RECENTLY PATENTED INVENTIONS. Pertaining to Apparel.

SKIRT-HOLDER.—F. H. NEWTON, Greenville, S. C. The invention contemplates the employment of a cord or chain, the body of which is normally wound upon a reel within the case which is pinned upon the skirt at the upper portion thereof, and one of the objects is to provide means for clamping this cord or chain to limit the same against further extension.

BELT-BUCKLE.—J. D. TEMPLETON, Ada, Ohio. The object of the improvement is to provide details of construction for a buckle for waist belts, suspenders or the like, which afford a neat, simple, practical, and inexpensive device. The coaction of the bent and privoted head portion of the hook piece with the buckle frame having the inclined teeth, are the dominant features.

HAT-FASTENER.—M. E. Jennings and A. J. Winebrake, Scranton, Pa. By this invention it is intended to provide in connection with hat-pins, a holder therefor which will be self-retaining in the hat, will be adjustable to fit any size or shape of crown, and will be provided with a bushing or sleeve through which the pins slide to avoid wear of the hat material, and also to steady the pins in position.

Of Interest to Farmers.

PLANTER.—E. B. WINSHIP, Rushville, Ind. One of the objects of this invention is to provide a simple, strong, and efficient planter having a frame provided with drill teeth and supported upon a wheel, and having means for automatically elevating the frame at predetermined intervals in order to free the drill teeth from weeds and the like.

HAY RAKE AND TEDDER.—K. M. ELLIS and E. E. ELLIS, Greeley, Iowa. The purpose of the invention is to provide a construction by means of which the hay is raked to the right-hand side of the implement and left in a windrow, and the tedders automatically act upon the windrowed hay and move it over to the right, leaving the hay in a most convenient position for the loader, enabling a loader to take up the hay without looping back over a portion of the ground that the rake has already covered.

Of General Interest.

ANIMAL-TRAP.—H. TURNER, Richmond, Va. The object of the invention is to furnish a device adapted to be placed over the hole in the floor or ground through which the animal makes its entrance, and whereby the animal may be captured, or if not, prevented from entering the room. The device is likewise adapted to be placed against the wall and surround an opening therein in the same manner as when used in connection with a hole in the floor or ground.

SHAVING-BRUSH AND SOAP-HOLDER.—M. SCHMITZ, Schenectady, N. Y. This brush and holder is more especially designed for travelers' use, and is arranged to utilize the handle of the brush as a casing for the holder carrying the soap stick, and to allow of projecting the soap stick the desired distance beyond the handle for rubbing the stick over the face to be lathered.

Hardware.

WRENCH.—E. H. Boaz, Benbrook, Texas. The object of the improvement is the provision of a wrench arranged to combine simplicity with strength to permit convenient gripping, turning, and releasing of different sized nuts or other articles, and to allow of screwing the nut any distance along a bolt without removing the wrench from the nut.

MAIL-BAG LOCK:—R. E. REDDING, Marion, Ala. The intention in this improvement is to provide a lock having novel features of construction, which adapt it for a locked engagement with a constricting strap passed closely around the closed neck of a mail bag or pouch, and thus prevent access to the contents of the receptacle until the lock is opened with a suitable key.

Household Utilities.

LARDING-NEEDLE FOR MEAT.—P. Huss, Lakewood, N. J. This invention comprises a tapered tubular body to receive a larding strip, and a removable tapered tip constituting a plug for the forward end of the body, the butt end of the latter being open whereby the end of the strip may project and be withdrawn when the needle is forced through the meat.

CLOTHES-LINE HOLDER.—H. FALVEY, New York, N. Y. The aim of this improvement is to provide a line holder comprising a trough-shaped sheet-metal arm having a sheave journaled in a trough of the arm near each end thereof, and means for pivotally attaching to the arm intermediate sheaves whereby it is adapted to swing in a substantially vertical plane.

