

April 16, 1929.

A. BROADMEYER

1,709,005

SHEET FEEDING MECHANISM

Filed June 13, 1927

7 Sheets-Sheet 2

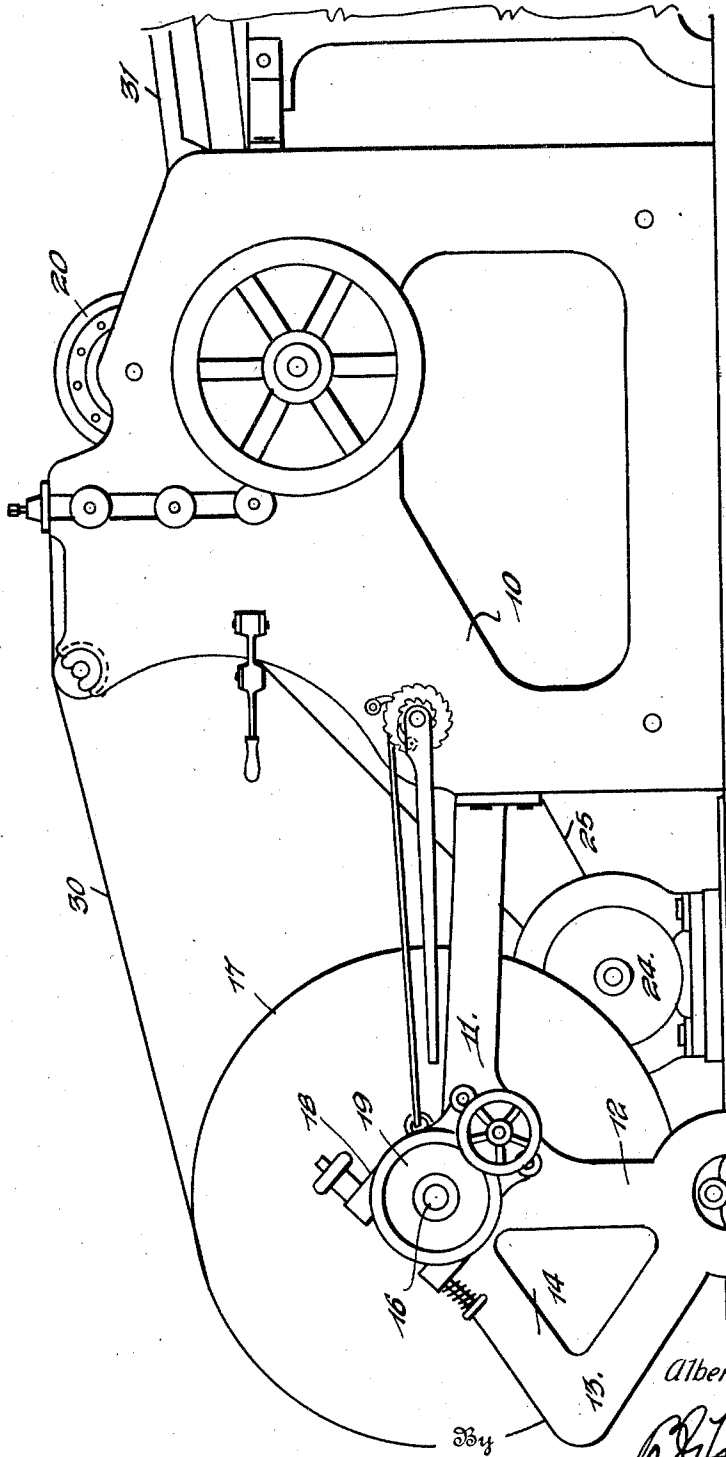


Fig. 2.

