

- 300 **CONVEYING APPARATUS ENTIRELY
SUPPORTED BY MOBILE GROUND
ENGAGING MEANS**
- 301 .Condition responsive control
means for vehicle or conveyor
- 302 .Retractable ground wheel
- 303 .Including three relatively
movable interconnected wheel
or track equipped vehicles
- 304 .Dirigible vehicle
- 305 ..Pulling winch on vehicle
- 306 .Ground wheel lockable in
transverse or longitudinal
position on vehicle
- 307.1 .Bucket conveyor
- 308.1 .Shovel or tine pushable under
load
- 309 .Support slidable on ground
- 310 .Conveyor driven by motion of
ground-engaging element
- 311 .Including gravity conveyor
section or bin with driven
conveyor
- 312 .Conveyor shiftably mounted on
vehicle
- 313 ..Contractible or foldable
conveyor section
- 314 ..Separate conveyors serially
arranged on single vehicle
- 315 ..Power means for shifting
conveyor
- 316.1 ...Fluid-actuated ram
- 317 ..Horizontally swingable conveyor
- 318 ..Vertically swingable conveyor
- 319 ...Means for maintaining
conveyor-drive motor support
in level position
- 320 ...Winch-operated shifting
mechanism
- 321 **CONVEYOR OR ACCESSORY THEREFOR
SPECIALIZED TO CONVEY PEOPLE**
- 322 .With means to control the
operation of the section
- 323 ..By means responsive to an
unsafe operating
characteristic of the system
- 324 .With means to facilitate
passenger entry or exit
- 325 ..By support having
interdigitating members (e.g.,
comb plate, etc.)
- 326 .By stairway having steps forming
an endless member
- 327 ..Having hinged plates forming
steps
- 328 ..Trained about vertical axis or
axes
- 329 ..With means allowing tensioning
of the endless member
- 330 ..With drive means
- 331 ...With means synchronizing the
operation of the steps and a
handrail
- 332 ..With paired track step levelers
- 333 ..With specified step structure
- 334 .By support means having a zone
of varying speed
- 335 .Moving hand-support structure
- 336 ..With handrail tensioning means
- 337 ..Specific handrail configuration
- 338 ..Handrail guard
- 339.1 **WITH MEANS TO FACILITATE WORKING,
TREATING, OR INSPECTING
CONVEYED LOAD AT A STATION**
- 340 .Having signalling or load
identifying means
- 341.01 .Condition responsive control of
conveyor or station apparatus
- 341.02 ..Conveyor displacement controls
station apparatus
- 341.03 ..Station operation responsive to
presence or absence of item
- 341.04 ...Item size
- 341.05 ...Item position relative to
station position
- 341.06 ...Quantity of items
- 341.07 ...Item presence
- 341.08 ..Conveyor responsive to station
operation
- 341.09 ...Speed control
- 343.1 .Load supporting conveyor portion
is retarded or stopped with
load at station without being
disconnected from remainder of
continuously moving conveyor
- 343.2 ..Load supporting conveyor
portion is movably secured to
conveyor drive
- 345.1 .Means engaging conveyor or load
on a conveyor to align load
for working
- 345.2 ..Means engages conveyor to fix
conveyor position relative to
station

- 345.3 ...Means engages a conveyor portion (i.e., pallet) which is separable from the conveyor drive to fix the position of said conveyor portion
- 346 .Static means for supporting load or workman adjacent conveyor for operation on load
- 346.1 .Means to convey a palleted load back and forth between an initial location and the work station
- 346.2 .Means to transfer a load back and forth between the mainline conveyor and the work station
- 346.3 .Conveyor(s) lowers the load to at least one of a plurality of fixed work stations
- 347.1 **CONVEYOR SYSTEM HAVING AUXILIARY SECTION FOR STORING ITEMS MOVING BETWEEN SOURCE AND DESTINATION**
- 347.2 .Auxiliary section has the same entrance and exit
- 347.3 ..Auxiliary section has a reversibly driven conveyor for bidirectional article movement
- 347.4 .Plural laterally spaced, same direction auxiliary paths
- 348 **CONVEYOR ARRANGEMENT FOR SELECTING AMONG PLURAL SOURCES OR DESTINATIONS**
- 357 .Condition responsive control means to prevent collision on merging conveyors
- 358 .Condition responsive control means including sensing condition of source or destination
- 349 .With selection responsive to means containing or introducing changeable operating instructions
- 349.1 ..By synchronously moving signal carrier distinct from conveyor
- 349.2 ..Moving at different velocity than conveyor
- 349.3Rotary signal carrier
- 349.4Magnetic means on rotary carrier stores code
- 349.5 ..Using central memory to store code until article is discharged
- 349.6 ...Memory stores plural sources or destinations
- 349.7Inventory also in memory
- 349.8Material detector indexes code
- 349.9Plural, longitudinally spaced, material detectors index code
- 349.95 ...Conveyor detector indexes code
- 350 ..By magnetic means
- 351 ..By selectively positioned abutment means
- 352 ...Having plural abutments arranged in a specific pattern
- 353 ...Having support means slidably mounting abutment means
- 354 ...Having an abutment support containing a plurality of abutment receiving means
- 355 ..By repositionable contact or switch actuator
- 359 .With gravity-conveying means
- 360 ..By movably mounted, load-supporting, gravity section
- 361 ...By repositionable idler roll or rollway
- 363 .By proportioning the feed from multiple sources
- 364 .By moving a load directing means along the length of the section
- 890 .Plural laterally spaced locations fed to or received from a conveyor having laterally movable article supports or pushers
- 890.1 ..Laterally moving article supports
- 367 .By passive material-diverting means placed across the flow path
- 367.1 ..Material diverted by plural, successive gates
- 367.2 ..Plural, manually manipulated gate actuators
- 368 .By a selectively movable stop means
- 369.1 .One of a plurality of main line conveyors selectively moves to connect with a spaced path

