

## SECTION B — PERFORMING OPERATIONS; TRANSPORTING

### B41 PRINTING; LINING MACHINES; TYPEWRITERS; STAMPS

**B41J TYPEWRITERS; SELECTIVE PRINTING MECHANISMS, i.e. MECHANISMS PRINTING OTHERWISE THAN FROM A FORME; CORRECTION OF TYPOGRAPHICAL ERRORS** (composing B41B; printing on special surfaces B41F; laundry marking B41K; erasers, rubbers or erasing devices B43L 19/00; fluid media for correction of typographical errors by coating C09D 10/00; recording the results of measuring G01; recognition or presentation of data, marking record carriers in digital fashion, e.g. by punching, G06K; franking or ticket-printing and issuing apparatus G07B; electric keyboard switches, in general H01H 13/70, H03K 17/94; coding in connection with keyboards or like devices, in general H03M 11/00; receivers or transmitters for transmission of digital information H04L; transmission or reproduction of documents, or the like, e.g. facsimile transmission, H04N 1/00; printing mechanisms specially adapted for apparatus, e.g. cash registers, weighing machines, producing records of their own performance, see the relevant subclasses)

#### Note(s)

- This subclass covers:
  - manually controlled power-operated apparatus or apparatus of this type with additional control by input of recorded information, e.g. on punched cards or tapes;
  - the "print-out" features of apparatus controlled by record carriers or electric signals in so far as these are of general interest, e.g. impression, inking, line-spacing mechanisms, printing heads.
- This subclass does not cover:
  - electrical features of apparatus controlled by record carriers or electric signals and of interest apart from the "print-out" features of said apparatus;
  - apparatus controlled by record carriers or electric signals, as a whole.
- In this subclass, the following term is used with the meaning indicated:
  - "paper" covers also similar flexible copy material;
  - "printing material" covers both paper and temporary record carriers from which records are transferred to a paper, but does not cover printing masters, e.g. formes.

#### Subclass index

##### KINDS OF APPARATUS

characterised by the mounting, arrangement, or disposition of the types or dies.....1/00  
 characterised by the printing or marking process for which they are designed.....2/00  
 characterised by the purpose.....3/00

##### COMMON DETAILS OR ACCESSORIES

Character selection.....5/00, 7/00  
 Hammer impression.....9/00  
 Supporting or handling copy or duplicating material.....11/00-15/00  
 Transfer material  
   of page-width.....17/00  
   in ribbon form; ink ribbon cartridges.....31/00, 33/00, 35/00, 32/00  
 Inking.....27/00  
 Spacing.....19/00  
 Drives.....23/00  
 Particular operations.....21/00  
 Others.....25/00, 29/00, 35/00

#### Kinds of typewriters or of selective printing mechanisms

		1/06	• • on power-operated levers or arms
		1/08	• with types or dies carried on sliding bars or rods
		1/10	• • on end surfaces thereof
		1/12	• • on side surfaces thereof, e.g. fixed thereto
		1/14	• • • the types or dies being movable relative to the bars or rods (mounted on flexible bars or rods B41J 1/16)
1/02	• with separate or detached types or dies		
1/04	• with types or dies carried upon levers or radial arms, e.g. manually operated (B41J 1/16 takes precedence)		