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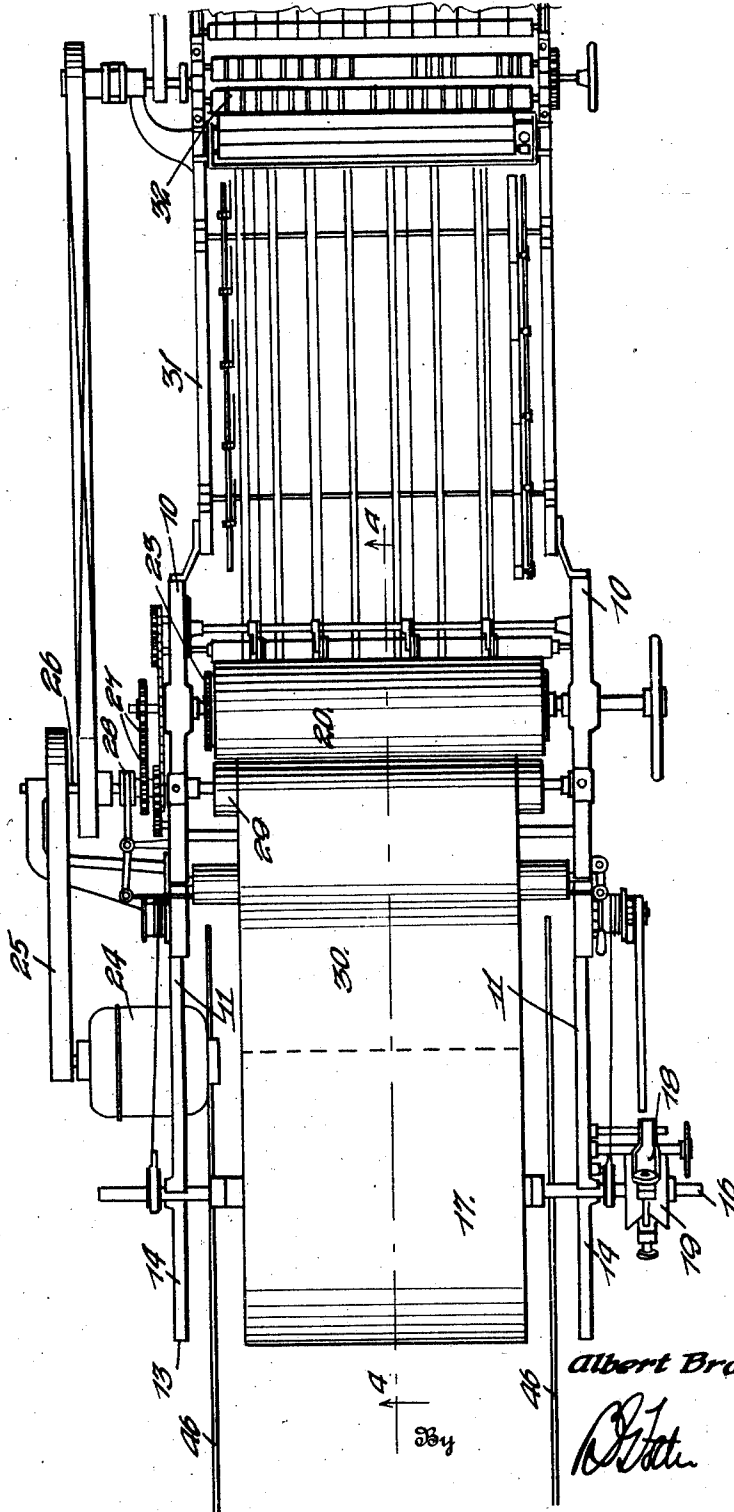
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SHEET FEEDING MECHANISM