369.2	..Endless conveyor or portion thereof pivots about a horizontal axis perpendicular to path	374	.By optionally facing successive items according to a predetermined recurring cycle
369.3	..Endless conveyor or portion thereof pivots about an axis parallel to path	375	.By actuating item-holder relative to holder-carrying conveyor
369.4	..Roller pivots about a vertical axis	376	..With holder-actuating means responsive to item-sensing means
369.5	..Endless conveyor or portion thereof pivots about a vertical axis	377.01	..Holder carried by orbiting conveyor
369.6	..Rollers shift the load vertically to a different plane	377.02	...Holder rotates item about axis spaced from the item
369.7	..Conveyor slides to provide an opening in main path	377.03	...Holder having load gripping element
370.01	.By loading or unloading section at selected one of a plurality of pre-established locations along the length thereof	377.04	....Holder having vacuum or air blast element
370.02	..Conveyor has independent lateral pushers	377.05	....Holder having magnetic or electrostatic element
370.03	..Conveyor has independently movable load supporting portions	377.06	...Holder rotation stops at predetermined position
370.04	...Supporting portions tilt about an axis parallel to path of travel	377.07	...Holder having load gripping element
370.05	...Supporting portions tilt vertically about an axis perpendicular to path of travel	377.08	...Holder having vacuum or air blast element
370.06	...Supporting portions are laterally extending belts	377.09	....Holder having magnetic or electrostatic element
370.07	..By separate reciprocating or oscillating pusher	377.1	...Holder rotation stops at predetermined position
370.08	..By separate endless or rotary pusher	378	...Holder or conveyor moves intermittently (e.g., for "indexing" load)
370.09	..By separate supporting rollers	379	.By gripping item and turning item about fixed axis
370.1	..By separate endless or rotary supporting conveyor	380	.With pressurized fluid causing change in attitude
370.11	..By separate fluid jet	381	.With magnetism causing change in attitude
370.12	..By selective application of suction	382	.By conveying randomly faced items and turning items to uniform facing
370.13	..By selective application of magnetic field	383	..Including significantly shaped portion of conveyor cooperating with significantly shaped item to face item
371.1	..By reversibly driving the main line section	384	...Including orbiting progression of item-receiving pockets and means moving item within pocket
371.2	...Endless belt or chain	385	...By roller/finder to move item and/or fit surface indentation on item
371.3	...Rollers	386	....Roller/finder rotating about plural axes
373	CONVEYOR FOR CHANGING ATTITUDE OF ITEM RELATIVE TO CONVEYED DIRECTION		

387	....Pockets comprise grooved, transversely disposed rollers	406	.For changing both the elevation and the posture of successive items
388	...Including protruding portion of conveyor entering end of slotted or hollow item	407	..By plural, sequentially acting conveyors
389	...For shaped item suspended in or by shaped passageway	408	..By an orbitally moving conveyor
390	...For shaped item fitting outline of shaped passageway	409	..By an oscillating or reciprocating conveyor
391	...Via vibrating bowl having shaped passageway	410	.By plural distinct occurrences of turning each successive item
392	..Via rotating means having shaped passageway or exit	411	.By conveyor and means driven for turning successive conveyed items
393	...Including orbiting progression of item-fitting elements passing through supply of scrambled items	412	..By means between successive conveyor sections or conveyor elements
394	..By conveying an item that has a position characteristic and rotating the item until it is positioned	413	...By means which interdigitate with conveyor sections or elements
395	..With control means actuated in response to sensing of improperly faced item	414	...By turntable which lifts, turns and lowers item(s)
396	..Including separating item from scrambled supply hopper	415	..By plural, unequal-speed members simultaneously contacting and conveying items
397.01	...By orbiting progression of item-receiving pockets passing through supply	416	.By member adjacent conveyor for contacting successive conveyed items
397.02	....Rotary pocketed conveyor	417	..Longitudinally twisted item- bounding passageway
397.03	.....Horizontal axis of rotation	418	CONVEYOR SYSTEM FOR ESTABLISHING AND MOVING A GROUP OF ITEMS
397.04	.....Item oriented while on rotary conveyor	418.1	.Having items discharged from plural distinct outlets into group
397.05	.....Item oriented while on rotary conveyor	418.2	..With outlets longitudinally spaced along path of progressively formed group
397.06	....Item oriented while on endless conveyor	418.3	...Superposes items within group
398	..By distinguishing between alternatively faced items and conveying uniformly faced items	418.4	..With vertically aligned outlets discharging in the same direction and superposing items
399	..By turning only improperly faced items to uniform facing	418.5	.Having plural successive groups discharged by single conveyor into larger group
400	...By partially turning all items to uniform facing and direction	418.6	.Having conveyor drop grouped items simultaneously onto another conveyor
401	.With control means for attitude- changer responsive to sensing of item	418.7	.Subdivides continuous item stream into longitudinally spaced groups
402	.For inverting successive items	418.8	..By offsetting first or last article
403	..By means driven for inverting conveyed items		
404	...Orbiting conveyor-inverter means		
405	....Twisted-belt conveyor means		