BED.—H. F. Nehr, New York, N. Y. One of the purposes of the invention is to provide a divisional bed or a bed the spring-sustaining portion whereof is in two sections removably mounted and capable of being brought together to form a double bed, or separated to constitute two single beds with a space between them, thus rendering the bed sanitary.

DUST-REMOVING APPARATUS.—H. Bog- Please state the name of the patentee ENSCHILD, Berlin, Germany. In this patent the invention, and date of this paper.

the invention relates to brushing and scrubbing, and its object is to provide a new and improved dust-removing apparatus for use in domestic and industrial purposes, such as cleaning carpets, upholstered furniture, tapestries, hangings, curtains, walls, wall papers, printing types and fonts, etc.

Machines and Mechanical Devices.

HOP-PRESS.—C. Kuensting, Woodburn, Ore. This press is designed especially for the baling of hops, but applicable also to other uses. The invention provides a press which is easily portable, conveniently loaded, of simple construction, without large metal castings, and of a graduated power apportioned to the increased compression strain as the follower compresses the bale.

POWER TRANSMISSION. — D. M. LE BARON, Amos, Nevada. In this instance the invention refers to wind motors, and its object is to provide a power transmission, more especially designed for use on wind mills, and arranged to utilize the power of the wind mill for pumping water in both light and strong winds.

GEARING.—J. J. P. BOATMAN, Blaine, Wash. An improved cone is provided in this system of gearing. It is easy to adjust the cone on a shaft to compensate for wear. A collar is provided with a setscrew whereby it may be fixed with respect to the shaft, is connected to the smaller disk by means of rerew threaded rods, secured to the disk, and traversing openings in the collar. Lock nuts are arranged upon a screw threaded rod upon each side of the collar, whereby to secure the cone in its adjusted position. When the cone becomes worn the nut locks are loosened and the cone is adjusted, after which the lock nuts are again tightened.

Pertaining to Vehicles.

SPROCKET-CHAIN.—R. S. McIntyre, Riverside, Cal. The present specification is a division of the original one claiming this invention, formerly filed by Mr. McIntyre. The object is to produce a chain constructed with a special view to preventing its becoming dislodged from the sprocket wheels over which it runs, without in any way detracting from the efficiency of the chain in operation.

Railways and Their Accessories.

RAIL-JOINT.—L. A. Bundy, Atlanta, Kan. The direction of the present invention is to improvements in rail joints, preferably embodying features of construction of a rail joint for which Letters Patent were formerly granted to Mr. Bundy. Among the objects is the provision of a rail connection that will insure a smooth road with no low joints, and in which the joints will be held against any accidental lateral displacement.

MAIL-BAG CATCHER AND DELIVERER.—A. D. WALTON and C. H. ANTHONY, St. James, Mo. The device is such as used for passing the mail bags to and from express trains as they pass post-offices located on the railway line. Two bags can be hung upon the holder at once and can be as readily caught or delivered as one bag. The fact that both catchers are reversible, enables them to operate with trains passing in either direction.

AUTOMATIC SAFETY APPARATUS FOR RAILWAYS.—G. E. RYAN, New York, N. Y. The use of automatically-operated track devices which are set by trains as they pass, is sought by this inventor. In this way each train as it proceeds maintains a track device in a set position at a suitable distance in its rear. A following train cannot pass this track without having its power automatically cut off. In this way rear-end collisions are prevented.

Pertaining to Recreation.

GAME-BOARD.—O. FALKENBERG, Baltimore, Md. The object of the invention is to produce a game board for playing a parlor game which will afford amusement and instruction to the players. The game involves the use of a map upon which routes of travel are indicated and involves also the element of chance, brought in by the use of dice.

Designs.

DESIGN FOR AN ORNAMENT.—J. W. Talbot, South Bend, Ind. This ornamental design is embodied in the figures of three owls, perched upon a branch and facing to the front, each bird bearing the letter O upon its breast.