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7 Sheets-Sheet 3



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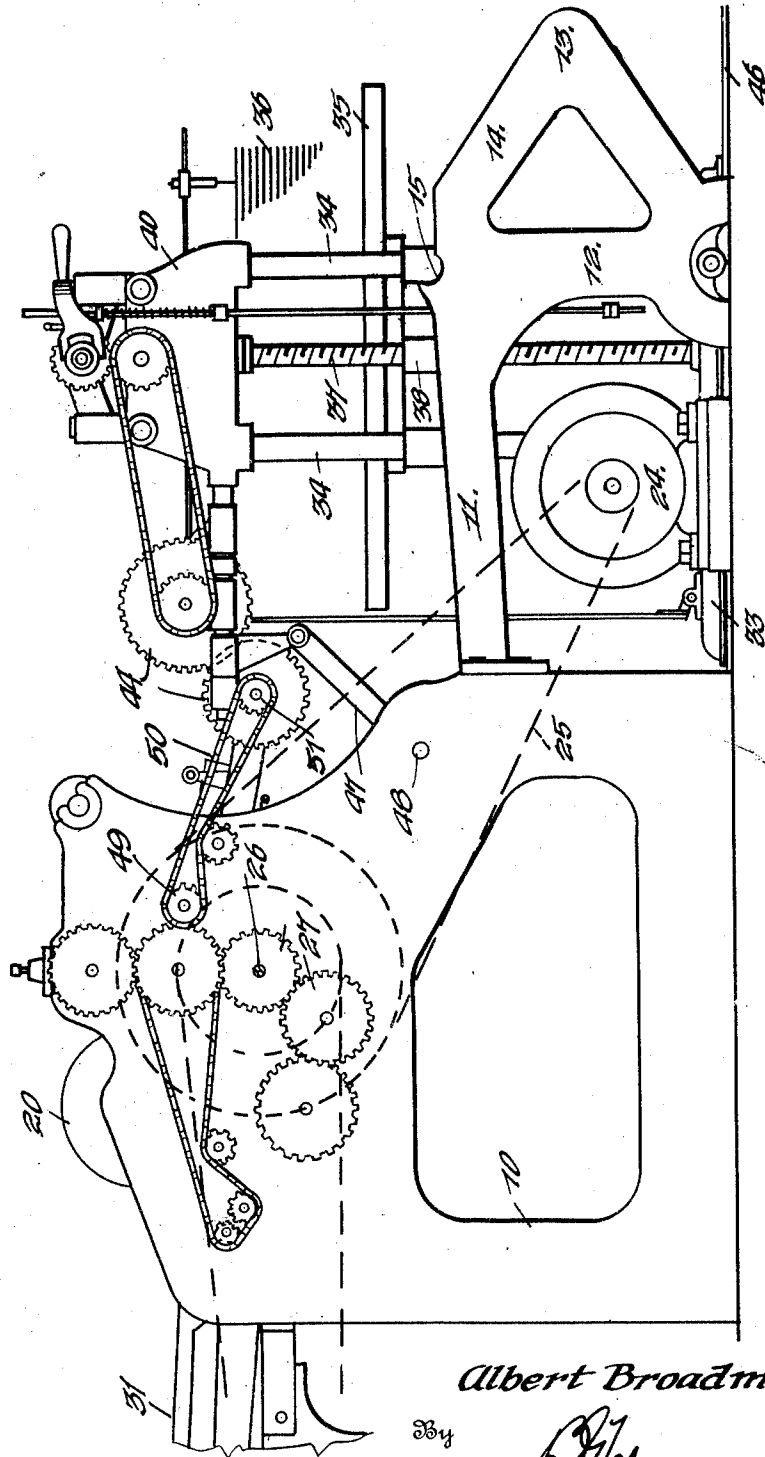
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SHEET FEEDING MECHANISM