- 418.9 ..And imbricates items within group
- 419.1 ..By item engaging stop means
- 419.2 ..By different speed conveyors
- 419.3 ...With spaced dividers on conveyor limiting group size
- 426 ..By shifting group of items simultaneously from stream conveyor to form a group
- 427 ..And distributing items of group into plural streams
- 428 ..By air blast or suction
- 429 ..By reciprocating shifter
- 430 ...Having oblique or orbital movement
- 431 ..By depositing items successively from one conveyor onto group conveyor
- 432 ..By shifting group from row conveyor onto row conveyor
- 433 ..By shifting group from row conveyor onto stream conveyor
- 434 **CONVEYOR SYSTEM FOR ARRANGING OR REARRANGING STREAM(S) OF ITEMS**
- 435 ..By distributing items onto vertically tiered conveyor/receiver
- 436 ..By distributing items from one stream into plural streams
- 437 ..With control means responsive to sensing means
- 438 ..By air blast or suction diverter
- 439 ..By magnetic diverter
- 440 ..By orbiting progression of item engaging elements
- 441 ...On rotating carrier (e.g., star wheel, etc.)
- 442 ..By interposing a guide into path of stream
- 443 ..By queueing items from quantity source of items into stream(s) of items
- 444 ..With control means responsive to sensing means
- 445 ..Forming plural streams
- 446 ...By jiggling items into streams
- 447 ..And merging plural streams into one stream
- 448 ..Merging plural streams (i.e., source) into one stream
- 449 ...By synchronized orbiting progression of item-engaging elements
- 450 ...On rotating carrier (e.g., star wheel, etc.)
- 451 ...By synchronized gate(s) in paths of plural streams
- 452 ...By guide means in paths of streams
- 453 ..Via throat for restricting flow of massed items
- 454 ...With supplementary moving surfaces that form throat
- 455 ...Including retro-moving surface
- 456 ..By laterally or vertically moving successive items in longitudinally moving stream
- 457.01 ..To change direction of longitudinally moving stream
- 457.02 ...Item supporting rollers cause direction change
- 457.03 ...Item supporting endless belt causes direction change
- 457.04 ...Item supporting screw causes direction change
- 457.05 ...Fixed guide causes direction change
- 457.06 ...Nonsupporting endless belt causes direction change
- 457.07 ...Nonsupporting rotary member causes direction change
- 458 ..To respace plural streams laterally
- 459.1 ..By longitudinally respacing successive articles in stream
- 459.2 ..Rotating star wheel
- 459.3 ..Rotating screw
- 459.4 ...Varying pitch
- 459.5 ..Fixed obstruction and means for moving articles over or around the obstruction
- 459.6 ..Movable gate
- 459.7 ...Plural
- 459.8 ..Endless or rotary conveyor having zone of varying speed
- 460.1 ..With space-control means responsive to article sensing means
- 460.2 ...Variable conveying length conveyor
- 460.3 ...To crowd or imbricate
- 461.1 ..By successive conveyors having dissimilar speeds
- 461.2 ...Conveyors having increased speeds only
- 461.3 ...Belt or chain conveyors only
- 462.1 ...To crowd or imbricate articles

