

March 19, 1940.

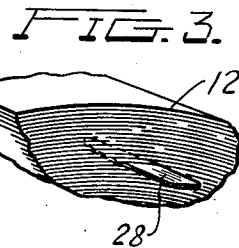
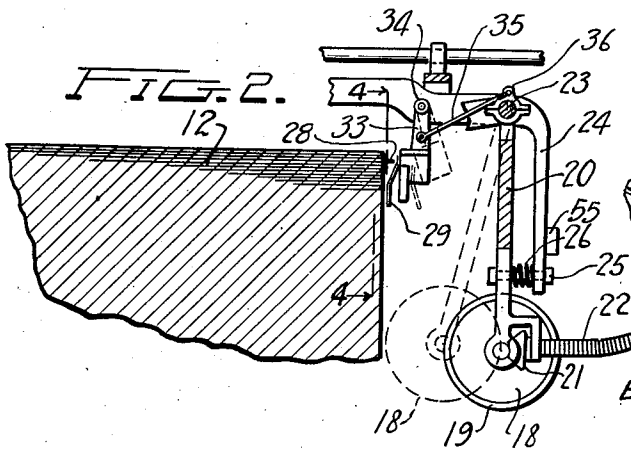
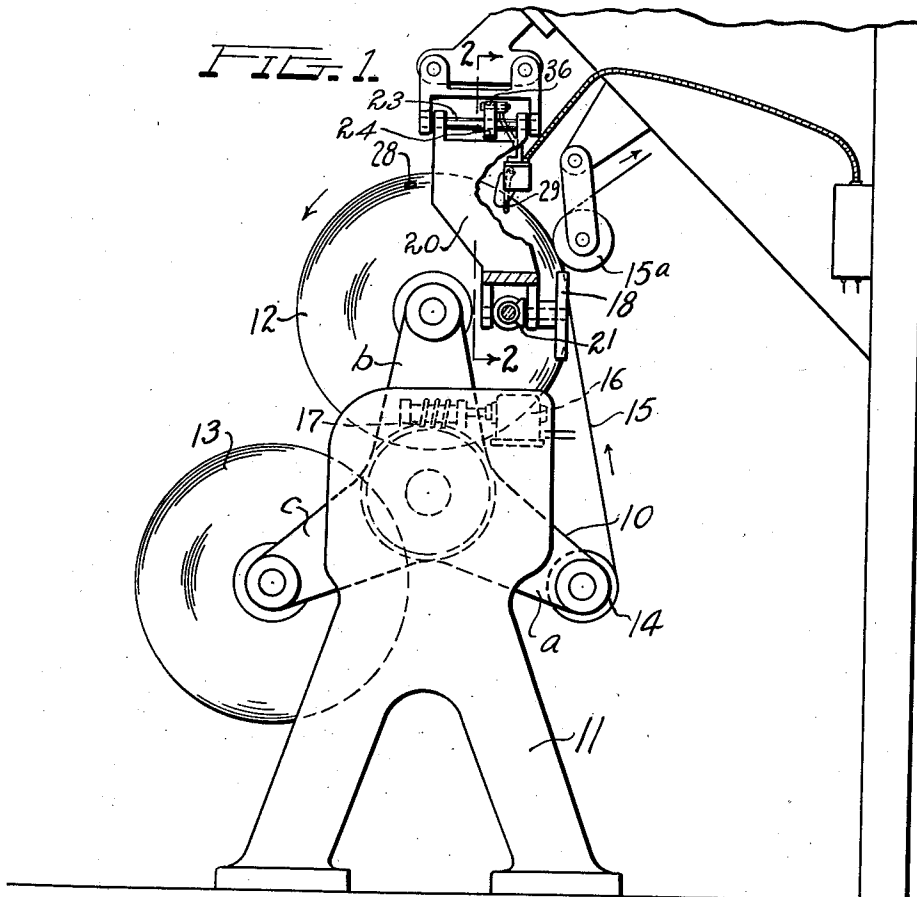
E. P. DOYLE ET AL

