## Editorial Summary.

BUTTER MAKING.—It is as easy to make sweet butter as that which is rank and offensive. Sweet cream and ordinary care in the processes of churning, working, and packing can produce but one result—good butter. One common fault is keeping the cream too long, for the sake of accumulating a sufficient quantity for a "big churning." Another is in raising the cream in a place where offensive exhalations or otherwise impure atmosphere can reach it, and another in churning in a room too warm. Sixty degrees Fahrenheit is the proper temperature for churning. Clean pans, pails, tubs, etc., are absolutely necessary to sweet butter, and one ounce of salt to one pound of butter is ample.

TRANSPARENT METAL.—From one of our German exchanges we copy a statement that a transparent metal has been discovered, the component parts of which are waterglass and copper: "It is of a deep orange hue, can be melted and cast, wrought under the hammer, and rolled. Files will not scratch it; it is translucent, and capable of being wrought into ornaments of rare beauty." Evidently a chemical canard, unworthy of serious notice.

AN exchange recommends as a preventive of the adulteration of drugs an increase of price, and claims that this would not prove burdensome to the poor, as the number of public dispensatories and the benevolence of practicing physicians, afford them ample relief. The profits on the retail drug trade are already sufficiently large, and we fail to see how its increase would affect the purity of the drugs sold. It is quite possible, also, that there are many poor people who prefer paying for what they need rather than to become the recipients of either public or private charity.

THE connection of Mobile Bay with the Mississippi River, via Bayou Manchac is being agitated by the citizens of Mobile. The expense of the work in order to make it practicable for large steamers is estimated at nearly \$4,000,000. Only one lock will be necessary. The feeling of the citizens of Mobile as indicated in resolutions adopted at a meeting held on the 11th inst. is highly favorable to the undertaking and it is probable that it will soon be commenced.

An examination of the statistics of death from sunstroke in the city of New York, gives the following exhibit: In August, 1853, 224 persons died from sunstroke; in 1863, there were 135 deaths from the same cause; in 1866 there were 230 deaths from sunstroke, and during the present year up to Saturday, the 18th inst, there were no less than 833 deaths from heat alone, as reported by the papers.

PROF. TYNDALL concludes his memoir of Faraday with the following beautiful tribute to his memory: "You might not credit me were I to tell you how lightly I value the honor of being Faraday's successor compared with the honor of having been Faraday's friend. His friendship was energy and inspiration, his mantle is a burden almost too heavy to be borne."

PRUSSIA has shown her determination to become a first-rate maritime power, by making an extraordinary appropriation of \$7,152,374 for the year 1869, to be expended in the construction of fortifications at the sea ports she has just obtained, and in manufacturing heavy artillery and armored vessels. The amount to be expended at Kiel alone, is stated to a mount to \$4,411,124, or \$2,514,842 more than in 1866.

THE Courier Medicale, of Paris contains an able article upon infant mortality. It attributes it largely to the insufficiency of bone tissue, and says that the milk of a healthy nurse ought to contain more phosphate of lime—the basis of osseous tissue-than is often the case. Scarcely one in ten women come up to the proper standard in this respect, and as a consequence infants necessarily perish or grow up sickly or deformed.

SILK MANUFACTURE.—The silk mills of Paterson, N. J. are nearly, but not quite fully busy. The season for fringes is past. Some of the mills are engaged on trains. Paterson contains the largest silk manufactories in the country, capable of making anything from threads to trimmings. Some of them are now engaged on ribbons. We propose shortly to visit these mills, and to give our readers a more extended account of the silk manufacture as at present conducted in this country.

EXPENSIVE MATERIAL FOR MODELS.—One of our correspondents from Central City, Colorado sends us, as a model of his patent for deposition in the Patent Office, a horse shoe of solid silver, beautifully finished and elegantly engraved. It is made from native metal obtained in Colorado and is a solid specimen of the treasures now being revealed by the hardy miners in that region.

THE German philosophy is beginning to re-act upon the popular taste. According to recent statistics, novels and other works of light literature are much less called for than formerly, while the demand for works upon science is largely increased.

ACCORDING to the recently issued Register of the United States Navy it appears that we have now in the navy, two hundred and twenty vessels, of which fifty-two are iron-clad.

WE are in receipt of several interesting communications upon the subject of tides. We regret that owing to the pressure of other matter we cannot make room for them.