DESIGN FOR A CLOCK-STAND.—W. T. HOPSON, New London, Conn. The design embodies a circle around the face of the clock, with the lower part spreading at the base and terminating in feet. The entire exquisite ornamental effect is produced by scroll patterns which surround the dial frame and inclose two cupids suspended under the frame.

DESIGN FOR A DOLL.—S. KAHN and W. REIZENSTEIN, New York, N. Y. The design in this case shows a doll dressed in fur or like material from the top of the head to the feet. A hood tied under the chin gives the doll a complete Esquimau garment or outfit.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of



HINTS TO CORRESPONDENTS.

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.

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.

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 cent for exemplation should be distincted.

price.

Minerals sent for examination should be distinctly marked or labeled.

(10625) A. C. asks: What size lens would be required to melt gold by focusing the sun's rays, if the focus would be 1/4 inch in diameter? A. A mathematical answer to the question could not be made, unless all the conditions could be definitely assigned. The altitude of the sun above the horizon at the time is the most important of these, while the optical condition of the atmosphere is a clos econd. The amount of carbon dioxide in th air of the place, it has recently been determined, exercises a very powerful absorptive influence upon the heating value of the sola rays. On the other hand, the temperature to be reached by a metal depends upon the rational of its absorbing and radiating power, and the time during which the heat is applied. Ir the open air a substance might be able to radiate heat so rapidly as not to melt at all but would maintain a constant temperature radiating as much heat as it received. If a mathematical calculation is to be made, it may be based upon the accepted assumption tha the vertical sun is able to melt an inch of ic (more accurately, 24.7 millimeters) in ar hour. The calculation may also be made from the statement that 3 horse-power is received on every square yard exposed to the vertica rays of the sun. We are not able to say wha the diameter of the smallest lens is, which i capable of producing a temperature equal t that of the melting point of gold, or a tem perature of 1,080 deg. C., equal to 1,976 deg. F. but Ganot's "Physics" contains the statemen that a plano-convex echelon lens, 2 feet in diameter, has melted gold, platinum, and quartz. This would indicate a temperature nearly or quite equal to that of the electric arc, from 6,300 to 7,000 deg. F., if quart was actually melted by it. If we wished to solve this question we should take a lens o this size and reduce its opening by diaphragm until the smallest opening was found at which gold would melt. Will voi

(10626) J. F. K. asks: kindly give me the following information of tell me where I can get it? 1. Roughly speaking, what is the combined mileage of the dif ferent railroads in the United States, not counting the switches, side tracks, etc.? A The combined main track mileage of the rail roads of the United States is 218,018 miles 2. What is the average distance the ties fo same are supposed to be placed apart? A. The tles are placed at an average distance apar of 24 inches (between centers). 3. What is the approximate cost of the wooden ties now in use? A. Wooden ties have approximatel doubled in cost in the last decade, and th cost varies greatly with the quality, which of course for railroad purposes means durabi ity. A tie with a life of five years may be said to cost in round figures a dollar, an preservative treatment with the addition of tie plates and the substitution of bolts for spike may bring its cost up to \$1.65, but the life o the tie so treated may be approximatel tripled, thus effecting a saving of 7 or 8 cents per annum per tie. 4. What is the average cost of the metal ties that have been used u to the present time? A. The metal ties use in this country cost from \$2.50 to \$3.25 th principal railroads experimenting with ther from 1889 to 1899 reported emphaticall against them, and the general railroad practice in this country goes to show that bette results can be obtained by the preservativ treatment of wooden ties. In Europe, wher-less wide distribution of population give greater proportionate funds for attention t permanent way, the use of steel ties is cor stantly increasing, and the best opinion and experience go to show that the use of well made steel ties properly laid (not in marsh ground or badly drained roadbed) will effect a great saving in renewal and maintenance labor, the ties having a life of thirty year and upward. We have no figures as to th number of steel ties in use here; you migh obtain the information by writing to the United States Forestry Division, which ha made a study of the question with reference to forest depletion by the use of wooder ties.

