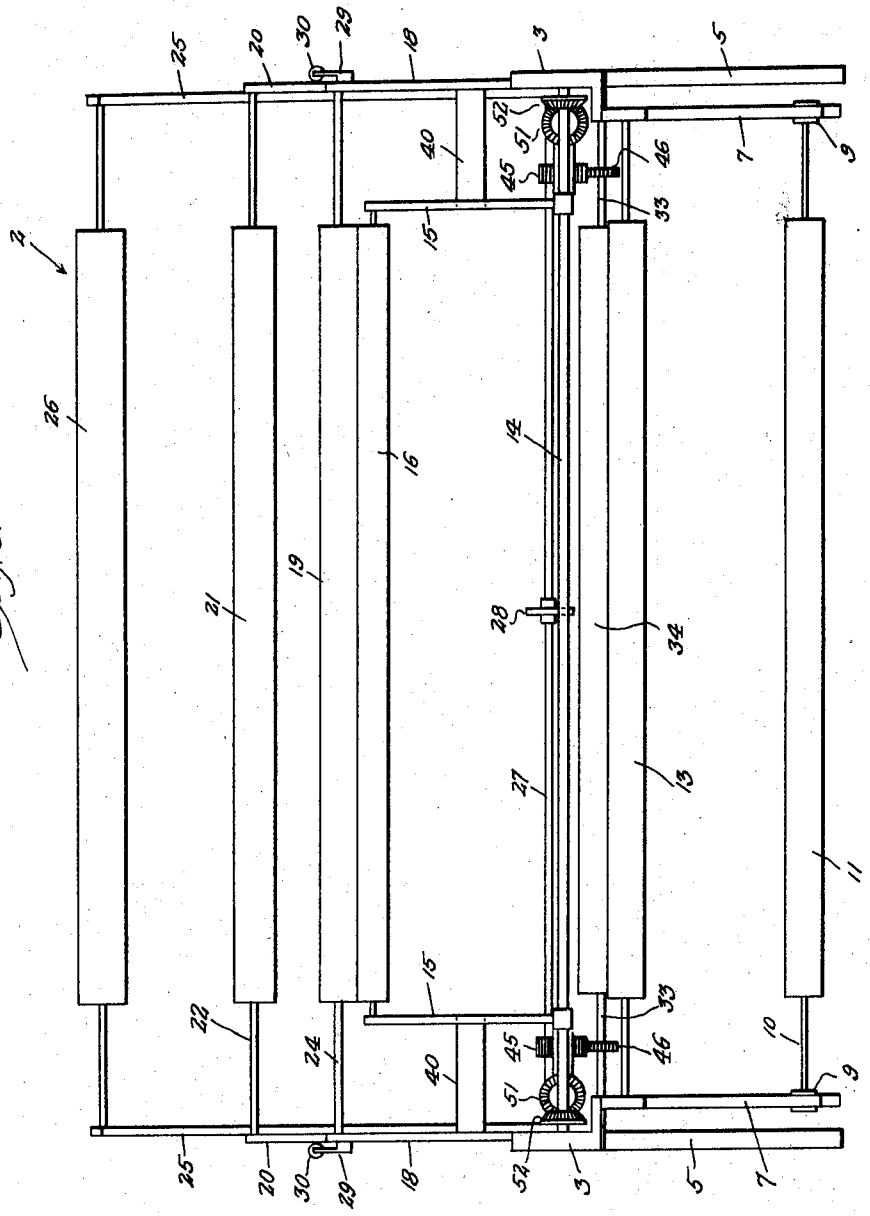



Fig. 3.

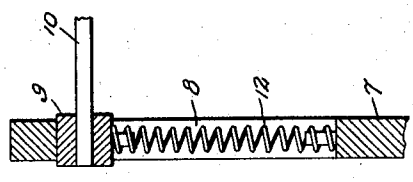



Fig. 9.