- 462.2Articles imbricated
- 462.3Crowding by endless belts or chain conveyors only
- 463.1 **CONVEYOR SYSTEM FOR MOVING A SPECIFIC LOAD AS A SEPARATE UNIT**
- 463.2 ..System includes a linear conveyor or portion thereof which bodily shifts transversely to move a load in synchronization with a transverse, continuously operating conveyor section
- 463.3 ..System includes linear conveyor or portion thereof which shifts to lift or lower load before or after linearly conveying load relative to adjacent conveyor section
- 463.4 ..System includes gate means
- 463.5 ..Load obstructing gate and means for lifting load over the obstruction
- 463.6 ..Plural successively operated gate means
- 464.1 ..System includes control means responsive to sensing means
- 464.2 ..Responsive to load presence or absence
- 464.3 ...Responsive to condition of at least one conveyor
- 464.4 ..Responsive to undesired condition of load
- 465.1 ..System includes a load supported by a conveyor portion which is separable from the conveyor drive
- 465.2 ..Wherein the conveyor portion moves in a closed path in the horizontal plane only
- 465.3 ..Wherein the conveyor portion is supported and driven adjacent its opposite sides by horizontally spaced drives
- 465.4 ..Wherein the conveyor portion supports the load below the drive
- 466.1 ..System includes a T-shaped or headed load suspended between parallel conveyors directly
- 467.1 ..System includes a rotating screw
- 468.01 ..System includes an oscillating or reciprocating load engaging element
- 468.2 ..Comprising load gripping elements
- 468.3 ...Gripping elements movable relative to one another to space articles in the load
- 468.4 ...Suction gripping elements
- 468.5 ...Magnetic or electrostatic gripping elements
- 468.6 ..Engaging element moves load vertically and horizontally
- 468.7 ...Element pushes load over nonlinear support
- 468.8 ..Engaging element moves load vertically only
- 468.9 ..Engaging element moves load horizontally in a straight line
- 468.1 ...Element pushes load over separate support and has nonlinear path of travel
- 468.11 ...Element pushes load over separate support and has linear path of travel
- 469.1 ..System includes a rotating or endless carrier with a load engaging element
- 470.1 ..Comprising a load gripping element
- 471.1 ...Suction gripping element
- 472.1 ...Magnetic or electrostatic gripping element
- 473.1 ..Nongripping elements are adjustable or replaceable for different sized loads
- 474.1 ..With means to move load engaging elements relative to carrier
- 475.1 ...Whereby the load engaging component moves relative to the carrier to maintain load in a desired position during travel along a curved path
- 476.1 ...Element is shifted to discharge or receive a load
- 477.1 ...Element is only shifted with the load during discharge
- 478.1 ..Carrier rotates about a fixed axis
- 479.1 ...Elements push the load over a separate support
- 480.1 ...With a load retaining guard means
- 481.1 ...With load retaining guard means
- 482.1 ..Means mounted on the engaging element to forceably eject the load from the element

483.1	..Means movably mounted inside the path of the element to eject the load	513	...Opposite hand screws
		514	...Opposed load engaging pushers
484.1	..Elements comprise a nongripping pair of members which self-open as they pass through a curved path	515	...Orbiting progressions of pusher elements
		516	....Mounted on endless carriers
485.1	..Nongripping elements support the load below the endless carrier	517	..Reciprocating pusher feeding means
		518	..Rotating feeding means
486.1	...Elements are hooks	519	.Having means mounting conveyor for pile surface attack
487.1	..Nongripping elements are laterally projecting pins which engage the interior of a hollow load	520	.Self-gathering pusher
		521	.By vibratory trough entrance means
493	CONVEYOR HAVING IMPINGING FLUID TO FEED, SHIFT OR DISCHARGE LOAD; OR MEANS TO FACILITATE CLEANING OF CONVEYOR; OR STERILIZING OR LUBRICATING MEANS	522	.Having passive material collecting means
		523	CONVEYOR SYSTEM HAVING A GRAVITY CONVEYOR SECTION
494	.Having cleaning means	524	.Condition responsive
495	..By fluid applying means	525	.With means to affect flow
496	..By conveyor contacting brush	526	..Moving flow control means coordinated with power-driven conveyor section
497	..By conveyor contacting scraper	527	...Successive power-driven conveyor sections
498	...Having a moving scraper	528	..Power-driven conveyor section operatively engages adjustable gravity section
499	...With scraper biasing means	529	..Conveying element of power-driven conveyor section manipulated to effect load discharge
500	.Having lubricating means		
501	..For rollers forming belt troughing structure	530	..Gate
502.1	WITH ALARM OR INDICATOR	531	...Actuated by, or otherwise coordinated with, power-driven conveyor section
502.2	..Means for measuring dimensions (height, width, or length) of load on a conveyor	532	...In generally vertical exit path of gravity discharge material holder
502.3	..Means for indicating position of unit load	533	..By agitating, stirring, vibrating, etc.
502.4	..Means responsive to conveyor movement to indicate speed or to actuate alarm due to abnormal speed	534	..By retarding velocity or reducing volume
506	CONVEYOR HAVING MEANS SPECIALIZED FOR COLLECTING A LOAD FROM A STATIC SUPPORT (E.G., THE GROUND, ETC.)	535	..Adjustably mounted conveyor section
		536	...Section is terminal one of system
507	.Having control means responsive to load condition or unsafe operating condition	537	.With means to handle portion of load which becomes separated from main flow path
508	.Having means to form a pile on a static support	538	.Conveyor section(s) adjustable for nonoperative purpose (e.g., storage, transport, etc.)
509	.Having buckets specialized to gather load batches		
510.1	.Power-driven feed means		
511	..Having vertically adjustable feeding means		
512	..Paired feeding means		