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- 1/16 • with types or dies arranged in stationary or sliding cases or frames or upon flexible strips, plates, bars, or rods
  - 1/18 • with types or dies strung on wires or rods
  - 1/20 • with types or dies mounted on endless bands or the like
  - 1/22 • with types or dies mounted on carriers rotatable for selection
  - 1/24 • • the plane of the type or die face being perpendicular to the axis of rotation (B41J 1/60 takes precedence)
  - 1/26 • • • Carriers moving for impression (B41J 1/27 takes precedence) [3]
  - 1/27 • • • Carriers moving during impression [3]
  - 1/28 • • • Carriers stationary for impression, e.g. with the types or dies not moving relative to the carriers
  - 1/30 • • • • with the types or dies moving relative to the carriers or mounted on flexible carriers
  - 1/32 • • the plane of the type or die face being parallel to the axis of rotation, e.g. with type on the periphery of cylindrical carriers (B41J 1/60 takes precedence)
  - 1/34 • • • Carriers rotating during impression
  - 1/36 • • • Carriers sliding for impression, e.g. manually operated
  - 1/38 • • • • power operated
  - 1/40 • • • Carriers swinging for impression
  - 1/42 • • • • about an axis parallel to the axis of rotation of the carrier
  - 1/44 • • • Carriers stationary for impression
  - 1/46 • • • • Types or dies fixed on wheel, drum, cylinder, or like carriers
  - 1/48 • • • • • with a plurality of carriers, one for each character space
  - 1/50 • • • • • with one or more carriers travelling across copy material in letter-space direction
  - 1/52 • • • • • with copy material moving in the letter-space direction, and carrier mounting being fixed relative to the machine
  - 1/54 • • • • • Types or dies movable on wheel, drum, cylinder, or like carriers
  - 1/56 • • • • • Types or dies on shuttles or like loose carriers
  - 1/58 • • • • • Types or dies upon arcuate bars
  - 1/60 • with types or dies on spherical, truncated-spherical, or like surfaces
- 2/00 Typewriters or selective printing mechanisms characterised by the printing or marking process for which they are designed** (mounting, arrangement, or disposition of types or dies B41J 1/00; marking methods B41M 5/00; structure or manufacture of heads, e.g. inductive, for recording by magnetisation or demagnetisation of a record carrier G11B 5/127; heads for reproducing capacitive information G11B 9/07) [5]
- Note(s)**
1. This group covers devices reproducing only a discrete number of tones, whereas group H04N 1/00 covers devices used for the reproduction of documents or the like, which devices are capable of reproducing continuous tone value scales.
  2. In this group, the following expressions are used with the meanings indicated:
- "ink jet" involves the projection of ink on to the printing material, e.g. paper, through a nozzle as a stream of droplets or particles of colouring matter;
  - "continuous ink jet" means a jet of ink transformed into a continuous stream of droplets or particles of colouring matter after having left the nozzle;
  - "ink spray" means a spray of ink transported by a stream of charged particles or air on to the printing material.
- 2/005 • characterised by bringing liquid or particles selectively into contact with a printing material (printing by selective application of impact or pressure on a printing or impression-transfer material B41J 2/22) [5]
  - 2/01 • • Ink jet [5]
  - 2/015 • • • characterised by the jet generation process (B41J 2/215 takes precedence) [5]
  - 2/02 • • • • generating a continuous ink jet [5]
  - 2/025 • • • • • by vibration [5]
  - 2/03 • • • • • by pressure [5]
  - 2/035 • • • • • by electric or magnetic field [5]
  - 2/04 • • • • • generating single droplets or particles on demand [5]
  - 2/045 • • • • • by pressure, e.g. electromechanical transducers [5]
  - 2/05 • • • • • • produced by the application of heat [5]
  - 2/055 • • • • • • Devices for absorbing or preventing back-pressure [5]
  - 2/06 • • • • • • by electric or magnetic field [5]
  - 2/065 • • • • • • involving the preliminary making of ink protuberances [5]
  - 2/07 • • • characterised by jet control (B41J 2/205 takes precedence) [5]
  - 2/075 • • • • for many-valued deflection [5]
  - 2/08 • • • • • charge-control type [5]
  - 2/085 • • • • • • Charge means, e.g. electrodes [5]
  - 2/09 • • • • • • Deflection means [5]
  - 2/095 • • • • • • electric field-control type [5]
  - 2/10 • • • • • • magnetic field-control type [5]
  - 2/105 • • • • • for binary-valued deflection [5]
  - 2/11 • • • • • for ink spray [5]
  - 2/115 • • • • • synchronising the droplet separation and charging time [5]
  - 2/12 • • • • • testing or correcting charge or deflection [5]
  - 2/125 • • • • • Sensors, e.g. deflection sensors [5]
  - 2/13 • • • • • for inclination of printed pattern [5]
  - 2/135 • • • • Nozzles [5]
  - 2/14 • • • • • Structure thereof [5]
  - 2/145 • • • • • Arrangement thereof [5]
  - 2/15 • • • • • • for serial printing [5]
  - 2/155 • • • • • • for line printing [5]
  - 2/16 • • • • • • Production of nozzles [5]
  - 2/165 • • • • • • Prevention of nozzle clogging, e.g. cleaning, capping or moistening for nozzles [5]
  - 2/17 • • • • • characterised by ink handling [5]
  - 2/175 • • • • • Ink supply systems [5]
  - 2/18 • • • • • Ink recirculation systems [5]
  - 2/185 • • • • • • Ink-collectors; Ink-catchers [5]
  - 2/19 • • • • • for removing air bubbles [5]
  - 2/195 • • • • • for monitoring ink quality [5]
  - 2/20 • • • • • for preventing or detecting contamination of compounds [5]

