ENGINEERING INVENTIONS.

A guard for railway cars has been patented by Mr. Robert J. Gillham, of Orlando, Fla. This be attached to the tops of railway cars at each end, to prevent smoke, dust, and cinders from passing down between the cars when they are in motion, and also to shield and protect the platform from rain and snow.

A balanced slide valve has been patented by Mr. William Jackson, of Allegheny City, Pa. It has a seat with apertures on opposite sides communicating with the live steam passages, and spring valves for closing said apertures, with slide valve in said seat, so balanced as to work easily and fit snugly even when it wears down, without being disturbed by back pres sure, the invention being an improvement on a slide valve formerly patented by the same inventor.

AGRICULTURAL INVENTIONS.

A planter and manure distributer has been patented by Mr. David C. Bullard, of Elberton, Ga. It is a device designed to be drawn over the field by teams to sow seeds and to distribute fertilizers, such as guano, at the same time, or to plant the seeds and drop the fertilizer at different times, the single machine being adapted for both purposes

A potato digger has been patented by Mr. William J. Davis, of Pittston, Pa. Its construction is such that the digging mechanism can be readily adjusted to work at a greater or less depth in the ground, and can be readily thrown into and out of gear, the teeth entering the ground easily and carrying the potatoes over the shaft to drop them upon the ground at the rear of the machine

A sulky plow has been patented by Mr. Frederick T. Miller, of Fredericksburg, Va. The tongue is readily adjustable at such angle as desired, and there are right and left hand plows, either of which may be lowered into operative position, and at the end of the furrow, when the plow is turned to return across the field, the other plow may be lowered, so that the earth from each furrow is always turned by the mouldboard in one direction.

MISCELLANEOUS INVENTIONS.

A shaft tug has been patented by Mr. John Fischer, of Louisville, Ky. The invention consists of a peculiarly constructed metal frame, and the combination of the same with other parts, to make a simple, strong, and durable shaft tug.

A hand truck has been patented by Mr. Charles Walter, of Brooklyn, N. $\tilde{\mathbf{Y}}$. It has a swinging frame carrying a third wheel, whereby it can be readily transformed from a two wheel to a three wheel truck and the tongue can be used in a vertical or horizontal

A compound for cleaning boilers has been patented by Mr. William S. Baskin, of Corning, N. Y. The compound consists of saltpeter and white vitriol mixed together in certain proportions, for loos ening old and hard scale and preventing the formation of new scale in the boiler.

A barrel roller has been patented by Mr. Thomas B. Dittrick, of East Tawas, Mich. It consists of two pairs of rollers mounted on curved arms and connected with a suitable handle, the rollers being adapted to bear against the sides of the barrel, and move it forward, when they are pushed by the handle, by con tinuous forward pressure.

An animal bit has been patented by Mr. Willard D. Harmon, of Beloit, Wis. It has opposite parallel side bars, connected by cross bars concaved from the lower side of the bit, and resting on the animal's tongue, which is held between the side bars, the object being to correct the habit of the animal of holding the tongue out of the mouth.

A sash holder has been patented by Mr. Moses C. Hargrave, of Wilmington, N. C. This invention relates to sash holders in which spring-actuated pulleys are employed to bear against the edge of the sash as a substitute for cords and weights, and combined with the pressure pulleys a lock which presents no ob struction when the sash is unlocked.

An oil can has been patented by Mr. Henry E. Wolcott, of Syracuse, N. Y. Its construction is such that the top and cover may be conveniently removed for cleaning the can, while the top serves as support for cups and measures, and through it projects the pump, the construction being simple and such as can be furnished at light cost.

A middlings purifier has been patented by Mr. Richard A. Rew, of Pomeroy, Wash. Ter. This invention relates to middlings purifiers having vibrating sieves through which the middlings are passed, and covers various details for improving the efficiency of the machine, and by which it is made to occupy less floor space than the machines at present in use.

A process of treating tobacco has been patented by Mr. Goldsborough Robinson, of Louisville, Ky. It consists in first flooding the leaf tobacco with hot and then with cold alcohol, applying pressure to exclude the surplus spirits, and then flooding the leaf momentarily with cold water and drying, to improve the quality and color of the tobacco.

