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(54) **CLEANING APPARATUS FOR MOUSE PAD**

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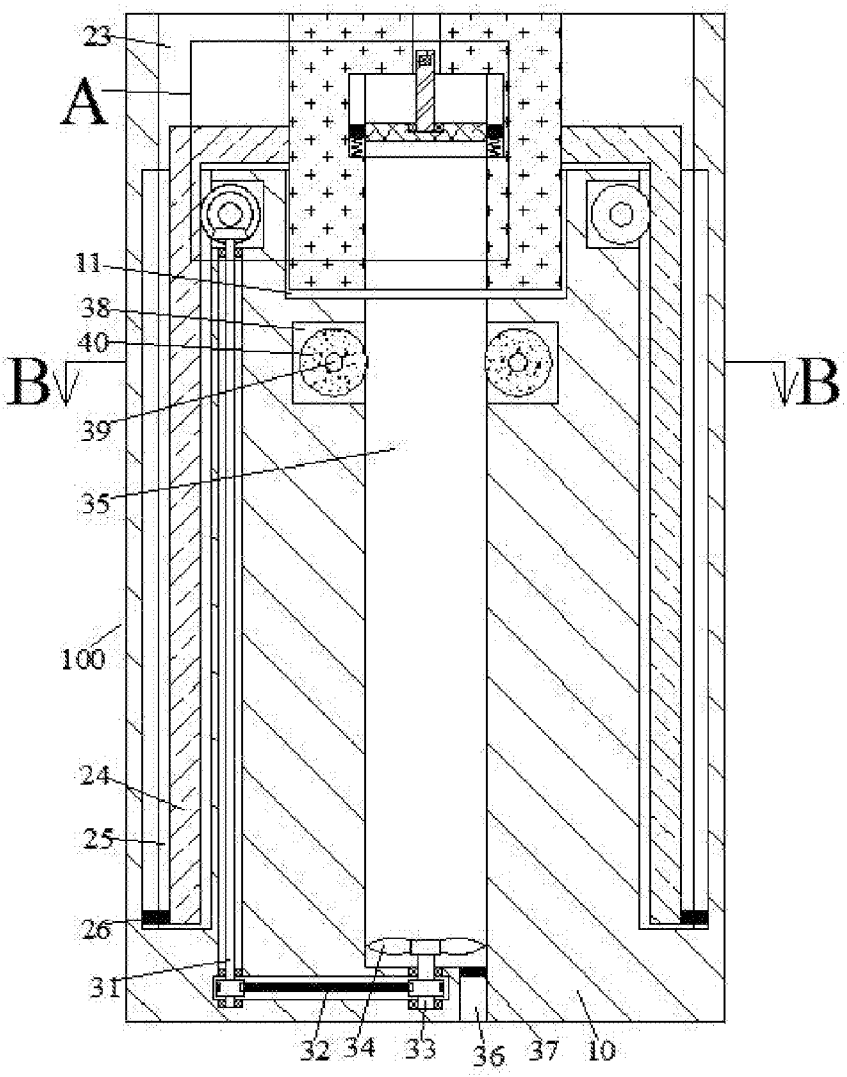
(57) **ABSTRACT**

The invention discloses a cleaning apparatus for a mouse pad, which comprises a machine body. The machine body is provided with a slot with an opening facing upwards. A clip block is inserted into the slot. The clip block is provided with a clip slot. The upper side of the clamping groove is provided with a sliding groove, and a slide plate is slidably arranged in the sliding groove. The left and right ends of the slide plate are fixed with resetting components for resetting the slide plate. The upper end surface of the slide plate is provided with a pull rod. The invention is easy to operate, and the mouse pad is cleaned by soaking, scrubbing, washing, and drying processes. In this process, the degree of automation is high, manpower is saved, and the cleaning time is shortened. The mouse pad after cleaning can be used directly, which is convenient and convenient. Efficient.



