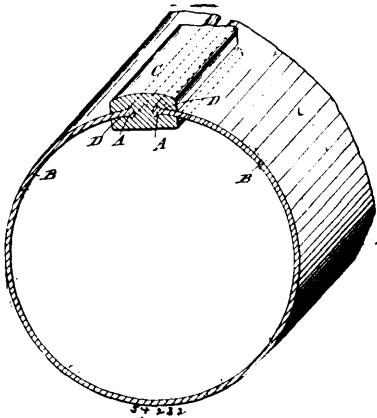


screen having tubular journals, central inlet and outlet openings, a conveyer rotating interiorly of but non-contiguous to the screen, a vat for the screen and dams in said vat, of a secondary rotary screen, a vat therefor, a shelf beneath the screen fixed to three sides of the vat, and an upraised lip or dam in part along the unattached edge of said shelf to control the liquid level in said screen, substantially as set forth. 4th. In wood pulp refining apparatus, a revoluble screen with inlet and outlet openings, a vat to contain said screen, and a conveyer rotating with but non-contiguous to said screen, combined with a second screen revolving in unison with the first, a plurality of peripheral ribs interiorly attached to said screen, a lifting device at the tail end of said screen, a shelf attached to three sides of the vat and horizontally beneath said second screen, a dam or vertical lip extending from the tail end of the vat in part along the unattached edge of said shelf, dams in the first vat to control the liquid level in the primary screen, and a shower pipe in the second screen, substantially as explained.

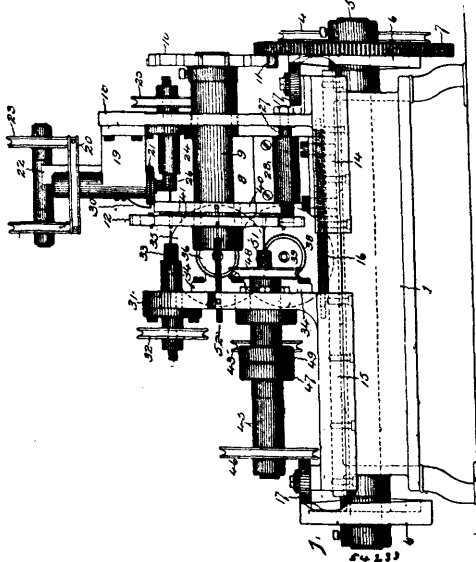
No. 54,232. Means for Joining Metal Plates. (*Moyen d'unir des plaques métalliques.*)



Mephan Ferguson, Melbourne, Victoria, Australia, 2nd December, 1896; 6 years. (Filed 20th October, 1896.)

Claim.—The herein described means for joining the edges of metal plates or sheets to each other, consisting essentially in forming an enlargement on each edge of the plates or sheets to be joined together and in a metal bar or strip having a deep groove or recess on each side to receive the enlarged edges of said plates or sheets, substantially as herein described and explained and as illustrated in the accompanying drawing.

No. 54,233. Machine for Forming Nipples. (*Machine pour faire des mamelons.*)

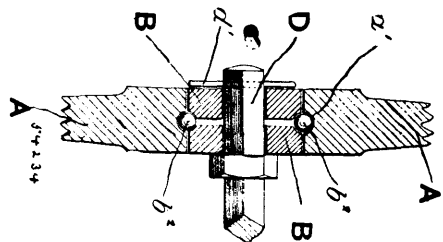


The Pope Manufacturing Co., Portland, Maine, assignee, of Arthur J. Jacobs, Hartford, Connecticut, both in the U.S.A., 2nd December, 1896; 6 years. (Filed 27th October, 1896.)

Claim.—1st. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for im-

parting to the carrier an intermittent rotary movement, carriages movable upon the bed toward and from each side of the carrier, mechanisms for moving the carriages, operating tools mounted upon the carriages, and means for rotating the tools, substantially as specified. 2nd. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for imparting to the carrier an intermittent rotary movement, carriages movable upon the bed toward and from each side of the carrier, mechanisms for moving the carriages, cutting, boring and threading tools mounted upon the carriages, mechanisms for rotating the tools, and a part borne by one of the carriages and adapted to engage with and lock the carrier when the carriages are moving up and disengage from and unlock the carrier when the carriages are moving away, substantially as specified. 3rd. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for imparting to the carrier an intermittent rotary movement, carriages movable upon the bed toward and from each side of the carrier, mechanisms for moving the carriages, means for rotating the tools, and a part borne by one of the carriages and adapted to eject a finished nipple from the carrier when the carriages move up, substantially as specified. 4th. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for imparting to the carrier an intermittent rotary movement, a carriage movable upon the bed toward and from the carrier, mechanisms for moving the carriage, milling cutters arranged on the carriage so as to operate when the carriage is moved up, in one part of the path of travel of the blanks, milling cutters arranged on the carriage so as to operate when the carriage is moved up, in another part of the path of travel of the blanks, whereby the blanks are given a partial revolution while passing from one set of mills to the other, and means for rotating the mills, substantially as specified. 5th. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for imparting to the carrier an intermittent rotary movement, a carriage movable upon the bed toward and from the carrier, mechanisms for moving the carriage, milling cutters arranged on the carriage so as to operate when the carriage is moved up, in one part of the path of travel of the blanks, milling cutters arranged on the carriage so as to operate when the carriage is moved up, in another part of the path of travel of the blanks, whereby the blanks are given a partial revolution while passing from one set of mills to the other, means for rotating the mills, and a projecting guide connected with the bed and adapted to engage the ends of the blanks and prevent them from rotating in the holding perforations while they are making the partial revolution from one set of the mills to the other, substantially as specified. 6th. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for imparting to the carrier an intermittent rotary movement, a carriage movable upon the bed toward and from the carrier, mechanisms for moving the carriage, and a saw, drill and locking rod borne by the carriage, substantially as specified. 7th. In a machine for forming nipples, in combination, a blank-carrier rotarily supported upon the bed, mechanisms for imparting to the carrier an intermittent rotary movement, a carriage movable upon the bed toward and from the carrier, mechanisms for moving the carriage, and two sets of slabbing mills, a tap and an ejecting rod borne by the carriage, substantially as specified. 8th. In a machine for forming nipples, in combination, a disk with transverse perforations rotarily supported upon the bed, a star wheel connected with the disk, mechanisms adapted to intermittently rotate the star wheel, carriages movable back and forth upon ways on the bed on each side of the disk, cams for moving the carriage backward, one of said carriages bearing a saw, a drill and a locking rod and the other of said carriages bearing two sets of mills, two drills, a tap and an ejecting rod, said forming tools being connected with means for rotating them as they move with the carriages up to the blank-carrier disk, substantially as specified.

No. 54,234. Wheel Bearing. (*Coussinet de roue.*)



David Roper and Benjamin Crowther, both of West Bromwich, Stafford, England, 2nd December, 1896; 6 years. (Filed 18th November, 1896.)

Claim.—The improvements in the bearings of wheels consisting of the supplemental centre piece or pieces, with suitable provision such as the square hole for attachment to a spindle with provision for one or more rows of balls, substantially as hereinbefore described and shown on the accompanying sheets of drawings.