- 2/205 • • • for printing a discrete number of tones (B41J 2/21 takes precedence) [5]
- 2/21 • • • for multi-colour printing [5]
- 2/215 • • • by passing a medium, e.g. consisting of an air or particle stream, through an ink mist [5]
- 2/22 • characterised by selective application of impact or pressure on a printing material or impression-transfer material [5]
- 2/225 • • ballistic, e.g. using solid balls or pellets [5]
- 2/23 • • using print wires [5]
- 2/235 • • • Print head assemblies [5]
- 2/24 • • • • serial printer type (B41J 2/25, B41J 2/265 take precedence) [5]
- 2/245 • • • • line printer type (B41J 2/25, B41J 2/265 take precedence) [5]
- 2/25 • • • • Print wires [5]
- 2/255 • • • • • Arrangement of the print ends of the wires [5]
- 2/26 • • • • • Connection of print wire and actuator [5]
- 2/265 • • • • Guides for print wires [5]
- 2/27 • • • Actuators for print wires [5]
- 2/275 • • • • of clapper type (B41J 2/28 takes precedence) [5]
- 2/28 • • • • of spring charge type, i.e. with mechanical power under electro-magnetic control [5]
- 2/285 • • • • of plunger type [5]
- 2/29 • • • • of moving-coil type [5]
- 2/295 • • • • using piezo-electric elements [5]
- 2/30 • • • Control circuits for actuators [5]
- 2/305 • • • Ink supply apparatus (ink ribbons, ink-ribbon mechanisms B41J 31/00-B41J 35/00) [5]
- 2/31 • • using a print element with projections on its surface impacted or impressed by hammers [5]
- 2/315 • characterised by selective application of heat to a heat sensitive printing or impression-transfer material (B41J 2/385, B41J 2/435 take precedence) [5]
- 2/32 • • using thermal heads [5]
- 2/325 • • • by selective transfer of ink from ink carrier, e.g. from ink ribbon or sheet [5]
- 2/33 • • • • from ink roller [5]
- 2/335 • • • Structure of thermal heads [5]
- 2/34 • • • • comprising semiconductors [5]
- 2/345 • • • characterised by the arrangement of resistors or conductors [5]
- 2/35 • • • providing current or voltage to the thermal head [5]
- 2/355 • • • • Control circuits for heating-element selection [5]
- 2/36 • • • • • Print density control [5]
- 2/365 • • • • • • by compensation for variation in temperature [5]
- 2/37 • • • • • • by compensation for variation in current [5]
- 2/375 • • • Protection arrangements against overheating [5]
- 2/38 • • Preheating, i.e. heating to a temperature insufficient to cause printing [5]
- 2/385 • characterised by selective supply of electric current or selective application of magnetism to a printing or impression-transfer material (B41J 2/005 takes precedence; electrography, magnetography G03G) [5]
- 2/39 • • using multi-stylus heads [5]
- 2/395 • • • Structure of multi-stylus heads [5]
- 2/40 • • • providing current or voltage to the multi-stylus head [5]
- 2/405 • • • • Selection of the stylus or auxiliary electrode to be supplied (electronic switching circuits in general H03K 17/00) [5]
- 2/41 • • • for electrostatic printing (B41J 2/39 takes precedence) [5]
- 2/415 • • • • by passing charged particles through a hole or a slit [5]
- 2/42 • • • for heating selectively [5]
- 2/425 • • • for removing surface layer selectively from electro-sensitive material, e.g. metal coated paper [5]
- 2/43 • • • for magnetic printing [5]
- 2/435 • characterised by selective application of radiation to a printing material or impression-transfer material (optical elements, systems, or apparatus G02B; modulation or deflection of light G02F; electrophotography G03G) [5]
- 2/44 • • using single radiation source, e.g. lighting beams or shutter arrangements (B41J 2/475 takes precedence) [5]
- 2/445 • • • using liquid crystals [5]
- 2/447 • • using arrays of radiation sources (B41J 2/475 takes precedence) [6]
- 2/45 • • • using light-emitting diode arrays [5]
- 2/455 • • • using laser arrays [5]
- 2/46 • • • characterised by using glass fibres [5]
- 2/465 • • using masks, e.g. light-switching masks (photographic composing B41B) [5]
- 2/47 • • using the combination of scanning and modulation of light [5]
- 2/475 • • • for heating selectively [5]
- 2/48 • • • melting ink on a film or melting ink granules [5]
- 2/485 • characterised by the process of building-up characters applicable to two or more kinds of printing or marking processes [5]
- 2/49 • • • by writing [5]
- 2/495 • • • by selective printing from a rotating helical member [5]
- 2/50 • • • by the selective combination of two or more non-identical printing elements [5]
- 2/505 • • • from an assembly of identical printing elements [5]
- 2/51 • • • serial printer type [5]
- 2/515 • • • line printer type [5]
- 2/52 • Arrangement for printing a discrete number of tones, not covered by group B41J 2/205, e.g. applicable to two or more kinds of printing or marking process (B41J 2/525 takes precedence; for photomechanical production G03F 5/00) [5]
- 2/525 • Arrangement for multi-colour printing, not covered by group B41J 2/21, e.g. applicable to two or more kinds of printing or marking process (for photomechanical production G03F 3/00) [5]
- 3/00 Typewriters or selective printing or marking mechanisms characterised by the purpose for which they are constructed (cryptographic typewriters G09C 3/00) [5]**
- 3/01 • for special character, e.g. for Chinese characters or bar codes [5]
- 3/24 • for perforating or stencil cutting using special types or dies
- 3/26 • for stenographic writing
- 3/28 • for printing downwardly on flat surfaces, e.g. of books, drawings, boxes
- 3/30 • for printing with large type, e.g. on bulletins, tickets

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- 3/32 • for printing in Braille or with keyboards specially adapted for use by blind or disabled persons
- 3/34 • for printing musical scores
- 3/36 • for portability
- 3/37 • • Foldable typewriters [5]
- 3/38 • for embossing, e.g. for making matrices for stereotypes
- 3/39 • • hand-held (manually-controlled or manually-operable label dispensers having printing equipment B65C 11/02) [5]
- 3/407 • for marking on special material (printing on special surfaces B41F 17/00) [5]
- 3/413 • • for metal [5]
- 3/42 • Two or more complete typewriters coupled for simultaneous operation
- 3/44 • Typewriters or selective printing mechanisms having dual functions or combined with, or coupled to, apparatus performing other functions (printing mechanisms coupled to typographical composing machines B41B 27/41)
- 3/46 • • Printing mechanisms combined with apparatus providing a visual indication
- 3/50 • • Mechanisms producing characters by printing and also producing a record by other means (punching mechanisms G06K) [5]
- 3/51 • • • the printed and recorded information being identical; using type elements with code-generating means (G06K 1/12 takes precedence) [5]
- 3/54 • with two or more sets of type or printing elements (B41J 3/60 takes precedence) [5]
- 3/60 • for printing on both faces of the printing material [5]
- 3/62 • for printing on two or more separate sheets or strips of printing material (B41J 3/54 takes precedence) [5]

### Common details or accessories

- 5/00 Devices or arrangements for controlling character selection** (methods or arrangements for sensing record carriers G06K 7/00)
- 5/02 • Character or syllable selected by setting an index
- 5/04 • • Single-character selection
- 5/06 • • Multiple-character selection
- 5/08 • Character or syllable selected by means of keys or keyboards of the typewriter type
- 5/10 • • Arrangements of keyboards
- 5/12 • • Construction of key buttons
- 5/14 • • Construction of key levers
- 5/16 • • Mounting or connecting key buttons on or to key levers
- 5/18 • • Locks
- 5/20 • • • for subsidiary keys, e.g. for shift keys
- 5/22 • • • Interlocks between keys, e.g. without detent arrangements
- 5/24 • • • • with detent arrangements
- 5/26 • • Regulating touch, key dip or stroke, or the like
- 5/28 • • Multiple-action keys, e.g. keys depressed by two or more amounts or movable in two or more directions to effect different functions or selections
- 5/30 • Character or syllable selection controlled by recorded information
- 5/31 • • characterised by form of recorded information
- 5/32 • • • by printed, embossed, or photographic records, e.g. cards, sheets
- 5/34 • • • • by strips or tapes