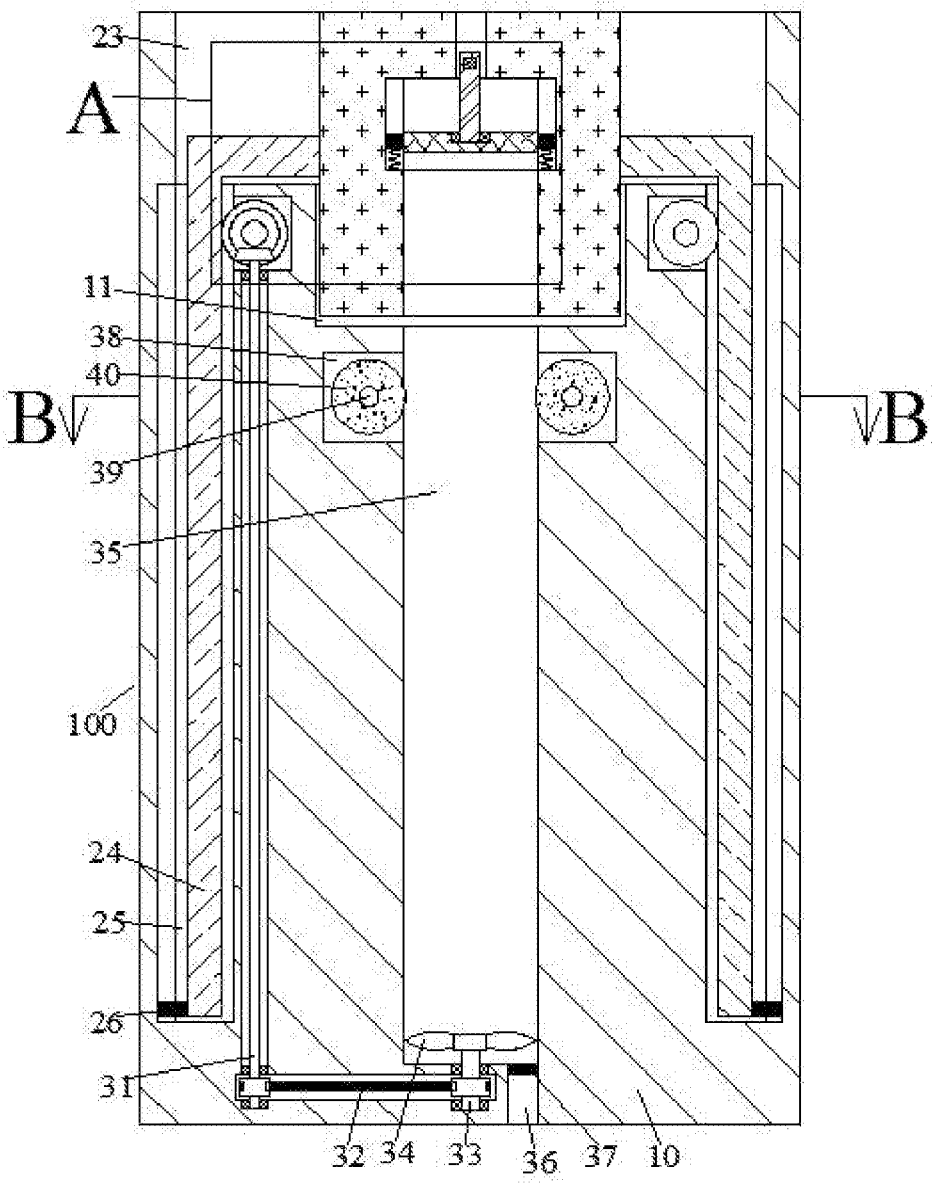


FIG 1

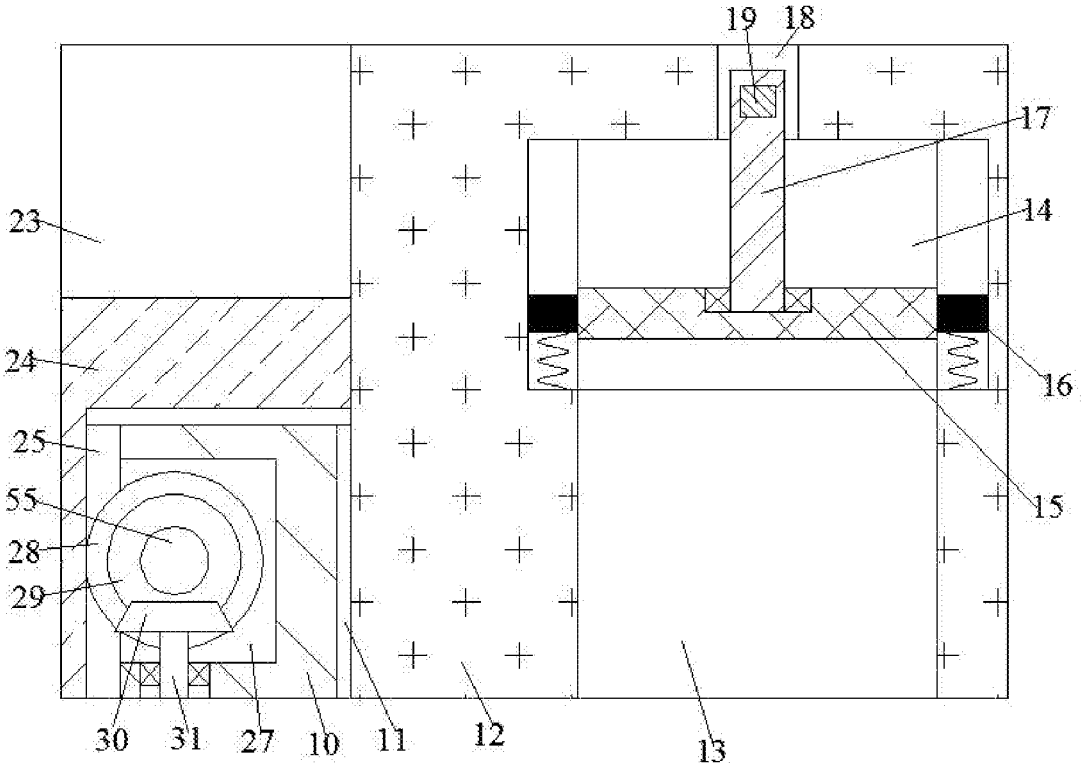


FIG 2

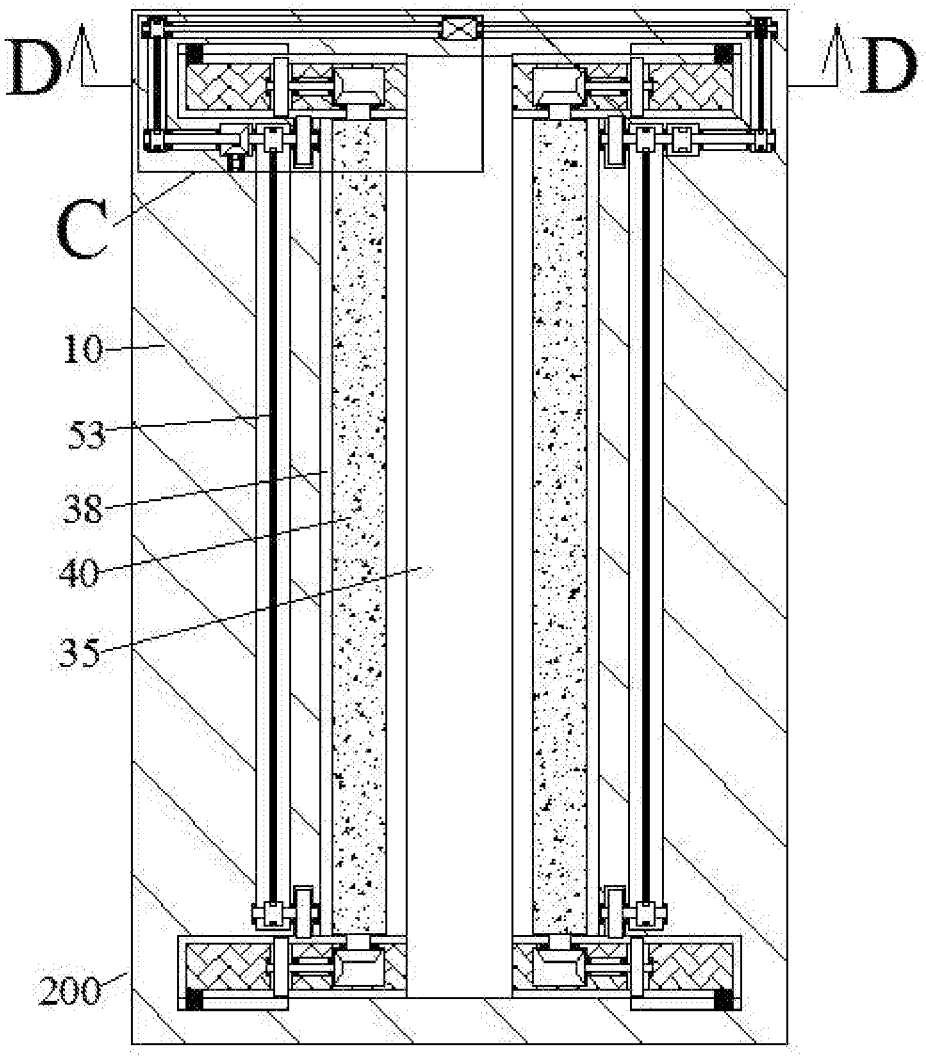


FIG 3

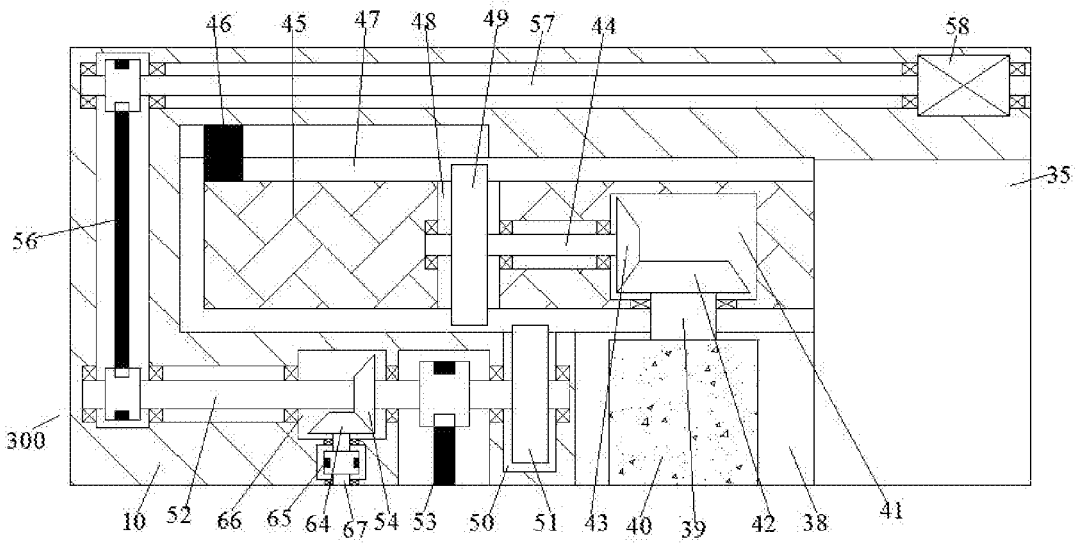