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PAPER ROLL HOLDER FOR PRINTING PRESSES

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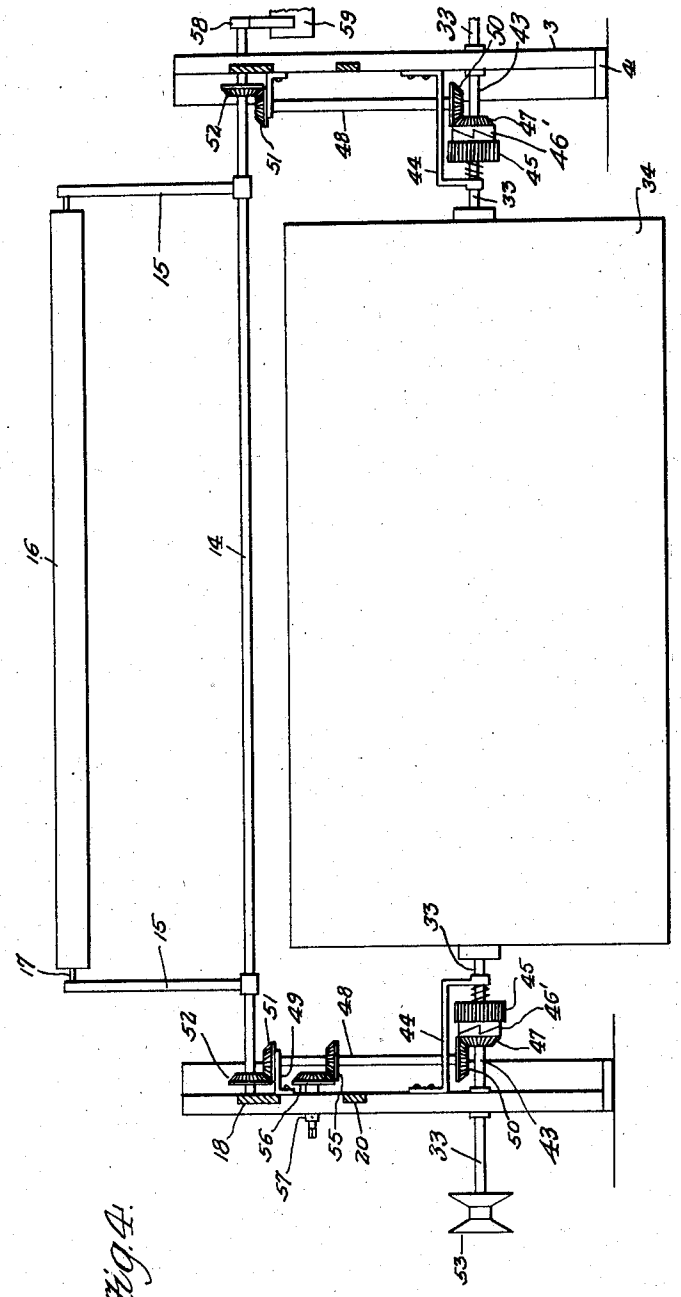



Fig. 4.

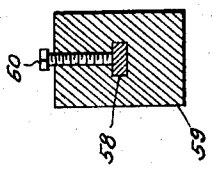



Fig. 11.

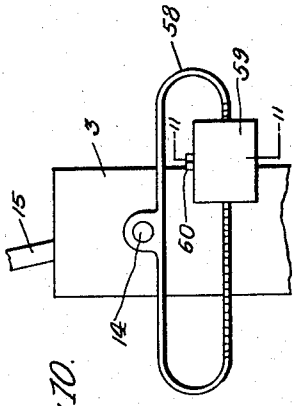



Fig. 10.

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PAPER ROLL HOLDER FOR PRINTING PRESSES

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Fig. 5.

