from the alternating current side, in a Wonder Alternator? The direct current side is wound for 10 volts, 11/2 amperes; both sides using the same winding. A. There is a drop of ten per cent. or more in a rotary converter. We have no figures for the special one about which you ask. You should refer the question to the makers of the machine. 3. State some good books on elementary chemistry and price of A. We recommend and can supply Smith's "Inorganic Chemistry," price \$2.25, or Remsen's "College Chemistry," price \$2.50. Both 4. What is the address of are authorities. Massachusetts Institute of Technology? A. The Massachusetts Institute of Technology is located in Boston, Mass.

(10836) R. R. B. writes: A friend claims that if a live fish is put into a vessel partially full of water and swims around without touching the bottom or sides, although not a drop of water is spilled, the fish and the receptacle and the water will weigh no more than merely the receptacle and water. He attempts to explain it by arguing that the fish is in equilibrium and is therefore not a dead weight; I consider that, as the specific gravity of the fish must necessarily equal that of the water to maintain the equilibrium, the downward force exerted on the water by the fish must equal that of an equal volume of water, which would of course increase the weight of the outfit. Which is correct? A. If a fish is put into a tub of water, it displaces water; if the fish is in equilibrium under the surface of the water, it is displacing its own weight of water, and the water in the tub is made deeper by the displacement due to the fish. It is just the same then as if the same weight of water were poured into the tub. If a fish be put into a tub the tub is made just as much heavier as if the same weight of water were poured into the tub. 2. I have heard that a buzzard, after fiying up into the air, sometimes rests on his wings, and without moving them or any other part of his body, goes to sleep and does not change his position relative to the earth at all, neither approaching to nor receding from it. Is this so? A. We are not familiar with the actions of a turkey buzzard, but we can say that we do not believe that any bird can float in air without moving a wing, and neither rise nor sink in the air. It could if its weight were the same as that of the air it displaces; but all birds we know are heavier than air.

(10837) R. E. S. C. says: Will you kindly inform me the relative position of the magnetic north to the true north for this longitude, how many degrees apart they are and which is east or west of the other, and if the norths are represented by distinct symbols on the compass dial such as an arrow for magnetic north and N. for true north. A. The magnetic needle at your place points about 12 deg. to the west of true north, that is, the magnetic declination is 12 deg. west. Nearer than that we are not able to give it since your place is not given in the government tables: Engineering at Chatham. It is a valuable con which we have. Should you wish the exact tribution to civil as well as military engineer figures you can doubtless obtain them by ad-ing, although it was intended primarily for the dressing the director of the United States military engineer. Coast and Geodetic Survey, Washington, D. C., who has in charge this work, and whose force is making determinations in various parts of the country year by year. The words East and West in connection with magnetic declination tell on which side of the true north and south line the magnetic needle points. It is not desirable to indicate declination upon a compass dial, since the declination changes year by year. In the eastern part of the United States the declination is west and increasing each year. Nor does this change correspond to the longitude.

car wheels cast on an axle and a straight of special value to the student as a textbook level track. A third rail is placed between the We are particularly impressed with the clarity two rails in an elevated position so it comes in contact with axle and parallel to the other trated with half-tones, line cuts, and drawing rails. Will the axle travel the same distance made to scale. on the third rail without slipping as the two wheels do on the track in the same number of revolutions? A. Anything rolling on a track moves along in one revolution a distance equal to its circumference. If your car wheels are 24 inches in diameter, the circumference will be a triffe more than 75 inches, and the wheels without slipping will move that distance in each revolution. If the axle is 4 inches in diameter it would roll a little more than 121/2 inches in each revolution. It must keep up with its wheels and so must slip on the third rail the rest of the 75 inches every time the wheels revolve once.

(10839) W. H. R. says: In the course of an argument I stated the fact, or at least what I considered a fact, that waves have no power of force but are merely a motion which would not carry anything forward. Am I right in this assertion? A. Any wave which is a mere vertical motion of the water would have no mechanical value or power, but the waves as they beat against the shore have great force, which is sometimes utilized for doing work. The ocean waves which hear against a vessel often break strong iron rods and twist them into shapeless masses. It would be useless to deny force to such waves. There are few waves which are merely tossings of the water. The force of waves combing upon the shore is largely due to the momentum of the water as it rushes up a sloping shore. At the most, your statement is a half truth—true only for one form of wave.