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FIG 4

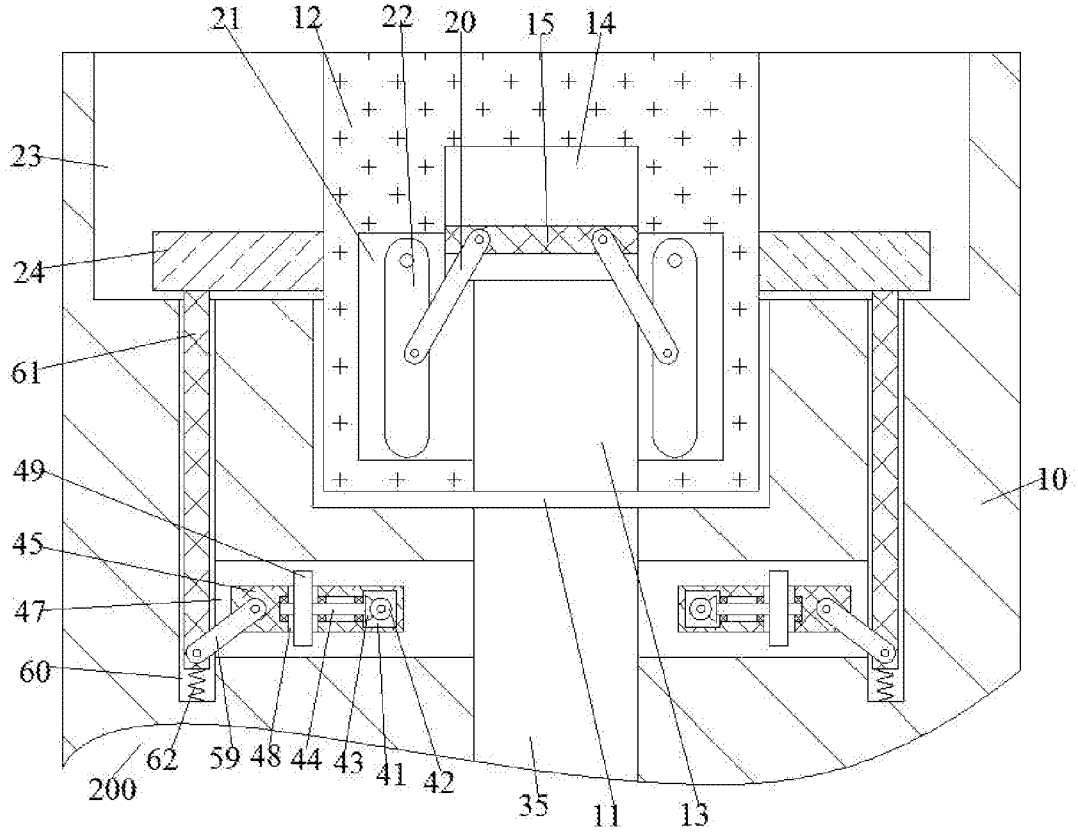
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FIG 5

CLEANING APPARATUS FOR MOUSE PAD

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] The present application claims priority from Chinese application No. 2019103251432 filed on Apr. 22, 2019 which is hereby incorporated by reference in its entirety.

