

No. 29,101. Harp. (Harp.)

John C. Dietz, Brussels, Belgium, 7th May, 1883; 5 years.

Claim.—1st The use, for playing on a harp, of a mechanical finger with angular pulling part *re*, fixed rigidly to a sliding block *W* and so arranged in combination with a key that, on the depression of the latter, the said finger is made to pull the string of the harp so as to sound it, and is then pushed or pulled to one side by the action of a weight or spring so as to escape the string as it moves back again, the part *re* being afterwards made to resume its original position behind the string by an incline, or equivalent device, substantially as herein described. 2nd. In a mechanical finger, such as *re*, connected by a spring *7* to the finger, and so arranged that, on drawing forward the finger sharply, the inertia of the weight will cause the spring to exercise pressure upon the finger in order to produce a loud tone, while, on drawing this forward gently, the weight will move so as to reduce the pressure of the spring and thereby produce a soft tone, substantially as herein described. 3rd. In combination with a harp, a keyboard *K*, keys *L*, fingers *re*, escapement *Z*, recovery mechanism *e*, *d*, *dt*, sound regulating mechanism *e*, *f*, *p*, dampers *l*, *n* and damper operating pedals *l*, *q*, substantially as herein shown and described and for the purpose stated. 4th. In combination with a harp, a keyboard *K* and keys *L*, provided with mechanism for sounding the cords or strings, consisting of a pillar *M* fixed to the keys *L*, stops *R*, *S*, a pin *N* at the upper end of the pillar, a block *X* placed on the pin *N*, said block *X* being connected to the block *W* by a distance regulating pin *Y*, a cord playing finger *re* fixed to block *W*, inclined recovery piece *e* fixed to block *Y*, and guides *d*, *dt*, substantially as herein shown and described and for the purpose stated. 5th. In combination with a harp, a keyboard *K* and keys *L*, provided with a pillar *M*, carrying a pin *N* at its upper end, on which the cord sounding apparatus and dampers are mounted, substantially as herein shown and described and for the purpose stated.

No 29,102. Process of and Apparatus for Dyeing, Scouring, Bleaching and otherwise Treating Yarn in Cops. (Procédé de séchage, nettoyage, blanchiment et de traitement général des fils en écheveaux)

August Graemiger, Warwick, R.I., U.S., 7th May, 1883; 5 years.

Claim.—1st. The continuous process of dyeing, scouring, bleaching or otherwise treating a series of cops hereinbefore described, which consists in the contemporaneous but distributive subjection of said cops, each in turn, to its appropriate step of the following contemporaneously conducted successive steps or operations, namely: first, saturation or impregnation by sucking or forcing dyeing, bleaching or other selected liquids through given cops, and second, substitution of cops to be impregnated for given impregnated cops, substantially as set forth. 2nd. The continuous process of dyeing, scouring, bleaching or otherwise treating a series of cops, hereinbefore described, which consists in the contemporaneous but distributive subjection of said cops, each in turn, to its appropriate step of the following contemporaneously conducted successive steps or operations, namely: first, saturation or impregnation by sucking or forcing dyeing, bleaching or other selected liquids through given cops, second, liquid exhaustion by forcing or sucking air, or other suitable fluid, through given impregnated cops, and third, substitution of cops to be impregnated and liquid exhausted for given impregnated and liquid exhausted cops, substantially as set forth. 3rd. The continuous process of liquid exhausting a series of cops, hereinbefore described, which consists in the contemporaneous but distributive subjection of said cops, each in turn, to its appropriate step of the following contemporaneously conducted successive steps or operations, namely: first, liquid exhaustion by forcing or sucking air, or other suitable fluid, through given cops, and second, substitution of cops to be liquid exhausted for given liquid exhausted cops, substantially as set forth. 4th. The continuous process of dyeing with easily oxidizable liquid dyes a series of cops, hereinbefore described, which consists in the contemporaneous but distributive subjection of said cops, each in turn, to its appropriate step of the following contemporaneously conducted successive steps or operations, namely: first, air exhaustion by sucking air from out given cops to be dyed, second, saturation or impregnation by sucking or forcing dyeing liquid through given air exhausted cops, and third, substitution of cops to be air exhausted and impregnated for given air exhausted and impregnated cops, substantially as set forth. 5th. The continuous process of dyeing with easily oxidizable liquid dyes a series of cops, hereinbefore described, which consists in the contemporaneous but distributive subjection of said cops, each in turn, to its appropriate step of the following contemporaneously conducted successive steps or operations, namely: first, air exhaustion by sucking air from out given cops to be dyed, second, saturation or impregnation by sucking or forcing dyeing liquid through given air exhausted cops, third, liquid exhaustion by forcing or sucking air or other suitable fluid through given air exhausted and impregnated cops, and fourth, substitution of cops to be air exhausted, impregnated and liquid exhausted for given air exhausted, impregnated and liquid exhausted cops, substantially as set forth. 6th. In combination, a rotatable cop carrier having perforations in communication with which cops are applied to said carrier, and one or more fixed conduits over the mouths of which the perforations of the carrier are caused to present as the carrier is caused to rotate, substantially as and for the purposes specified. 7th. In an apparatus for dyeing, bleaching or otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, and fourth, a dead face, substantially as set forth. 8th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, and fourth, a liquid exhausting conduit in communication with a liquid exhausting pump, substan-