A fence post has been patented by Mr. Jay L. Quackenbush, of Portland, Oregon. It is made of plate metal, rolled, pressed, or cast, with a notched flange on one side to receive fence wires, and its bottom part is formed like a gimlet, to enter the ground easily, the screw being sharpened so as to compress, rather than lift, the earth around the threads.

A clutch coupling has been patented by Mr. Benjamin F. Applegate, of New Albany, Ind. It is made of two half sections which are counterparts of each other, adapted to interlock, each formed at its acting face with two annular series of driving faces, with other novel features, it being intended to drive both ways without backlash, automatically take up the

wear of the driving shoulders, and to couple or uncou ple readily.

A method of casting car wheels is the invention covers a novel form of light metal guard, to subject of letters patent reissued to Mr. William Wilmington, of Toledo, O. The distinctive feature of the invention consists in imparting rich ferro-manganese or its equivalent to molten chill hardening cast iron at or about the time it is first entering the mould of a car wheel, and at a later period imparting greater quantities of ferro-manganese to the flowing metal, the ferro-manganese being finely powdered or granulated, and melted and disseminated by the inherent heat of the iron pour ing from the ladle, and thus vary the quality of the iron in different parts of the wheel.

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Curtis Pressure Regulator and Steam Trap. See p. 142. Supplement Catalogue.—Persons in pursuit of inforof any special engineering, mechanical, or scientific subject, can have catalogue of contents of the ScI-ENTIFIC AMERICAN SUPPLEMENT sent to them free The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

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References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all, either by letter or in this department, each must take his turn.

Special Writteu Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly.

Minerals sent for examination should be distinctly marked or labeled.

(1) F. E. S. asks how to make amber varnish to varnish violins. A. Take of amber 3 ounces benzol 50 ounces: heat the amber in a closed vessel to a temperature of 570° Fah. When it begins to soften and swell, giving off white fumes, then dissolve in benzol; amber is also soluble in chloroform. The gum may bepurchased from any dealer in gums in New York or other large cities.

(2) E. W. T. asks if what is known as silkworm gut, used as leader on trout line, is made of the same. A. Yes; and is imported principally from

(3) J. E. W.—We know of nothing that can be added to shellac to increase its adhesiveness. It does not have any odor by itself. In the manufacture of shellac varnish, the gum should be dissolved in ethyl alcohol, but frequently methyl alcohol is substituted on account of its cheapness, although it has an exceedingly disagreeable odor.

(4) A. C. R. writes: 1. Can you recommend me a good rubber cement? I wish to cemen leather together, the cement to be waterproof, to resis oil, and the leather to retain its elasticity after press ing. A. Dissolve gutta percha in bisulphide of carbon; shave off the edges of the leather, and pour on the cement; allow to evaporate to dryness. Then put the two faces together, previously heating thoroughly, and press until cool.

(5) G. F. asks the best kind of a vessel to make liquid gold in, for potter's use. A. Either a glass or a porcelain vessel will answer.

(6) W. J. M. asks how papier mache is made to stand the action of water. A. Coat with a mixture made by fusing together equal parts of pitch and gutta percha, to which is added two parts of linseed oil containing five parts of litharge. Continue the heat until the ingredients are uniformly commingled and apply warm.

(7) J. D. H. desires a recipe for the manufacture of a white ink that can be used in a ruling pen as India ink is used. A. Mix Chinese white with water containing enough gum arabic to prevent the immediate settling of the substance. Magnesium carbonate may be used in a similar way. They must be reduced to impalpable powder.

(8) R. L. H. asks what will polish nickel plated goods after becoming black and not worn. A Use rouge on a rag with a little oil; also see the scouring paste given in answer to query No. 20, in Scien-TIFIC AMERICAN of May 2, 1885.

(9) J. W. O. writes: 1. I have some gold coin dissolved in aqua regia; how can I recover it so can sell it? A. The gold may be precipitated by means of iron sulphate. 2. Will you give a recipe for making phosphorescent paint? A. See "How to Make Luminous Paint," in Scientific American Supple MENT, No. 249. 3. Also one for making inks that will fade out in four, six, or eight weeks. A. See the article on "Inks," in Scientific American Supplement, No. 157. 4. What is the specific gravity of gold and silver coin? A. The specific gravity of gold is 19.50, that of silver 10.50, and that of copper, which is an alloy of silver coin, 8.788.

