

steam by way of the supplementary passage *a*. 2nd. The improved blast pipe, constructed substantially as herein described and having a central steam nozzle *a*, an annular steam-passage *a* surrounding the same, an intervening passage *a* for the conduct of the air or other gases to be operated on, and means, such as the movable ported face *a* for partially or wholly intercepting the escape of steam through the steam passages *a*, whilst correspondingly augmenting or concentrating the delivery through the passage *a*. 3rd. In a blast pipe, provided with a central steam nozzle and surrounding annular steam passage, the improved means, substantially as herein described, for enabling a portion of the steam to escape by way of the latter passage, such means, consisting of a casing *a*, mounted to rotate upon its face *a*, and to open communication from the main pipe *a*, through the passages *a* and ports *a* to the interior of the casing *a*. 4th. For use in, and in combination with, the smoke-box of a locomotive, or similar fire-tube boiler, the improved blast-pipe, substantially as herein described, and having at about the level of the lower fire-tubes openings on all its sides, for the admission to the passage *a* of the air or other gases to be exhausted or operated on. 5th. For use in and in combination with the smoke box of a locomotive or similar fire tube boiler, a blast pipe, having a central steam nozzle *a*, a surrounding annular steam passage *a*, and an intervening air passage *a*, the inlet to the latter being arranged at about the level of the lower fire tubes, and being provided with means, such as the movable ported face *a*, whereby the admission of air to the passage *a* may be partially or wholly intercepted.

**No. 30,319. Manufacture of Laminated Springs. (Fabrication des ressorts laminés.)**

Warnock and Co. (assignees of William E. Rothwell), Ont., U.S., 1st December, 1888; 5 years.

*Claim*.—As an improvement in the manufacture of laminated springs, the placing of each plate *C* between the dies *A* and *B*, which are suitably fitted into a drop press or other suitable machine, and have the recess *a* and projection *b* made in their face, so that when the said dies are brought together upon the plate *C* they shall form in the said plate the recess *d* and projection *e*, substantially as and for the purpose specified.

**No. 30,320. Steam Engine.**

(Machine à vapeur.)

The American High Speed Engine Company (assignee of George F. Swain, Calvin L. Swain, William G. Worth and John D. Worth), Cedar Rapids, Iowa, U.S., 1st December, 1888; 5 years.

*Claim*.—1st. In a steam engine, the cylinders and piston of which have a reciprocating motion perpendicular to each other within a rectangular shell, the combination of an exhaust port wholly within said shell, and adapted to be opened and closed by the movement of the cylinders, steam ports similarly adapted to be opened and closed at their lower extremities, and at their upper ends terminating in separate steam passages in a steam chest, and adapted to be opened and closed at this end by the independent action of a valve having a reciprocating motion through suitable mechanism, substantially as and for the purpose set forth. 2nd. In an engine of the class specified, the combination of the shell having the exhaust port *G* isolated from the steam chest, and the separate steam ports opening at the lower ends in opposite sides of the shell, and at the upper ends into separate passages in a steam chest, the steam chest *M* provided with the valve *N*, and means, substantially as specified, for imparting independent reciprocating motion to said valve, substantially as and for the purpose set forth. 3rd. In a steam engine of the class specified, the combination, with the outer rectangular shell, within which the cylinders reciprocate perpendicularly to the motion of the piston cylinders, joined closely together in the middle at the top and bottom, with an opening in the side for the crank shaft, and provided with a socket at the top and bottom, a wedge-shaped plug in said socket, and a spring adapted to force said plug toward the narrower part of the socket, whereby said cylinders are forced apart and automatically adjusted endwise, substantially as set forth. 4th. In an engine, of the class specified, the combination of the parts *N*, *S*, *E*, *E*, having the bridges *b*, *b*, one of said bridges forming one half of the box for the crank pin, and the other with a recess adapted to receive the other half of the box *h*, wedges in said recess between the half box and the bridge, and means, substantially as specified, for setting up said wedges for the adjustment of said box. 5th. In an engine, of the class specified, the combination of the shell enclosing the working parts of the engine, a hollow base thereof adapted to hold oil and water, and a separating medium between the interior of the said oil and the base to prevent agitation of the oil, but perforated to allow the oil to flow up into the shell, as raised by the water in the base, substantially as specified. 6th. In an engine, of the class specified, the combination of the reciprocating cylinder *O*, having an annular groove in the end thereof, and an adjustable ring seated in said groove, substantially as and for the purpose set forth.

**No. 30,321. Boot and Shoe Clasp.**

(Agrafe de chaussure.)

Abondius Chapedelaine, Nicolet, Que., 1st December, 1888; 5 years.

*Resumé*.—Une agrafe de chaussure dans laquelle une attache composée des morceaux en H, A, A et B, réunis fixés sur la partie recouverte D de l'empeigne de la chaussure et d'un ardoillon C ayant une largeur pour passer sous la barre transversale G de l'attache et fixé à la partie recouverte I, le tout tel que ci dessus représenté et décrit.

**No. 30,322. Pulley. (Poulie.)**

Edward C. Stearns, Syracuse, N. Y., U.S., 1st December, 1888; 5 years.