tially as set forth. 9th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, fourth, a liquid exhausting conduit in communication with a liquid exhausting pump, and fifth, a dead face, substantially as set forth. 10th. In an apparatus for treating yarn in cops, the following instrumentalities in combination, first, a fixed frame-work, second, a perforated rotatable cop carrier, and third, a liquid exhausting conduit in communication with a liquid exhausting pump, substantially as set forth. 11th. In an apparatus for treating yarn in cops, the following instrumentalities in combination, first, a fixed frame-work, second, a perforated rotatable cop carrier, third, a liquid exhausting conduit in communication with a liquid exhausting pump, and fourth, a dead face, substantially as set forth. 12th. In an apparatus for treating yarn in cops, the following instrumentalities in combination, first, a fixed frame-work, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, fourth, a dead face, and fifth, mechanism essentially, for instance such as set forth, for imparting to the cop carrier a predetermined movement relative to the frame-work liquid exhausting conduit and dead face, substantially as set forth. 13th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, fourth, a dead face, and fifth, mechanism essentially, for instance such as set forth, for imparting to the cop carrier a predetermined movement relative to the tank charging conduit and dead face, substantially as set forth. 14th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, fourth, a liquid exhausting conduit in communication with a liquid exhausting pump, fifth, a dead face, and sixth, mechanism essentially, for instance such as set forth, for imparting to the cop carrier a predetermined movement relative to the tank charging conduit, liquid exhausting conduit and dead face, substantially as set forth. 15th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, a charging conduit in communication with a charging pump, fourth, a dead face, fifth, a carrier body, and sixth, mechanism essentially, for instance such as set forth, for imparting to the cop carrier a predetermined movement relative to the tank charging conduit and dead face, substantially as set forth. 16th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, an air exhausting chamber in communication with an air exhausting device, fourth, a charging conduit in communication with a charging pump, fifth, a dead face, and sixth, a carrier body, substantially as set forth. 17th. In an apparatus for dyeing yarn in cops, the following instrumentalities in combination, first, a fixed tank, second, a perforated rotatable cop carrier, third, an air exhausting chamber in communication with an air exhausting device, fourth, a charging conduit in communication with a charging pump, fifth, a liquid exhausting conduit in communication with a liquid exhausting pump, sixth, a dead face, and seventh, a carrier body, substantially as set forth. 18th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a tank to contain dyeing, bleaching or other desired liquid, second, a perforated rotatable cop carrier adapted to be supplied with removably applied cops, third, a charging conduit in exterior communication with a suction or pressure pump and in interior communication with given perforations in the cop carrier, fourth, a dead face to act in connection with other given perforations of the cop carrier, and fifth, suitable means, such, for instance, as the carrier body *B*, for maintaining the foregoing instrumentalities in their given relative disposition, substantially as set forth. 19th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a tank to contain dyeing, bleaching or other desired liquid, second, a perforated rotatable cop carrier, adapted to be supplied with removably applied cops, third, a charging conduit in exterior communication with a suction or pressure pump, and in interior communication with given perforations in the cop carrier, fourth, a liquid exhausting conduit, in exterior communication with a liquid exhausting pump, and in interior communication with other given perforations in the cop carrier, fifth, a dead face, to act in connection with yet other given perforations of the cop carrier, and sixth, suitable means, such, for instance, as the carrier body *B* for maintaining the foregoing instrumentalities in their given relative disposition, substantially as set forth. 20th. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a tank to contain dyeing, bleaching or other desired liquid, second, a perforated rotatable cop carrier, adapted to be supplied with removably applied cops, third, a charging conduit in exterior communication with a suction or pressure pump, and in exterior communication with given perforations in the cop carrier, fourth, a dead face to act in connection with other given perforations of the cop carrier, and fifth, a carrier body, with reference to which the cop carrier rotates, which has a chamber in communication with the charging conduit, and which also embodies the aforesaid dead face, substantially as and for the purposes set forth. 21st. In an apparatus for dyeing, bleaching and otherwise treating yarn in cops, the following instrumentalities in combination, first, a tank to contain dyeing, bleaching or other desired liquid, second, a perforated rotatable cop carrier adapted to be supplied with removably applied cops, third, a charging