- 5/36 • • • by punched records, e.g. cards, sheets
- 5/38 • • • • by strips or tapes
- 5/40 • • • by magnetic or electrostatic records, e.g. cards, sheets
- 5/42 • • • • by strips or tapes
- 5/44 • • characterised by the kind of storage of recorded information
- 5/46 • • • the storage being on internal storages
- 5/48 • • • the storage being on external storages
- 5/50 • • • • on a single storage
- 5/51 • • • • on more than one separate storage, e.g. on additional correction strips or tapes [3]
- 5/52 • • characterised by the provision of additional devices for producing a punched or like record, e.g. simultaneously
- 7/00 Type-selecting or type-actuating mechanisms** (index setting B41J 5/02)
- 7/02 • Type-lever actuating mechanisms
- 7/04 • • Levers mounted on fixed pivots
- 7/06 • • • and connected to transmission members, e.g. toothed gearing
- 7/08 • • • • with pin-and-slot or like loose connections; Cam-slot members
- 7/10 • • • • Chain, belt, flexible-cable, or like members
- 7/12 • • • U-shaped type-lever on two pivots
- 7/14 • • • Single key-and-type lever
- 7/16 • • • Type-head pivoted to, or rotating on, lever
- 7/18 • • Levers having moving or variable fulcra to alter the mechanical advantage during the stroke
- 7/20 • • Levers having moving pivots fixed relative to the lever; Type-bars each pivoted on two links
- 7/22 • • Type-baskets; Bearings or hangers for type-levers
- 7/24 • • Construction of type-levers (U-shaped levers B41J 7/12)
- 7/26 • • Special means, e.g. repulsers, for ensuring return of type-levers
- 7/28 • • Key-lever and type-member returned independently to rest position
- 7/30 • • Preventing rebound or clash of levers or type-members
- 7/32 • Type-face selected by operation of sliding members
- 7/34 • Type-face selected by operation of rotary members
- 7/36 • Selecting arrangements applied to type-carriers rotating during impression
- 7/38 • • Type movable on carrier for selection
- 7/40 • • Type movable on carrier for impression
- 7/42 • • Timed impression, e.g. without impact
- 7/44 • • • with impact
- 7/46 • • Rolling contact during impression
- 7/48 • Type-carrier arrested in selected position by electromagnetic means
- 7/50 • Type-face selected by combinations of two movements of type-carrier
- 7/52 • • by combined rotary and sliding movement
- 7/54 • Selecting arrangements including combination, permutation, summation, or aggregation means
- 7/56 • • Summation devices for mechanical movements
- 7/58 • • • Wedges
- 7/60 • • • Levers
- 7/62 • • • Gearing
- 7/64 • • • Pulley-and-strand mechanism
- 7/66 • • Movable members, e.g. pins, displaceable according to a code