Filed June 13, 1927

7 Sheets-Sheet 5



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SHEET FEEDING MECHANISM

Filed June 13, 1927

7 Sheets-Sheet 6

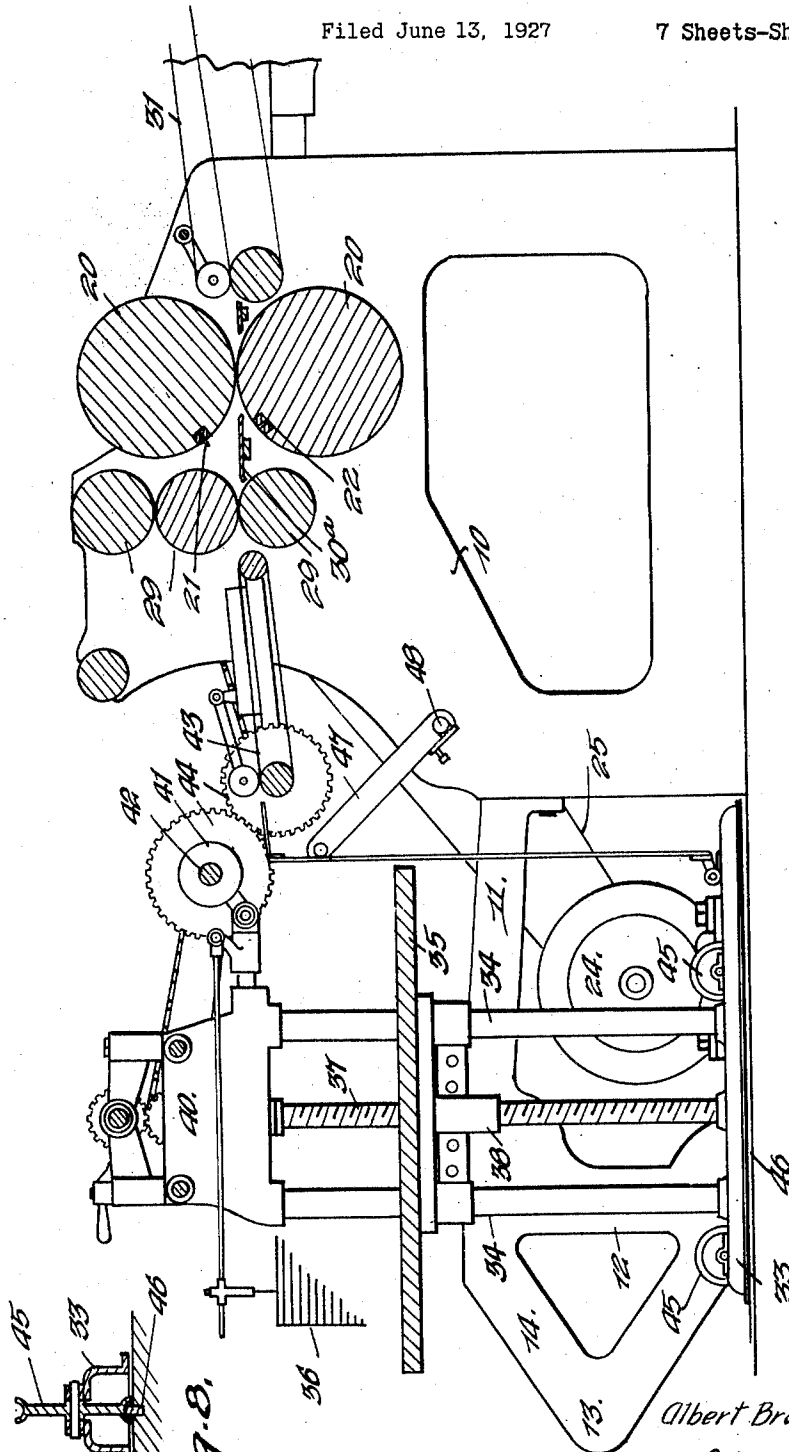


Fig. 6.

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April 16, 1929.