FIELD OF TECHNOLOGY

[0002] The invention relates to the technical field of packaging, and in particular relates to a cleaning apparatus for mouse pad.

TECHNICAL FIELD

[0003] The existing mouse pad cleaning process is manual operation, which is time-consuming and has poor cleaning effect. Secondly, the cleaned mouse pad needs to be dried in the shade, which requires a long drying time, which brings inconvenience to the cleaning and use of the mouse pad. For this reason, it is necessary to design a device that can easily clean the mouse pad and improve its cleaning efficiency.

Content of the Invention

[0004] An object of the present invention is to provide a cleaning device for a mouse pad, which is used to overcome the above defects in the prior art.

[0005] A cleaning device for a mouse pad according to the present invention includes a body, the body is provided with a slot with an opening facing upward, a clamping block is inserted into the slot, and a clamping slot is provided in the clamping block. A slide groove is communicated with the upper side of the clamping groove, and a slide plate is slidably arranged in the slide groove. The left and right ends of the slide plate are fixed with resetting components for resetting the slide plate. The upper end surface of the slide plate is provided with a pull rod. The upper side of the chute is provided with a communication slot, and the upper end of the pull rod is fixed with a fixed rod protruding from the front end into the outer space. A turning slot, a clamping rod is rotatably provided in the rotating slot, and the clamping rod is rotatably connected with the lower end of the rotating rod. Two sides of the slot are provided with an opening cavity, and the opening cavity is slidably provided with the clamping block. A fixed cavity is fixedly connected, and a sliding cavity is provided at the lower side of the open cavity. The lower end of the solid piece extends into the sliding cavity. A slider is fixed at one end of the solid block, and one side of the sliding cavity is provided. A meshing cavity is provided with a rotating gear in the meshing cavity through a transmission shaft for rotation, and the lower side of the slot is communicated with A cavity is provided with a rotating shaft for rotation in the cavity, and three fan blades are uniformly fixed on the upper end of the rotating shaft. A transmission device is provided on the left side of the cavity, and the transmission device is dynamically connected with the rotating shaft. A water tank is communicated with the lower side of the cavity, and a solenoid valve is fixed in the water tank. A contraction groove is provided on both sides of the cavity. The contraction groove is provided with a soft shaft to clean the surface of the mouse pad through a fixed shaft. A cleaning wheel, the cavity is provided with a cleaning device symmetrically on the left and right sides, and the cleaning device is respectively fixedly connected to the front and rear ends of the fixed shaft on the same side; the clamping rod is used to clamp the mouse pad, and the fixed block is passed through the fixed block The mouse pad is driven to rise, and the cleaning wheel is rotated to clean the mouse pad.

[0006] In a further technical solution, the transmission device includes a first bevel gear fixed at the front end of the transmission shaft on the left side, and a first bevel gear meshing with the first bevel gear is provided in the meshing cavity on the left side through the gear shaft to rotate. A two-bevel gear, the lower end of the gear shaft and the rotating shaft are connected by a toothed belt power; the first bevel gear drives the fan blades to rotate, stir the cleaning liquid in the cavity or generate a wind-drying mouse pad.

[0007] In a further technical solution, the cleaning device includes a pushing groove which is symmetrical back and forth and communicates with the shrinking groove. A pushing block is slidably arranged in the pushing groove, and a guide block is fixed on the rear end surface of the pushing block. A slot is provided in the slot. A meshing gear is provided in the slot by rotating through a shaft. A power device is arranged between the pushing slots. The power device is meshed with the meshing gear. There is a transmission cavity. One end of the coupling shaft extends into the transmission cavity and is fixed with a third bevel gear. A fourth bevel gear is meshed with one end surface of the third bevel gear. The fourth bevel gear is fixedly connected, and a pressure groove is communicated between the pushing groove and the open cavity. A pressure rod with an upper end abutting the solid block is slidably arranged in the pressure groove, and the pressure rod is connected with the pressure block. The push blocks are rotationally connected by a connecting rod, and a compression spring is fixed between the pressure rod and the pressure groove; four of the pressure rods are simultaneously lowered, so that the cleaning wheel moves into the cavity, It rotates to scrub the mouse pad.