- 7/68 • • with means for selectively closing an electric circuit for type presentation
- 7/90 • Syllable, line, or like type selection
- 7/92 • Impact adjustment; Means to give uniformity of impression (B41J 9/46, B41J 9/48 take precedence) [5]
- 7/94 • • Character-by-character adjustment
- 7/96 • Means for checking correctness of setting
- 9/00 Hammer-impression mechanisms**
- 9/02 • Hammers; Arrangements thereof
- 9/04 • • of single hammers, e.g. travelling along printing line
- 9/06 • • • of stationary hammers, e.g. engaging a single type-carrier
- 9/08 • • • • engaging more than one type-carrier
- 9/10 • • of more than one hammer, e.g. one for each character position
- 9/12 • • • each operating in more than one character position
- 9/127 • • Mounting of hammers [3]
- 9/133 • • Construction of hammer body or tip [3]
- 9/14 • Means for selecting or suppressing individual hammers
- 9/16 • Means for cocking or resetting hammers
- 9/18 • • Cams
- 9/20 • • Springs
- 9/22 • • Fluid-pressure means
- 9/24 • • Electromagnetic means
- 9/26 • Means for operating hammers to effect impression
- 9/28 • • Cams
- 9/30 • • Springs
- 9/32 • • arranged to be clutched to snatch roll
- 9/34 • • Fluid-pressure means
- 9/36 • • in which mechanical power is applied under electromagnetic control
- 9/38 • • Electromagnetic means
- 9/40 • • including an electro-adhesive clutch
- 9/42 • with anti-rebound arrangements
- 9/44 • Control for hammer-impression mechanisms [5]
- 9/46 • • for deciding or adjusting hammer-firing time [5]
- 9/48 • • for deciding or adjusting hammer-drive energy [5]
- 9/50 • • for compensating for the variations of printer drive conditions, e.g. for compensating for the variation of temperature or current supply [5]
- 9/52 • • for checking the operation of print hammers [5]
- 9/54 • • • for checking the breakage of print hammers [5]
- 11/00 Devices or arrangements for supporting or handling copy material in sheet or web form** (specially adapted for supporting or handling copy material in short lengths B41J 13/00, in continuous form B41J 15/00; holders for text to be copied B41J 29/00)
- 11/02 • Platen
- 11/04 • • Roller platens
- 11/053 • • • with sound-deadening devices (structure of surface B41J 11/057) [3]
- 11/057 • • • Structure of the surface [3]
- 11/06 • • Flat page-size platens
- 11/08 • • Bar or like line-size platens
- 11/10 • • Anvil or like character-size platens
- 11/13 • • Backings or blankets (for roller platens B41J 11/057) [3]
- 11/14 • • Platen-shift mechanisms; Driving gear therefor
- 11/16 • • with balancing means
- 11/18 • Platen-impression arrangements
- 11/20 • Platen adjustments for varying the strength of impression, for a varying number of papers, for wear or for alignment
- 11/22 • Paper-carriage guides or races
- 11/24 • Detents, brakes, or couplings for feed rollers or platens
- 11/26 • Pin feeds
- 11/27 • • on or within the platen-rollers
- 11/28 • • Pin wheels
- 11/30 • • Pin traction elements other than wheels, e.g. pins on endless bands
- 11/32 • • Adjustment of pin wheels or traction elements, e.g. laterally
- 11/34 • • Guides coacting with pin feeds
- 11/36 • Blanking or long feeds; Feeding to a particular line, e.g. by rotation of platen or feed roller
- 11/38 • • Manually-operated feeding devices
- 11/40 • • specially adapted for printing musical scores
- 11/42 • • Controlling
- 11/44 • • • by devices, e.g. programme tape or contact wheel, moved in correspondence with movement of paper-feeding devices, e.g. platen rotation
- 11/46 • • • by marks or formations on the paper being fed
- 11/48 • Apparatus for condensed record, tally strip, or like work using two or more papers, or sets of papers
- 11/50 • • in which two or more papers or sets are separately fed in the same direction towards the printing position
- 11/51 • • • with different feed rates [3]
- 11/52 • • in which one paper or set is moved transversely relative to another
- 11/53 • • • Devices for holding in place one paper or set during replacement of one or more of the auxiliary papers or sets
- 11/54 • • in which one paper or set is fed towards printing position from the front of the apparatus
- 11/55 • • • with means for adjusting a paper or set [3]
- 11/56 • specially constructed to facilitate storage or transport of typewriter
- 11/58 • Supply holders for sheets or fan-folded webs, e.g. shelves, tables, scrolls, pile holders
- 11/60 • Erasing or correcting tables
- 11/62 • Shields or masks
- 11/64 • Applications of scales or indicators
- 11/66 • Applications of cutting devices
- 11/68 • • cutting parallel to the direction of paper feed
- 11/70 • • cutting perpendicular to the direction of paper feed
- 13/00 Devices or arrangements specially adapted for supporting or handling copy material in short lengths, e.g. sheets**
- 13/02 • Rollers (roller platens B41J 11/04)
- 13/03 • • driven, e.g. feed rollers separate from platen
- 13/036 • • co-operating with a roller platen [3]
- 13/042 • • • Front and rear rollers or sets of front or rear rollers each mounted on a separate carrier [3]
- 13/048 • • • Front and rear rollers both mounted on a common carrier [3]
- 13/054 • • • • on the paper apron concentric with the roller platen [3]
- 13/076 • • Construction of rollers; Bearings therefor
- 13/08 • Bands or like feeding devices
- 13/10 • Sheet holders, retainers, or stationary guides
- 13/12 • • specially adapted for cards, envelopes, or the like

- 13/14 • • Aprons or guides
- 13/16 • • • movable for insertion or release of sheets
- 13/18 • • • concentric with roller platen
- 13/20 • • Bails
- 13/22 • • Clamps or grippers
- 13/24 • • Strips for supporting or holding papers
- 13/26 • Registering devices
- 13/28 • • Front lays, stops, or gauges
- 13/30 • • Side lays or gauges
- 13/32 • • Means for positioning sheets in two directions under one control, e.g. for format control or orthogonal sheet positioning
  
- 15/00 Devices or arrangements specially adapted for supporting or handling copy material in continuous form, e.g. webs**
- 15/02 • Web rolls or spindles; Attaching webs to cores or spindles
- 15/04 • Supporting, feeding, or guiding devices; Mountings for web rolls or spindles
- 15/06 • • characterised by being applied to printers having stationary carriages
- 15/08 • • characterised by being applied to printers having transversely-moving carriages
- 15/10 • • • and mounted on the carriage
- 15/12 • • • and coupled to the carriage
- 15/14 • • • and detached from the carriage
- 15/16 • Means for tensioning or winding the web
- 15/18 • Multiple-web feeding apparatus
- 15/20 • • for webs superimposed during printing (machines for separating superposed webs B65H 41/00)
- 15/22 • • for feeding webs in separate paths during printing
- 15/24 • • with means for registering the webs with each other
  
- 17/00 Mechanisms for manipulating page-width impression-transfer material, e.g. carbon paper** (in manifolding devices B41L; sheet material for duplicating or marking B41M 5/00)
- 17/02 • Feeding mechanisms
- 17/04 • • Feed dependent on the record-paper feed, e.g. both moved at the same time
- 17/06 • • • "Creep" feed, i.e. impression-transfer material fed slower than the record paper
- 17/07 • • • electromagnetically controlled
- 17/08 • • Feed independent of the record-paper feed
- 17/10 • • • electromagnetically controlled
- 17/12 • • Special adaptations for ensuring maximum life
- 17/14 • • Automatic arrangements for reversing the feed direction
- 17/16 • Holders in the machine for sheets of impression-transfer material
- 17/18 • • pivotable to and from the platen
- 17/20 • • slidable to and from the platen
- 17/22 • Supply arrangements for webs or impression-transfer material
- 17/24 • • Webs supplied from reels or spools attached to the machine (reels *per se* B65H 75/02)
- 17/26 • • Webs supplied from trays or like supports attached to the machines
- 17/28 • Arrangements of guides for the impression-transfer material
- 17/30 • Constructions of guides for the impression-transfer material
- 17/32 • Detachable carriers or holders for impression-transfer material mechanism
  
