March 14, 1933. L. McCARTHY 1,901,352

MACHINE FOR MAKING COMPOSITE SHEETS

Filed Jan. 23, 1930

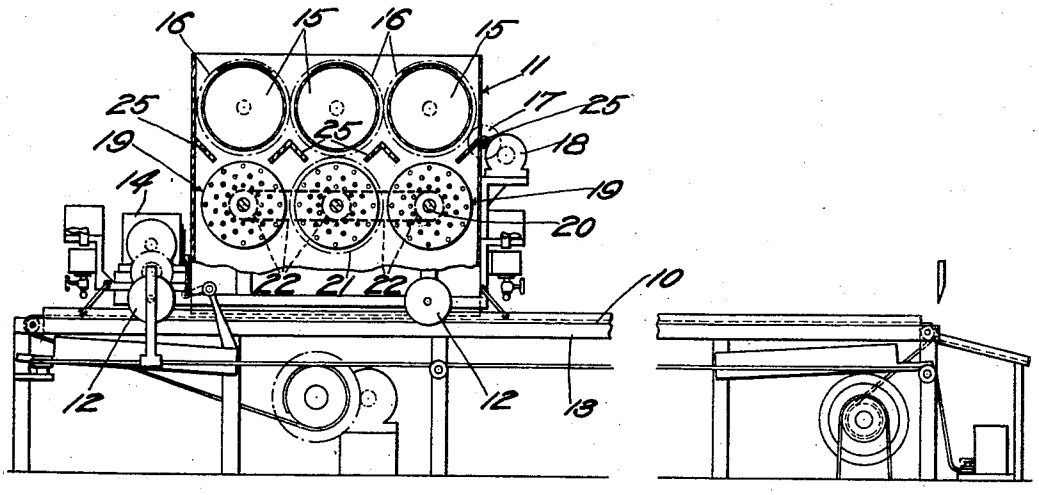


Fig. 1.

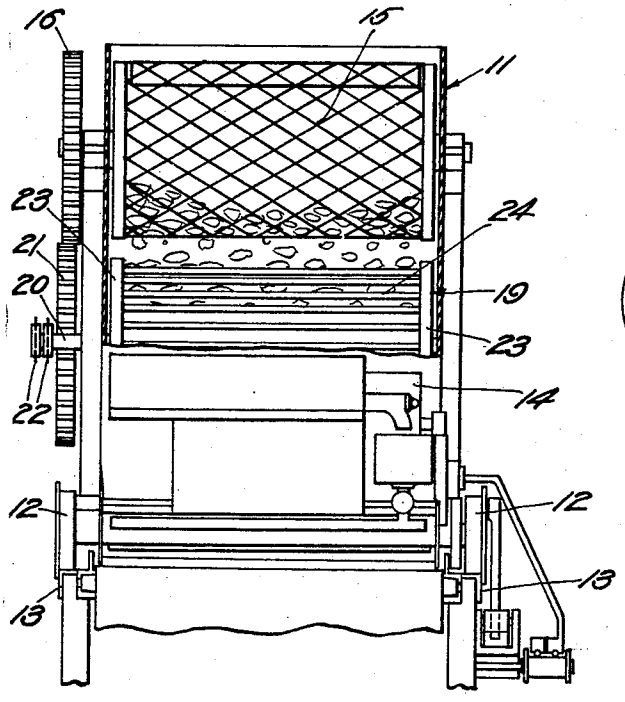


Fig. 2.

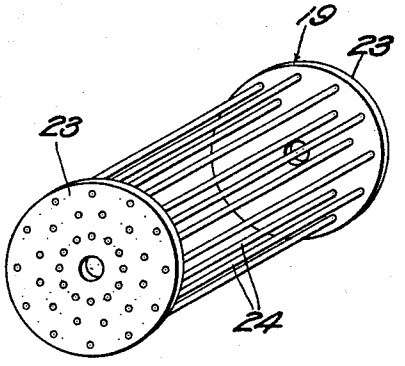


Fig. 3.

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UNITED STATES PATENT OFFICE

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MACHINE FOR MAKING COMPOSITE SHEETS

Application filed January 23, 1930. Serial No. 422,928.

