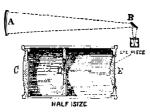
(25) E. C. R. writes: I have a Cleveland study lamp, the principle of which is similar to the German student lamp, and I am troubled with having the flame, after burning a short time, gradually go lower and lower, and then, if I raise and lower the tank or oil receptacle several times in quick succession, which I imagine forces the oil through the apparently AND EACH BEARING THAT DATE. partly impeded passage leading from the tank to the wick, the flame will again assume its regularheight and perhaps not grow smaller again for the remainder of the evening. Now I suppose that the pipe leading from the tank to the wick is lined with grease or something similar, thus preventing the oil from readily flowing to the wick, and what I wish to know is what can I clean this channel or pipe with (some liquid) that will not eat themetal, and yet destroy the grease sufficiently to clear the pipe? A. If the feed tube of your lamp is obstructed, put a solution of potasb and water into the tank holder afterwashing out the lamp with hot water. Let itstand for a day, then clean out with hot water. See that it runs a free stream when the tank holder is full of water. It is possible that the nupple at the bottom of the tank is too low and seals itself. It should not be below the top of the tube that feeds the lamp.

(26) T. M. asks: 1. What size leather belt would you advise to transmit 125 horse power; shafts 50 feet from center to center, small pulley 42 inches diameter? Belt speed 2200 feet per minute. A. Your pulley is too small to transmit 125 horse power. It will require a belt or a number of belts equal to 60 inches in width upon 42 inch pulleys. Better use 4 foot pulleys and 2 belts 24 inches wide running at the speed you give. 2. What size shaft would you recommend for Brace. See Dental jaw brace.
main shaftin mill? A. The size of the shaft depends Brake, See Car brake. Locomotive brake. Loconpon whether you distribute the power upon both sides method for making engine foundations. A. A brick foundation with granite cap stones with anchor bolts from the bottom is the best.

(27) H. M. W. writes: I have a large saw mill run by steam. We run the engine by burning sawdnst, but we cannot get rid of more than one-eighth of it in this way. Now, is there no way in which the sawdust can be utilized without a great outlay for machinery? A. Sawdust can be used in the manufacture makes good manure, but is slow in rotting. It should be thickly spread and plowed in; two years will be required for effect.

(28) G. M. S. asks: 1. What can I use to waterproof coat a large canvas used as shed for portable saw mill? Would like to make it fireproof also. A. See Supplement, No. 159. 2. Can I run a 1 inch by 40 inch steel shaft and disk 100,000 revolutions per minute? Boxes are very long, hollow, and a cold stream of water is forced through, also a jet of oil under great pressure. A. It is improbable a 1 inch shaft can be given a speed of 100,000 revolutions per minute. 3. Could not water, powder, or dynamite be made red hot without burning, if so powerfully confined that it could not explode? Would it not be impossible to freeze water under the same condition? A. If powder or dynamite is confined in a chamber that is strong enough to prevent bursting, it will not prevent the chemical combination, when brought to the proper condition for explosion, whether by heat or otherwise. The pressnrewill last.until reduced by cooling, new combinations, or waste. These experiments have been made by firing a confined charge and allowing it to waste through a small vent. Water will freeze if confined, and put the vessel holding it under immense pressure. We think that great pressure will not prevent it from freezing. 4. Could not steam be heated to such a degree that it would not return to a fluid state? A. Yes. Could be heated under pressure, until its chemical constituents are dissociated. 5. If it was possible to so powerfully compress wood or other substance as to make it as dense as iron, would it not be as heavy, as hard, and as strong as iron? Has extreme pressure of such substances ever been experimented upon? A. Wood compressed would become no heavier than its chemical constituents considered as solid bodies. Wood has been put under great pressures, but we do not know of any profitable results.

(29) A. R. H. writes: I am attempting to make a Newtonian telescope, described in SUPPLE-MENT, No. 179, but there are some points I don't underand I have concluded to write and ask a few questions, hoping that you could enlighten me. Is the mirror glass or metal, and what is its size? The writer does not give the number or kind of lenses used in the eyepiece. How are the rays thrown through the eyepiece? What is meant by the flat which is mounted on the sliding piece? Is it necessary to have copper bars or any bars at all. and why is the mirror supporting base composed of lavers of wood glued together? Are the reflected rays of the mirror thrown up through the center of the tube, and how are the lenses arranged? A



For your Newtonian telescope a mirror of speculum metal is to be preferred, although fine glass specula are now made with a silvered surface. The size of the mirror should be about one-twelfth the focal length of the telescope that you wish to make. The flat is the small oval plane mirror used near the focal end to reflect the image forming rays through the side of the tube or frame, so that in viewing anobject your head will not interrupt the incident light. The details of the construction need not be followed strictly, as the mirror support may be made of a solid piece. The above sketchmay answer some of the other questions. A, speculum; B, flat; C, field lens; D, diaphragm; E, eye lens. The eye piece is Huyghenian.

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	Rope clamp, C. Littlefield	278,155
į	Row boats, mirror attachment for, E. W. Oppe	278,039
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	Burk	278,091
	Rubber fabrics, manufacture of metallic surfaced	
	India, N. S. White	278,206
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	removing, W. H. Payne	278,176

Sash balance, D. L. Phipps	278.04
Sash fastener. H. L. Blodgett	277,98
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Saw handle, F. Brunson	278,08
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Saw mill dog, T. H. Bottomley	277,98
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Scale, counter, D. Buoy	277.87

Sack fastening, fur. C. Altman.....

Scourer. See Grain scourer.

Screen See Window screen.

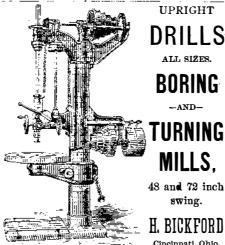
364	Scientific ?
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Separator. See Grain separator. Ore separator. Sewer-trap, G. A. Reich	Garment, A. Simon
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Skate roller, A. J. Lutz	Glue, B. Cannon & Co       10,279         Glue, E. Cannon & Sons       10,289         Ham, bacon, and lard, H. Denny & Sons       10,290
Slag, treating blast furnace, A. D. Elbers	Medicinal preparation for external and internal use, C. B. Colwell 10,302
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Gibson, Jr. & Platt       278,125         Soldering-machine, can, I. H. Cox       278,100         Spike, J. T. Nulty       277 921	Company
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Spoon and vial holder, medicine. S. Pelkey 277,924 Spring. See Elliptic spring. Vehicle spring.	table food, chemical, C. E. Calm
Spring testing machine, W. Harty	Skins, salted sheep, B. Cannon & Co
Steam engine, H. Hartig.       277,997         Steam engine, E. Tandler       278.062         Steel, compound for tempering, J. T. Mercer       278.250	ufacturing Company         10,277           Watches, A. Schwob         10,301
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Foy revolver, Fredricks & Brown       278,005         Foy, wheel, J. L. M. Du Four       278,109         Fraction engine, L. Lillard       278,154	TURNING
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Vehicle spring, M. Medart	The <b>T</b> Seibert Cylinder Oil Cup Co.,
Vehicle, two wheeled, F. L. Perry       278,041         Vehicle, two wheeled, A. Woeber       277,968	tives, Marine and Sta-
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į	Ham, bacon, and lard, H. Denny & Sons	10,290
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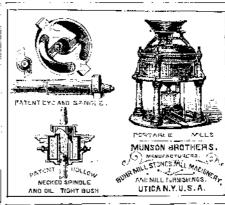
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