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Lamp bracket, J. W. Barney 345 Lamp burner, W. A. Hull 345 Lamp chimney cleaner, J. H. Nolan 345	5,283 5,169	Saw swaging machin Saw table gauge, J. I Sawing machine, cir
Lamp shade and bowl, Shirley & Steffin 345 Lamp shade ornament, J. D. Griswold 344 Lamp shade ornament, W. A. Hull 345	1,959	Scale, weighing and Seal, metallic, C. L. Seal press, J. H. Har
Lantern, tubular, Baron & Rufer. 345 Latch, door, E. S. Winchester. 345 Latch, gate, J. Duls. 34	5,100 5,016	Secondary battery, A Secondary battery
Latch. sliding door, Gordon & Hamilton	5,048 1,926	Schenek Seed distributer, har R. Crane
Leafturner, A. Richar , Sr	.861	Seed, removing fib

Scientifi	ic ¿	American.	
Lifter. See Transom lifter. Lifting jack, M. H. Levy Light. See Sidewalk light.	344,841	Seeder and cultivator, disk, B. C. Dorsey Sewers, apparatus for flushing, J. Scott. Sewing machine, C. H. Bayley.	344,873
Lithographer's arm rest, J. H. Slebold	1	Sewing machine, Garland & Schulze-Berge Sewing machine shuttle bobbins, machine for winding, H. A. Behn Shaft, cranked, D. A. Woodbury	344,825 345,208
Lock, P. Cool. Loom shuttle motion, C. Widmer. Looms for weaving wire, filling carrier for, L. W. Newton.	345,011	Sheet delivery apparatus, G. P. Fenner	345,224
Lubricator. See Axle lubricator. Lubricator, Brooks & Sweetser	345,128	Shutter or door, air, W. Palmer	345,221
Mechanical movement, C. Schirrmeister	345,077 344,949 344,831	Stifter, flour, P. Marx. Skirt, E. D. McCracken. Sling-shot frame, M. Lester, Jr. Sluice-way gate, J. B. Tainter.	344,972 344,973 344,840
Middlings purifier, R. A. Rew	345,177 344,902	Snap hook, S. S. Stahl Soldering machine, Norton & Hodgson Soldering the longitudinal seams of sheet metal cans, machine for, G. T. Pillings	345,086 345,254
Mirror, window, S. A. Phillips	345,074 344,854	Sounds, apparatus for transmitting to distant points articulate, E. S. Spaulding	345,085
R. T. White. Mortising machine, M. Rothschild. Motive power, employing steam for producing, M. P. W. Boulton.	344,968	ing articulate, E. S. Spaulding. Speculum, anal, P. P. Price. Speed and station indicator, automatic, F. A. Schmidt	344,984 344,993
Motor. See Water motor. Nail furnace, G. Rowe	344,985	Speed changing mechanism, J. C. Henry	345,157 345,015
Needles, machine for sticking, W. H. Dayton Oil can, E. E. Miller Oil can, H. E. Wolcott Oil hole cover, E. F. Herrington	344,975 344,929	Spool or bobbin, O. E. Wait	845,072
Ore concentrator, Clark & Cone	345,114 345,028 345,129	Stalk cutter, J. B. Neff	344,850 844,904 344,903
Overseaming machine, H. Schulze-Berge Packing piston rods of refrigerating machines, E. Fixary	344,872 345,041	Stand. See Switch stand. Starching machine, W. H. Garlock Starching machine, S. W. Holbrook	345,043 345,137
Packing, rod and piston, C. C. Jerome	845,187	Steam muffler, G. W. Richardson	345,0 0 9 344,968
Spalding. Paper, combined feeder and cutter for toilet, H. H. Harrison Paper cutting dies, bed for, H. P. Fiske	345,052 344,8 22	Brodrick	344,889
Paper, etc, machine for coating, J. Jordan Paper tying apparatus, J. S. Shannon Paper with paraffine, coating, Howe & Knowlton. Pen holders, cushion and guard for, S. S. Harman	344,995 344,965	Store or range, cooking, F. A. Magee	344,816
Perforating machine, E. B. & E. B. Stimpson, Jr., 345,189. Permutation lock, J. H. & T. D. Morris Photographic printing, graphic negative film for,		HoytSuspension device, C. J. PetersenSwitch stand, H. C. SingiserTable. See Folding table. Knockdown table.	345,172