OFFICIAL REPORT OF

## Patents and ULAIMS

Issued by the United States Patent Office.

FOR THE WEEK ENDING JULY 21, 1868.

Reported Officially for the Scientific American.

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following

being a schedule of fees:

On fling each Cavest.

On dling each application for a Patent, except for a design.

On issuing each original Patent.

On application for Reissue.

On application for Extension of Patents.

On application for Extension of Patent.

On granting the Extension.

On fling a Disclaimer

On fling application for Design (three and a half years).

On fling application for Design (seven years).

On fling application for Design (fourteen years).

In addition to which there are some small revenue-stamp taxes. Residents of Canada and Nova Scotia pay \$500 on application.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required, and much other information useful to Inventors, may be had gratis by addressing MUNN & CO., Publishers of the Scientific American, New York.

80,046.—BRICK KILN.—Henry W. Adams, Philadelphia, Pa. COLUME OF THE REAL ASSETS OF THE REAL OF T

north.

3d, The steam pipes, RSTT, in fig. 1, and passages, FF, and flues, EE, in fig. 2 in combination with the fire places, CC, for the objects indicated, and substantially in the manner shown.

4th, The arrangement of the pipes, p. o2 o2, o1 o1, o3, and o, in combination with a covered brick kin, for exhausting the smoke and gaseous products of combustion and superheated steam, in an equal and uniform method, trom all parts of the kiln, for the objects described, and substantially as represented.

all parts of the kiln, for the objects described, and substantially as represented.

5th, The use of a jet of steam to create a draft at the top or end of the brick kiln, substantially as shown and for the ends proposed.

6th, The combination and arrangement of the exhaust pipe, o, when supplied with a jet of steam, the treplaces, C C, and with the airfuses, H H D D, and with the openings, G G F F, and with the steam pipes, E E, in fig. 2, when they severally sapply those vehicles of heat to the bottom of the kinn, which the steam jet, issuing from, o, pumps from its top, as herein substantially shown and described.

7th, The construction and operation of the brick kiln, substantially as shown and explained, and for the pripose set forth 80,047.— HAND-LODM.— James Albertson, and Sample C. Byers, Richmond, Ind., assignors to James L. Havenand James L. Branson, Chich nath, Ohio.

We claim the combination of the driving shaft, having the sprocket-wheel, B, mounted thereon, and having the batten connected thereto by pitmen, E, with the cam shaft, having the sprocket-wheel, C, and the cams. n, secured thereto, when sad parts are all constructed and arranged to operate substantially as described.

80.044.—ARTIFICIAL LEATHER BELTING.—Stephen M. Allen.

standard as described. 80,048.—Artificial Leather Belting.—Stephen M. Allen.

Woburn, Mass.
I claim, 1st, The attaching, cementing, igluing, stitching, or uniting together of sheets for artificial leather belting or banding made from pulped animal fiber, tanned or untanned, used alone or in combination with other vegerable fiber or with other further combination with resinous or gelatinous

substances.

2d. Attaching, cementing, gluing, riveting, or stitching sheets or strips of artificial leather paper for belting, made from pulped animal fiber, tanned or untained, alone or mix-d in further combination with other pulped vegetable fiber, to sheets of common leather for belting, whether the sheets of leather are laid upon either one or both sides, or b, tween sheets of artificial

leather are laid upon either one or both sides, or b. tween sbeets of artificial leather.

3i, The combination of sheets of artificial leather for belting, with sheets of leather, canvas, cloth, wood, yarn, iron, or wire, when properly attached together for the purpose, by gluing, cementing, riveting, or stitching the same.

4th, The overlapping and strengthening of joints in leather, artificial leather, or other belting, by the use of artificial leather sheets, set on and over the lapse or joints in belting, by cementing, gluing, riveting, or stitching the same, substantially as within described.

5th, A belting made of pulped artificial leather, as described, by combining sheets made of the same to the other substances named, or any of them as described, such as leather, canvas, cloth wood, yarn, iron, or wire, properly set together, in the manner and for the purposes substantially as described.

6tt, The application of satisficial leather paper to veneer and increase the find choeses and strength of leather belting by applying the same to the safet and tininer parts of leather belting, making them of uniform thickness, and nearly non-elastic, either when applied on side or between strips of leather, and confined substantially as herein described.

80,049 — KEY-BOARD FOR TELEGRAPH INSTRUMENT.—Wm.