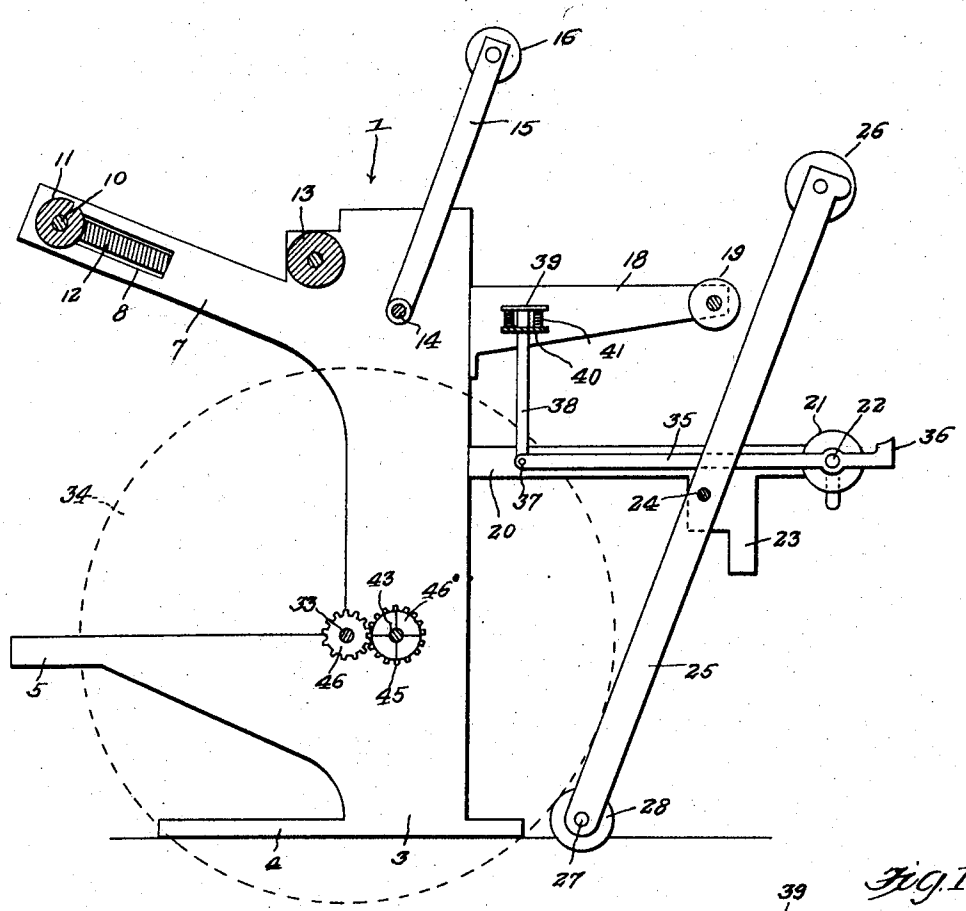



Fig. 12.

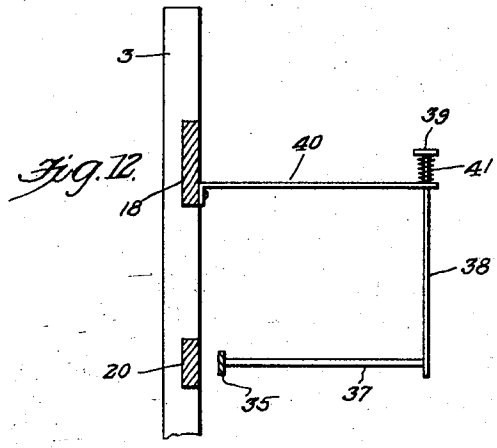
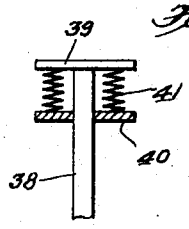



Fig. 13.




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# UNITED STATES PATENT OFFICE

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## PAPER ROLL HOLDER FOR PRINTING PRESSES

Application filed January 30, 1930. Serial No. 424,635.

This invention relates to a paper roll holder for printing presses and has for one of its principal objects, to provide a roll holding mechanism of this character which is capable of supplying paper to the press continuously without the necessity of interrupting or stopping said press when the roll of paper being fed thereto is exhausted and in order to renew the same, as is now the general practice.

Another important object is to provide a roll holder for printing presses of the character set forth having means for automatically securing the end portion of an exhausted roll of paper to the first part of a new roll without stopping the press and in a manner to supply paper thereto continuously.