- 17/34 • Backings for impression-transfer material, e.g. sheets for reducing friction, shields for preventing imprint
- 17/36 • Alarms, indicators, or feed-disabling devices responsive to material breakage or exhaustion
- 17/38 • for dealing with the impression-transfer material after use
- 17/40 • • for retracting sheets for re-use
- 17/42 • • for webs
  
- 19/00 Character- or line-spacing mechanisms** (key actions B41J 25/02)
- 19/02 • with retarding devices, e.g. brakes
- 19/04 • Sound-deadening or shock-absorbing devices or measures therein (B41J 19/38 takes precedence)
- 19/06 • • Resilient mounting of mechanism
- 19/08 • • Buffers, springs, or like carriage stops
- 19/10 • • Dash-pots
- 19/12 • • Gearing made of special material or specially constructed to reduce sound or shock
- 19/14 • with means for effecting line or character spacing in either direction
- 19/16 • Special spacing mechanisms for circular, spiral, or diagonal-printing apparatus
- 19/18 • Character-spacing or back-spacing mechanisms; Carriage-return or release devices therefor
- 19/20 • • Positive-feed character-spacing mechanisms (controlled by escapements B41J 19/52)
- 19/22 • • • acting by friction or gripping effect
- 19/24 • • • Pawl and ratchet
- 19/26 • • • • moving a paper or like carriage
- 19/28 • • • • moving a paper or like web or strip, e.g. over a stationary support
- 19/30 • • • Electromagnetically-operated mechanisms
- 19/32 • • • Differential or variable-spacing arrangements
- 19/34 • • Escapement-feed character-spacing mechanisms
- 19/36 • • • Driving mechanisms, e.g. springs stressed during carriage return
- 19/38 • • • • adapted for silent return
- 19/40 • • • Escapements having a single pawl or like detent
- 19/42 • • • Escapements having two pawls or like detents
- 19/44 • • • • coacting with two toothed members, e.g. racks or wheels
- 19/46 • • • • and mounted on a single rocker
- 19/48 • • • • and mounted on a single slider
- 19/50 • • • Electromagnetically-controlled escapements
- 19/52 • • • Escapements controlling positive-feed mechanism
- 19/54 • • • Construction of universal bars
- 19/56 • • • Escapements controlling web or strip feed
- 19/58 • • • Differential or variable-spacing arrangements
- 19/60 • • Auxiliary feed or adjustment devices
- 19/62 • • • for back-spacing
- 19/64 • • • for justifying
- 19/66 • • Carriage-release mechanisms
- 19/68 • • Carriage-return mechanisms, e.g. manually actuated
- 19/70 • • • power driven
- 19/72 • • • • with power stored during character spacing
- 19/74 • • with special means to maintain character-spacing or back-spacing elements in engagement during case-shift or like movement
- 19/76 • Line-spacing mechanisms (special line-feeds, e.g. long feeds, B41J 11/36)
- 19/78 • • Positive-feed mechanisms
- 19/80 • • • Pawl-and-ratchet mechanisms