- 539 .Including a load-supporting bridging element (e.g., horizontal surface) between conveyor sections
- 540 .Gravity discharge material holder is source of supply, discharging by gravity to power-driven section
- 541 ..With at least one more gravity section therebetween
- 542 ...And having plural, successive power-driven sections
- 543 ..With at least one more successive power-driven section
- 544 ...Of the apron belt type
- 545 ...Of the screw type
- 546 ..Followed by at least one gravity section
- 547 ..Apron belt type of discharge-receiving, power-driven section
- 548 ..Screw type of discharge-receiving, power-driven section
- 549 ..Bucket type of discharge-receiving, power-driven section
- 550.01 .Bin having a power-driven conveyor section for discharging or feeding discharge to a gravity or power-driven section
- 550.2 ..Having adjustable bin or discharge means
- 550.3 ..Excess material on power-driven discharge means returned to bin
- 550.4 ..Power-driven discharge means feeds to a subsequent gravity section
- 550.5 ..Power-driven discharge means feeds to a subsequent power-driven section
- 550.6 ...Of the screw type
- 550.7 ...Of the bucket type
- 550.8 ...Of the scraper type
- 550.9 ...Of the apron type
- 550.1 ..Screw type power-driven discharge means
- 550.11 ..Bucket type power-driven discharge means
- 550.12 ..Scraper type power-driven discharge means
- 550.13 ..Apron type power-driven discharge means
- 560 .Power-driven conveyor section feeding to gravity section (i.e., gravity discharge material holder, or gravity flow path) feeding in turn to another power-driven section
- 561 ..Gravity conveyor section fed by one run of power-driven section, and feeding in turn to another run of the same section
- 562 .Gravity conveyor section is gravity flow path feeding to power-driven section
- 563 ..Followed by gravity section (i.e., gravity discharge material holder, or gravity flow path)
- 564 ..Thrower type power-driven section
- 565 ..Plural gravity sections
- 566 ..Plural power-driven sections
- 567 ...Serially arranged
- 568 .Plural power-driven conveyor sections feeding to gravity section (i.e., gravity discharge material holder, or gravity flow path)
- 569 .Power-driven conveyor section feeding to plural gravity sections (i.e., gravity discharge material holder, or gravity flow path)
- 570 **CONVEYING SYSTEM HAVING PLURAL POWER-DRIVEN CONVEYING SECTIONS**
- 571 .With condition responsive control of a section
- 572 ..By means responsive to presence or condition of load
- 573 ...By overload sensing
- 574 .Conveyor carried by load-engaging conveyor
- 575 .With means controlling the interrelated operation of plural sections
- 576 .With means operating successive sections in timed relation
- 577 .With means for altering the speed (e.g., accelerating, decelerating, stopping, reversing, etc.) of a section
- 578 .Having a cyclically swingable section

- 579 ..With means operating successive sections at different speeds
- 580 ..Recycling load in a closed path
- 581 ..With means allowing a section to fold upon itself
- 582 ..With supply chamber for system
- 583 ..With means connecting sections for quick assembly of disassembly
- 584 ..By means allowing relative movement of joined sections
- 585 ..Including tripper
- 586 ..With relatively adjustable sections
- 587 ..By means mounting a section for lateral swinging movement
- 588 ...With means to vary the effective length of the system (e.g., telescoping sections
- 589 ...With means mounting a section to swing about a generally horizontal axis
- 590 ...With yieldable side walls
- 591 ..With a curved guide or support
- 592 ..By means mounting a section to swing about a generally horizontal axis
- 593 ...With flexible means and winding drum
- 594 ..By means to vary the effective length of the system
- 595 ...By nested trough sections
- 596 ...With opposed gripper means
- 597 ..Including power-driven means for laterally shifting a conveyor-engaged load
- 598 ..By a revolving or pivotal member
- 599 ..Including non-driven means for moving load relative to conveyor
- 600 ..Including rest for transient load
- 601 ..Forming plural conveying paths feeding to single conveying path or vice versa
- 602 ..Forming a single conveying path
- 603 ..Superposed sections forming an ascending or descending zigzag conveying path
- 604 ..Load simultaneously engaged between and moved by coacting conveyors
- 605 ..With load transfer between coacting conveyors
- 606 ..Plural sections each formed of or including a closed flexible loop
- 607 ...With elevating or lowering section
- 608 ..Plural rotating sections
- 609 ..Plural vibratory sections
- 610 ..Diverse sections
- 611 ...Having a rotating section
- 612 ...With load engaging element carried by the rotating section
- 613Element retractable to disengage from load
- 614 ...And a reciprocating section
- 615 **CONVERTIBLE**
- 617 **PROCESSES**
- 618 **CONVEYOR SECTION**
- 619 ..Load propelled as the reactive means in a linear motor or moving magnetic field
- 620 ..Load simultaneously engaged between and moved by a plurality of driven conveyor members
- 621.1 ..Reciprocating member
- 621.2 ...Load support member lifted by inclined or vertical supporting fluid actuator (e.g., piston or air bag)
- 621.3 ...Load support member lifted by supporting eccentric cam or rotating crank drive
- 621.4 ...Load support member lifted by inclined supporting surface
- 622 ..Oppositely moving members (e.g., doffing, etc.)
- 623 ..Wherein the velocities of at least two of the members are not equal
- 624 ..Rotary members
- 625 ...Screw type
- 626.1 ..Opposed endless belts
- 626.2 ...Load is enclosed by belts
- 626.3 ...Having means to adjust one belt relative to the opposed belt
- 626.4By biasing means
- 626.5 ...Having adjustable belt portion
- 626.6 ...By biasing means
- 629 ..Diverse
- 630 ..Moving wave type
- 631.1 ..Conveyor portion only cyclically rotates, shifts, or oscillates for extra-conveying function