2,194,140

PASTER FOR NEWSPAPER PRESSES

Filed Feb. 2, 1938

3 Sheets-Sheet 1



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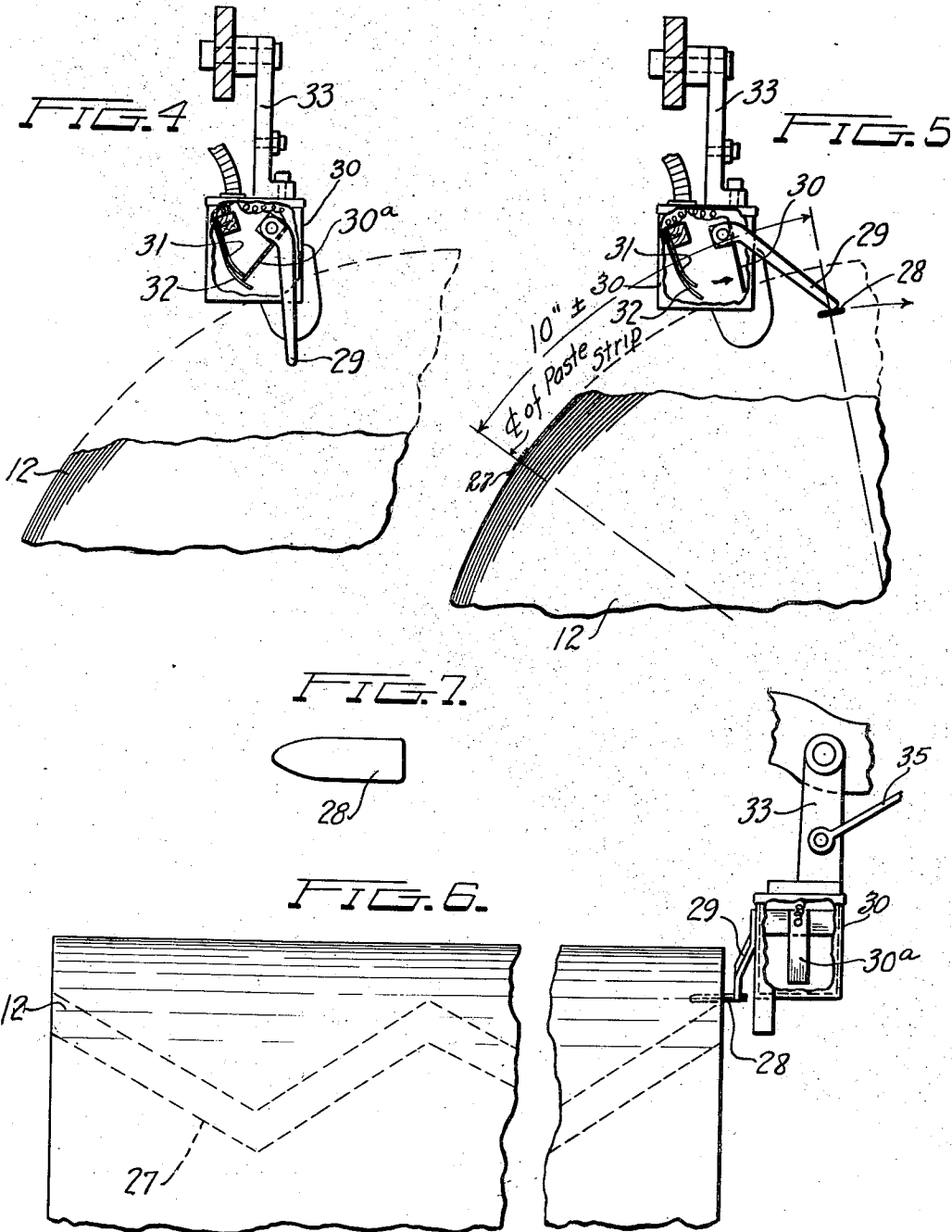
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E. P. DOYLE ET AL.
PASTER FOR NEWSPAPER PRESSES