B. Allyn, Boston, Mass.

B. Allyn, Boston, Mass.
I claim, 1st. The wheels, E, the uprights, D D, one or two to each key, the roller, H, when constructed and operating as herein shown and described.
2d, The rod, M, in combination with the arms, N, or their equivalent, substantially as described for the purpose set forth.
80.050.—Machine for Sharpening Hop Poles.—Truman

B. Angel, Watertown, N.Y.
I claim a tool for sharpening sticks, stakes, and poles, consisting of the holow frustrum of a cone, having inserted longitudinally inits shell conical rolers, and an adjustable oblique cutting knife, all constructed and arranged to perate substantially as described.

operate substantially as described.

80,051.—CHRONOMETER.—Philip Bantel, New York city.

I claim, 1st, The combination of the shafts, B and O, one or both, and large gear wisel, D, said parts being constructed, as described, with the ordinary clock wore of a chronometer, substantially as and for the purpose set forth.

2d, The combination of the self adjusting screw pulley, G, and stationary screw, H, with cord C, and shaft, B, substantially as herein shown and described, and for the purpose set forth.

3d, The swiveled pulleys, I and K, incombination with the cord, C weight bar, J, and pulley, L, or its equivalent, substantially as hereinshown and described, and for the purpose set for th.

80,052—PORTABLE FERCE—Benjamin F Brattain Noblessen

acribed, and for the purpose see by see. So. 052 —Portable Fence. —Benjamin F. Brattain, Noblesville, Ind.
I claim the yoke herein described, when the same is constructed as aforesaid, in combination with a panel of fence, the rails of which are notched, as
lessymbed and for the nurnous specified.

described and for the purpose specified.

80.053.—MODE OF MULCHING STRAWBERRY BEDS.—Joseph Brett. Geneva, Ohto.

1 claim the mode of mulching strawberry bedsby sowing thereon the seeds of plants, the stalks or blades of which are intended to serve as mulch thereof plants, the status of braces of walled are intended to the control of the for, substantially as set forth.

80,054.—Fence.—R. W. Bro kway and Henry Frederick,

OU.014.—FENCE.—R. W. Bro Kway and Henry Frederick, Akron, Onio.

We claym, ist, A crooked or angular rail fence, the joint of which rests upon a bed piece, A with the uprights, C. C, tastened at or near one end of the bed piece, while the long end of the bed piece projects into the hollow of the angle of the fence, substantially as shown and d-scribed.

20. The combination of the bed pieces, A, uprights, C. C, braces, G. H, and subs or legs, B. B, substantially as and for the purposes set forth.

80,055.—POLE FOR VEHICLES.—Edmund D. Brown, Battle Creek Mich

Creek, Mich.

I claim the arrangement and combination of the spring bow, C, and slotted arm braces, B, with each other and with an or inary vehicle pole, A, substantially in the manner and for the purpose of adjustability, as set forth.

\$\text{Statistically in the manner and for the purpose of adjustability, as set forth.}\$
80,056.—Machine for Sinking Shafris.—John Dickinson
Brunton, London, England. Patented in England, January 5, 1867.
I claim the construction and application of machinery of apparatus for sinking sbaffs and pits, and for driving or excavating tunnels, gatteries, or adits, wherein one or more cutting disks are caused to revolve on their own axis or vaxes, such axis or axes revolving round a center, which also revolves other fixed center, substantially as hereindefore described.

APPARATUS FOR DRAWING MEDALS.—Louis Chris-

50,007. APPARATUS FOR DRAWING MEDALS.—Louis Christoph, Paris, France, William Hawksworth, Gartness, North Brutain, and Gustavus Palmer Harding, Chiswick, England. Patented in England, pril 10, 1882.

We claim the combination of the hydraulic or hydrostatic press, the collars or flanges, K. G. thereof, and drawing apparatus, substantially as hereinbefore described.

80,058.—Corn Planter.—Z. T. Clagett, Washington, D. C. 80,058.—CORN PLANTER.—Z. T. Clagett, Washington. D. C. 1 claim, 1st, The diagonal shatt, F. and scraper, F2. in connection with the cog wheel, E. constructed as described, the lever, O, spring, O', slide, A2, axie, D, wheels, D2, H', D1, C, and H, and also the bar, B, constructed as specified. Also, in connection with the wheels, H' and H, the support, I, with lever, K, and carch. K', and spring, T, attached, working in the manner and lever, S, arranged as and for the purpose set forth.