as to withstand copper and sulphur water in a mine or other places where it would come in contact with same. We would like to prepare some pipe and dip in a preparation that would ahere to the pipe inside and out, so as to make same more serviceable in a mine. We have enameled same, but find it is too easily chipped off. Galvanizing does not protect much better than ordinary black pipe. A. There are various acid-proof paints of which you can obtain particulars by writing to any paint and enamel dealer, but we doubt if you will find any of them better than asphaltum. The latter should be of such quality as to be fairly elastic when coid, softening but little at 100 degrees Fahrenheit, and should be heated to about 550 degrees before the pipe is dipped into it. The pipe should be warm and thoroughly dry.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued

for the Week Ending

October 1, 1907.

AND EACH BEARING THAT DATE

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

ie	[See note at end of list about copies of these pa	stents.]
ie se	Account and shipping pad, C. B. Sperry Accumulator plates, preliminary treatment	867,316
ie	Accumulator plates, preliminary treatment for, H. Leitner, Leitner, Advertising device, J. W. Fawkes. Air brake coupling device, C. B. Koehler. Air brake safety valve, T. Behan, Air brake system, H. N. Ransom, Amusement apparatus, A. Hermann. Animal trap O. D. Wright.	867,517
r- re	Air brake coupling device, C. B. Koehler.	867,562 867,280
ır	Air brake system, H. N. Ransom	867,234 867,533
0	Animal trap, O. D. Wright. Ash recentacle and cigar holder C. G. Dorto	867,546
ie	Amusement apparatus, A. Hermann. Animal trap, O. D. Wright. Ash receptacle and cigar holder, C. G. Davis Automobile heating appliance, P. P. Hof- mann	867,271
n	mann Automobile sleigh, W. C. Mielke. Automobile sleigh, F. Hartje. Automobile steering gear, W. W. Macfar-	867,285 867,503
o l,		867,282
e,	Axle, vehicle, S. C. Wagner	867,454
a y	Pag look Hiertry & Eville	867,468 867,269
t	fluids to, T. O. Bates	867,229
e n	Baking machines, means for supplying fluids to, T. O. Bates	867,518 867,292
m d	Brant	867,343 867,391
al	Brant Battery plate or grid, storage, J. Marx Bearing for separator spindles, step, J. T. Shields Bearing shaft J. P. Karns	
it is	Bearing shaft, J. P. Karns. Beehive, C. D. Barnes.	867,511 867,337
0	Shields Bearing shaft, J. P. Karns. Beehive, C. D. Barnes. Bees from supers when taking surplus honey, means for clearing, J. H. Rupe Beets, refuse separator for, Noble & Wietzer	867,423
ı- .,	Relt shifter S R Relev	001,230
ıt	Belt shifter, S. R. Bailey. Berth raising mechanism for railway cars, G. H. Poor.	867,466 867,409
n d	Berths, device for locking the drums of	867,410
e e	sleeping car, G. H. Poor	C67,526
c z	Vogelsang Blind slat fastener, W. W. Winslow Block. See Building block Block machine. J. R. Harbeck	867,452 867,460
0	Block machine, J. R. Harbeck	867,361
f IS	Block signaling system, automatic, D. J.	867,329 867,563
h	Blotter pad, thumb carried, F. P. Childress Boat, submarine, W. J. O'Haire	867,479
	Booler incrustation means for preventing	867,294 867,532
u r	Rooth election W. H. H. Hill Co.	867,430 867.371
k-	Bottle, J. C. Hizar. Bottle washing machine, D. E. Shaw	867,372 867,310 867,400
f- ot	Bottle, J. C. Hizar. Bottle washing machine, D. E. Shaw. Brake mechanism, R. J. McIntyre. Brake mechanism, beamless, J. B. McKiel. Bridge construction, J. M. Carroll.	867,400 867,477