Other objects of the invention are to provide a paper roll holder for printing presses which will be simple in construction, strong, durable, efficient in its use and which may be manufactured at low cost.

The foregoing and other objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in side elevation of a paper roll holder constructed in accordance with this invention.

Figure 2 is a view in top plan of one of the units of the invention.

Figure 3 is a view in top plan of the other of the units.

Figure 4 is a longitudinal sectional view taken substantially on the line 4—4 of Figure 2.

Figure 5 is a transverse sectional view taken substantially on the line 5—5 of Figure 3.

Figure 6 is a detail view in perspective of the paster roll lifting lever.

Figure 7 is a detail view, partly in section of the stabilizing weight which is mounted on the bracket which supports each of the traveling paster rolls.

Figure 8 is a detail view in section showing the bearing for one of the rotating roller supporting shafts.

Figure 9 is a view in horizontal section taken substantially on the line 9—9 of Figure 1 and showing the manner of mounting the spring tension roll.

Figure 10 is a detail view in side elevation showing the adjustable counterweight for the drop roller.

Figure 11 is a cross-sectional view taken substantially on the line 11—11 of Figure 10.

Figure 12 is a view in rear elevation of the paster roll lifting mechanism.

Figure 13 is a fragmentary view in side elevation showing the spring control means for normally maintaining the paster roll lifting lever in inoperative position.

The mechanism constituting this invention comprises a pair of co-acting units designated generally by the reference characters 1 and 2 and as these units are identical in construction, a description of the construction of one will suffice for both.

Referring to the drawings in detail and to Figure 1 in particular, the reference numeral 3 designates a pair of vertically disposed standards mounted upon the base portion 4. The standards 3 have mounted thereon adjacent their lower ends the horizontally disposed arms 5 and recesses 6 are provided in the standards at the point where the upper edges of the arms 5 are connected thereto. The upper end portions of the standards are provided with the inclined brackets 7 the free end portions of which are provided with a longitudinal slot 8 in which are slidably mounted the bearing blocks 9 of the horizontally disposed shafts 10 upon which the tension roller 11 is mounted. A compressible coil spring 12 is maintained under tension be-

tween the bearing block 9 and the lower end of the slot 8 to normally urge this bearing block outwardly toward the free ends of the brackets 7. An elongated roller 13 is journaled between the inner portions of the brackets 7.

As best illustrated in Figure 4 of the drawings, a shaft 14 has its opposite end portion journaled in the upper end portion of the standards 3 and has fixed thereon a pair of arms 15. A drop roller 16 is mounted for rotation on the free end portions of the arms 15 through the medium of its supporting shaft 17. The standards 3 are also provided, adjacent their upper ends, with the inwardly extending brackets 18 between the free ends of which is rotatably mounted the roller 19. Beneath the bracket 18 are a pair of comparatively long brackets 20 between the free end portions of which is mounted for rotation the stationary pasting roller 21 through the medium of the shaft 22. The brackets 20 have depending therefrom the extension 23 in which are journaled the end portions of the horizontal shaft 24 upon which shaft is fixed the intermediate portion of the swingable arms 25 which are disposed between the brackets 20. The upper ends of the swingable arms 25 have journaled therebetween the traveling pasting roller 26 which is of elongated cylindrical construction similar to that of the previously described rollers. The opposite ends of the swingable arms 25 have mounted thereon the shaft 27 upon the intermediate portion of which is mounted for rotation a disk 28 which is preferably provided with a rubber periphery. One end of the shaft 24 extends outwardly of the supporting brackets 20 therefor and has fixed thereon an arm 29 which supports the stabilizing weight 30 which, as illustrated in detail in Figure 7 comprises a cylindrical container adapted to be filled with a suitable liquid, such as oil, and is provided with a removable screw cap 31 to which is secured the suspension wire 32.