NEW BOOKS, ETC.

BALDWIN ON HEATING. Sixteenth Edition, Revised and Enlarged. By William J. Baldwin. New York: John Wiley & Sons, 1908. 12mo.; pp. 404; 143 figures and 15 plates. Price, \$2.50.

In 1879 the first edition of this work ap peared. It could be called nothing more than a collection of suggestions or hints, as stated in the preface of the earlier editions. These earlier editions were the publisher's editions being reprints with slight corrections, but with-out revision. So far as the work related to the principles of steam heating, where the water of condensation is returned by gravitation to the boiler, there could be little change in the book. To bring it down to modern practice in the use of steam by other methods, a general revision was necessary. Therefore, the whole former book is superseded by one whose data and practice harmonize. The author, therefore endeavors to give some facts relating to the principles of modern steam fitting, which, since the writing of the first book, has risen to the dignity of a branch of engineering science that may be known as domestic engineering, and which includes substantially all that goes to make up the engineering plant of a modern city building, excepting electric light and elevator systems, which do not properly belong to the subject.

LIFE AND LETTERS OF HERBERT SPENCER. By David Duncan, LL.D. New York: D. Appleton & Co., 1908. 2 vols. 12mo.; cloth; 414-444 pages; 21 illustrations. Price, \$5.

The last twenty-one years of Herbert Spencer's life, following after the close of his autobiography, appears in this important publication. For this period, it is the only authorita tive record. The value is significant when it is known that a part includes material that Spencer at the time thought best not to use himself. By this plan, the Life and Letters gains the insertion of the "Filiation of Ideas." written by him in 1899. It is the philosopher's final contribution to the theory of evolution and furnishes a concise elucidation of the Synthetic Philosophy. The space devoted to the letters shows an able selection of corre-spondence with representative literary and scientific persons; and the high narrative level attained in the portion given to the life in no respect falls short in the work of nicely and strongly carrying the portrayal through the difficulties of a long biography. Five por traits are presented of Spencer between 19 and 78 years of age. The index is very com-

MANUAL OF ROAD CONSTRUCTION AND MAIN TENANCE. By Major E. M. Paul, R.E. Chatham, England: Published by the Royal Engineers' Institute, 1908.

This work was compiled at the School of Military Engineering by Major Paul, R.E., o the instructional staff of the School of Military

DYNAMO-ELECTRIC MACHINERY. By Francis B. Crocker, E.M., Ph.D. Chicago: American School of Correspondence 1908. 8vo.; pp. 235. Price, \$1.50.

The title page tells that this is an authorita tive treatise on the theory of constructive de tails, calculations, characteristic curves and de sign of dynamo-electric machinery. The author is the head of the department of electrica engineering of Columbia University, past presi dent of the American Institute of Electrica Engineers, and is the author of a number of books on electricity. He is a recognized leader (10838) R. P. C. says: We have two in his profession. The present work will prove of the writing. The book is profusely illus

CURVES FOR CALCULATIONS. A Manual for Engineers, Architects, Designers Draftsmen, Builders, and Contractors By Sidney Diamant, E.E., Structura Engineer. New York: McGraw Pub lishing Company, 1908. Small 4to. pp. 13; 25 plates. Price, \$2.

This subject is a most important one to the engineer who has to deal with beams and chan nels for constructional work. With the aid greatly lightened.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued

for the Week Ending August 18, 1908,

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents

î f	Abdominal supporter, L. Ross	896,583
t e	Abdominal supporter, L. Ross	896,447 896,169 896,560 896,407