S. C. Duval	345,005	Table slide, extension, J. W. Potter	344,803 345,245
Pin machine, safety, Jenkins & Gaylord	344,837 345,146	Telephone, A. M. Phelps	344,983 345,106
Phillips. Planing and matching machine, C. F. Ritchel Planter and manure distributer, D. C. Bullard Planter, seed, R. J. Wentz	344,867 345,210	er for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson.	345,125 345,266
Planter, seed, I. A. Wesson	345,198 345,176 345,215	Tongue support, wagon, M. E. Johnson Toy kitchen, M. Schaare Transom lifter, C. F. Leopoid	344,910 344,992 345,238
Plow, J. W. Barnett. Plow, T. W. Boyle. Plow, J. W. Carr. Plow, A. C. McNeal.	345,027 345,113 345,161	Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh	345,184 345,248
Plow, gang, P. Hansen Plow, sulky, F. T. Miller Polishing machine, E. S. Hollister Portable tank, V. M. Backus	345,068 344,835	Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman	345,170 345,038
Post. See Fence post. Potato digger, W. J. Davis Potato meal, making, C. Maull Press. See Crupper press. Seal press.	345,159	Type matrices, machine for producing, O. Mergen- thaler	344,933 344,839
Pressure gauge, recording, F. A. Jones	-	Upper, W. Hughes	345,056 345,197
Simpson Printing press gauge pin, E. L. Megill. Propeller, screw, B. Dickinson Protector and stiffener, I. H. Westgate.	345,066 344,898	Valve for engines, J. Thom	344,998
Pump, W. H. Cloud	345,116 845,25,3 845,£45	Valve, steam-actuated, W. L. Saunders	344,991 344,954 345,028
Quilting frame, J. E. Wright	345,267 345.257	Vehicle spring, W. Cole	845,118 344,851 345,107
Railway gate, J. A. Lidback Railway rail chair, M. R. Perkins. Railway tie and chair, combined, I. F. Good Railway track, S. Hyman.	345,239 344,92 0 344,826	Vise, work bench, J. C. Lynch. Wagon, buckboard, J. A. Burden. Wagon running gear, J. H. Whiting Wagon spring, H. Metcalfe	345,244 344,895 345, 2 01
Refrigerator, J. Linsley	345,240	Wall and ceiling, freproof, J. Smith. Wall decoration and other purposes, fabric for, T. Strahan. Watch case hinge, F. Rapp	345,001 345,191
Regulator. See Gas regulator. Pressure regulator. Rein holder, check, R. E. King	345,062	Watch case spring, W. Fowler	345,22 6 345,192 34 4, 838
Rock drill, C. O. Barlow	344,906 344,907	Watch winding mechanism, H. F. Hambruch Watches, pendant stem for, E. F. Heffernan Watches, stem setting and winding mechanism for, R. L. Taft	345,055 345,193
Roofing, metal. A. W. Walter	345,219 345, 0 29 345.033	Water back, H. Engelbert	344,884 344,911 345,156
Sad iron, A. Schneider, Jr	345,123 345,237	Water motor, J. H. Hagerty Waterworks, constructing, Bull & Hall Waterproofing fabrics, apparatus for, H. C. Spalding	314,813
Safe and sieve, combined flour, F. A. Hovey	345,050 345,256	Weather strip, W. H. Randle	344,921 345,153
Saw table gauge, J. H. Palm. Sawing machine, circular, J. H. Palm. Scale, weighing and price, J. E. Pitrat. Seal, metallic, C. L. Pond.	345,071 345,070 344,857	Well drilling machine, W. C. Shear	345,181 B 45,218 3 44 ,8 5 2
Beal press, J. H. Hamilton	344,829 345,124	Whiffletree hook, H. F. Bock	345,108 345,166 344,979
Schenek. Seed distributer, harrow, and roller, combined, T. R. Crane	845,214	Wick for lamp burners, J. Wayland	345,250
Perry	344,951.	and bolster therefor for, H. & J. W. Collins	245,030