١.	Buckle, rope, C. W. Baker	867,467 867.334
1- s.	Building construction, L. K. Davis. 867,251,	$12.698 \\ 867.252$
r	Button attaching device, C. H. Dome Button, cuff, J. Pejchar	867,352 867,529
re !	Camera, panorama, Muller & Klein	867.396 867,238
is	Car brake, Jett & Palmer	867,472 867.376 867,266
w ly	Cars, attachment for preventing telescoping	867,367
h h	of, F. Hedley	867,549
1-	Cars. device for raising the boxes of railway, Bentley & Miller. Cars, means for raising the boxes of railway, W. F. Bentley. Cars, pipe connection for railway, H. F. Pope	867,550
oe id	Pope	867,530 867,356
e-	Carriage and high chair, combination baby, J. L. Bacon.	867,465
es of	J. L. Bacon	867,414 867,336
ly	Casting patterns, production of, F. Walenta	867,541 867,427 867,555
ts ge	Chandelier, F. A. Burton	867.555 867.253
ıp ed	more Casting patterns, production of, F. Walenta Cement gate mold, Shively & Huber Chandelier, F. A. Burton. Cigar clipper and match box, T. H. Davies Clip or holder, J. W. L. Todd Closures, fastener for edgewise moving, D. Schuwler	867,449
ie	Closures, fastener for edgewise moving, D. Schuyler Clothes pin, W. E. Faulkingham. Clutch, friction, J. F. Harrison. Coats, label attachment for, C. S. Smith. Coffee grains or beans, machine for separating and grading, J. Jenkins. Coiling machine, M. C. Loveloy. Coin testing machine, M. D. Sadtler. Control system, E. R. Carlehoff Controller handles, locking mechanism for, A. S. Cubitt.	867.537 867.489 867.502
m ly	Coats, label attachment for, C. S. Smith.	867,433
c-	rating and grading, J. Jenkins Coiling machine. M. C. Lovejoy	867.276 867,390 867.304
er ve	Coin testing machine, M. D. Sadtler Container top, J. R. Harbeck	867,500
re	Control system. E. R. Carichoff	867,476
es to	A. S. Cubitt Conveyer, gravity, A. S. Dehler.	867,482 867,350 867,301 867,487
n٠	A. S. Cubitt . S. Dehler	867.487 867.397
ıd II-	Cotton cleaner and condenser, E. Reagan Cuff. shirt, T. D. MacGregor	867.535 867.524 867.378
ıy	Cultivator. W. E. Johnson.	867.378 867.388
ce	Current motor, water, C. H. Willard Curtain draper, J. Kaufmann Cut outs filling for thorned F. H. Willard	867.379 867.379
rs	Cylinder press, single plate. H. F. Bechman	867.231 867.246
ht	Delivery mechanism, W. & D. J. Scott Dental implement. C. S. Evans	867.424 867,264
e	Die. See Tapping die. Die press. A. J. Thomson	867,540
ce	Digger or scraper, C. H. Gunn	867.499 867.446
n	Door hanger, O. F. Mann	867.523 867.523
d	Drying the interior of vats, etc., means for,	867.549
ld	Cotton chopper, J. S. Nurray. Cotton cleaner and condenser, E. Reagan. Cuff. shirt, T. D. MacGregor. Cultivator W. E. Johnson. Current metor. water. C. H. Willard. Current metor. water. C. H. Willard. Curtain draper. J. Kaufmann. Cut outs. filling for thermal, F. H. Weston Cylinder press, single plate. H. F. Bechman Dehydrating apparatus. E. W. Cooke. Delivery mechanism, W. & D. J. Scott. Dental implement. C. S. Evans. Dic. See Tapping die. Die press. A. J. Thomson. Digger or scraper, C. H. Gunn. Door. combination. H. Thomas. Door hanger, O. F. Mann. Door hanger, O. A. McFadden. Deving the interior of vats, etc., means for, J. H. Beckman. Uplicators. diaohragm for. M. J. D. Carter Dyestuff. vat. Schirmacher & Deicke. Dvestuff. vat. Schirmacher & Leonold.	867,345 867,305
ıv	Dyestuff, vat. Schirmacher & Leonold	867.300