[0008] In a further technical solution, the power device includes a connecting groove communicating with the pushing groove, and a transmission gear is arranged in the connecting groove through a rotating shaft, and the rotating shafts are respectively connected by a connecting belt for power connection. A connecting cavity is provided on one side of the connecting groove, and the rotating shaft extends into the connecting cavity and a fifth bevel gear is fixedly connected to the front end of the fifth bevel gear. A sixth bevel gear is meshed with the first bevel gear. The mandrel of the six-bevel gear is connected to the transmission shaft (with the cavity as the center line) on the same side through a belt, and a motor is fixed in the rear wall of the cavity, and power is connected to the two ends of the motor. A shaft, the power shaft and the said rotating shaft are respectively connected by a transmission belt power; the motor works, so that the four transmission gears rotate.

[0009] The beneficial effects of the present invention are: the structure of the present invention is simple, the operation is convenient, and the mouse pad is cleaned by soaking, scrubbing, washing, and drying processes. In this process, the degree of automation is high, labor is saved, and cleaning time is shortened. The cleaned mouse pad can be used directly, which is convenient and efficient.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1** is a schematic diagram of the overall internal structure of a cleaning device for a mouse pad according to the present invention;

[0011] FIG. **2** is an enlarged structural diagram of "A" in FIG. **1** in the present invention;

[0012] FIG. **3** is a schematic structural view in the direction of "B-B" in FIG. **1** in the present invention;

[0013] FIG. **4** is an enlarged structural diagram of "C" in FIG. **3** in the present invention; FIG.

[0014] FIG. **5** is a schematic diagram of the structure in the direction of "D-D" in FIG. **3** in the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0015] The present invention will be described in detail below with reference to FIGS. **1-5**. For convenience of description, the orientation described below is defined as follows: the up-down, front-back, left-right direction described below is consistent with the up-down, front-back, left-right direction of the projection relationship of FIG. **1** itself.

[0016] Referring to FIGS. **1-5**, a cleaning device for a mouse pad according to an embodiment of the present invention includes a body **10**, which is provided with a slot **11** with an opening facing upward, and a clip is inserted into the slot **11**. Block **12**, the clamping block **12** is provided with a clamping groove **13**, and the upper side of the clamping groove **13** is provided with a sliding groove **14**, and a sliding plate **15** is slidably arranged in the sliding groove **14**, and the left and right ends of the sliding plate **15** are fixedly installed. A reset assembly **16** for resetting the slide plate **15** is provided with a pull rod **17** on the upper end surface of the slide plate **15**; a through groove **18** is provided on the upper side of the slide groove **14** to communicate with the outside; A fixed rod **19** that enters the external space is provided with a rotating rod **20** at four corners of the lower end surface of the sliding plate **15**, a clamping groove **21** is provided at the four corners of the clamping groove **13**, and a clamping rod **22** is provided in the rotating groove **21**, The clamping rod **22** is rotatably connected to the lower end of the rotating rod **20**, and an open cavity **23** is provided on both sides of the slot **11**. A fixed block **24** fixedly connected to the clamping block **12** is slidably arranged in the open cavity **23**. The open cavity **23** The lower side communicates with a sliding cavity **25**. The lower end of the solid block **24** extends into the sliding cavity **25**. One end of the solid block **24** is fixed with a slider **26**. The sliding cavity **25** communicates with one side. There is a meshing cavity **27**. A rotation gear **28** is provided in the meshing cavity **27** through a transmission shaft **55** for rotation. A cavity **35** is provided on the lower side of the slot **11**, and a rotation shaft **33** is provided in the cavity **35** for rotation. The upper end of the rotating shaft **33** is uniformly provided with three fan blades **34**. A transmission device **100** is provided on the left side of the cavity **35**. The transmission device **100** is dynamically connected to the rotating shaft **33**. A water tank is provided on the lower side of the cavity **35**. **36**, a solenoid valve **37** is fixed in the water tank **36**, and a shrinking groove **38** is provided on both sides of the cavity **35**. A soft shaft for cleaning the surface of the mouse pad is provided in the shrinking groove **38** through a fixed shaft **39**. The cleaning wheel **40**, the cavity **35** is provided with a cleaning device **200** symmetrically on the left and right sides, and the cleaning device **200** is respectively fixedly connected to the front and rear ends of the fixing shaft **39** on the same side; the clamping rod **22** is used to clamp a mouse pad, The mouse pad is driven up by the solid block **24**, and the cleaning pad **40** is rotated to clean the mouse pad.

[0017] Advantageously, the transmission device **100** includes a first bevel gear **29** fixed on the front end of the transmission shaft **55** on the left side, and the first bevel gear **29** is rotatably provided in the meshing cavity **27** on the left side through the gear shaft **31**. **29** meshing second bevel gear **30**, the lower end of the gear shaft **31** and the rotating shaft **33** are dynamically connected by a toothed belt **32**; the first bevel gear **29** drives the fan blade **34** to rotate, agitating the cavity **35** cleaning solution or generate wind to dry the mouse pad.