	Amugament apparatus of the gravity reli	
	Amusement apparatus of the gravity railway type, Bishop & Down	896,43 896,48
	Amusement apparatus, public, W. Taylor Anchor, stockless, W. S. Bickley Animal trap, F. Everhart. Antiseptic cone, G. C. McMurtry Anvils, forming, W. F. Ring Arc light, pencil and apparatus for producing the, I. Ladoff. Ash pan. F. Hibner Automobile hom, R. Wright Bag fastener, hand, Meltzer & Karron Bag handle and bracelet, G. Auslander Baling press. S. G. Gilleland	896,34 896,52
	Antiseptic cone, G. C. McMurtry Anvils, forming, W. F. Ring	896,40 896,15
1	Arc light, pencil and apparatus for produc- ing the, I. Ladoff	896,39
. '	Ash pac. F. Hibner	896,44 896,60
	Bag handle and bracelet, G. Auslander	896,31 896,26 896,56
ı		896,10 896,68
	Barrel heads, etc., removable closure for	
	Barrel heater, L. Frick Battery control system. storage. E. Wray.	896,37 896,18
į	Battery element, storage, J. Bimeler Bearing, antifrictional, A. B. Chapman	896,35 896,51
i	Bearing, roller, G. A. McKeel Bed, folding, W. B. De Witt Bed, invalid. Vance & Critery	896,14 896,27
	Barrel heads, etc., removable closure for the openings of, J. Schmid. Barrel heater, L. Frick Battery control system, storage, E. Wray. Battery element, storage, J. Bimeler Bearing, antifrictional, A. B. Chapman. Bearing, roller, G. A. McKeel Bed, folding, W. B. De Witt Bed, invalid, Vance & Critser Bed, wall, E. B. Peirce Bedstead, stretcher, and the like, F. Wood. Beeblye, R. Williamson Belt clasp or buckle, G. J. Kelley Belt fastemer, W. S. Langford Bicycle spring frame, C. Blankenheim Bin. See Storage bin.	896,17 896,23
	Bedstead, stretcher, and the like, F. Wood. Beehive, R. Williamson	896,42 896,49
i	Belt fastener, W. S. Langford	896,39 896,55
	Bin. See Storage bin.	896,46
i	Bin. See Storage bin. Binding machine, A. F. Preston Blackleading machine, F. J. Learman Blotter bolder and ruler, combined, W. J.	896,40
. '	Mogridge	896,31 896,36
,	Boat, submarine, G. Behrmann	896,61 896,44
1	Bott clip and connection, king, F. E. Wilcox	896,6 0
	J. Hetherington	896,54
1		896,15 896,67
ij	Bottles, cutter for metallic capsules on, H.	89 6, 30
. !	Bottles, jars, and similar receptacies, clos-	
:	Box, A. B. Klein	896,30 896,64 896,65
	Box or tank, P. Connolly	896,65 896,27 896,32
	Braiding machine, R. C. Rahm	896,41 896,64 896,07
	Branch sleeve, connecting, A. P. Smith	896.33
t	Briquet-making machine, F. E. Abbott	896,45 896,42
t	Brush or Polisher, shoe, E. Wilson	896,12 896,67
,	Buckle, J. J. Buchanan	896,15 896,35 896,64
,	Buckle, A. Kunzler Buckle, hame tug and trace. J. Ziegler Bugkle, hame tug and trace. J. Ziegler Buggy attachment, Rose & Hawley Building block, W. P. Meeker Buildings against rocking of the ground, yielding support for safing, E. Boermel. Burglar alarm, door knob, W. S. Hurst Calendar, perpetual, W. B. Summerall. Came lead, S. L. Brown	896,26 896,32 896,13
ĺ	Building block, W. P. Meeker	
•	yielding support for safing, E. Boermel. Burglar alarm, door knob, W. S. Hurst	896,43 896,38 896,25
	Calendar, perpetual, W. B. Summerall Came lead, S. L. Brown	896,25 896,19 896,23
l	Came lead, S. L. Brown	896.26
•	Canceling machine, letter, S. J. Evans	896,28
7	Canceling and marking machine, stamp, S. J. Evans Canceling machine, letter, S. J. Evans. Candy, making, J. Stuckes. Car brake, railway, J. M. Goodknight. Car, double deck, P. J. Ross. Car fender, J. Dornberger Car loader, box. J. M. Christy Car, pit, J. Childs. Car replacer, F. A. Millis Car supporting frame, freight, T. F. Burke	896,37 896,46
	Car fender, J. Dornberger	896,27 896,18
,	Car, pit, J. Childs	896,62 896,45
	Cana financial support for alastrical wines	
١.	in railway, E. T. Robinson	896,46 896,38
	Carbureter gasolene feed chamber, G. J.	896,58
	Mayer	896,65
ľ	F. A. Sylva Cardpoard box, J. E. Thornton. Carding machine, Woll & Schofield. Cart lock, dump, Dickinson & Winder.	896,42 896,60