632	.Conveyor section folds to facilitate transportation or storage of section	673	...Bearing means directly engages periphery of the helical surface formation
633	..Movement of load changed relative to conveyor movement on contact of load with passive means	674	..Including drive means
634	..Load responsive means or timing means controls load engaging means	675	...Having reversible or variable speed
635	..Stripper (e.g., static scraper)	676	..Helical surface formation structure
636	..Passive means causes load to move laterally of conveyor	677	..With means for securing helical surface formation to driving member
637	...To discharge load from conveyor	678.1	..Endless conveyor having means for suspending load
638	..Thrower	679	..Magnetic means
639	..Condition responsive control	680	..Means engagable with hanger to change hanger position relative to drive means or to release load
640	..With guide or deflector for material thrown	681	..Load directly suspended from means spanning between parallel drive means
641	..Adjustable means to control trajectory distance or direction	682	..Having lock connection between hanger and load engaging means
642	..Rotary	683	..Articulated drive means provided with non-load supporting guide means
643	..Endless belt strand or chain-like member to lift viscous fluid	684	..Having means interengaging articulated drive and drive means therefor
644	..Conveyor for signatures	685	..Elongated drive means and hanger interengaging means
657	..Screw	686	...Strand or cable drive means connected to hanger below hanger support means
658	..Including rotating load confining means (e.g., tumbler)	687	...Chain or pivotally connected members drive means connected to hanger below hanger support means
659	..Including a deformable element	687.1	..Separable conveyor portion
660	..Including an axially adjustable helical surface formation	688.1	..Having means to enhance the friction or adherence between the conveyor and load at random locations on conveyor
661	..Having axially varying capacity	689.1	..Suction
662	..Plural helical surface formations	690.1	..Magnetic
663	...Separate, parallel formations supporting same load	690.2	..Transversely extending elongated ridge means formed on or attached by nonmechanical means to the conveyor
664	...Transversing less than 360 degrees	691	..Electrostatic
665	...And reversible	692	..Impaling
666	...Coupled end-to-end	693	...Having impaled load removal assisting means
667	...With intermediate drive		
668	...Pivotably		
669	...Of opposite hand		
670	..With means for controlling flow or to assist conveying		
671	..With means to assist in discharging from or feeding to the housing of the helical surface information		
672	..Including bearing means		

697	..Load-engaging belt having separate load-impelling, projecting member swingably mounted thereon	720	..Having means to recycle conveyed load
698	..Load-engaging belt having load-impelling, projecting cross members (e.g., slat, etc.) joined thereto by mechanical fastening means	721	..With antifriction or movable supporting surface
699	...Belt formed of a continuous member of flexible sheet-type material (e.g., canvas, etc.)	722	..Rotating pusher
699.1	..By a plurality of laterally spaced, projecting members on the conveyor	723	...To move load in an arcuate path
700	.Single suspended loop	724	...Wherein path is helical
701	.Bucket	725	..Endless-orbiting pusher or its load support
702	..To convey liquid	726	...Coacting plural pushers in plural orbits
703	..Having means to facilitate loading or discharging load from bucket	727	...Pusher edge configured to load-support surface
704	...Bucket has door means to release load	728	...Pusher connected to endless pusher-carrier
705	..Having means to engage and move load from bucket	729	...With carrier drive or guide means configured to pusher
706	..Having means to pivot bucket relative to endless drive means	730	...Integral element forming pusher, connection and carried link
707	..Interconnected buckets form chain	731	...By detachable or adjustable connection
708	..Having means to close gap between buckets	732	...By pivot between pusher and carrier
709	..Having means to adjust tension on endless bucket carrier	733	...By connection to single carrier
710	..Slide and guide or wheel and track means to movably support bucket	734	...Pusher-surface configuration
711	..Bucket with connection to endless band or strand-type carrier	735.1	...Load support, casing, shield or auxiliary attachment
712	..Bucket with connection to endless chain or link-type carrier	735.2	...Modules connectable end to end with no relative movement
713	..Bucket structure	735.3	...Door, casing, cover, or load supporting surface
714	...Composite	735.4	....Casing or load supporting floor with door
715	.Flexible pocket	735.5	....Removable cover overlying the conveyor
716	.Flight means in conduit for lifting flowable solid material	735.6	...Modules connected end to end permitting relative angular positioning (e.g., due to uneven ground)
717	.Pusher conveyor and separate load support surface	736	..Reciprocating pusher
718	..Condition responsive control	737	...Plural laterally spaced alternately acting
719	..Having means to prevent damage to conveyor	738	...Mounted on a carrier
		739	...Carrier has a swinging path of movement
		740	...Carrier has an orbital path of movement
		741	...Plural pushers
		742	....Oscillating about axis or axes
		743	.....Axis or axes transverse to path of travel