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3 Sheets-Sheet 2



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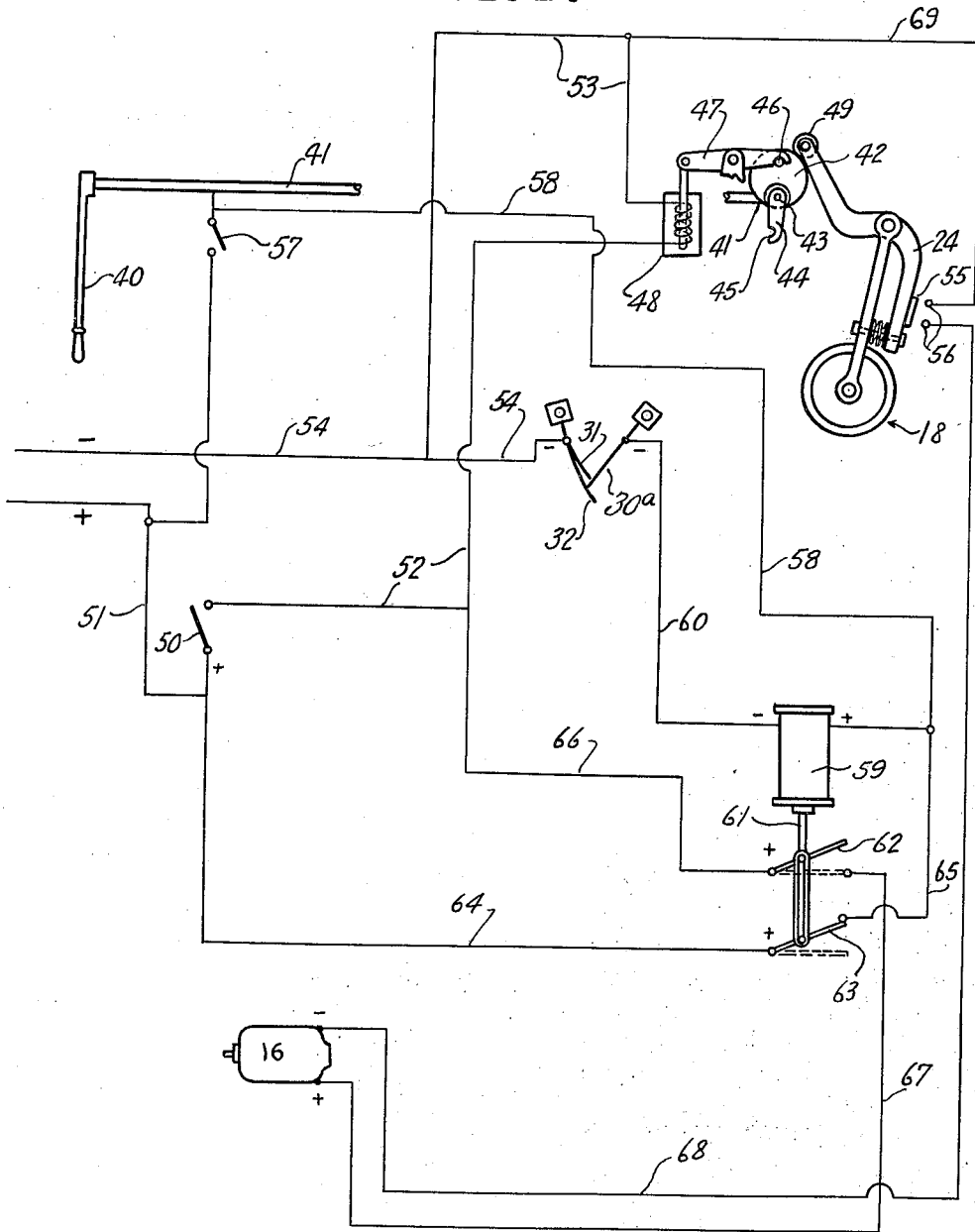
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3 Sheets-Sheet 3

FIG. 8.



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2,194,140

PASTER FOR NEWSPAPER PRESSES

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Application February 2, 1938, Serial No. 188,216

8 Claims. (Cl. 242—58)

This invention relates to pasters for newspaper presses in which a continuous web of paper is drawn from a roll by the press and, substantially when the roll is exhausted, a web from a new or fresh roll is adhesively connected to the web from the previous roll so that an uninterrupted web of paper passes to the press.