The shaft 33 upon which the roll of paper 34 is mounted is journaled in the recesses or pockets 6 in the standards 3, and the disk 28 is adapted to engage with the periphery of the roll 34 and is maintained in engagement therewith through the medium of the stabilizing weight 30. It is further pointed out that the swingable arms 25 are mounted on the supporting shaft 24 at a point nearest their lower ends and thus the upper ends thereof will overbalance said lower ends for maintaining the disk 28 against the roll of paper 33.

A pair of levers 35 are pivotally mounted on the shaft 22 which supports the stationary pasting roller 21 on the brackets 20 and said levers extend outwardly beyond this pasting roller 21, and are provided at their outer ends with the upstanding portions 36 adapted to engage the traveling pasting roller of the opposite unit of the machine in a manner to raise the said traveling roller out of the way. The opposite end portions of the levers 35 are provided with the lateral extension 37 upon which are mounted the upstanding arms 38 upon the upper ends of which are mounted the T-heads 39 for engagement with the supporting arms 15 of the drop roller 16. The upper end portions of the arms 38 extend slidably through the plates 40 which are mounted on the inner side of the brackets 18. Expansible coil springs 41 have their opposite ends impinged on the plates 40 and the T-heads 39 for urging the inner ends of the levers 35 upwardly and consequently the outer ends upon which the portions 36 are mounted downwardly.

As best illustrated in Figure 4 of the drawings, a pair of comparatively short shafts have one end journaled in the standards 3 at a point adjacent the pockets or recesses 6 therein and the roll supporting shaft 33. These short shafts are designated by the reference numeral 43 and have their inner ends supported through the medium of the angular bracket 44 which extends inwardly from the inner side of the standards and having downturned end portions provided with a bearing for the said inner ends of said shafts. The shafts 43 are parallel with the roll shafts 33. An elongated gear 45 is loosely mounted for rotary and longitudinal movement on each of the shafts 43 and is constantly in mesh with a pinion gear 46, see Figure 5, on the roll shafts 33. The gears 45 are provided on one side, with a clutch face 46′ for engagement with a complementary clutch face provided on the adjacent side of a beveled gear 47, one of which is fixed on each of the shafts 43. Vertically disposed shafts 48 are rotatably supported on the standards 3 on the inner sides thereof through the medium of the brackets 49 and 44 at the upper and lower ends, respectively, of said shafts. Each of the shafts 48 has fixed on its lower end a beveled gear 50 which meshes with the beveled gear 47 on the adjacent shaft 43 and a beveled gear 51 is fixed on the upper end of each shaft 48 and is constantly in mesh with a beveled gear 52 one of which is fixed adjacent each end of the shafts 14 upon which the drop roller 16 is mounted. A brake drum 53 is fixed on the outer end of each of the shafts 33.

When the machine is in operation and the parts are in the position indicated in Figure 1 of the drawings, the roll of paper mounted on the shafts 33 of the unit 2 is exhausted or very nearly so and the follower disk 28 of this unit has swung inwardly as the diameter of the roll of paper has been reduced. A full roll of paper is mounted in position on the unit 1 of the machine and the web is trained over the spring tension roller 11 un-

der roller 13, over the roller 16, under roller 19, over the traveling paster roller 26 and has its end portion disposed against the outer side of the stationary paster roller 21. A suitable adhesive is then applied to the outer side of the end portion of the new roll of paper. It is understood, of course, that the new roll of paper is mounted on the unit 1 and the web trained over the rollers and mucilage applied thereto before the paper is exhausted from the roll on unit 2. When the paper of the roll on the unit 2 is exhausted the swingable arms 25 have moved to the position indicated in Figure 1 and the traveling paster roll on the upper ends thereof swings toward the co-acting stationary pasting roll 21 on the unit 1 and presses the web against the end of the new roll to which the mucilage or adhesive has been applied and the two webs of paper are thus secured together. The paper from the two units is trained under the guide roller A from which it travels to the printing press. The initial pull on the paper from the new roll swings the drop roller 16 downwardly until the arms which support said drop roller engage with the T-head 39 which is mounted on the inner end of the levers 35 and the outer end of each lever is swung upwardly and kicks the traveling pasting roller of the opposite unit upwardly out of engagement with the paper on the unit upon which the new roll is mounted and a continuous feed of paper to the press is thus had without the necessity of stopping the same. The spring pressed rollers 11 which are mounted for longitudinal movement between the brackets 7 prevents the webs from becoming torn by sudden jerks or strains by yielding thereto, as will be apparent. The stabilizer weight 30 urges the upper portions of the swingable arms 25 outwardly and downwardly on their supporting shafts and prevent excessive oscillation of these arms.

