

No. 13,356. Improvements on Car Door Hangers. (*Perfectionnements aux portières des portes de chars.*)

Dennis F. Van Liew, Aurora, Ill., U. S., 2nd September 1881: for 5 years.

Claim.—1st. The combination with the car and its door, of the ball or balls confined in sockets equal, or essentially equal, in length to the distance travelled by the balls in the operation of the door. 2nd. The combination with the door sliding upon rollers or balls confined in long sockets, of the support *c c*, one or both, for supporting the edges of the door. 3rd. The combination of the door and its supporting rollers the projection *c* upon the inner side of the carrier, for forcing the door against the car side.

No. 13,357. Improvements on Shoe Button Fasteners. (*Perfectionnements aux machines à poser les boutons des chaussures.*)

Alexander G. Wilkins, Cooperstown, Pa., U. S., 2nd September 1881: for 5 years.

Claim.—The combination tool described, composed of the pivoted jaws having bifurcated gripping openings *d* arranged at right angles to each other, the pivotedawl provided with a stop *a* and the telescopic button hook sliding in and out of the hollow handle portion.

No. 13,358. Improvements in Exhaust and Blowing Fans. (*Perfectionnements aux aspirateurs-ventilateurs.*)

William W. Green and Lewis G. Stark, Chicago, Ill., U. S., 2nd September 1881: for 5 years.

Claim.—1st. A double fan having the wings or blades forming the fan wheels proper placed on the same shaft and arranged alternately in the plane of revolution relative to each other, combined with an inclosing case which has a central air inlet common to both of said fans. 2nd. In a double fan, the blades whereof are arranged in alternate planes described, the combination, with two or more fan wheels located on the same shaft, of the central inlet or receiving passage *a*, and the outlet or discharge passages *a' a'*. 3rd. In combination with the cylindrical casing *A* provided with the central receiving inlet *a* and the discharge outlets *a' a'*, the shaft *B*, the arms *a* and the series of fan wings *D D*.

No. 13,359. Improvements on Spark Arresters. (*Perfectionnements aux arrête-flammèches.*)

Hugh McKenzie, Caro, Mich., U. S., 2nd September 1881: for 5 years.

Claim.—1st. In combination with the smoke stack *H* and the hood *B* tightly fitting the stack *A* at its lower end, the enclosed double deflector *c* provided with two separate curved passages *a a* and having straight flat sides. 2nd. The combination, with the stack *A*, hood *B* and inclined deflector *C* having separate passages *a a*, of the curved incline inlet pipe *D* adapted to cause the water to flow around the smoke stack and the outlet *E*.

No. 13,360. Improvements in the Manufacture of Wood Pulp. (*Perfectionnements dans la fabrication de la pâte à papier.*)

Stephen M. Allen, Duxbury, Mass., U. S., 2nd September, 1881: for 5 years.

Claim.—1st. The method of preparing pulp for transport by crimping and filling the sheets as they come from the machine, and afterwards drying the same. 2nd. A crimped or filled sheet of paper pulp made from pure wood, or wood mixed with other fibre and dried. 3rd. In dried porous paper-pulp of wood fibre, or wood and other fibre mixed, said pulp containing the gelatinous or albuminous matter in a soluble condition, and being capable of ready disintegration.

No. 13,361. Improvements on Revolving Nets. (*Perfectionnements aux filets tournants.*)

Thornon F. Williams, Lower Cascades, W. T., U. S., 2nd September 1881: for 5 years.

Claim.—1st. In a revolving dip net, the box nets *L* constructed with holes *M* at their inner ends, whereby the fish are discharged. 2nd. The nets *L* secured to arms of shaft *E* having an opening at the front except at the inner part, for the inlet of the fish, and at the rear an opening for their outlet. 3rd. The combination, with a rotary wheel having nets *L* with discharge openings *M* near the hub, and having the inner part inclined toward said openings, of a receptacle *J*.

No. 13,362. Improvements on Catapults for Seal Fishing. (*Perfectionnements aux catapultes pour la pêche du phoque.*)

William Munsie, Victoria, B. C., 2nd September, 1881: for 5 years.

Claim.—The combination of the stock *A*, rubber *B*, cross bar *C*, trigger *D*, spring *E*. The combination of the lance *G*, jointed barbs *H H*, shaft *F* with socket.

No. 13,363. Improvements in Telephones. (*Perfectionnements aux téléphones.*)

The Canadian Telephone Company, Montreal, Que., (Assignee of George L. Anders, Boston, Mass., U. S.) 2nd September, 1881: for 5 years.