An object is to produce a new and improved paster for newspaper presses which can be satisfactorily operated by an unskilled person.

Another object is to advance the fresh roll rotating at approximately press speed against the web of the substantially exhausted roll in response to a timing device moving with the fresh roll.

A further object is to produce a simple and efficient timing device for pasters of the above character in which the adhesive strip on the paper roll which is rotating at press speed, first engages the traveling paper web when the roll advances into contact with the web.

A still further object is to provide a drive for the reel with a member inserted between the convolutions of the paper roll which is instrumental in rendering the drive effective.

Other objects and advantages of the invention will hereinafter appear and for purposes of illustration but not of limitation, an embodiment of the invention is shown on the accompanying drawings in which

Figure 1 is an end elevation of the reel for the paper rolls showing particularly the roll driving means and switch for operating the reel motor;

Figure 2 is a transverse sectional view on the line 2—2 of Figure 1;

Figure 3 is an enlarged fragmentary view of a peripheral edge portion of a paper roll showing the timing strip inserted between convolutions;

Figure 4 is an enlarged sectional view of the timing switch mechanism taken substantially on the line 4—4 of Figure 2, showing the switch in inoperative position;

Figure 5 is a view similar to Figure 4 showing the timing switch arm at the time of being tripped by the timing element;

Figure 6 is a side elevation showing a fresh or oncoming roll of paper with the timing switch mechanism moved to operative position and the switch arm in engagement with the timing strip;

Figure 7 is a plan view of the timing strip or Celluloid piece which is inserted between the convolutions of the paper roll;

Figure 8 is a diagrammatic view of the electrical connections and control devices.

The illustrated embodiment of the invention

comprises a reel 10 which is mounted for rotating movements on a suitable standard 11. The reel in this instance has three arms *a*, *b*, and *c*, the arms *b* and *c* in this instance supporting fresh rolls 12 and 13 respectively of paper ordinarily used for newspapers and the arm *a* supporting a substantially exhausted roll 14 of paper. The web 15 leading from the roll 14 extends upwardly to a relatively soft guide roll 15a and from thence passes in a suitable manner to the newspaper press (not shown), the fresh roll 12 being substantially in the position prior to splicing or adhesively connecting the end of the roll 12 to the web 15, it being understood that substantially upon effecting the paster, the reel 10 is rotated in a clockwise direction (Figure 1) so that the roll 12 will be in the position shown by the roll 14 on the drawings, such movement being effected by an electric motor 16 having a worm and wheel connection 17 with the reel.

Before the paster or splicing is accomplished, the next succeeding or oncoming roll of paper, such as the roll 12, is rotated to bring it to approximately the speed of the newspaper press with which the device is associated. The roll 12 is brought up to press speed by a wheel 18 having a covering 19 of rubber or some similar material. The wheel 18 is carried by an arm 20 and driven from a bevel gear 21 operated by a flexible drive 22 from the newspaper press and in such manner that when the wheel 18 is in contact with an end of the paper roll 12, it will bring the latter up approximately to press speed or at the rate of speed that the web 15 travels in the normal operation of the press.

The arm 20 is pivoted on a shaft 23 and a bent arm 24 is connected to the outer end of the arm 20 by a bolt 25 which slides in one of the arms, a coil spring 26 being interposed between these arms. The wheel 18 is moved into engagement with the end of the roll 12 adjacent the peripheral surface thereof substantially as shown and at this time the roll 12 is spaced a short distance from the guide roll 15a. It will be obvious that in this manner the roll 12 is very quickly rotated so that the web thereof is moving at approximately the traveling speed of the web 15 in the normal operation of the press.