- 19/82 • • • • moving a paper or like carriage
- 19/84 • • • • • in the form of a roller rotated for line spacing
- 19/86 • • • • • • the pawl being normally in engagement with the ratchet
- 19/88 • • • • moving a type carriage
- 19/90 • • • • moving a paper or like web or strip, e.g. over a stationary support, automatically in response to movements other than carriage return
- 19/92 • • • Electromagnetically-operated mechanisms
- 19/94 • • • automatically operated in response to carriage return
- 19/96 • • • Variable-spacing arrangements
- 19/98 • • Escapement-feed mechanisms
- 21/00 Column, tabular, or like printing arrangements; Means for centralising short lines** (carriage-release mechanisms B41J 19/66; key actions B41J 25/18)
- 21/02 • Stops or stop-racks
- 21/04 • Mechanisms for setting or restoring tabulation stops
- 21/06 • with means for preventing rebound from stops
- 21/08 • Mechanisms for initiating, effecting, skipping, or stopping tabulation movement; Means for centralising short lines
- 21/10 • with central, counter, or equivalent stop projected into path of tabulation stops
- 21/12 • characterised by arrangements of electrical contacts
- 21/14 • characterised by denominational arrangements
- 21/16 • controlled by the sensing of marks or formations on the paper being typed, an undersheet, or the platen
- 21/17 • controlled by stored information [5]
- 21/18 • characterised by applications of scales or indicators
- 23/00 Power drives for actions or mechanisms** (B41J 9/00 take precedence)
- 23/02 • Mechanical power drives
- 23/04 • • with driven mechanism arranged to be clutched to continuously-operating power source
- 23/06 • • • by snatch rolls
- 23/08 • • • by one-revolution or part-revolution clutches
- 23/10 • • • and arrested in selected position
- 23/12 • • Mechanism driven by cams engaging rotating roller
- 23/14 • • Mechanism driven through an oscillating or reciprocating member
- 23/16 • • Mechanism driven by a spring tensioned by power means
- 23/18 • • Continuously-cycling drives
- 23/20 • Fluid-pressure power drives
- 23/22 • • for key or like type selection
- 23/24 • • for impression mechanisms
- 23/26 • • for platen or carriage movements, e.g. for line spacing, letter spacing, or carriage return
- 23/28 • • for type-carriage movements
- 23/30 • • for case shift
- 23/32 • Electromagnetic power drives, e.g. applied to key levers
- 23/34 • • applied to elements other than key levers
- 23/36 • • • and acting on type members
- 23/38 • • • and acting on aligning or case-shift mechanisms
- 25/00 Actions or mechanisms not otherwise provided for**
- 25/02 • Key actions for specified purposes
- 25/04 • • Back-spacing
- 25/06 • • Carriage return
- 25/08 • • Case shift
- 25/10 • • Ink-ribbon adjustment
- 25/12 • • Character spacing
- 25/14 • • Line spacing
- 25/16 • • Line spacing and carriage return by a single key
- 25/18 • • Tabulating
- 25/20 • Auxiliary type mechanisms for printing distinguishing marks, e.g. for accenting, using dead or half-dead key arrangements, for printing marks in telegraph printers to indicate that machine is receiving
- 25/22 • for aligning characters for impression (in machines using index setting B41J 5/02)
- 25/24 • Case-shift mechanisms (B41J 11/14 takes precedence; key actions B41J 25/08); Fount-change arrangements
- 25/304 • Bodily-movable mechanisms for print heads or carriages movable towards or from paper surface (type carriers sliding for impression B41J 1/36; type carriers swinging for impression B41J 1/40) [5]
- 25/308 • • with print gap adjustment mechanisms [5]
- 25/312 • • with print pressure adjustment mechanisms, e.g. pressure-on-the-paper mechanisms [5]
- 25/316 • • with tilting motion mechanisms relative to paper surface [5]
- 25/32 • Impression mechanisms in which a roller co-operates with stationary type-faces
- 25/34 • Bodily-changeable print heads or carriages (B41J 1/20, B41J 1/22, B41J 1/60 take precedence) [5]
- 27/00 Inking apparatus**
- 27/02 • with ink applied by pads or rotary discs
- 27/04 • • Pads or discs; Ink-supply arrangements therefor
- 27/06 • • Arrangements to ensure maximum life of pads or discs
- 27/08 • • Arrangements for multicolour work
- 27/10 • with ink applied by rollers; Ink-supply arrangements therefor
- 27/12 • • Rollers
- 27/14 • • Arrangements for multicolour work
- 27/16 • with ink deposited electrostatically or electromagnetically, e.g. powdered ink
- 27/18 • • with liquid ink deposited
- 27/20 • with ink supplied by capillary action, e.g. through porous type-members, through porous platens
- 27/22 • with inking discs or sectors
- 29/00 Details of, or accessories for, typewriters or selective printing mechanisms not otherwise provided for**
- 29/02 • Framework
- 29/04 • Means for attaching machines to baseboards
- 29/06 • Special supports, platforms, or trolleys for supporting machines on tables
- 29/08 • Sound-deadening or shock-absorbing stands, supports, cases, or pads separate from machines
- 29/10 • Sound-deadening devices embodied in machines (B41J 19/04 takes precedence)
- 29/12 • Guards, shields or dust excluders [5]
- 29/13 • • Cases or covers [5]
- 29/14 • Attachments operated by the leg, e.g. the foot or knee
- 29/15 • Script supports connected to the typewriter or printer (tables, desks, office furniture, in general A47B) [5]
- 29/16 • Auxiliary receptacles for articles, e.g. erasers, pencils
- 29/17 • Cleaning arrangements [5]

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- 29/18 • Mechanisms for rendering the print visible to the operator (ink-ribbon shifts B41J 35/20) [5]
- 29/19 • • with reflectors or illuminating devices [5]
- 29/20 • Arrangements of counting devices
- 29/22 • • Line counters
- 29/24 • • Word counters
- 29/26 • Devices, non-fluid media or methods for cancelling, correcting errors, underscoring or ruling [4]
- 29/28 • • Writing or like instruments in holders or guides
- 29/30 • • Wheels
- 29/32 • • Type-members
- 29/34 • • • repeatedly actuated
- 29/36 • • for cancelling or correcting errors by overprinting (B41J 31/00 takes precedence) [4]
- 29/367 • • • sheet media carrying a pigmented transferable correction layer [4]
- 29/373 • • • sheet media bearing an adhesive layer effective to lift off wrongly typed characters [4]
- 29/377 • Cooling or ventilating arrangements [5]
- 29/38 • Drives, motors, controls, or automatic cut-off devices for the entire printing mechanism
- 29/387 • • Automatic cut-off devices [5]
- 29/393 • • Devices for controlling or analysing the entire machine [5]
- 29/40 • Means for printing fixed, i.e. unchanging, matter in addition to selectable matter
- 29/42 • Scales and indicators, e.g. for determining side margins
- 29/44 • • for determining top and bottom margins or indicating exhaust of paper
- 29/46 • Applications of alarms, e.g. responsive to approach of end of line (responsive to transfer-material breakage or exhaustion B41J 17/36, B41J 35/36)
- 29/48 • • responsive to breakage or exhaustion of paper or approach of bottom of paper
- 29/50 • Side-stop mechanisms
- 29/52 • Top-and-bottom stop mechanisms
- 29/54 • Locking devices applied to printing mechanisms
- 29/56 • • and manually actuated
- 29/58 • • and automatically actuated
- 29/60 • • • in response to failure of power supply
- 29/62 • • • by the absence of paper to lock hammer mechanism
- 29/64 • • • by a function of the printer to lock the keyboard
- 29/66 • • • • Locking devices actuated when platen reaches the end of a line
- 29/68 • • • by completion of a page or predetermined number of lines or exhaustion of paper to lock the keyboard
- 29/70 • • • Interlocks between any two carriage-moving mechanisms, e.g. character-space, back-space, tabulation, carriage-return, or carriage-release mechanisms