Seeder and cultivator, disk, B. C. Dorsey	
Sewers, apparatus for flushing, J. Scott	. 344,8
Sewing machine, C. H. Bayley Sewing machine, Garland & Schulze-Berge	345,20
Sewing machine, Garland & Schulze-Berge	. 344,82
Sewing machine shuttle bobbins, machine for winding, H. A. Behn	. 345.21
Shaft, cranked, D. A. Woodbury	. 344,9
Sheet delivery apparatus, G. P. Fenner	
Shipping can, A. O. Fitz Gerald345,223,	
Shovel or spade handle, auxiliary, M. L. Wilson et al.	
Shutter or door, air, W. Palmer	
Shutter worker, A. F. Evers	. 345.22
Sidewalk light and ventilator, combined, F.	
Braun	345,10
Skirt, E. D. McCracken.	344,91 344.91
Sling-shot frame, M. Lester, Jr	
Sluice-way gate, J. B. Tainter	344,87
Snap hook, S. S. Stahl	
Soldering machine, Norton & Hodgson	
cans, machine for, G. T. Pillings	
Sounds, apparatus for transmitting to distant	
points articulate, E. S. Spaulding	345,08
Sounds to distant points, transmitting and receiv-	
ing articulate, E. S. Spaulding	
Speed and station indicator, automatic, F. A.	. 024,00
Schmidt	
Speed changing mechanism, J.C. Henry	
Spindle and support therefor, T. H. Logan	
Spoke socket, W. C. Williamson	345,01
Spool or bobbin, O. E. Wait	345.92
Spring. See Vehicle spring. Wagon spring.	,
Spring. See Vehicle spring. Wagon spring. Springless lock, A. Park	345,07
Square, try and bevel, A. S. Vose	
Stalk cutter, J. B. Neff	
Stamp, hand, B. B. Hill	
Stamp, hand, F. C. Lidke	
Stand. See Switch stand.	
Starching machine, W. H. Garlock	
Starching machine, S. W. Holbrook	
Steam engine, I. Vernon	345.01
Steam heater, G. Jones	344,96
Steam muffler, G. W. Richardson	
Stencil and producing the same, autographic, J.	
Brodrick	
Stopper. See Bottle stopper.	344,00
Stove or range, cooking, F. A. Magee	344,84
Stuffing box, E. H. Cole	344,81
Sugar, manufacturing, Reichardt & Heyer	
Surfacing and sizing machine, chain feed, L. P. Hoyt	
Suspension device, C. J. Petersen	
Switch stand, H. C. Singiser	345,08
Table. See Folding table. Knockdown table.	
Table slide, extension, J. W. Potter	345,17
Tedder, A. G. Barton	
Telephone, S. Bergmann	344.93
Telephone, A. M. Phelps	344,98
Thermometer or like instrument, J. T. Brayton	345 10
The moment of fac men ament, v. 1. Drayton	010,10
Thill coupling, J. A. Kneedler.	345,14
Thill coupling, J. A. Kneedler	345,14
Thill coupling, J. A. Kneedler	345,14 345,23
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley.	345,23 345,23 345,12 345,26
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson.	345,23 345,23 345,12 345,26 345,07
Thill coupling, J. A. Kneedler. Thrashers, combbed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson.	345,23 345,23 345,12 345,26 345,07 344,91
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare.	345,23 345,23 345,12 345,26 345,07 344,91 344,99
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley.	345,14 345,23 345,12 345,26 345,07 344,91 344,99 345,23 344,81
Thill coupling, J. A. Kneedler. Thrashers, combbed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, G. F. Carsley.	345,14 345,23 345,12 345,26 345,07 344,91 344,99 345,23 344,81
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap.	345,14 345,23 345,12 345,26 345,07 344,91 344,99 345,23 344,81 345,18
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Tor kitchen, M. Schaare. Transon lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh.	345,14 345,23 345,12 345,26 345,07 344,91 344,99 345,23 344,81 345,18
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap.	345,14 345,23 345,12 345,26 345,07 344,99 345,23 344,81 345,18 345,24 345,24
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen Tug, shaft, J. Fischer.	345,14 345,23 345,12 345,26 345,07 344,91 345,23 345,18 345,18 345,18
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman.	345,14 345,23 345,12 345,26 345,07 344,91 345,23 345,18 345,18 345,18
Thill coupling, J. A. Kneedler. Thrashers, combbed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergen-	345,14 345,23 345,12 345,26 345,07 344,91 345,23 344,81 345,18 345,18 345,09 345,04
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman.	345,14 345,23 345,12 345,26 345,07 344,91 345,23 345,18 345,24 345,09 345,03 345,04 345,04