7	Carding machine, Woll & Schofield Cart lock, dump, Dickinson & Winder Cash carrier, M. R. Collins	896,60 896,60 896,6
-	Cash carrier, M. R. Collins	896,0
•	Caster, ball bear ng, H. Denton	896,25 12,84
i	Chuck, F. Rahm	896,60 896,48
•	T Angland	896,26 896,2
,	Cigar forming machine, E. J. Lake	896,2 896,3
	like cases for, M. D'Alessandri Circle comb, A. Long	896,69 896,40
-	Circle comb, A. Long. R. Scott. Circuit breaker, magnetic, R. Scott. Clock, recording, A. Kopekin. Clothes hanger, E. Montgomery. Clothes line reel. G. P. Kinkennon.	896,46 896,1 896,1
-		896,13 896,6 89£8
1	Clutch, friction, K. G. Johnston	896,4
1	Clutch mechanism for dumb waiters, etc., A. Svenson. Clutch, spring, T. D. Carter Clutch winding arrangement, electromagnetic, H. Ast. Coin controlled mechanism, Nicholes & Jones Coin repository, B. vom Eigen.	896,69
ť	netic, H. Ast	896,6 896,2
r e	Coin controlled mechanism, Nicholes & Jones Coin repository, B. vom Eigen	NMO.1
	Comp, 1. Freemette	896,3 896,3 896,1
7	Composition of matter, F. A. Lobert	896,5
s	Compensator, recoil, Mellen & Edwards Composition of matter, F. A. Lobert Composition of matter and making the same, W. A. Phillips Concrete beam, reinforced, H. B. Andrews Concrete building block mold, C. J. Scheelky Concrete construction bar, J. H. Schlafly Concrete spreader J. E. Briggs.	896,2 896.6
r	Concrete building block mold, C. J. Scheelky Concrete construction bar, J. H. Schlafly	896,3 896,5
,	Condenser superheater, vacuum, C. T. &	000,0
ï	R. R. Rogers	896,2 896,4
-	Contact member, H. D. James	896,4 896,1 896,2
;	Condenser, vacuum, C. T. & R. R. Rogers Conduit rod, R. H. Villard Contact member, H. D. James Conveyer rolls, train of, A. Thomas Coop, knockdown, E. C. Mudd Copper, hardening, H. V. Draper Corner socket S. M. Chuse	896,1 896,5 896,6
e	Corner socket, S. M. Chuse	896,0 896,1
1	Copper, hardening, H. V. Draper. Corner socket, S. M. Chuse. Corrugating device, W. W. Stout. Couch, drop side, H. B. Arnold. Crane, portable jib, Maxfield & Gardner. Crate, collapsible, I. V. HoHoway.	896,5
ę	Crate cover fastening device, snipping, J.	896,5
	M. Wentz Crate, folding, M. Hutchinson Crucifix holder, J. L. Paul. Cuff and wristband fastener, R. Onffroy, Jr.	896,4 896,2
-	Crucifix holder, J. L. Paul	896,2 896,6 896,4
3	Culvert, D. C. Boyd	896,4 896,3 896,2
•	Desk and seat, combined, W. Kimmel Die block, W. R. Forsyth	896.6 896.3
	Display card for sample cases, E. T. Marsh Display stand, G. E. Fredericks	896,1 896,4
	Desk and seat, combined, W. Kimmel Die block, W. R. Forsyth Display card for sample cases, E. T. Marsh Display stand, G. E. Fredericks Distillation apparatus, H. O. Chute. Distillation process, H. O. Chute. Distilling wood, T. B. Gautier.	896,4 896,4
	Distillation process, H. O. Chute	896,2 896,6
	Dividers, proportional, G. H. Benedict Door check, W. L. Perkinson Door check, W. A. Ralston Door hanger, Banks & Tatum Door hanger track, S. W. Beeson Door look sliding D. H. Blenette	896,1 896,2 896,2
	Door hanger track, S. W. Besson	896,2 896,6 896,1
Е	Door hanger track, S. W. Beeson Door lock, sliding, D. H. Plquotte Door, metallic, A. H. Bobb Door spring, J. A. Fretz. Doors, roller support for edgewise movable, Miles & Poirier Draw gage and cutter, N. Hughes Drill, W. R. Down. Drill attachment, post, R. Valliant Dust remover, pneumatic, M. E. Freeman Egg strainer, Walz & Butler	896,5 896,2
]	Doors, roller support for edgewise movable, Miles & Poirier	896,5
_	Draw gage and cutter, N. Hughes Drill, W. R. Down	896,3 896,2
3	Drill attachment, post, R. Valliant Dust remover, pneumatic, M. E. Freeman Egg strainer, Walz & Butler	896.6 896,2
7	Egg strainer, Walz & Butler	
9 10 7	Electric apparatus, gas or vapor, M. von Recklinghausen Electric cable branch connection, J. J. Dossert	896,2 896,2
•	Dossert	