### **Ink ribbons; Ink-ribbon mechanisms**

- 31/00 Ink ribbons** (sheet material for duplicating or marking B41M 5/00; storing webs or tapes, e.g. on reels, B65H 75/00); **Renovating or testing ink ribbons**
- 31/02 • Ink ribbons characterised by the material from which they are woven
- 31/04 • • woven from synthetic material
- 31/05 • Ink ribbons having coatings other than impression-material coatings

- 31/06 • • the coatings being directly on the base material, i.e. below impression-transfer material; Ink ribbons having base material impregnated with material other than impression material
- 31/08 • • the coatings being superimposed on impression-transfer material
- 31/09 • Ink ribbons characterised by areas carrying media for obliteration or removal of typing errors [4]
- 31/10 • Ink ribbons having arrangements to facilitate threading through a machine
- 31/12 • Ink ribbons having arrangements to prevent undesired contact between the impression-transfer material and machine parts or other articles
- 31/14 • Renovating or testing ink ribbons
- 31/16 • • while fitted in the machine using the ink ribbons
- 32/00 Ink-ribbon cartridges [3]**
- 32/02 • for endless ribbons [3]
- 33/00 Apparatus or arrangements for feeding ink ribbons or like character-size impression-transfer material** (ink-ribbon cartridges B41J 32/00)
- 33/02 • Ribbon arrangements
- 33/04 • • mounted on moving carriages
- 33/06 • • Ribbons associated, but not moving, with typewriter platens, e.g. extending transversely to the length of the platen
- 33/08 • • • and extending parallel to the length of the platen
- 33/10 • • Arrangements of endless ribbons
- 33/12 • • Ribbons carried by coaxially-mounted spools
- 33/14 • Ribbon-feed devices or mechanisms
- 33/16 • • with drive applied to spool or spool spindle
- 33/18 • • • by ratchet mechanism (B41J 33/30 takes precedence)
- 33/20 • • • by friction
- 33/22 • • • by gears or pulleys
- 33/24 • • with drive applied directly to ribbon
- 33/26 • • • by rollers engaging the ribbon
- 33/28 • • • by mechanism pulling or gripping the ribbon
- 33/30 • • Escapement mechanisms
- 33/32 • • Electromagnetic devices
- 33/34 • • driven by motors independently of the machine as a whole
- 33/36 • • with means for adjusting feeding rate
- 33/38 • • Slow, e.g. "creep", feed mechanisms
- 33/382 • • • the ribbon being fed only during carriage return
- 33/384 • • • • and attached to the carriage during writing
- 33/386 • • • the ribbon being fed only by operation of the line-spacing mechanism
- 33/388 • • • the ribbon being fed only when type impression takes place
- 33/40 • • with arrangements for reversing the feed direction
- 33/42 • • • manually
- 33/44 • • • automatically
- 33/46 • • • • and characterised by its application to mechanism in which two spools are driven by pawl-and-ratchet mechanism
- 33/48 • • • • • comprising two pawls and ratchets, one for each spool
- 33/50 • • • • • comprising a single pawl or integral double-tooth pawl selectively engageable with two ratchets, one for each spool
- 33/51 • • • • and characterised by the use of particular reversing control means

- 33/512 • • • • using a pivoted reversing-feeler engaging the external periphery of the wound ribbon
- 33/514 • • • • using a pivoted reversing-feeler engaging the interior of the wound ribbon
- 33/516 • • • • using a reversing-feeler responsive to the tension of the ribbon
- 33/518 • • • • the reversing-feeler engaging buttons or the like secured to the ribbon near its ends
- 33/52 • • Braking devices therefor
- 33/54 • • for ensuring maximum life of the ribbon (B41J 33/38 takes precedence; by adjustment of vibrator mechanisms B41J 35/14)
- 33/56 • • • Ribbon adjusted transversely
- 33/58 • • • Ribbon fed angularly
- 33/60 • • responsive to telegraph code or other extraneous signals
  
- 35/00 Other apparatus or arrangements associated with, or incorporated in, ink-ribbon mechanisms**
- 35/02 • Frames or holders for unwound short lengths of ink ribbons
- 35/03 • • the holder being movable to inoperative position, e.g. by swinging upwardly
- 35/04 • Ink-ribbon guides
- 35/06 • • stationary
- 35/08 • • with tensioning arrangements
- 35/10 • • Vibrator mechanisms; Driving gear therefor
  
- 35/12 • • • adjustable, e.g. for case shift (key actions B41J 25/02)
- 35/14 • • • • for multicolour work; for ensuring maximum life of ink ribbon; for rendering ink ribbon inoperative
- 35/16 • Multicolour arrangements (B41J 35/10 takes precedence)
- 35/18 • • Colour change effected automatically
- 35/20 • Ink-ribbon shifts, e.g. for exposing print, for case-shift adjustment, for rendering ink ribbon inoperative
- 35/22 • Mechanisms permitting the selective use of a plurality of ink ribbons
- 35/23 • • with two or more ribbon guides
- 35/24 • Mechanisms specially adapted for feeding impression-transfer materials of foil form
- 35/26 • Ink-ribbon shields or backings
- 35/28 • Detachable carriers or holders for ink-ribbon mechanisms
- 35/30 • Manifolding or like arrangements
- 35/32 • • for producing a plurality of copies along the printing line by a single ink ribbon
- 35/34 • • using a plurality of separate ink ribbons, e.g. including one hectographic ink ribbon
- 35/35 • • using unwound short lengths of ink ribbons
- 35/36 • Alarms, indicators, or feed-disabling devices responsive to ink-ribbon breakage or exhaustion
- 35/38 • Feeding the ink ribbon to waste after use