Thill coupling, J. A. Kneedler. Thrashers, combbed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake.	345,14 345,23 345,12 345,26 345,97 344,91 345,23 344,81 345,18 345,18 345,19 345,09 345,04 345,04 345,04
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transplanter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes.	345,12 345,23 345,12 345,12 344,91 344,99 345,23 344,81 345,18 345,17 345,04 344,93 344,93 344,93 344,93 344,93 344,93 344,93
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle.	345,124 345,23 345,126 345,07 344,91 344,99 345,23 345,18 345,24 345,17 345,04 345,04 344,97 344,93 345,04 345,04 345,04 345,05
Thill coupling, J. A. Kneedler. Thrashers, combbed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, F. Wade.	345,243 345,263 345,127 344,91 344,93 345,283 345,283 345,283 345,283 345,283 345,283 345,283 345,283 345,183 345,184 344,933 345,144 3344,933 345,144 3344,933 345,144 3344,933 345,144 3344,933 345,144 3344,933 345,144 3344,933 345,144 3345,194
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, W. Wade. Valve, balanced slide, W. Jackson. Valve for engines, J. Thom.	345,243 345,263 345,127 344,91 344,93 345,283 345,283 345,283 345,283 345,283 345,283 345,283 345,177 345,03 345,177 344,933 345,144,933 345,145 345,146 344,937 345,146 345,146 345,146 345,146 345,146 345,146 345,146 345,146
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Trug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, E. Henneboehle. Valve, balanced slide, W. Jackson. Valve for engines, J. Thom. Valve mechanism for steam pumping engines, W.	345,14 345,23 345,12 345,26 345,47 344,91 345,23 344,81 345,18 345,18 345,19 34
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, balanced slide, W. Jackson. Valve benanism for steam pumping engines, W. L. Shepard.	345,14 345,23 345,12 345,26 345,07 344,91 345,23 345,18 345,24 345,19 345,04 345,04 344,93 345,18 34
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson Tongue support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, Safety, G. W. Richardson. 344,862, 344,864 to	345,14 345,23 345,12 345,26 344,91 344,99 345,23 345,14 34
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Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tobacco, treating, G. Robinson. Top kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, W. Wade. Valve, Balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Varnishing mac	345,14 345,23 345,12 345,24 344,91 344,91 345,24 345,12 345,26 344,81 345,14 34
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tobacco, treating, G. Robinson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, W. Wade. Valve, Balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Vaults, discharge pipe for, J. Beard. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, W. M. Brinkerhoff. Ventilator, W. M. Brinkerhoff. Ventilator, C. Cluthe. Wagon, buckboard, J. A. Burden. Wagon spring, H. Metcalfe. Wall and ceiling, fireproof, J. Smith. Wall case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch watch, stem setting and winding mechanism	345,14 345,23 345,12 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,14 345,16 345,16 345,17 345,13 345,14 345,16 345,17 345,13 345,14 345,16 345,17 345,18 345,16 345,17 345,18 345,16 345,17 345,18 345,16 345,17 345,18 345,16 345,17 345,18 345,16 345,17 345,18
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tobacco, treating, G. Robinson. Top kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, W. Wade. Valve, Balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Varnishing mac	345,144 345,23345,124 345,243 345,124 345,23345,233 345,243 345,134 345,243 345,145 34