One of the vertical shafts 48 of each unit has a beveled gear 55 fixed to its intermediate portion which meshes with a beveled gear 56 which is fixed on a stub shaft 57 journaled through one of the standards 3 of each unit and said stub shafts have their outer ends provided with polygonal tool receiving portions for manually actuating the same. As best illustrated in Figures 4, 10 and 11, the shafts 14 upon which the drop roller 16 is supported have one end extending through and beyond the respective supporting standards 3 and each has fixed thereon a horizontally disposed substantially oval frame 58 the lower portion of which is provided with graduation marks and has slidably mounted thereon the adjustable counterweight 59 which is secured in adjusted position through the medium of the set screw 60 threaded thereinto for engagement with the said frame, see Figure 11.

When the drop roller 16 of the unit upon which the new roll of paper is mounted is swung downwardly by reason of the initial excessive pull exerted thereon when the web from said fresh roll adheres to the web of the exhausting roll, the shaft 14 upon which the drop roller is mounted is rotated and rotary movement is thus imparted to the vertical shaft 48 of that unit through the medium of beveled gears 52 and 51 and the shaft 33 upon which the fresh roll of paper is mounted is caused to start to rotate through the medium of the beveled gears 50, 47, the co-acting clutch elements 46′ mounted on the gears 47 and 45 and the gear 46 on said shaft 33. In this manner the web from the fresh roll 34 is relieved of the excessive strain of starting the rotary movement of the full roll of paper. The drop roller is then returned to its elevated position through the medium of the manually actuated shaft 57 and the beveled gears 56 and 55 and also by its respective counter weight 59. After the initial start has been given to the fresh roll of paper 34 and the unit 1 is in operation, the beveled gears 47 and the shafts 43 are permitted to stop and remain stationary by reason of the one way clutches provided by the co-acting clutch faces 46′ on the gears 45 and 47. As hereinbefore stated, the gears 45 are loosely and slidably mounted on the shaft 43 of each unit. A braking belt (not shown) may be trained over the pulley 53 of each unit for restraining the rotary movement of the roll.

It is believed that the many advantages of a device constructed in accordance with this invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction may be had which will fall within the scope of the invention as claimed.

What is claimed is:—

1. A paper roll holder for printing presses of the character described comprising a pair of co-acting units upon each of which is rotatably mounted a roll of paper to be fed to the press, each unit comprising a pair of standards, guide rollers rotatably mounted on the standards about which the paper from the respective roll is trained, a stationary pasting roller on each unit over which the paper is trained, a traveling pasting roller mounted for swinging movement on each unit over which the paper is trained, said traveling pasting roller adapted to be shifted in a manner to press the paper trained thereover into engagement with the paper trained over the stationary pasting roller of the other unit.

2. A paper roll holder for printing presses of the character described comprising a pair of co-acting units upon each of which is rotatably mounted a roll of paper to be

fed to the press, each unit comprising a pair of standards, guide rollers rotatably mounted on the standards about which the paper from the respective roll is trained, a stationary pasting roller on each unit over which the paper is trained, a traveling pasting roller mounted for swinging movement on each unit over which the paper is trained, said traveling pasting roller adapted to be shifted in a manner to press the paper trained thereover into engagement with the paper trained over the stationary pasting roller of the other unit, and means mounted on each unit engageable with the traveling pasting roller of the other unit for automatically shifting the latter away from the co-acting stationary pasting roller.