[0018] Advantageously, the cleaning device **200** includes a pushing groove **47** which is symmetrical in the front-rear direction and communicates with the shrinking groove **38**. A pushing block **45** is slidably arranged in the pushing groove **47**, and a guide block **46** is fixed on the rear end surface of the pushing block **45**. The push slot **47** is provided with a slot **48** therein. The slot **48** is provided with a meshing gear **49** through a coupling shaft **44**. A power unit **300** is provided between the push slot **47**. The meshing gear **49** meshes, a transmission cavity **41** is provided on one side of the slot **48**, and one end of the coupling shaft **44** extends into the transmission cavity **41** and a third bevel gear **43** is fixedly attached to the third bevel gear. A fourth bevel gear **42** is meshedly connected to one end surface, the front and rear ends of the fixed shaft **39** are respectively fixedly connected to the fourth bevel gear **42**, and a pressure groove **60** is provided between the pushing groove **47** and the opening cavity **23**. A pressing rod **61** having an upper end abutting against the solid block **24** is slidably provided in the pressing groove **60**. The pressing rod **61** and the pushing block **45** are rotatably connected through a connecting rod **59**. A pressure spring **62** is fixed between the pressure grooves **60**; the four pressure levers **61** are synchronously lowered, so that the cleaning wheel **40** moves into the cavity **35**, and the mouse pad is scrubbed by its rotation.

[0019] Beneficially, the power device **300** includes a connecting groove **50** communicating with the pushing groove **47**. A transmission gear **51** is rotatably provided in the connecting groove **50** through a rotating shaft **52**, and a connecting belt **53** is connected between the rotating shafts **52**. For power connection, a connecting cavity **66** is provided on one side of the connecting groove **50** on the rear side. The rotating shaft **52** extends into the connecting cavity **66** and a fifth bevel gear **54** is fixedly attached to the fifth bevel gear **54**. The front end is meshed with a sixth bevel gear **64**, and a mandrel **67** of the sixth bevel gear **64** is dynamically connected to the transmission shaft **55** (with the cavity **35** as a center line) on the same side through a belt **65**, and the cavity A motor **58** is fixed in the rear wall of the motor **35**, and a power shaft **57** is dynamically connected at both ends of the motor **58**. The power shaft **57** and the rotation shaft **52** are respectively power-connected through a transmission belt **56**; the motor **58** works, Four of the transmission gears **51** are caused to rotate.

[0020] In the initial state, the cleaning wheel **40** is located in the shrinking groove **38**, the meshing gear **49** is not meshed with the transmission gear **51**, the solid block **24** is

in contact with the pressing rod **61**, and the compression spring **62** is in a compressed state.

[0021] When the device is required to work, the motor **58** rotates forward to drive the power shaft **57** to rotate, the rotation shaft **52** rotates, and the rotation gear **28** rotates through the belt **65**. The solid block **24** rises to drive the clamp block **12** to rise. Then, the upper end of the mouse pad is raised. Placed in the clamping groove **13** and pulling up the fixing rod **19** to drive the slide plate **15** upward, the left and right clamping rods **22** are rotated toward each other by the rotating rod **20** to clamp the upper end of the mouse pad forward and backward, and the lower end surface of the fixing rod **19** and the upper end surface of the body **10** The abutment fixes **15** and fills the cavity **35** with clean water. The motor **58** is reversed. The clamp block **12** is lowered and connected to the slot **11**. The mouse pad is immersed in the cavity **35**. After soaking, the motor **58** is rotated forward. Then, the clamp block **12** drives the mouse pad to rise, and the pressure lever **61** rises under the action of the compression spring **62**, so that the push block **45** moves in the direction of the cavity **35**, and the left and right cleaning wheels **40** move toward the mouse pad, and the gear is engaged at this time. **49** meshes with the transmission gear **51**, so that the cleaning wheel **40** rotates and scrubs the mouse pad from top to bottom. Thereafter, the solenoid valve **37** is opened to drain the cleaning water in the cavity **35**, and the cavity **35** is filled with clean water. Water, cleaning liquid for mouse pad, washing, To drain water from the cavity **35**, the working machine **58**, via a toothed belt **32** so that the blade **34** rotates, the wind mouse pad dried.

[0022] The beneficial effects of the present invention are: the structure of the present invention is simple, the operation is convenient, and the mouse pad is cleaned by soaking, scrubbing, washing, and drying processes. In this process, the degree of automation is high, labor is saved, and cleaning time is shortened. The cleaned mouse pad can be used directly, which is convenient and efficient.