2d The arrangement of the arms, L, constructed with the wheels, L2, bars, L3, wheels, M, and cranks, MI, substantially as and for the purpose set forth.

3d, The levers, Q, whi h cords or chains, as described, in connection with the drill teeth, P1, tabe, P2, and corn coverers, P3, joined to bars, P, by a joint, as shown in drawings, and supports, U, substantially as and for the purposes set forth. In combination with lever, O, the catches, Q', arranged for the purpose set forth.

70,059.—Boring Machine.—A. M. Connett, Madison, Iowa I claim the locking sleeve B. having the inner side of its under face beveled to receive a bit, D, in combination with the arm of a bit stock, constructed to operate substantially as and for the purpose herein specifies.

80,060.—THREE HORSE EQUALIZER.—Giles Cramton and Pract A Spicer, Marshall, Mich.

We claim providing the sheave, A, with a polygonal or other suitably shaped shifting eye plug, said plug to be inserted in a position either concentric eccentric with the equalizing rims of the sheave, and perforated with either one or all of the pivot holes, im n, substantially as and for the purpose herein set forth.

80,061.—Shaft Coupling.—Wm. Crandall, Philadelphia, Pa. I claim, 1st, A coupling, composed of two halves, connected together on one side of the shaft by bars or links, B and B', or their equivalents, and on the opposite side of the shaft by setscrews or botts, all substantially as set forth.

2d, Arranging the said bars or links, or their equivalents, nearer to the shaft than the said screws or botts, as and for the purpose set forth.

3d The bars, B and B', embedded in the coupling during the process of

forth.

2d, Arranging the said bars or links, or their equivalents, nearer to the shat than the said serews or boits, as and for the purpose set forth.

3d The bars, B and B', embedded in the coupling during the process of casting the same, as specified 4th. In combination with a griping coupling, set screws, F, applied to prevent the end play of the shafts, as set forth.

80.062.—CUTLERY.—Edwin Day, Chicago, Ill. I claim the handle, B, with the tane, a, inserted therein, and having the locking recess, e, or its equivalent with the toolten metal cast on them, so as to form the belsters, m, straps, n, and the cross bar or rie, 1, of greater diameter than the slit in which the tang is inserted, all at one operation, substantially as described.

tally as described.

80,063.—MANUFACTURE OF ICE.—R. S. Egbert, Colfax, Cal. I claim forming artificial ice in houses or receptacles by spray, sprinkling or dropping water through a pipe or pipes, C, or vessels, pierced with holes, as a, or their equivalents, substantially as described.

80,064.—STOCK-GUARD GATE.—W. C. Gault, Ruggles, Ohio. I claim the weight or float, H, rope or chain, G, lever, F, and book, I, as aranged in combination with the gate, A, substantially as and for the purpose set forth.

80,065.

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set forth.

80,065.—FURNACE FOR ROASTI G AND TREATI G ORE.—R.
George, Mineral Point, Wis.
I claim, 1st, An oxidizing, desulphurizing, chlorifying, and disintegratingfurnace, as shown in the drawings, and detailed in the specification.
24, A stirring machine, with all its parts, as illustrated and specified.
34, A water and heating apparatus as illustrated, and for the purpose described.

stribed.

4th, The substitution of fire-clay or porcelain tubes, or their equivalents, for the purpose of converting water into steam, and superheating the same. Sth, The cooling of the stirring machine by air, steam, or water, used separately or combined, m the manner and for the purpose as described and set

80,066.—Valve Cock.—John B. Gibson, Cincinnati, Ohio.

cu, vob.— VALVE COCK.—JOHN B. Gibson, Cincinnati, Ohio. I claim, lat. The rubber rings, G and J, as arranged in combination with the valve, H, stem. E, and cap, D. as explained.
2d, The arrangement of stem, E. valve, H, recessed screw, N, and rubber diek, L, as and for the purpose set forth.
80,007.—HOISTING MACHINE.—Henry T. Goodling, York, Pa. I claim the construction of a housting machine, arranged with a central post. B, jurning cr. ss-head, K, provided with pulleys, I, windlass, and a pivoted sine lever, L, to base of post, B, combined substantially in the manner and for the purpose specified.

ann for the purpose specified.