The web from the roll 12 is connected to the web 15 by adhesive applied to the end of the fresh roll and preferably adhesive is applied as indicated at 27 on Figure 6, the zig zag line affording more secure adhesive connection with the web 15. It is desirable that as soon as the

roll 12 is brought up to press speed that it be advanced so that the adhesive 27 can engage the web 15 so as to allow the newspaper press to continue uninterruptedly. For that purpose, the reel motor 16 is energized substantially when the new roll 12 attains press speed. This is accomplished in an exceedingly simple manner as will now appear. A timing strip 28 preferably of some material like Celluloid and of a size and shape simulating a banjo pick, having, as indicated, a substantially pointed end, is inserted between the convolutions of the roll 12 adjacent the peripheral end portion and substantially in alignment with the adhesive strip 27.

For convenience of the operator, the fresh or oncoming roll is usually allowed to come to rest and in its balanced condition, the line of adhesive 27 is applied and then the timing piece 28 is inserted in such manner that a portion thereof projects beyond the end of the roll and a substantial portion is disposed between the convolutions of the roll. It should be understood that the line of adhesive 27 can be applied any place along the roll although from the standpoint of convenience, the operator will usually permit the roll first to come to rest. The timing piece 28 should project far enough beyond the end of the roll to contact a timing switch arm 29 which is pivoted in a housing 30 and in its normal position hangs downwardly substantially as shown on Figure 4.

The inner end of the arm 29 carried a contact strip 30a engageable with a contact strip 31 which acts as a stop, the outer end riding along a strip 32 which frictionally engages and holds the strip 30a in normal position. The contacts lead from the strips 30a and 31 to a solenoid 59 controlling the operation of the reel motor 16 and the arrangement is such that when the arm 29 is swung outwardly or to the position shown in Figure 5 in which the contact is broken, the solenoid operates in such manner when the paster control button is depressed as to energize the motor 16 until the paster control button is released, to advance the reel in a clockwise direction (Figure 4) moving the roll 12 to the position of the roll 14 shown on Figure 1, thus bringing the line of adhesive 27 into contact with the web 15 at the proper time and splicing these webs together. The swinging of the timing switch arm 29 to break the contact is caused by the timing piece 28 which moves into contact with the free end of the arm as the roll 12 rotates and then passes under it allowing the arm 29 to swing back by gravity to its normal position. The timing piece 28 remains in place until the roll has been unwound to free it when it is thrown or drops from the roll.

Reference is hereby made to our co-pending application, Serial No. 167,100 for the details of operation of the driving wheel 18 and the web severing means by which the web 15 is cut between the exhausted roll 14 and the roll 12 substantially at the time when the paster or splicing of the webs is accomplished. The severing of the web from the exhausted roll can be accomplished in accordance with the disclosure in the co-pending application whereby the paster can be effected without interrupting the normal operation of the press. Details of construction and operation of these parts form no part of the present invention so that additional description and illustration is not considered necessary.

The arrangement is such that when the driving wheel 18 is in operative driving relation to

the paper roll, the switch mechanism is away from the roll and conversely, when the switch mechanism is in operative position, the driving wheel 18 is disposed in inoperative position. For this purpose the switch housing is carried by a bracket arm 33 which is pivoted at 34 to a portion of the bent arm 24. The arm 33 is connected by a link 35 to an extension 36 of the wheel carrying arm 20. An inspection of Figure 2 will show that when the parts are in the full line position, the wheel 18 is away from the paper roll but the switch mechanism is disposed close to the end of the roll in position to be engaged by the actuator or timing piece 28. On the other hand, when the parts are in the dotted line position, the wheel 18 is in operative driving relation to the paper roll but the switch mechanism is swung away from the roll to inoperative position.