0	Electric circuit breaker terminal piece, C. Aalborg Electric currents, means for regulating the	896,192
9 3 9 5	Electric circuit breaker terminal piece, C. Aalborg Electric currents, means for regulating the supply of, C. M. P. Montbarbon. Electric heater, E. M. Hewlett. Electric machine, dynamo, H. G. Reist, 896,322, Electrical testing instrument, C. D. Jarvis Electrode, H. Pauling. Electrode for electric furnaces, F. M. Becket Electrolytic cell, G. C. Landis. Elevating and dumping apparatus, I. S. Mc- Bride Elevator safety brake, A. A. Brown.	896,227 896,297 896,323
7 . 9	Electrical testing instrument, C. D. Jarvis Electrode, H. Pauling	896,300 896,144 896,429
1 4 6	Elevating and dumping apparatus, I. S. Mc- Bride Elevator safety brake, A. A. Brown	896,568 896,270
1	Elevator shaft safety net, J. S. Kerfoot Engine, S. Lawson	896,213 896,399
8 4 8 0	ling the spark and throttle of an inter- nal-combustion, H. Lemp	896,305
5 0 7	Engine, S. H. Brundge Engine, device for simultaneously control- ling the spark and throttle of an inter- nal-combustion, H. Lemp. Engine starting device, hydrocarbon, R. Huff Engine starting safety clutch, gas, W. S. Jones Engine stop, automatic, N. C. Locke Engines and the like, cylinder for gas, C. Houben	896,451 896,462
6	Engines and the like, cylinder for gas, C. Houben Engines in self-propelled vehicles, starter	896,543
6 8	Engines, incandescent igniter for gas, J. S. Lang	896,375 896,398 896,605
2	Houben Engines in self-propelled vehicles, starter for explosion, D. B. Gardner. Engines, incandescent igniter for gas, J. S. Lang Eraser holder, chalk, F. C. Woods. Escalator landing, E. L. Cale, Sr. Evaporating and concentrating apparatus, liquid, Prache & Boullion. Exhaust and signal control, J. D. Maxwell Explosive, W. Rickmers. Explosives, shipping and storing, F. L. Chamberlin	896,098 896,460 896,455
3 10	Explosive, W. Rickmers Explosives, shipping and storing, F. L. Chamberlin	896,325 896,622
3	Chamberlin J. Haut Extension table, J. Haut Eyeglasses, G. J. Lowres Fabric striping apparatus, W. H. Adams Fan, O. Selg.	896,697 896,504 896,165
3	Fan, H. E. Walker	896,492 896,550 896,315
3	Feed bag, L. M. Burke Feed box, F. M. Bennett. Feeder, F. M. Mott.	896,619 896,268 896,656
3 6 20	Fence, A. U. Human	896,113 896,500 896,351 896,294
19 16 13	Filing cabinet Trautman & Jacobs Filter, Easley & Buckles Filter, A. A. Bowser Filter frame, G. H. Clevenger	896,486 896,202 896,353 896,436
54 27 23	Filter, water, M. Ray	896,574 896,360 896,241
16 50 59 14 :	Eyegiasses, G. J. Lowres. Fabric striping apparatus, W. H. Adams Fan, O. Selg Fan, H. E. Walker. Fare recorder, J. J. Joines Fare register setting and operating device, J. F. Ohmer. F. G. Burke. Feed box, F. M. Bennett. Feeder, F. M. Mott. Feeder, F. M. Mott. Feeder, F. M. Mott. Feenee, A. O. Huffman. Fennee post, Wolfe & Peddle. Fender, W. J. Birchell. Fille, revoluble cabinet, W. A. Hadden. Filliag cabinet Trautman & Jacobs. Filler, Easley & Buckles. Filter, A. A. Bowser. Filter frame, G. H. Clevenger. Filter frame, G. H. Clevenger. Filter escape, L. Jansoone. Fire escape, M. Pike. Fire escape, L. Jansoone. Firearm, automatic, S. Mangle. Firearm, automatic, W. J. Whiting. Fireproof sbutter, H. L. Turner. Flask hinge and pin corner, foundry, W. Hales Floor jack, H. T. & E. M. Spedden.	896,548 896,453 896,496 896,176