3. A paper roll holder for printing presses of the character described comprising a pair of co-acting units upon each of which is rotatably mounted a roll of paper to be fed to the press, each unit comprising a pair of standards, guide rollers rotatably mounted on the standards about which the paper from the respective roll is trained, a stationary pasting roller on each unit over which the paper is trained, a pair of inclined arms pivotally supported on each of the units, means supported on the lower ends of each pair of arms for engagement with the adjacent roll of paper for controlling the swinging movement of said pairs of arms, a traveling pasting roller rotatably mounted between the upper ends of each pair of the arms, said pairs of arms adapted to swing in a vertical plane as the respective roll of paper diminishes in a manner to engage the paper from said roll which is trained thereover with the paper which is trained over the stationary pasting roll of the other unit, means carried by each unit for engagement with the traveling pasting roller of the other unit for automatically shifting the same away from the co-acting stationary pasting roll after the paper trained over said traveling roller has been engaged with the paper trained over the stationary pasting roller.

4. A paper roll holder for printing presses of the character described comprising a pair of co-acting units upon each of which is rotatably mounted a roll of paper to be fed to the press, each unit comprising a pair of standards, guide rollers rotatably mounted on the standards about which the paper from the respective roll is trained, a stationary pasting roller on each unit over which the paper is trained, a pair of inclined arms pivotally supported on each of the units, means supported on the lower ends of each pair of arms for engagement with the adjacent roll of paper for controlling the swinging movement of said pairs of arms, a traveling pasting roller rotatably mounted between the upper ends of each pair of the arms, said pairs of arms adapted to swing in a vertical plane as the respective roll of paper diminishes in a manner to engage the paper from said roll which is trained thereover with the paper which is trained over the stationary pasting roll of the other unit, means carried by each unit for engagement with the traveling pasting roller of the other unit for automatically shifting the same away from the co-acting stationary pasting roll after the paper trained over said traveling roller has been engaged with the paper trained over the stationary pasting roller, said means comprising a pivotally mounted lever having one end disposed for engagement with the traveling paster roller of the other unit, means connected to the opposite end of the lever for yieldingly maintaining the same in inoperative position, an arm mounted for swinging movement in a vertical plane on the adjacent standard for engagement with said means in a manner to actuate the lever, and a roller mounted on the free ends of the arms over which the paper is trained, said roller and the arms adapted to be swung downwardly by the pull of the paper when the same is connected to the paper on the other unit for shifting the lever.

5. A paper roll holder for printing presses of the character described comprising a pair of co-acting units upon each of which is rotatably mounted a roll of paper to be fed to the press, each unit comprising a pair of standards, guide rollers rotatably mounted on the standards about which the paper from the respective roll is trained, a stationary pasting roller on each unit over which the paper is trained, a pair of swingable arms pivotally supported on each unit, each pair of arms adapted to have their upper end portions swung in a vertical plane toward the other unit, a disk rotatably mounted between the lower end of each pair of swingable arms for engagement with the respective roll of paper for permitting swinging movement of the pair of arms as the roll of paper diminishes, a traveling pasting roller rotatably mounted between the upper ends of each pair of swingable arms over which the paper is trained, said traveling pasting rollers adapted to engage the paper trained thereover with the paper trained over the stationary pasting roller of the other unit when the paper from its respective roll is exhausted, a shaft rotatably mounted between the standards of each unit, arms fixed on the shaft adjacent its opposite ends, a roller mounted for rotation between the arms on each shaft over which the paper is trained, the last named roller and the arms being adapted to be swung downwardly by the pull exerted thereon by the paper when the paper of the other unit is engaged therewith and in a manner to rotate the shaft, pairs of levers pivotally mounted on the standards of each unit, spring controlled depressible means connected to

one end of each of the levers for engagement with the arms when the latter are swung downwardly in a manner to rock the levers on their pivots, means on the opposite ends of the levers for engagement with the traveling pasting roller of the other unit for shifting the same rearwardly and means operatively connecting the shaft and the roll of paper of each unit for rotating said roll of paper when the last named arms and the roller mounted thereon are swung downwardly.

In testimony whereof I affix my signature.

CHRISTOPHER McGARRY.