From the above description, it will be apparent that the sequence of operations is as follows: adhesive is applied in any position selected by operator on the next succeeding roll of paper or the roll which is to be applied or connected to the traveling paper web preferably in the manner shown in Figure 6. Then the timing or Celluloid piece 28 is inserted near the periphery of the roll and between the convolutions thereof substantially in line with the adhesive strip. When the operator considers that it is time to make a paster, the driving wheel 18 which is constantly rotating at approximately press speed is moved into engagement with the end of the roll thus driving the roll at press speed. As more fully described in our co-pending application hereinbefore mentioned, movement of the driving wheel 18 to roll driving position is effected manually, as diagrammatically shown on Figure 8, by a handle 40 which is fixed to a shaft 41. The shaft 41 is suitably connected to rock an eccentric disc 42 which is free to swing about its axis 43. Turning movement of the shaft 41 swings an arm 44 which has a notched end 45, so that the latter engages a pin 46 on the disc 42 and rocks the disc in a counterclockwise direction to the position shown on Figure 8. When the eccentric disc 42 is in its raised position, the pin 46 is engaged by one end of a latch arm 47 which holds the same in place. As soon as the eccentric disc is engaged or latched by the arm 47, the handle 40 is released and the arm 44 drops downwardly to its normal position. As shown the arm 47 is pivoted between its ends and the opposite end carries the armature of a solenoid 48. The bent arm 24 has a roller 49 at one end which engages the eccentric disc 42 so that when the disc is raised as above described, the bent arm 24 is likewise rocked to move the driving roll 18 to driving position into engagement with the paper roll. By depressing the paster button, which is indicated as 59 in Figure 8 the driving wheel 18 is swung, as set forth in our co-pending application, away from the paper roll. By referring to Figure 8, it will be apparent that by depression of the paster control button or switch 50, the solenoid 48 is energized through the leads 51, 52, 53 and 54, thereby rocking the latch 47 in a counterclockwise direction and releasing the eccentric disc 42. The disc 42 will then swing downwardly (counterclockwise) thus allowing the driving wheel 18 to swing by gravity away from the paper roll and to such position that the contact piece 55 on the bent arm 24 bridges the spaced contacts 56. Thereupon the switch mechanism, and particularly the timing

switch arm 29, is moved into the path of revolving movement of the Celluloid piece 23 which strikes against the arm 29 breaking the contact as above mentioned and thus, through suitable means, the reel motor operates at the proper time to move the line of adhesive into contact with the traveling web 15. The tail of the web 15 is then severed in any suitable manner and the paster is completed, when the roll 12 is in the position occupied by the roll 14 (Figure 1) and the paster button is released.

When the operator sees that the roll is substantially exhausted and shortly before web splicing is required, the driving wheel 18 is moved manually into engagement with the paper roll to bring it to press speed, as above indicated and as particularly shown and described in our co-pending application. It is to be understood that upon actuating the handle 40 to bring the driving wheel 18 into operative position, a switch 57 is thereby closed to allow current to flow through lead 58 to a solenoid 59 and thence through lead 60, switch arm 29, contact strip 21 and lead 54. Energizing of solenoid 59 moves the armature 61 upwardly opening switch 62 and closing switch 63. As soon as the handle 40 is released, the switch 57 is opened and current is then supplied to the solenoid 59 through leads 51 and 64, switch 63, lead 65 and then through the solenoid 59, lead 60 and other connections above mentioned. The operator then presses the control or paster button 50, whereupon the driving wheel 18 is released and the timing switch is moved into operative position as above described. When the switch arm 29 has been thrown outwardly, as indicated in Figure 5, so that the solenoid 59 is released, the reel motor 16 will revolve the paper rolls at the proper time until the operator releases the paster button when the paster is completed. In this connection, it will be apparent that upon closing the switch or paster control 50, current passes to the reel motor 16 through the leads 51, 52 and 66 through switch 62 (which has been moved to its dotted line or closed position upon release of the solenoid 59), and then through lead 67 to the reel. From the reel motor 16 current flows through lead 68, contacts 56 and contact piece 55, lead 69 and lead 54. Obviously, in absence of an automatic tail severing device, the speed of the press must be reduced to afford the operator sufficient time to sever the tail by hand but the use of an automatic tail severing device as shown in our co-pending application will enable the paster to be accomplished without reduction in press speed.

One advantage of the above paster is that an unskilled person can apply the adhesive to the paper roll and insert the timer piece. This is a decided improvement on similar devices which require that the adhesive be applied at a certain place and ordinarily requiring the services of two men, one to hold the roll and the other to apply the adhesive.

It is to be understood that numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention especially as defined in the appended claims.