*Claim*.—1st. As an improved pulley frame *a*, having solid sides of substantially an inverted U-shape, cast integral with the boss *a* for receiving the suspending eye, and with the journals *b* and strengthened

webbs *b*, the latter extended down the sides of the frame at the parting line of the casting mould, substantially as herein shown and described. 2nd. As an improved article of manufacture, the herein described pulley, consisting of the frame *a*, having the boss *a*, journals *b* and webbs *b* cast integral therewith, in the manner described, and the wheel *c*, having its hub *c* connected to the rim by a solid web *c*, the removable pin *d* and split key *d*, substantially as set forth.

**No. 30,323. Mechanism for Transmitting Motion. (Mécanisme de transmission du mouvement.)**

George F. Evans, Somerville, Mass., U.S., 1st December, 1888; 5 years.

*Claim*.—1st. In combination, with two oppositely disposed conical pulleys 2, 3, adapted to grip an endless band 4, which loosely encircles one of said pulleys, the screw-threaded shaft 12, guide-rod 16 and the screw-nut 14 adapted to receive the band, and adapted to travel onwise of the pulleys, whereby the belt may be positioned, substantially as described. 2nd. In a device for transmitting motion from one conical or tapering pulley to another, by pressure of said pulleys upon a band arranged to pass between them, the pulleys 2, 3, reduced in diameter at adjacent portions to form the annular recess 17, combined with an endless band which loosely encircles one pulley, and is adapted to enter said recess, when motion is not to be transmitted, substantially as herein specified. 3rd. In combination with the pulley 2 in fixed bearings, the pulley 3 in movable bearings and the endless band 4 which passes therebetween, the horizontal slotted boxes 19, the shafts 22 having screw-threaded ends engaging and moving said journal boxes, the mitre-gears 23 on the other ends of said shafts, and the shaft 25 carrying additional mitre gears 24, meshing therewith, by which the pulley 3 is adjustable in paths of movement transversely of the axis of support of the pulley 2, to increase or diminish the grip upon the band, as herein stated. 4th. The combination with the pulley 2 in fixed bearings, the pulley 3 in movable bearings, and the endless band 4 which passes therebetween, the mechanism, as described, composed of the shaft 34, with its inclined projections or wedges 35 adapted to wipe the supports of said pulley 3, and the actuating hand-wheel 36, whereby movement of the pulley 3 is effected transversely of the axial support of the co-operating pulley 2, to increase or diminish the frictional pressure upon the band, substantially as described.

**No. 30,324. Machine for Fastening Traces to Whiffletrees. (Machine pour attacher les traits aux palonniers.)**

William J. Stitt, Smith's Falls, Ont., 1st December, 1888; 5 years.

*Claim*.—The combination of the rod *A*, the button *B* and the spring *C*, substantially as and for the purpose hereinbefore set forth.

**No. 30,325. Dress Extender. (Forme de jupon.)**

Alain C. Macdonald, Montreal, Que., 1st December, 1888; 5 years.

*Claim*.—The combination of the pieces *D* and *E*, joined together by the clasps *A* and *B*, and held at a wished for length by the catch *C*, or any other means or process, the whole as above described and substantially as and for the purpose hereinbefore set forth.

**No. 30,326. Power Machine Specially Applicable to Elevators. (Force mécanique applicable spécialement aux ascenseurs.)**

James Lawrence, Chiswick, N.S.W., 1st December, 1888; 5 years.

*Claim*.—1st. So constructing them that each end of a ram may receive independent power or pressure in the same direction, substantially as herein described and explained. 2nd. So constructing them that a hollow rod supports a fixed piston head within a hollow ram, and allows of the passage of the power through it to act between said piston-head and the internal end of said ram, substantially as herein described and explained. 3rd. The combination and arrangement with a fixed cylinder, having stuffing box and gland, of a hollow ram having a blank inside end, and whose interior slides upon a fixed piston to form an extra and independent pressure cylinder, substantially as herein described and explained. 4th. The particular combination and arrangement of parts forming a multiplying hydraulic elevator power machine, substantially as herein described and explained and as illustrated in the drawings.

**No. 30,327. Attachment of Eye-Glasses to Head Apparel. (Appareil pour attacher les lunettes aux coiffures.)**

William H. Brownlow, Brockville, Ont., and Joel S. Warner, Ogdensburg, N. Y., U.S., 1st December, 1888; 5 years.

*Claim*.—1st. The combination, with the attaching plate having lugs, of a spindle journalled in said lugs, and provided with a coiled friction spring bearing at its outer end against one of said lugs, and the eye-glasses depending from the attaching plate, substantially as set forth. 2nd. The combination, with the attaching plate, of an eye-glass frame, and a lazy tongs connected to the said plate and frame, substantially as set forth. 3rd. The combination, with the attaching plate, having a spindle journalled on its lower or under side, of an eye-glass frame and a lazy tongs connected to the said spindle, and to the spring of the eye-glass frame, substantially as set forth. 4th. The combination, with the attaching plate, having lugs on its under face of the spindle, journalled in said lugs and provided at one end with a coiled spring bearing at its outer end against the adjacent lug of the attaching plate, lazy tongs connected to the attaching plate and an eye-glass frame attached to the other end of the lazy tongs, substantially as set forth.