80,068 — MACHINE FOR CUTTING OFF NAILS.—M. Gormley,
Wilna, N.Y. Antedated July 7, 1888.

I claim the shank, B, baving arms, H, H, flanges, C, C, and opening, E, in
combination with the sheling cutter, D, rode, G, G, and springs, all constructed, arranged and operating substantially as and for the purpose specified.

80,069.—MACHINE FOR BENDING PIPE.—Thomas J. Harrison

80.069.—MACHINE FOR BENDING PIPE.—Thomas J. Harrison (assignor bimself and Geo. Allin) New York city.

I claim the air infement herein described of the formers, C C, rollers, E E, and bifucated levers, D D, on the platform, A, in the manner substantially as an dfor the purposes described and serve forth.

80,070.—POTATO DIOGER.—Michael Henderson, Detroit, Mich.

I claim, 1st The scoop, A, connected with the bars, J and B, provided with transverse runners, O, and openings, 4, when arranged and operating substantially as and for the purposes set forth.

2d, the cylinders, Hi, bars, K, and belts, I, when operated by belts, F, from pulleys, D, substantially as described, and for the purposes specified.

34. The combination of the above named parts with frame, G, bars, K, brooms or brushes, 3, secured to endless celts, I, axle, N, a d wheels, D, when constructed, arranged and operating substantially as and for the purposes set fortb.

80,071.—INSOLE FOR BOOTS AND SHOES.—Robert Heneage, Buffalo, N.Y., assignor to himself and Ira R, Amsden.

Buffalo, N.Y., assignor to himself and Ira R. Amsden.
I claim an msole for boots and shoes, attached or otherwise, consisting of an air-cu-hion or chamber with suitable attachments, as a new article of

an alrectring of chalmer with suitable attachments, as a new article of manufacture.

Also, constructing the sole with a perforated base plate or stiffener, a, an overlying aircushion, b, and an outer covering, c, the cushion being united with the plate by coment or gine that passes through the periorations and holds on the opposite side, the whole arranged as ascerbed, and operating substantially in the manner and for the purpose specified.

80,072.—CLAW BAR.—Michael Hennasy (assignor to himself, and Jonn Adams) Grawford, N. J.

1 claim the claw bar, B, and fulcrum, E, in combination with the claw bar, A, substantially as and for the purpose specified.

A, substantially as and for the purpose specified.

80,073.—PIANOFORTE.—Hiram Herrick, Boston, Mass.
I claim the improved arrangement of the sounding board, "the wrest-pin" block, and the bridges with respect to the ron frame and the strings, such sound-boards strings, wrest pin block, and bridges, under such an arrangement, being placed underneath the ron frame and a love the strings.

Also, the combination of the two separate cases, A, B, binged together as described, with the action arrunged on the lower one, and the sounding board and strings placed in the upper one as set forth.

Also, the combination of the auxiliary adjuster with the string, the tuning pin, and bridge.

Also, the combination of the auxiliary adjuster with the string, the tuning pin, and bridge.

Also, the improved arrangement of the tuning pins with the strings and the west pin block, or the same and the iron frame, the tuning-pin, under such arrangement, having its head to extend from one side of the said block, and having the string applied to the part which projects from the other side of the block, the whole being substantially as set forth.

80,074—House Shoe.—John A. Heyl (assignor to himself, and John H. Wigners, Boston, Mass

oo,012 -- HORSE Shoe. -- John A. Heyl (assignor to himself, and John H. Wiggits. Boston, Mass 1 claim the connector, B, as described, that is as consisting of the Jaws and toe and heel categoes, arranged, constructed, and combined substantially in the manner and to operate with a hoof and with a shoe constructed essentially as set forth.

ally as set forth.

Also, the shoe as made or provided with toe and heel catch recesses to receive the carches of the jaws of the connector. B, constructed as described. Also, the combination and arrangement of the standard, i, and its screw, g, with the shoe provided with toe and heel recesses to receive the connector, B, made substantially as described.

Also, the combination of the standard, f, and its screw, g, with the shoe, A, and the connector. B, made in manner and so as to operate together substantially as specified.

80,075.—APPARATUS FOR TOWING VESSELS—James Maze Kilner, Chester, England. Patented in England, April 4, 1867.

Kilner, Chester, England. Patented in England, April 4, 1867.

1 claim, 1st, The combination and arrangement of the cleaver and its trunk with the bull of a vessel, so that the cleaver may be operated as described.