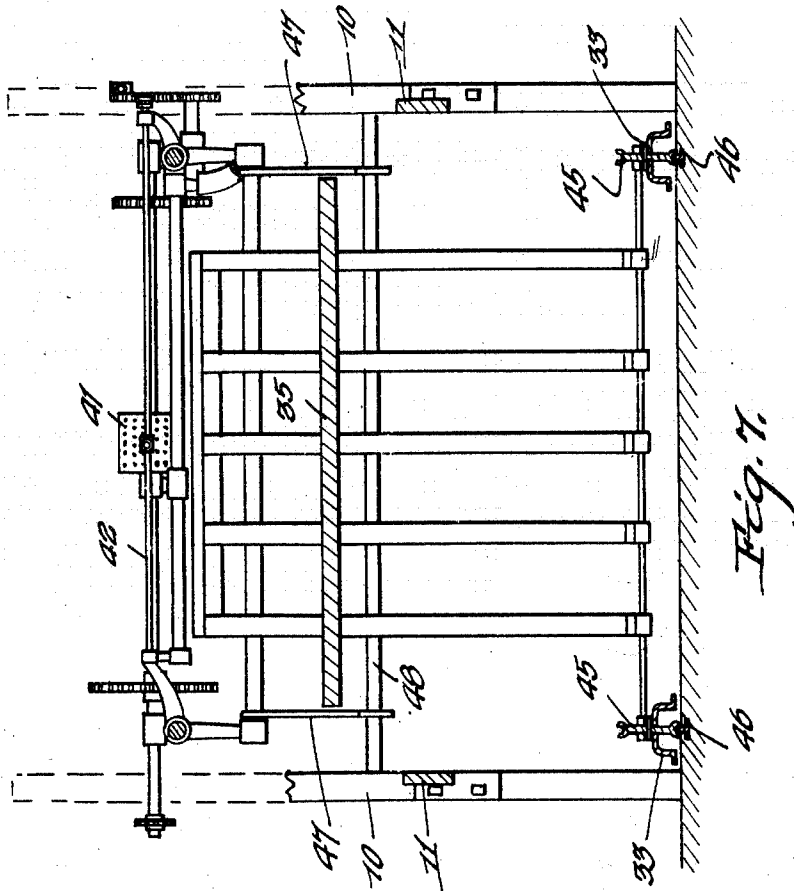
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SHEET FEEDING MECHANISM

Filed June 13, 1927

7 Sheets-Sheet 7



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UNITED STATES PATENT OFFICE.

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SHEET-FEEDING MECHANISM.

Application filed June 13, 1927. Serial No. 198,549.

This invention relates to apparatus for feeding sheets to a ruling machine or some other instrumentality that is to operate on such sheets.

5 The object is to provide mechanism by which either previously cut sheets can be fed or a roll of paper may supply the sheets which are cut up and fed to the same instrumentality, common mechanism being employed for effecting the delivery of the sheets, whether removed from a pile or cut from the web of a roll.

In the accompanying drawings:

15 Figure 1 is a side view of the apparatus with the pile feeder in place,

Figure 2 is a similar view with a roll of paper being fed,

Figure 3 is a plan view of the structure assembled as shown in Figure 2,

20 Figure 4 is a longitudinal sectional view of the same taken on the line 4—4 of Figure 3,

25 Figure 5 is a view in elevation of the pile feeder showing the side opposite to that shown in Figure 1,

Figure 6 is a longitudinal sectional view, Figure 7 is a cross sectional view,

30 Figure 8 is a detail view showing more particularly the manner of mounting the supporting wheels of the pile feeder.

In the structure disclosed, there is provided a frame comprising spaced side members 10. Secured to the front ends of said side members are spaced brackets 11 having floor standards 12 and provided with forward extensions 13. These extensions include rearwardly and upwardly inclined track bars 14 that extend to recessed seats 15 (see Fig. 5) above the standards 12. These seats are designed to receive the shaft or core 16 of a roll of paper 17, which can be journaled in the seats 15 by being run up the track bars 14, as will be readily understood. A brake 18 is mounted on the upper end of the standard 12 and is adapted to grip a brake drum 19 that is mounted on the shaft 16.