744	.....Axis or axes below load support surface	770	.....By unbalanced weights
745	.....Axis or axes perpendicular to load support surface	771	...Conveying member configuration
746	...Pivotally mounted pusher	772	..With retrograde movement preventer
747	...Pusher having linear path of movement	773	..Including set of alternately-acting load-support members
748	...Moved by endless actuator	774.1	...Longitudinally extending interdigitated sets (lifted by oscillating arms, etc.)
749	...Pusher configuration	775	....Each set movable
750.1	..Reciprocating conveying surface	776	....Sets move through a closed-loop path
750.11	..Reciprocating gripper	774.2	...Load support member lifted by inclined supporting fluid actuators
750.12	...Suction gripper	774.3	....Load support members lifted by supporting, eccentric cam or rotating crank drive
750.13	...Magnetic or electrostatic gripper	774.4	....Load support members lifted by inclined supporting surface
750.14	..Reciprocating surface carries load horizontally and vertically for one cycle only	777	...Including transverse pivoted sets of alternately acting load-support members
750.2	..Surface formed by plural parallel elongated sections reciprocating horizontally	778	.Spiral
750.3	...Seals	779	.Load-supporting rolls moved about endless path
750.4	...With specified bearing	780	.Live roll
750.5	...Piston drive	781.01	..Live roll drive engages, disengages, or slips responsive to load position or blockage
750.6	....Detachable drive	781.02	...Friction drive slips or disengages
750.7	..Piston drive	781.03	....Belt drive
750.8	..Eccentric cam or rotating crank drive	781.04	....Friction wheel drive
751	..With control means responsive to sensor means	781.05	...Live roll is driven by load sensor (e.g., trigger roller)
752.1	..Vibratory conveying member	781.06	....Sensor and drive interconnected by fluid or electric means
753	...Selectively operated to reverse direction of movement	781.07	....Positive gear drive
754	...With flexible-belt extension	781.08	....Friction wheel drive
755	...With retrograde-movement preventer	781.09	....Flat belt drive
756	...Having helical path	781.1	....O-Ring drive
757	....Confined within a bowl	781.11	....Chain drive
758	...Coupled parts from single vibratory trough	782	..Having means to adjust position of roll relative to load (i.e., vertically, horizontally, angularly, etc.)
759	...Conveying member having support or drive	783	..Having intermittent, periodic, timed or programmed drive for rolls
760	....With damper for conveying member or support	784	..Arranged or having means to change load speed
761	....With means to control load speed		
762	.....By control of motor speed		
763	.....Support for conveying member		
764	.....Pivotal link support		
765	.....Rolling contact support		
766	.....With drive causing conveying member vibration		
767	.....With damper for drive		
768	.....By fluid means		
769	.....By electromagnetic means		

- 785 ..Roll (s) center load on conveyor
- 786 ..Load moves axially of roll
- 787 ..Rolls causes load to travel curved path
- 788 ..With motor means for roll
- 789 ..Roll drive means
- 790 ...Belt drive
- 791 ...Gear drive
- 792 .Conveyor having a zone of varying speed
- 793 .Unit load conveying surface means moved about an endless or rotating path
- 794 ..With manual, position or condition responsive drive control
- 797 ..Unit load conveying means maintained in uniform orientation while transiting from one direction to another
- 798 ...By coacting with guide only while transiting from one direction to another
- 799 ...Plural endless means support and maintain conveying surface horizontally orientated while moving around associated but axially displaced sprockets power-driven section
- 800 ...By constant engagement with guide means throughout conveying course of travel
- 801 ..Conveying surface elevates load and has cantilever-type connection with endless means
- 802 ..Conveying surface movable relative to path
- 867.01 ..Holder is removable or replaceable relative to drive
- 867.02 ...Holder grips load
- 867.03Suction gripper
- 867.04Magnetic or electrostatic gripper
- 867.05Gripper portion biased to load engaging position
- 867.06Gripper portion made of resilient material which is self-biased into engaging position
- 867.07Cam means moves at least one portion of the gripper to a load engaging position
- 867.08Holder is adjustable for different sized loads
- 867.09 ...Holder for hollow load contacts interiorly
- 867.1 ...Holder formed of nongripping elements which separate from each other as they pass through a curved path
- 867.11 ...Holder means forms recess to receive or seat load
- 867.12 ...Holder means forms an aperture for receiving load
- 867.13 ...Holder has frictional engagement with drive
- 867.14 ...Holder has positive engagement with drive
- 867.15 ...Holder is attached by a detachable connector to the drive
- 803.2 ...Holder supported and driven by horizontally spaced drive
- 795 ...Each conveying surface means abbutted and pushed by succeeding conveying surface means
- 803.3 ..Holder grips load
- 803.4 ...Relatively adjustable grippers space portion of load
- 803.5 ...Suction gripper
- 803.6 ...Magnetic or electrostatic gripper
- 803.7 ...Gripper portion biased to load engaging position
- 803.8 ...Gripper portion made of resilient material which is self biased into engaging position
- 803.9 ...Cam means moves at least one portion of the gripper to a load engaging position
- 803.1 ...Gripping portions self-open as they pass through a curved path
- 803.11 ..Nongripping holder is adjustable for different sized loads
- 803.12 ..Holder for hollow load contacts interiorly
- 803.13 ..Holder formed of nongripping elements which self-open as they pass through a curved path
- 803.14 ..Holder means forms recess to receive or seat load
- 803.15 ..Holder means forms an aperture for receiving load