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tobacco, treating, G. Robinson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, W. Wade. Valve, Balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Vaults, discharge pipe for, J. Beard. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, W. M. Brinkerhoff. Ventilator, C. Cluthe. Ventilator, C. Cluthe. Wagon, buckboard, J. A. Burden. Wagon spring, H. Metcalfe. Wall and ceiling, fireproof, J. Smith. Wall case spring, W. Fowler. Watch case spring, R. L. Stufft. Watch stem windung and setting, C. Kistler. Watch stem setting and winding mechanism for, R. L. Taft. Watch coloset, W. H. Umpleby.	345,14 345,23 345,12 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,14 345,16 345,16 345,17 345,13 345,14 345,16 345,17 345,16 345,17 345,16 345,17 345,16 345,17 345,16 345,17 345,16 345,17 345,16 345,17 34
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson Topace support, wagon, M. E. Johnson. Toy kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson. 344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Vaults, discharge pipe for, J. Beard. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, C. Cluthe. Veise, work bench, J. C. Lynch. Wagon spring, W. Cole. Vehiclator, W. M. Brinkerhoff. Ventilator, C. Cluthe. Vise, work bench, J. C. Lynch. Wagon spring, H. Metcalfe. Wall and ceiling, freproof, J. Smith Wall decoration and other purposes, fabric for, T. Strahan. Watch case spring, R. L. Stufft. Watch stem winding and setting, C. Kistler. Watch winding mechanism, H. F. Hambruch. Watches, pendant stem for, E. F. Heffernan. Watches, stem setting and winding mechanism for, R. L. Taft. Water elevator, C. M. Kimball	345,14 345,23 345,12 345,24 345,23 345,12 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,14 345,15 345,16 34
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tonague support, wagon, M. E. Johnson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, E. Henneboehle. Valve, Belanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson344,862, 344,864 to Valve, safety, G. W. Richardson344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Warnishing machine, J. D. Ehlers. Varnishing machine, J. C. Lynch. Wagon, buckboard, J. A. Burden. Wagon punning gear, J. H. Whiting. Wagon spring, H. Metcalfe. Wagon buckboard, J. A. Burden. Wagon spring, H. Metcalfe. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch, stem winding and setting, C. Kistler. Watch, stem winding and setting, C. Kistler. Watch, stem winding and	345,14 345,23 345,12 345,24 344,911 344,913 345,24 345,18 345,24 345,19 344,913 345,23 344,91 344,93 345,23 345,24 345,23 345,24 345,23 345,24 345,23 345,24 345,23 345,26 345,21 345,26 345,27 345,11 345,26 345,27 345,17 345,11 345,26 345,27 345,17 345,11 345,26 345,27 345,17 345,11 345,26 345,27 345,17 345,11 345,26 345,27 345,17
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Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tobacco, treating, G. Robinson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, W. Wade. Valve, balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson. 344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Vanishing machine, J. D. Fiblers. Vaults, discharge pipe for, J. Beard. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, W. M. Brinkerhoff. Ventilator, C. Cluthe. Vise, work bench, J. C. Lynch. Wagon spring, H. Metcalfe. Wall and ceiling, fireproof, J. Smith. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch, stem winding and setting, C. Kistler. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Watch, stem winding and setting, C. Kistler. Watch case spring, R. L. Stufft. Water elevator, C. M. Kimball Water gauge, safety, J. B. Little. Water motor, J. H. Hagerty. Waterwo	345,14 345,23 345,12 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 34
Thill coupling, J. A. Kneedler. Thrashers, combined band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson Tobacco, treating, G. Robinson Tongue support, wagon, M. E. Johnson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, balanced slide, W. Jackson. Valve for engines, J. Thom. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Vaults, discharge pipe for, J. Beard. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, C. Cluthe. Vise, work bench, J. C. Lynch. Wagon, buckboard, J. A. Burden. Wagon punning gear, J. H. Whiting. Wagon spring, H. Metcalfe. Wall and ceiling, fireproof, J. Smith. Wall decoration and other purposes, fabric for, T. Strahan. Watch case spring, R. L. Stufft. Watch winding mechanism, H. F. Hambruch. Watch seem setting and winding mechanism for, R. L. Taft. Water back, H. Engelbert. Water back, H. Engelbert. Water closet, W. H. Umpleby. Water elevator, C. M. Kimball Water poofing fabrics, apparatus for, H. C. Spalding. Weatherboarding gauge, C. A. Summit.	345,144 345,233 345,124 345,244,911 345,244,911 345,146,149 345,177 344,913 345,146,149 345,177 344,933 345,147 345,149 345,14