What we claim is:

1. In a paster for a newspaper press in which the webs of a substantially exhausted roll of paper and a fresh roll are adhesively connected, a mounting on which a fresh roll is rotatable, a drive for the fresh roll for rotating same at approximately press speed, a drive for said

mounting, a switch controlling the mounting drive, said switch being bodily movable upon movement of said roll drive, and a timing element carried by the fresh roll and movable into operative engagement with the switch thereby to render the mounting drive operative.

2. In a paster for a newspaper press in which the webs of a substantially exhausted roll of paper and a fresh roll are adhesively connected, a mounting on which a fresh roll is rotatable, a drive for the fresh roll for rotating same at approximately press speed, a switch controlling the mounting drive and movable to a position adjacent the fresh roll when the roll drive is ineffective, and a device projecting from a side of the fresh roll and movable into engagement with the switch for tripping same thereby to energize the mounting drive.

3. In a paster for a newspaper press in which adhesive is applied to the paper web from a fresh roll and then joined to the web of a substantially exhausted roll, a reel on which the substantially exhausted and fresh rolls are rotatably mounted, a motor for rotating said reel, a drive for the fresh roll for rotating same approximately to press speed, a switch for controlling said motor, means for moving said switch into close juxtaposition to an end of the fresh roll, and a device inserted between the convolutions of the fresh roll and engaging said switch for energizing said motor.

4. In a paster for a newspaper press, a shiftable mounting on which the fresh paper roll is rotatably mounted, a friction wheel operating at approximately press speed for driving the roll and movable toward and away from an end thereof, a motor to shift said mounting, a part projecting from an end of the fresh roll and rotatable therewith, and a switch for the motor movable conjointly with said wheel when the latter moves away from the roll and actuated by said projecting part.

5. In a paster for a newspaper press, a shiftable mounting on which the fresh paper roll is rotatably mounted, a friction wheel operating at approximately press speed for driving the roll and movable toward and away from an end thereof, a motor to shift said mounting, an element loosely inserted between the convolutions of the roll with a part projecting therefrom, and a switch for the motor movable conjointly with said wheel when the latter moves away from the roll and actuated by said projecting part.

6. In a paster for a newspaper press, a roll of paper, a reel on which said roll is rotatably mounted, a friction wheel operating at approximately press speed by engagement with an end thereof and shiftable toward and away therefrom, a motor for rotating said reel, said roll having adhesive on the outermost ply for connection to another paper web, an element projecting from an end of the roll substantially in line with the adhesive thereon, and a switch controlling said motor movable into the path of said slip for actuation thereby.

7. In a paster for a newspaper press a rotatable reel on which a plurality of rolls of paper are rotatably mounted, an electric motor for rotating said reel, a friction wheel driven at press speed and engageable with one of the paper rolls adjacent the periphery thereof for frictionally driving same at press speed, a timer piece simulating a banjo pick inserted between the convolutions of the paper roll driven by said friction wheel having a portion thereof projecting beyond

the end of the roll, a reel controlling switch including a switch arm movable into the path of movement of said timer piece to be actuated thereby, and a connection between said switch and friction wheel whereby, when one member is in operative position, the other member is in inoperative position.

8. In a paster for a newspaper press, a rotatable reel on which a plurality of paper rolls are rotatably mounted, an electric motor for driving said reel, the next succeeding roll having a longitudinal line of adhesive thereon to secure the web of such roll to the web from the preceding roll, a timer piece simulating a banjo pick loosely disposed between the convolutions of such roll at the end thereof and in the region of the adhesive strip, a switch mechanism controlling said reel motor including a switch arm and elec-

trical contact elements in engagement when the arm is in its normal position, said arm being swingable away from normal position to separate said contacts and being adapted to return by gravity to its normal position, said switch arm being movable to a position in the path of movement of said timer piece, a bracket arm carrying said switch mechanism, a friction wheel movable into engagement with such roll at an end thereof for rotating same at press speed, means for rotating said friction wheel, an arm for supporting said friction wheel, and a connection between said last arms whereby, when the switch mechanism is in operative position, the friction wheel is in inoperative position.

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