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Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

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

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(7684) E. R. writes: I have noticed reently in the SCIENTIFIC AMERICAN and other paper different articles and letters on clocks, and two especial on new plans to illuminate tower clock dials. I would say that I experimented somewhat in this lin in 1879 and since at various times. I used but thr lights to each dial, a red one on the end of the minu hand, a green one on the hour hand, and a white or frosted one on the center post. There is no effo or intention whatever to illuminate the dial, as the time is readily ascertained by the position of the mo ing red and green lights in relation to the stational white one, just as a blind man tells the time by fee ing the hands and center post of a watch. I used five foot dial, making a great number of changes at ran dom in the position of the lights, and both myself ar my assistants could readily tell the time without diff culty at a distance of 2.400 feet. The ordinary groun glass illuminated dial in general use will not do half well, although often twice this diameter. They are also expensive both in first cost and in the amount of light required. By rigging the lamps out on light extensio pieces attached to the ends of the hands the effect is ha of apparently much longer hands and larger dials, the increasing the distance at which it may be seen. I too no patent out on this, but give it to the world for what it is worth. Electric lamps are of course used, the v rious connections being easily made by means of wing and brushes. All the public needs to learn and remen ber is, red minutes, green hours, and white centers. Red and green are the nautical colors for signals, an perhaps were chosen for this reason; but a yellow lig is brighter than a green one, and seen in close contra with a white light can be readily distinguished from the white light. With this modification, the plan of our correspondent seems a very practicable as well as economical one for enabling one to read the position the hands of a distant clock in the night.

(7685) A. F. T. asks: Does paint affect the efficiency of lightning rods when applied to rod? No, not in the slightest degree.