Claim.—1st. The method of producing, in a conductor, electrical undulations corresponding in form to sound waves by vibrating, by said sound waves in proximity to said conductor, a body charged with electricity, whereby the electricity of the conductor is caused to be redistributed. 2nd. The method of producing, in a conductor, electrical undulations corresponding in form to sound waves by vibrating a conductor in the presence of an insulated charged conductor, whereby a redistribution of electricity is caused in said conductors and in others

in inductive proximity thereto. 3rd. The combination of a metallic plate *A* charged to a constant potential and capable of being vibrated by sound waves, a metallic plate *B* in proximity to said plate *A*, but electrically insulated therefrom, a conductor connected to the plate *B*, and a telephonic receiver, or other apparatus capable of being affected by electrical undulations and reproducing sound waves corresponding in form to said electrical undulations connected to the conductor. 4th. The combination of the case *E*, the diaphragm *H*, the series of metallic plates *a a a* separated from one another by the insulating plates *b b b*, said metallic plates being connected in alternate series and having one series charged to a constant potential, and the other series connected to the line, and means for compressing said plates to a greater or less degree. 5th. A telephonic receiver composed of a case *E*, a diaphragm *H*, two or more metallic plates, each insulated from the one next to it and having one plate or series connected to a conductor, whose potential is varied and the other plate or series connected to earth.

No. 13,364. Improvements on Carriage Springs. (*Perfectionnements aux ressorts des voitures.*)

Edward Spaulding, Brooklyn, N. Y., U. S., 2nd September, 1881: (Extension of Patent No. 9,886.)

No. 13,365. Improvements on Carriage Springs. (*Perfectionnements aux ressorts des voitures.*)

Edward Spaulding, Brooklyn, N. Y., U. S., 3rd September, 1881: (Extension of Patent No. 9,886.)

No. 13,366. Improvements on Overshoes. (*Perfectionnements aux souliers pardessus.*)

John H. McMechan, London, Ont., 4th September, 1881: (Extension of Patent No. 6,493.)

No. 13,367. Improvements on Drill Chucks. (*Perfectionnements aux mandrins des forets.*)

Augustus E. Ellinwood, Akron, Ohio, U. S., 4th September, 1881: for 5 years.

Claim.—1st. The combination of the screw-threaded and longitudinally slotted stock, the clamping jaws working loosely therein and having the outwardly projecting shoulders and the two screw-threaded rings working on the stock between and against the shoulders of the jaw. 2nd. The combination of the screw-threaded and slotted stock, the clamping jaws working loosely therein and provided with springs for forcing them outward, and the two screw-rings working between and against the shoulders of the jaws. 3rd. The combination of the screw-threaded and slotted stock, the jaws and the clamping screw-rings, when said jaws are formed with the cutting points. 4th. The combination of the screw-threaded and slotted stock, the jaws having the cutting or counter-sinking points, with the drill clamped by said jaws and the clamping screw-rings.

No. 13,368. Improvements on Hydrocarbon Burners. (*Perfectionnements aux foyers à hydrocarbures.*)

Charles Holland, Chicago, Ill., U. S., 4th September, 1881: for 5 years.

Claim.—1st. In an apparatus for burning fluid hydrocarbons with steam and air, the combination of two or more pairs of separate retorts so connected by tubes with a hydrocarbon fluid and water supply, and with jet tubes from which the resultant gases or vapours and steam are burned that one retort of each pair shall be supplied with water or steam, and the other retort of each pair shall be supplied with hydrocarbon fluid, and the gas or vapour and steam generated in the other pair or pairs of retorts, shall heat the furnace. 2nd. The combination of separate retorts, connected in pairs and delivering steam and hydrocarbon gas or vapours into the same pipe, and a series of jet-tubes delivering jets of mixed steam and gas or vapour through conical air tubes leading into an inclosed combustion chamber. 3rd. In an apparatus for burning hydrocarbon fluids in combination with steam and air, the combination of jet tubes delivering jets of mixed steam and gas or vapour in a heated state with distributing-pipes protected by troughs and extending into conical air tubes leading into an inclosed furnace. 4th. The construction and form of retorts, adapted to be arranged in pairs and held in position in a furnace by supporting pillars and lugs. 5th. The combination, with a series of separate retorts arranged in pairs, for the burning of hydrocarbon fluid with the steam and air, a priming or starting pan located under one of the retorts, the pair of retorts supplying the heating jets to the retorts.

No. 13,369. Improvements on Friction Gears. (*Perfectionnements aux appareils de friction.*)

James Herron, Philadelphia, Pa., U. S., 4th September, 1881: for 5 years.

Claim.—1st. In combination with a drum mounted loosely upon a driving shaft, the fixed disk *E* and the movable disk *F*, said disks being provided with the frictional surfaces. 2nd. In combination, the drum having wooden faced wheels or flanges *L*, the fixed disk *E*, the movable disk *F* and means for locking said movable disk and driving shaft and maintaining it in frictional contact with the drum. 3rd. In combination, with the drum and the movable disk *F* adapted for frictional contact therewith, and provided with a slot *7*, the key *10* working in the slot *8* in the driving shaft, and means in engaging such key, with said slot *7*. 4th. In combination with the driving shaft having the slot *8* and central bore *9*, the key *10* working in such slot, and pin *12*, and the lever *13*.

No. 13,370. Improvements on Rails and Railway Telegraphs. (*Perfectionnements aux rails et aux télégraphes des railroads.*)

Peter Bargion, Black Diamond, Cal., U. S., 4th September, 1881: for 5 years.

Claim.—1st. The combination, in a compound rail, of the lower sections *A* secured centrally to the sleepers, and upper sections *B*, each