803.16	..Rotary conveyor without specific locations for supporting randomly placed articles or bulk material	825	.....Independently rotatable rollers canted relative to each other
804	..Endless conveyor	826	.....Means for selectively adjusting angle between rollers to vary carrier belt shape
805	..Magnetically guided, supported or driven	827	.....Pivotally linked rollers form chain supported only at its ends
806	..Revolvable means engaging carrier belt face automatically skews to correct belt training deviation	828	.....Roller-supporting transverse frame connected to side-frame stand
807	...With power drive (e.g., pressure cylinder or electric motor, etc.) for skewing revolvable means	829	.....Individually cantilevered roller
808	...With revolvable means supporting belt in transversely troughed form	830	.....Transverse frame carrying at least three transversely spaced roller supports
809	..Vertically shiftable belt situated between auxiliary load supports	831	..Upper and lower runs of same belt travel vertically aligned, laterally bending paths
810.01	..Condition responsive	832	..Carrier belt drive means
810.02	...Belt damage sensor	832.1	...Indexed or intermittent drive
810.03	...Belt tracking sensor	832.2	...Brake means to slow, stop or hold carrier belt
810.04	...Belt tension sensor	832.3	...Brake means directly engages carrier belt
811	..Pressurized fluid or suction applied to carrier belt to modify its reaction with support	833	...Carrier belt driven by contact with separate drive belt, or connected thereto by quick-release clamp
812	..Having variable conveying length	834	...Wheel with radial teeth-engaging carrier belt or means connected therewith
813	..Device for tensioning belt	835	...Roller, wheel, or drum-engaging belt
814	...With spring biasing means	836.1	..Having load retainer or guide separate from carrier belt
815	...With counterweight	836.2	...Load retainer biases load transversely against carrier belt
816	...With screw adjusting means	836.3	...Laterally adjustable or yieldable guides contact load
817	..Separate, parallel conveying reaches supporting same load	836.4	...Replaceable modular guides for changing the conveying path cross-section
818	..Having upwardly facing trough configuration in transverse direction on conveying reach	837	..Support, guide, or hold-down means for carrier belt
819	...Edges movable together to enclose load	838	...Track which supports rollers attached to belt
820	..Having preformed trough shape	839	...Means twists carrier belt or guides it between angularly oriented horizontal reaches
821	....Formed of or including a continuous member of sheet-like material (e.g., canvas, etc.)		
822	....Formed or including transverse plates tandemly disposed lengthwise of carrier belt		
823	..Supported in trough form by separate, unattached means engaging carrier belt face		
824	....Roller or roller assembly		

840 ...Guide exerting lateral force on nonload-supporting belt surface

841 ...Means slidably supporting belt

842 ...Rotatable support or hold-down engaging non-load-carrying face of belt

843 ...Resilient

844.1 ..Carrier belt structure

844.2 ...Connection means joins ends of sheet-like belt

845 ...Carrier belt supported or guided by rotatable means attached thereto

846 ...Formed of or including a continuous member of sheet-like material (e.g., canvas, etc.)

847 ...Including separate reinforcing elements or plural sheet-formed plies

848 ...Formed of or including wire mesh, or rods hooked together at belt edges

849 ...Link belt attached to carrier belt

850 ...Formed of or including pivotally interconnected rigid links

851 ...Separate pins interconnect links

852Links pivot about mutually perpendicular axes

853Links having interfitted ends

860.1 **CONVEYOR FRAME OR CASING**

860.2 .Modules connectable end-to-end with no relative movement

860.3 .Casing, cover, shield or load supporting surface

860.4 ..Casing with door

860.5 ..Removable cover overlying the conveyor

861.1 .Adjustable conveyor frame or casing

861.2 ..Conveyor frame or casing flexes or pivots intermediate its ends to move one end relative to the other

861.3 ...Single horizontal pivot axis only

861.4 ..Entire conveyor pivots about horizontal and vertical axes

861.5 ..Entire conveyor pivots about horizontal axis

861.6 ..Entire conveyor pivots about vertical axis

866 **MISCELLANEOUS**

CROSS-REFERENCE ART COLLECTIONS

950 **CONVEYOR TRANSVERSES WALL APERTURE**

951 **TURNING CIGARETTES END-FOR-END**

952 **HEATING OR COOLING**

953 **COIL SPRING UNTANGLING APPARATUS**

954 **OVERFLOW**

955 **AIR MANIFOLD**

956 **IMPACT PLATES**

957 **CONVEYOR MATERIAL**

958 **LOAD UNITS COUNTER**

959 **WEIGHING**

FOREIGN ART COLLECTIONS

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