31 29 34	Flask hinge and pin corner, foundry, W. Hales Thoor jack, H. T. & E. M. Spedden	896,380 896,477
31 86 55	Hales Floor jack, H. T. & E. M. Spedden. Flue cleaner, W. Deuchar. Flue thimble, J. L. Droesch. Fluid motor, F. E. Jenkins. Fluids, apparatus Weichert For electrolysis of, E.	896,521 896,211
96 32 56	Folding machine, A. Baruch Freezing to the sides of a receptacle, preventing moisture-containing material	896,184 896,509
34 96 77	from, S. G. Stevens Fume arrester, H. Howard Furnace. F. T. Snyder	896,595 896,111 896,167
79 97 23	Game board, W. J. M. Walker	896,340 896,331 896,570
57 32 33	Gas analysis, apparatus for automatic and continuous, W. S. Hubbard	896,544 896,519
88 59	Fume arrester, H. Howard Furnace, F. T. Snyder, Fuse, mechanical time, Meigs & Gathmann Game board, W. J. M. Walker. Garment clasp, M. W. Schloss. Garment hanger, E. J. Noble. Gas analysis, apparatus for automatic and continuous, W. S. Hubbard. Gas and air mixing apparatus. E. Dankel- mann Gas burner, incandescent, Harrison & Noad Gas burner valve, distance lighting, R. N. Oakman. Gas cleaner, A. Ernst.	896,533 896,237
04 94 25	Gas engine, G. B. Fetsche. Gas forming chemicals, portable container for, H. J. Mittell. Gas nozzle ditr tetainer, H. Sussmann Gases, apparatus for washing iron blast furnace, B. H. Thwaite. Gasket, J. H. Glauber. Gearing, nower transmission. G. Milner Gearing, nower transmission. G. Milner	896,479 896,175 896,204
63 32 33 19	Bates Glass, shaping, Dixon & Marsh	896,511 896,631
18 93	Governor, steam engine, J. W. Gardner. Grate, J. G. Crowdes	896,376 896,692 896,260
03 59 19 39	Green or hot house, P. Minder	896,565 896,636 896,099 896,647
41 89 21	Glass cutter, F. W. Roller. Glass holding receptacle, molten, A. J. Bates Glass, shaping, Dixon & Marsh. Glue testing process and apparatus, C. M. Zimmerman Governor, steam engine, J. W. Gardner. Gravity lock, O. Wiegmann. Green or hot house, P. Minder. Gun closure locking device, M. Hermsdorf. Gun pointing attachment, M. H. Gardner. Hair tonic, S. R. Mackay. Halter, C. W. Schreiter. Hame hook, A. B. Rosson. Hames manufacturing, J. M. Masteller. Hame hook, A. B. Rosson. Hand operating gate, J. O. Marks. Harvesting machine, beet, I. C. & D. W. Lesh Hat blocking apparatus, L. Flicker. Hat pin, Schloss & Hawley. Hatliday & Hawks. Heater, A. I. D. Kyle. Heating pipes, sanitary dirt guard for, Stoker & Jones. Heels of boots and shoes, machine for fin- ishing the, Evans & Taylor. Hoof trimmer, J. D. De Celle. Horse blanket, W. Gordon.	896,164 896,666 896,651
99 08	Harness, horse, J. Caubert Harvesting machine, beet, I. C. & D. W. Lesh	896,621 896,557