[0023] Those skilled in the art can clearly understand that various modifications to the above embodiments can be made without departing from the overall spirit and concept of the present invention. They all fall within the protection scope of the present invention. The protection scheme of the present invention is subject to the claims attached to the present invention.

1. A cleaning device for a mouse pad, comprising a machine body, the machine body is provided with a slot with an opening facing upward, a clip block is inserted into the slot, and a clip slot is provided in the clip block, and the clip The upper side of the groove is provided with a slide groove, and a slide plate is slidably arranged in the slide groove. The left and right ends of the slide plate are fixed with resetting components for resetting the slide plate. The upper end surface of the slide plate is provided with a pull rod. The upper side of the groove communicates with the outside. A through groove is fixed on the upper end of the pull rod. A fixed rod extending into the external space is fixed on the upper end of the pull rod. Rotating rods are provided at the four corners of the lower end of the slide plate. A clamping rod is rotatably provided in the rotating slot, and the clamping rod is rotatably connected to the lower end of the rotating rod. Two sides of the slot are provided with an opening cavity. The opening cavity is slidably provided with a clamping rod. A solid block, a sliding cavity is provided on the lower side of the open cavity, the lower end of the solid block extends into the sliding cavity, a slider is fixed on one end of the solid block, and an engaging cavity is provided on one side of the sliding cavity. A rotating gear is provided in the engaging cavity through a transmission shaft for rotation, and a cavity is provided on the lower side of the slot. A rotating shaft is provided for rotation in the cavity, and three fan blades are evenly arranged on the upper end of the rotating shaft. A transmission device is provided on the left side of the cavity, and the transmission device is dynamically connected with the rotating shaft. There is a water tank, a solenoid valve is fixed in the water tank, a shrink groove is provided on both sides of the cavity, and a soft cleaning wheel for cleaning the surface of the mouse pad is provided in the shrink groove through a fixed shaft. A cleaning device is symmetrically arranged on the left and right sides of the cavity, and the cleaning device is respectively fixedly connected to the front and rear ends of the fixed shaft on the same side; the clamping rod is used to clamp the mouse pad, and the mouse pad is raised by the fixed block, and The cleaning wheel is rotated to clean the mouse pad.

2. The cleaning device for a mouse pad according to claim **1**, wherein the transmission device comprises a first bevel gear fixed at the front end of the transmission shaft on the left side, and in the engagement cavity on the left side. A second bevel gear meshing with the first bevel gear is provided through the rotation of the gear shaft, and the lower end of the gear shaft and the rotating shaft are dynamically connected by a toothed belt; the first bevel gear drives the fan blade to rotate, Agitate the cleaning solution in the cavity or generate wind to dry the mouse pad.

3. The cleaning device for a mouse pad according to claim **1**, wherein the cleaning device comprises a pushing groove which is symmetrical in front and back and communicates with the shrinking groove, and a pushing block is slidably arranged in the pushing groove, A guide block is fixed on the rear end surface of the pushing block, and a slot is provided in the pushing slot. A meshing gear is provided in the slot through a coupling shaft to rotate, and a power device is provided between the pushing slots. The device meshes with the meshing gear, a transmission cavity is communicated with the slotted side, one end of the coupling shaft extends into the transmission cavity and a third bevel gear is fixed, and one end surface of the third bevel gear meshes A fourth bevel gear is connected, the front and rear ends of the fixed shaft are respectively fixedly connected to the fourth bevel gear, a pressure groove is provided between the pushing groove and the opening cavity, and an upper end and a sliding groove are provided in the pressure groove. Pressure rods abutting the fixed blocks, the pressure rods and the push blocks are rotationally connected by a connecting rod, and pressure springs are fixed between the pressure rods and the pressure grooves; four of the pressure rods Synchronous descending makes the cleaning wheel move into the cavity and rotates to scrub the mouse pad.

4. The cleaning device for a mouse pad according to claim **3**, wherein the power device includes a connecting groove communicating with the pushing groove, and a transmission gear is provided in the connecting groove through a rotation shaft, The rotating shafts are respectively connected by a connecting belt for power connection. A connecting cavity is provided on the back side of the connecting groove. The rotating shaft extends into the connecting cavity and a fifth bevel gear is fixed. The front end of the fifth bevel gear is meshed with a sixth bevel gear. The mandrel of the sixth

bevel gear is power-connected to the transmission shaft (with the cavity as the center line) on the same side through a belt. A motor is fixed in the wall, and a power shaft is dynamically connected at both ends of the motor, and the power shaft and the rotation shaft are respectively power-connected through a transmission belt; the motor works to make four of the transmission gears rotate.

* * * * *