2d, The cleaver, constructed as represented in fig. 6, and as hereinbefore-described.

3d, The arrangement of the tow chain, viz., so as to be fastened to a vessel near or below its keel as set forth.

4th, The combination and arrangement of the tow chain and the cleaver of a vessel to be towed, such chain being passed through and out of the cleaver as set forth.

a sect forth.

80,076.—Stovepipe Drum.—J. A. Lakin, Thompsonville, Ct.

1 claim the arrangement of a number of radiating chambers, A, con-ected
to the main pipe by means of the pipes, B and U, and op rated by means of a
damper, D, the parts being combined and arranged together in the manner
herein shown and for the purpose set forth,

80,077.—MEASURING LUMBER.—Clement Littlefield, Kennebunk, Me.

I claim the application of logarithms to a circular movable form, with a
double radius mathematically divided, so that one part works in conjunction with the other, substantially as and for the purposes specified.

tion with the other, substantially as and for the purposes specified.

80,078.—MACHINE FOR SAVING CREAM WHILE CHURNING.—
Milton Love, Corry, Pa.

1 claim the comomation of the air chamber, a a and b b, with the inverted tunnel, dd dd, and the ring, gg, for the purposes herein mentioned.

80,079.—FLOOR CLAMP.—Frederick S. Mack, Galesburg, Ill. I claim the arrangement of the coiled spring, H, for forcing the slide or driver, G, back, and the roller, g, for relieving the driver of friction when operated upon by the lever, F, in clamping the flooring, in the manner as herein shows; and set forth.

80,020.—REFRIGERATOR.—John Martin (assignor to himself and Jacob Jamison) Philadelphia, Pa

and Jacob Jamison) Philadelphia, Pa
I claim the ice-box or reingerator, A, having the ice trough, B, arranged along its center, with an op-n space on each side, with the drip speut, D, located thereunder, and both connected with the reservoir, G, and having the receptacles, C, all arranged substantially as shown and described.

80,081.—MACHINE FOR PUNCHING LEATHER STRAPS FOR FLY

SU, US1.—MACHING FOR PUNCHING LEATHER STRAPS FOR FLY NETS.—John Matheis, Ottawa, Ill.

I claim, 1st, The pulley, D, the brass rim, E, the hollow punches, M M, the rod, L. the pitman, J, and the crank I, when combused with each other in a machine for punching straps for fly nets, and constructed substantially as and for the purpose described in the foregoing specification.

21, The ratchet wheel, O, the pawl. P, the lever, Q, the rod, P, the crank, H, the pawl, S, and the eccentric, T, when combined with each other in a machine for punching leather straps for fly nets, substantially as and for the purpose described.

3d, The elastic guide, V, when applied to a machine for punching leather straps for fly nets, substantially as and for the purpose described.

80,082.—VALVE GEAR FOR STEAM HAMMERS.—F. B. Miles,

(assignor to Bement & Dougherty) Philadelphia, Penn.
I claim the slotted lever, G, arranged to slide and vibrate on an adjustable fulcrum, and constructed and operating in connection with the ran of a steam harmer or with the piston rod or other reciprocating part of a steam harmer or engine, substantially as and for the purpose set forth.

80,083.—MACHINE FOR ROLLING HOES BLANKS.—S. A. Mil-

80,083.—MACHINE FOR ROLLING HOES BLANKS.—S. A. Millard, Clay ville, N. Y.

I claim, ist, The construction of the projecting dies, o o, together with their arrangement on the projecting portions of the revolving rolls, B. C., as described, said dies being for the purpose of spreading the blank laterally in the manner described.

2d, This construction of the projecting dies, f. t. together with their arrangement on the projecting portions of the revolving rolls, B. C., as described, said dies being for the purpose of spreading the blank laterally and giving form to the rib on the surface of the hec, in the manner described.

3d The construction of the projecting dies, t. t. together with their arrangement on the revolving rolls, B. C., as described, and dies being for the purpose of spreading the metal to form the cars of the hoc, in the direction and in the manner described.

4th, In combination with the rotary rolls, B. C., a set of platting dies, m. m2, constructed as specified, the whole arranged to operate as described for the purpose set forth.

5th, The employment, in combination with a set of rolary dies, of adjusting guides, arranged on the 13c9 of the roll, and operating to effect the adjustment and retention of the blank, substantially as hereinbefore described.