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JUNE 27, 1899,

AND EACH BEARING THAT DATE

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15.	Blotter, F. C. Butler	and is set in agate type. Engravings in tisements at the same rate per agate it ment, as the letter press. Advertiser received at Publication Office as ear morning to appear in the following weel
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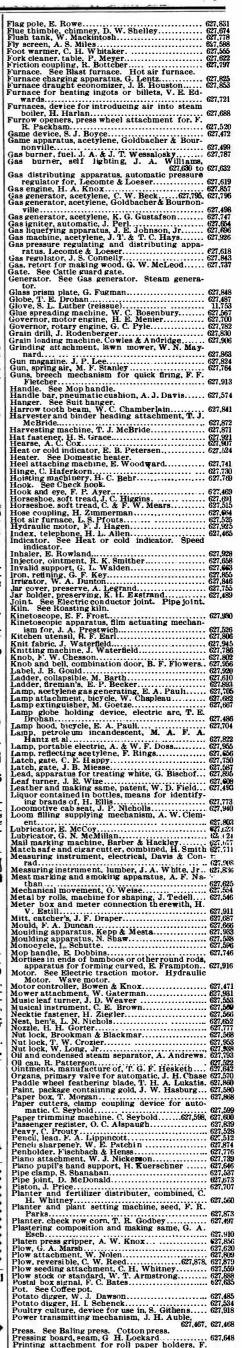
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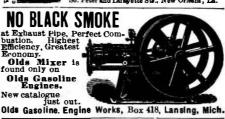
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Pumping oil wells, power mechanism for, C. E	627,771
I uniping on wens, power mechanism for, C. E	*
Sutton. Puzzle box, H. P. King Rack. See Bicycle rack. Stock or poultry rack Railway contact box, electric, W. M. Brown. Railway, electric, W. M. Brown. Railway frog, P. G. Stormer. Railway signaling apparatus, W. B. Quelch. Railway ite. J. Mulyey	. 627,507
Railway contact box, electric, W. M. Brown	627,476 5, 627,477
Railway frog, P. G. Stormer	627,543
Railway tie, J. Mulvey. Railway track structure, P. G. Stormer. Railway vehicles, electrohydraulic brake for, C	627,827 627,544
Railway vehicles, electrohydraulic brake for, C	. 627,772
Railway venicies, electronyuraunc brake 10°, C Durey	627.502
Rasp cutting machine, W. N. Rumely	627,532
Time recorder.	
Refrigerator, A. M. Murphy	627,651
Reel. See Fishing reel. Wire reel. Refrigerator, A. M. Murphy. Refrigerator, G. A. Blyers Refrister, See Passenger register. Ribbon fraying machine, L. E. King	627,508
Ring. See Embroidering ring.	coz c00
Rock drill valve, T. Officer	627,703
Rock drill valve, T. Officer. Roll safety device, Kuhlewind & Eisengart Rolls, automatic release device for, C. Kuhle	627,935
wind. Roller. See Shade roller. Roller. R. J. C. Mitchell. Roller and pulverizer, combined. A. Brouk Roller mills, etc., exhaust apparatus for, A. G. Mather	627,936
Roller, R. J. C. Mitchell Roller and pulverizer, combined, A. Brouk	627,958 627,474
Mather	627,514
Rotary engine, M. A. Green	627,832
Rubber, treatment of old or waste vulcanized, C Heinzerling Running gear, G. F. Uebel.	627,689
Running gear, G. F. Uebel Sandguard, C. C. Lower	627,833 627,649 627,943
Sash fastener, G. A. Seely	627,943
Sawmill carriage, N. Shaw	627,615 627,539 627,951
Rubber, tratment of old or waste vulcanized, C Hein zerling. Running gear, G. F. Uebel. Sand guard, C. C. Lower. Sash fastener, G. A. Seely. Saw, hand, E. J. Hicks. Sawmill carriage, N. Shaw. Scow, dumping, J. Atkins. Screen. See Fly screen. Window screen. Screen or riddle, J. A. Fugate.	627.640
Screen or riddle, J. A. Fugate	627,706 627,529
Seat. See Convertible seat. Seeding machines, agitator for fertilizer feed for	r.
Buchwalter & Oates. Separator. See Oil and condensed steam separa	627,478
tor.	
Separator, H. L. Day. Shade fixture, adjustable window, F. P. Casey. Shade roller, E. F. Hartshorn. Shaft support and thill coupling, combined, W. W. Whyberger	627,801 627,733
Shaft support and thill coupling, combined, W	697 000
Shears, L. A. Nickerson	627.738
Shoe fastener, A. J. A. Wallen Sifter, ash, C. F. Abbott	627,834 627,768
Signal. See Postal box signal.	627,735
Sifting chute, ash. P. J. Hynes. Sifting chute, ash. P. J. Hynes. Signal. See Postal box signal. Silo, G. D. Harder. Smoke consuming device, E. Fales. Smokestack lowering or raising device. J. D. Smokestack lowering or raising device.	627,732 627,726
Dailey	. 627.844
Sod, ballast, and ditch line marker, J. Vance. Sole vukanizing and applying apparatus, sho G. F. Butterfield Speed indicator. W. Moon Speed indicator electrical, A. Raps Spikot or valve, J. F. Boyer. Spike, H. H. Cummings Spindle adjusting machine, J. Kilburn. Spinning frame, ring, Leonard & Reynolds Spinning machine, E. K. Baker. Spraying machine. W. O. & F. E. Quest Sprocket wheels to crank shafts, means for a	e,
Speed indicator, W. Moon	627,840
Speed indicator, electrical, A. Raps	627,530 627,473
Spike, H. H. Cummings Spindle adjusting machine, J. Kilburn	627,819 627,582
Spinning frame, ring, Leonard & Reynolds Spinning machine, E. K. Baker	627,634
Spring. See Elliptic spring.	627,877
Sprocket wheels to crank shafts, means for a taching, B. W. Scott	t- 627,597
Stalk pithing machine, G. R. Sherwood Stamp, hand, B. B. Hill	. 627,882 . 627,734
Stamp, hand, B. B. Hill. Stamping and sealing machine, envelop, L. M. Nielsen.	627,590
Stamping machine, envelop, Nielsen & Madser Steam engine, W. Huggins	n. 627,591 627,854
Ni elsen. Stamping machine, envelop, Nielsen & Madser Steam engine, W. Huggins. Steam generator, K. Park. Steam generator feeder, W. Kouznezoff.	627,521 627,510
Steaming apparatus, steam, J. P. Manton Sterilizing or pasteurizing wines, etc., process of	627,585 of
Steam generator feeder, W. Kouznezoff. Steaming apparatus, steam, J. P. Manton. Sterilizing or pasteurizing wines, etc., process of and apparatus for, O. Streubel Still and condenser, water, J. F. Chase. Stock or poultry rack, folding, J. Schichtl Stogie or cigar rolling machine, J. C. Briggs Stopper. See Bottle stopper. Storage battery, W. P. Freeman Store service apparatus, G. Staib	627,740
Stock or poultry rack, folding, J. Schichtl Stogie or cigar rolling machine, J. C. Briggs	627.535 627,798
Stopper. See Bottle stopper. Storage battery, W. P. Freeman	627,494
Store service apparatus, G. Staib Stove, H. P. Cope Stove, gas cooking, W. J. Schmitz Stove or heating apparatus, etc., J. A. Jensen Stoveopipe elbow, U. D. Alexander Street indicating device, F. C. Roth baller Suit hanger, W. N. Moore Support, adjustable, F. L. Morgan Switch. See Electric switch. Switch and means for operating same, T. A. Smith Tank. See Flush tank.	627,770
Stove or heating apparatus, etc., J. A. Jensen	627,710 627,643
Stovepipe elbo w, U. D. Alexander Street indicating device, F.C. Roth baller	627,633
Suit hanger, W. N. Moore	627,867
Switch. See Electric switch. Switch and means for operating same. T. A	۸.
Smith	627,883
	627,556
Tap, F. L. White Telegraphic sounder, J. H. Bunnell	2
Tank. See Flush tank. Tan, F. L. White. Telegraphic sounder, J. H. Bunnell. Telegraphy apparatus employed in wireless, G Marconi.	627,650
Tap, F. L. White. Telegraphic sounder, J. H. Bunnell. Telegraphy apparatus employed in wireless, G. Marconi. Telephone, C. F. Dunderdale. Telephone circuit and switching apparatus, T.	627,650 627,577 C.
Tap, F. L. White. Telegraphic sounder, J. H. Bunnell. Telegraphy apparatus employed in wireless, G. Marconi. Telephone, C. F. Dunderdale. Telephone circuit and switching apparatus, T. Wales, Jr Telephone exchange switch apparatus and circuits.	627,650 627,577 C. 627,813
Telephone, C. F. Dunderdale. Telephone circuit and switching apparatus, T. Wales, Jr. Telephone exchange switch apparatus and ci cuits, C. H. Arnold.	C. 627,813 r- 627,814
Telephone, C. F. Dunderdale. Telephone circuit and switching apparatus, T. Wales, Jr. Telephone exchange switch apparatus and ci cuits, C. H. Arnold.	C. 627,813 r- 627,814
Telephone, C. F. Dunderdale. Telephone circuit and switching apparatus, T. Wales, Jr. Telephone exchange switch apparatus and ci cuits, C. H. Arnold.	C. 627,813 r- 627,814
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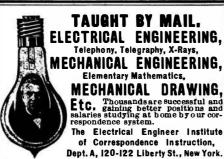
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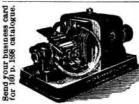
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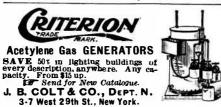


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