35 64 43 67	Hat blocking apparatus, L. Flicker Hat pin, Schloss & Hawley Hay cocking machine and hay loader, Holliday & Hawks	896,370 896,253 896,541
73 36 58	Heater, A. I. D. Kyle. Heating pipes, sanitary dirt guard for, Stoker & Jones. Heals of boots and sheet machine for fin	896,554 896,420
40 79 30	ishing the, Evans & Taylor	896,285 896,088 896,672
16 47	ishing the, Evans & Taylor. Hoof trimmer, J. D. De Celle. Horn, L. L. Terbune. Horse blanket, W. Gordon. Horse blanket, W. Gordon. Horseshoe attachment, W. J. Magee. Horseshoe calks, die for producing, E. A. Burns Hydraulic engine and pump, E. C. Roberts Hydraulic motor and air compressor, com- bined, G. E. Ocain. Hydraulic separator and classifier, C. E. Seymour Ice cream freezer, C. F. Barry Ice creeper, W. J. Roche Ice manufacture, apparatus for, C: M. Smith Incubator, J. A. Swenson. Incubator heating mechanism, J. L. Nix Indicating stations, advertisements, and	896,446 896,618 896,128
14 82 10 72	Burns Hydraulic engine and pump, E. C. Roberts Hydraulic motor and air compressor, com-	896,433 896,327 896,571
67 32 85	Hydraulic separator and classifier, C. E. Seymour Ice cream freezer, C. F. Barry	896,471 896,077
06 06 42	Ice manufacture, apparatus for, C. M. Smith Incubator, J. A. Swenson	896,594 896,597 896,236
95 99 38	Indicating stations, advertisements, and other announcements, apparatus for Hayn & Leilich	896,206 896,677
59 50 54	Internal combustion engine, L. S. Watres Internal combustion engine, J. Tinlin Kneading and molding machine attachment	896,183 896,485
40 72 31	Incubator heating mechanism, J. L. Nix. Indicating stations, advertisements, and other announcements, apparatus for Hayn & Leilich. Insoles, filling, W. A. Zickerman. Internal combustion engine, L. S. Watreinternal combustion engine, J. Tinlin. Kneading and molding machine attachment bread, C. & E. J. Kruse. Labeling machine, F. C. Williams. Ladder, fire, A. L. Haines. Ladder, folding, B. B. Neal. Ladder, step ladder, and scaffold, combined C. Flatland. Lamp, S. B. & H. Clarke. Lamp, arc, G. N. Chamberlin. Lamp, arc, R. Scott.	896,675 896,295 896,569
45 34 35 92	Ladder, step ladder, and scaffold, combined C. Flatland	896.286 896,275 896,274
14 46 42 65	Lamp, arc, R. Scott. Lamp, arc, Steinmetz & Dempster. Lamp burner, oil, J. & M. Lawson. Lamp, filament, incandescent, W. R. Whit	896,417 896,698 896,645
82 49 13	Lamp, gasolene, J. J. Weyer	. 896,425 . 896,122
91 62 85	of electric incandescent, P. Druseidt. Lantern, signaling, H. G. Hohnsbeen	. 896,092 . 896,384
80 01 90	Doeserioh Lathes, audible signal device for, H. A Steinkamp Leather blank conting the H. Steinkamp	. 896,091 . 896,419
43	Doserioh Lathes, audible signal device for, H. A Steinkamp Leather blank cutting die, H. Stockman Leather stretcher. Hysore & Barnstead Lens, W. K. Kight Letter opening machine. A. D. Ross. Level attachment, spirit, A. Forrer	. 896,387 . 896,393 . 896,415
υU	Level attachment, spirit, A. Forrer	080,371