45 Journaled in the side members 10 are cooperating cutting rollers 20, one of which is provided with a blade 21, the other having a ledger bar 22 cooperating with the blade. These are geared together as indicated at

23 in Figure 3, so that they will properly cooperate. A driving motor is shown at 24, and through a belt 25, drives a shaft 26 55 geared as shown at 27 to the cutting rollers 20. A suitable clutch 28 is employed for connecting and disconnecting the rollers 20 from the drive shaft 26. In advance of the cutting rollers 20 are feeding rollers 29, 60 around which the web of paper 30 from the roll 17 is passed before being directed between the cutting rollers 20. A suitable supporting plate 30^a is preferably interposed between the lower set of rollers 29 and the 65 cutting rollers. The cutting rollers 20 in turn deliver the sheets to a conveyor 31 that carries them to some other instrumentalities, as for example, ruling disks 32.

A pile feeder is also provided. This 70 feeder consists of a suitable frame, including base plates 33, on which are mounted guide standards 34. Vertically slidable on these standards is a table 35 that supports a pile of cut sheets, as shown at 36. Thread- 75 ed elevating rods or shafts 37, located between the standards 34, have threaded engagements in sleeves 38 of the table, and serve to elevate the table and support the same at different heights. Automatic means, 80 which may be of any well-known or desired character, are employed for elevating this table, this means being designated generally by the reference numeral 39, and being carried on heads 40 that connect the upper 85 ends of the standards 34. The pile feeder is also preferably provided with suitable sheet feeding means which may be in the form of a suction roller 41 carried on a shaft 42. Projecting rearwardly from the feeder and 90 constituting a part of the same, is a conveyor 43, to which the suction roller 41 delivers the sheets. The shaft 42 and the conveyor are geared together as illustrated at 44. 95

The base plates 33 are of good shape, as will be clear by reference to Figure 7, and journaled thereon are supporting wheels 45 that run on tracks 46 located on the floor between the brackets 11 and standards 12. 100

It will thus be evident that the pile feeder is a completely assembled entity that can be moved to and from a position between the brackets 11—14 and when in such position

as shown in Figure 6, the conveyor 43 thereof will deliver sheets between the lower rollers 29 and thence between the cutting rollers 20.

5 To secure the pile feeder in place it is provided with hooks 47 adapted to detachably engage around a cross bar 48 extending between and mounted on the side members 10. (See Figs. 6 and 7.) As shown by Figure 5
10 moreover the gearing that drives the cutting rollers also drives a sprocket wheel 49, on which can be placed a sprocket chain 50, driving a sprocket wheel 51 that operates the gears 44 of the pile feeder.

15 With this construction, it will be evident that if the pile feeder is removed, a roll of paper can be run on to the brackets and fed therefrom as illustrated in Figure 4, the web, passing between the rollers 29, and
20 thence to the cutting rollers 20, by which it is severed into sheets that are delivered to the conveyor 31, and thence to the ruling mechanism or other instrumentalities. If it is desired to feed cut sheets the roll of paper
25 is removed and the pile feeder run into position. It then only requires to be secured by the hooks 47, have the drive chain 50, and the cutting blade of the cutting rollers 20 removed. When thus equipped, and in
30 operation, sheets will be fed from the table, delivered between the guide rollers 29, and the cutting rollers 20, which now act as means for delivering the previously cut sheets to the conveyor, and thence to the
35 succeeding mechanisms.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art,
40 without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the
45 advantages of the invention.

What I claim, is:

1. In apparatus for the purposes described, the combination with a conveyor, of a paper roll support, means for cutting sheets
50 from a roll on the support and delivering them to the conveyor, and means for positioning a pile feeder in the space occupied by the roll to deliver sheets to the conveyor when the roll support is vacant.