Thill coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson. Tongue support, wagon, M. E. Johnson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Tug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers Warde, C. W. Saladee. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, C. Cluthe Vehicle, two-wheeled, C. J. Smith Wagon, buckboard, J. A. Burden. Wagon running gear, J. H. Whiting. Wagon spring, H. Metcalfe. Wagon buckboard, J. A. Burden. Wagon running gear, J. H. Whiting. Wagon spring, R. L. Stufft. Watch case spring, R. L. Stufft. Watch stem windung and setting, C. Kistler. Watch benden stem for, E. F. Heffernan. Watches, pendant stem for, E. F. Heffernan. Watches, pendant stem for, E. F. Heffernan. Watches, stem setting and winding mechanism	345,14 345,23 345,12 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,24 345,13 345,14 345,13 345,14 345,13 345,14 345,13 345,14 345,13 345,14 345,13 345,14 345,13 345,14 345,13 345,14 345,13 345,13 345,14 345,13
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Thila coupling, J. A. Kneedler. Thrashers, combibed band cutter and grain feeder for, C. Grover. Till lock, J. C. F. W. Diestel. Time lock, E. J. Woolley. Tobacco, treating, G. Robinson Topacco, treating, G. Robinson Torgue support, wagon, M. E. Johnson. Tor kitchen, M. Schaare. Transom lifter, C. F. Leopoid. Transplanter, G. F. Carsley. Transplanter, tobacco, M. Smith. Trap. See Animal trap. Treadles, foot pad for machine, L. McKeogh. Truck, hand, C. Walter. Truss, T. G. Owen. Trug, shaft, J. Fischer. Tunnels, construction of, C. C. Gilman. Type matrices, machine for producing, O. Mergenthaler. Type writers, escapement for, Baldrige & Lasar. Type writing machine, V. F. Lake. Upper, W. Hughes. Valve, F. Henneboehle. Valve, balanced slide, W. Jackson. Valve mechanism for steam pumping engines, W. L. Shepard. Valve, safety, G. W. Richardson. 344,862, 344,864 to Valve, steam-actuated, W. L. Saunders. Varnishing machine, J. D. Ehlers. Vaults, discharge pipe for, J. Beard. Vehicle, C. W. Saladee. Vehicle, two-wheeled, C. W. Noyes. Ventilator, C. Cluthe. Veise, work bench, J. C. Lynch. Wagon spring, W. Cole. Vehiclator, W. M. Brinkerhoff. Ventilator, C. Cluthe. Wise, work bench, J. C. Lynch. Wagon spring, H. Metcalfe. Wall and ceiling, freproof, J. Smith. Wall decoration and other purposes, fabric for, T. Strahan. Watch case spring, R. L. Stufft. Wall and ceiling, freproof, J. Smith. Wall decoration and other purposes, fabric for, T. Strahan. Watch case spring, R. L. Stufft. Watch stem winding and setting, C. Kistler. Watch winding mechanism, H. F. Hambruch. Watch stem winding and setting, C. Kistler. Watch winding mechanism, H. F. Hambruch. Watch stem winding and setting, C. Kistler. Watch winding mechanism, H. F. Hambruch. Watch case spring, R. L. Stufft. Water back, H. Engelbert. Water back, H. Engelbert. Water back, H. Engelbert. Water back, H. Engelbert. Water rotor, J. H. Hagerty. Water rotor, J. H. Hagerty. Water rotor, J. H. Hagerty. Water rotor, J. H. Handle. Wedge, rafting, W. J. Latchford. Well casing, oil	345,144 345,233 345,123 345,244,911 345,244,911 345,149 345,149 345,177 344,913 345,149 345,14

	[July 24, 1886.
44,950	Windmill, F. J. Wagner
44,873	Window fastener, J. E. Whidden
45,207	Window lock and burglar alarm, W. G. Bennett 344,807 Wire, grip for stretching, A. W. Laughlin 545,154
44,825	Wire, machine for straightening and cutting, D.
45,208	1. Eckerson
44,980 45.222	Wool, machine for oiling and drying, Speight & Whitehead
45,224	Woven fadric, G. Crompton (r)
201222	Wrench. See Pipe wrench.
44.890	
44,853	
15,22 1	DESIGNS.
(F 10F	Air moistener, C. W. Monroe
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