CLAIMS

What is claimed is:

1. A drying device of an integrated washer-dryer, comprising:

a circulating module assembly (10), communicated with a drum of the integrated washer-dryer and configured to enable moist air from the drum to form a circulating airflow by rotating and output the circulating airflow to a dehumidifying module assembly (20) for dehumidification;

the dehumidifying module assembly (20), communicated with the circulating module assembly (10) and the drum and configured to dehumidify and dry the circulating airflow from the circulating module assembly (10) by circulating movement and output the dried circulating airflow to the drum; and

a regenerating module assembly (30), communicated with the dehumidifying module assembly (20) and configured to output a dry regeneration airflow to the dehumidifying module assembly (20) to dehumidify and dry at least part of the dehumidifying module assembly (20) so as to restore a dehumidifying capacity of the dehumidifying module assembly (20),

wherein the circulating module assembly (10), the dehumidifying module assembly (20) and the regenerating module assembly (30) of the drying device are disposed substantially in one plane,

wherein a plane where the drying device is located is disposed horizontally above or below the drum and is parallel to a rotating shaft of the drum, and

rotating shafts of at least two of the circulating module assembly (10), the dehumidifying module assembly (20) and the regenerating module assembly (30) of the drying device are parallel to each other and are substantially perpendicular to the rotating shaft of the drum.

2. The drying device according to claim 1, wherein

the rotating shafts of the circulating module assembly (10) and the dehumidifying module assembly (20) are configured to be heteroplanar with and perpendicular to the rotating shaft of the drum, and distributed on two sides of the rotating shaft of the drum; and

the regenerating module assembly (30) is provided on a side of the circulating module assembly (10), and the regenerating module assembly (30) and the dehumidifying module assembly (20) are disposed on two sides of the rotating shaft of the drum, respectively.

3. The drying device according to claim 1 or 2, wherein the rotating shafts of the circulating module assembly (10), the dehumidifying module assembly (20) and the regenerating module assembly (30) are respectively the rotating shaft of a circulating fan (101), the rotating shaft of a dehumidifying rotary plate (200), and the rotating shaft of a regenerating fan (301).

4. The drying device according to any one of claims 1 to 3, further comprising: an air inlet passage (102) which is communicated with the circulating module assembly (10) and the drum and serves as a passage allowing the moist air from the drum to enter the circulating module assembly (10).

5. The drying device according to claim 4, wherein when the plane where the drying device is located is disposed horizontally above the drum, the air inlet passage (102) is disposed at a left rear side or right rear side of the drum, and the circulating module assembly (10) communicated with the air inlet passage (102) is accordingly disposed at an upper left rear side or upper right rear side of the drum.

6. The drying device according to any one of claims 1 to 3, further comprising: an air outlet passage (203) which is communicated with the dehumidifying module assembly (20) and the drum and serves as a passage allowing the dried circulating airflow as dehumidified to enter the drum.

7. The drying device according to claim 4, wherein when the plane where the drying device is located is disposed horizontally below the drum, the air inlet passage (102) is configured to extend sequentially along a bottom, a rear and a top of the integrated washer-dryer, so as to communicate an air outlet of the drum with an air inlet of the circulating fan (101).

8. The drying device according to claim 6, wherein when the plane where the drying device is located is disposed horizontally below the drum, the air outlet passage (203) is configured to extend along a bottom, a rear and a top of the integrated washer-dryer, so as to communicate an air outlet of the dehumidifying module assembly (20) with an air inlet of the drum.

9. The drying device according to any one of claims 1 to 8, wherein a regeneration air inlet (3011) and a regeneration air outlet (3012) of the regenerating module assembly (30) are both communicated with an atmosphere.

10. The drying device according to any one of claims 1 to 8, further comprising:

a condensing module assembly (40), communicated with a regeneration air outlet of the regenerating module assembly (30) and configured to condense the regeneration airflow output from the regenerating module assembly (30) to form a low-temperature and dry airflow.

11. The drying device according to claim 10, wherein an air outlet of the condensing module assembly (40) is communicated with an atmosphere or a regeneration air inlet (3011) of the regenerating module assembly (30).

12. The drying device according to any one of claims 4, 5, and 7, further comprising:

a filtering assembly (60), provided in the air inlet passage (102) of the circulating module assembly (10) and configured to filter lint and/or impurities in the airflow from the drum.

13. The drying device according to claim 12, wherein the air inlet passage (102) is configured to pass through a front end of the integrated washer-dryer, and the filtering assembly (60) provided in the air inlet passage (102) is detachably provided on a front-end panel of the integrated washer-dryer.

14. The drying device according to any one of claims 1 to 13, wherein a housing of the drying device is integrally provided with at least one mounting part (509) at corresponding positions on four sides of a frame of the integrated washer-dryer, respectively, and the drying device is rigidly fixed to a cabinet of the integrated washer-dryer via the mounting parts (509).

15. An integrated washer-dryer, comprising: a drum for washing, and the drying device according to any one of claims 1 to 14, wherein the drying device is communicated with the drum for dehumidifying and drying moist air inside the drum.