55 2. In apparatus for the purposes described, the combination with a conveyor, of a fixedly positioned paper roll support, mechanism for delivering sheets to the conveyor including means for severing the web of a
60 roll on the support, and means for positioning a pile feeder to feed sheets to said sheet delivering mechanism when the roll support is vacant and in its fixed position.

65 3. In apparatus for the purposes described, the combination with a conveyor, of a pa-

per roll support, mechanism for delivering sheets to the conveyor including means for severing the web of a roll on the support, and means for positioning a pile feeder in a predetermined position with respect to the
70 roll support to feed sheets thereby to the web severing means and by said delivering mechanism to the conveyor.

4. In apparatus for the purposes described, the combination with a conveyor, of a fixed
75 paper roll support, and mechanism for delivering sheets to the conveyor including cutter rolls between which the web of a roll on the support passes and by which it is
80 severed into sheets that are delivered to the conveyor, and means for positioning a movable pile feeder in a predetermined position with respect to the roll support to deliver sheets to the cutting rolls and thereby to the
85 conveyor, said roll support being constructed to admit the pile feeder to feeding position.

5. In apparatus for the purposes described, the combination with a conveyor, of a paper roll support, and mechanism for delivering sheets to the conveyor including cutter
90 rolls between which the web of a roll on the support passes and by which it is severed into sheets that are delivered to the conveyor, said roll support and cutter rolls being so related to permit a pile feeder being
95 moved to and from a position in the paper roll support with its sheet feeder adapted to deliver sheets to the cutting rolls when the pile feeder is in position.

6. In apparatus for the purposes described, the combination with a paper roll support comprising side members having bearings for a paper roll shaft, said members being spaced apart and adapted to receive
100 between them a pile feeder, of means for delivering sheets from a roll journaled on the side members and from a pile feeder placed therebetween, to the conveyor.

7. In apparatus for the purposes described, the combination with a frame and
110 a conveyor, of means in the frame for delivering sheets to the conveyor, spaced roll supporting members at one end of the frame, on which a roll can be journaled to feed
115 its web to the sheet delivering means, said roll supporting members being adapted to receive between them a pile feeder, and means between the supporting members and conveyor for feeding sheets to the said delivering means.
120

8. In apparatus for the purposes described, the combination with a frame and
125 a conveyor, of means in the frame for delivering sheets to the conveyor, spaced roll supporting members at one end of the frame on which a roll can be journaled to feed
130 its web to the sheet delivering means, said members being adapted to permit a pile feeder with an automatically elevated table, being moved to and from a position between

the roll supporting members, and means whereby the sheet delivering means in the frame is adapted to operate the pile feeder when placed between the roll supporting members.

9. In apparatus for the purposes described, the combination with a frame and a conveyor, of means in the frame for delivering sheets to the conveyor, spaced roll supporting members at one end of the frame on which a roll can be journaled to feed its web to the sheet delivering means, a trackway for a pile feeder extending between the roll supporting members, and means whereby the sheet delivering means in the frame is adapted to operate the pile feeder.

10. In apparatus for the purposes described, the combination with a frame, of coating web cutting rollers journaled in the frame, a conveyor extending from one end of the frame, spaced roll supporting brackets at the other end of the frame, and having journaled bearings for the

shaft of a paper roll that delivers its web to the cutting rollers, a trackway for a pile feeder extending between the brackets, means for fixing a pile feeder on the tracks between the brackets with the feeder in position to deliver sheets between the cutter rollers, and common means for driving the cutter roller and a pile feeder when so positioned.

11. In apparatus for the purposes described, the combination with a frame, of a conveyor for carrying sheets, mechanism in the frame for delivering sheets to the conveyor, and spaced members in advance of the sheet delivering mechanism for supporting a roll of paper to deliver its web to the delivering mechanism and also permitting the placing of a pile feeder therebetween and in a position to feed sheets to said delivery mechanism.

In testimony whereof, I affix my signature.

ALBERT BROADMEYER.