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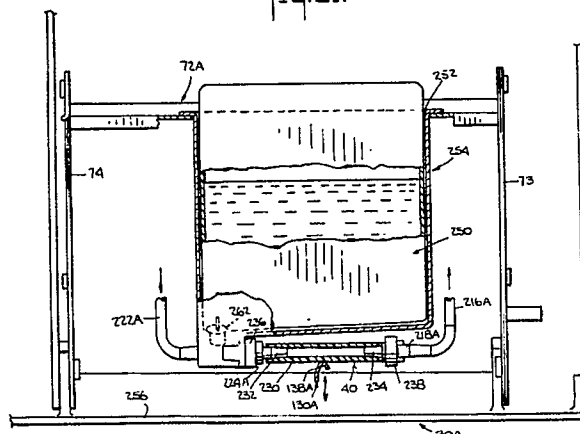
EUROPEAN PATENT APPLICATION

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19.09.90 Bulletin 90/38(71) Applicant: **PITNEY BOWES, INC.**
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London, WC1V 7RD(GB)(54) **Ink pump.**

(57) An ink pump (40) for a high speed mailing machine is disclosed. The ink pump 40 pumps ink from an ink reservoir 41 to an ink pad of an ink pad device 36. The ink pump 40 comprises a deformable chamber and valves (232, 234) which cooperate to pump ink upon compression of the chamber and release of the compression. The pump (40) comprises an input and an output, and the valves comprises a one way valve 232, e.g. a duck bill valve, disposed at the pump input which closes upon com-

pression of the chamber and opens upon release of the compression, and a one way valve 234, e.g. a duck bill valve, disposed at the pump output which opens upon compression of the chamber and closes upon release of the compression. Duck bill valves (232, 234) enable the pump (40) to be disposed in any attitude including horizontal. These valves (232, 234) may be disposed entirely within the deformable chamber, which may comprise a sleeve 230 of elastic material.

Fig. 21.



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-3961337 (JUNG ET AL) * column 3, line 53 - column 7, line 15; figures *	1, 4, 6, 8	G07B17/00 B41K3/56 B41J2/175
Y		2, 3, 10, 11	
A		7, 14	
X	US-A-4586058 (YAMAZAKI ET AL) * column 2, line 44 - column 3, line 43; figures *	1, 4, 5	
A		2, 3, 8	
Y	US-A-4292893 (KIRBY JR) * column 4, lines 3 - 35; figures 1-9, 15, 20-22 *	2, 3, 10, 11	
A		13	
Y	US-A-4441197 (BAUN ET AL) * column 3, line 8 - column 4, line 53; figures *	3	
A		9-11, 13	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	US-A-3646907 (DUDLEY) * column 2, line 18 - column 4, line 32; figures *	2, 3, 10-13	G07B B41K B41J B41F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 13 JULY 1990	Examiner RAKOTON DRAJAONA C.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	