This invention relates to machines for forming composite sheets from flaky or plate-like material, such as mica, and is in the nature of an improvement on apparatus of the general type shown and described in Letters Patent No. 1,622,795, issued March 29, 1927. Apparatus of this type comprises, in general, a bed on which the composite sheet is formed and means for showering the flakes or plates by gravity upon said bed, together with means for applying a liquid binder to the plates or flakes on the bed, and means for rolling the plates or flakes and the binder upon the bed to unite them into a composite sheet.

The present invention has for its general object to provide means for breaking up any lumps or masses of matted flakes or plates which may inadvertently be discharged from the showering means and for insuring the even spreading of the showered flakes or plates on the bed.

The more particular objects of the invention will best be understood from the following description of a preferred embodiment thereof illustrated in the accompanying drawing, but it will also be understood that the particular construction described and shown has been chosen for purposes of exemplification merely, and that the invention, as defined in the claims hereunto appended, may be otherwise embodied without departure from its spirit and scope.

In said drawing:

Fig. 1 is a somewhat diagrammatic side elevation, partly broken out, of the complete machine.

Fig. 2 is an enlarged end elevation of the carriage, the adjacent wall being partly broken away.

Fig. 3 is a perspective view of one of the squirrel cages hereinafter described.

The invention is herein illustrated as embodied in a machine of the type shown and described in Letters Patent No. 1,622,795, above referred to, to which reference may be had for a more complete description of parts not fully shown and described herein. Said machine comprises an elongated bed, generally indicated at 10, and a carriage 11 provided with wheels 12 arranged to run on rails 13 extending longitudinally of said bed, whereby said carriage may be propelled over said bed by a suitable electric or other motor 14. Mounted on parallel axes in an elevated position in the carriage 11 are a plurality of horizontally disposed, foraminous drums 15 adapted to receive the plates or flakes and to be rotated in unison, whereby said flakes or plates are showered by gravity upon the bed 10. The several drums 15 are geared together, as indicated at 16, one of said drums being positively rotated through suitable gearing 17 by an electric or other motor 18 on the carriage.

In accordance with the present invention, there are interposed between the drums 15 and bed 10 a plurality of devices 19, which, for convenience, may be termed "squirrel cages," corresponding in number to said drums and of substantially the same length and diameter, said squirrel cages being located respectively directly beneath the several drums and being mounted on parallel horizontal shafts 20 suitably journalled in the side walls of the carriage 11. The shaft of one of the squirrel cages 19 is provided with a gear 21 meshing with the gear 16 on the corresponding drum 15, whereby said squirrel cage is rotated in unison with said drum, and the remaining squirrel cages are connected with said first named squirrel cage, for rotation in unison therewith, by means of chain and sprocket gearing generally indicated at 22.

As shown most clearly in Fig. 3, each squirrel cage 19 comprises two parallel end heads 23 connected by a plurality of parallel horizontal rods 24 preferably arranged in a plurality of co-axial cylindrical series, the rods in adjacent series being staggered.

Between the drums 15 and squirrel cages 19 are arranged transversely extending baffles or deflectors 25 so disposed as to direct the plates or flakes falling from the drums through said squirrel cages.

It will be seen that, in operation, the flakes or plates, as they fall by gravity from the rotating drums 15, are acted upon by the rotating squirrel cages whose horizontally

disposed rods 24 are continuously moved transversely and alternately in opposite directions across the falling stream of plates or flakes. It is found in practice that this not only serves effectually to break up any lumps or masses of matted flakes which may fall from the foraminous drums, but also assists materialy in effecting an even spreading of the plates or flakes on the bed 10.

Having thus described my invention, I claim:

1. In a machine for forming composite sheets from flaky or plate-like material, the combination with a bed and an elevated, horizontally disposed, rotating foraminous drum for showering the flakes or plates by gravity upon said bed, of a rotating, horizontally disposed squirrel cage of substantially the same length and diameter as said drum located directly beneath the latter and comprising parallel end heads connected by a number of parallel rods spaced at various distances from the center of said end heads.

2. In a machine for forming composite sheets from flaky or plate-like material, the combination with a bed and an elevated, horizontally disposed, rotating foraminous drum for showering the flakes or plates by gravity upon said bed, of a rotating, horizontally disposed squirrel cage of substantially the same length and diameter as said drum located directly beneath the latter and comprising parallel end heads connected by parallel rods arranged in a plurality of coaxial cylindrical series, the rods in adjacent series being staggered.

3. In a machine for forming composite sheets from flaky or plate-like material, the combination with a bed and a plurality of elevated, horizontally disposed, rotating foraminous drums for showering the flakes or plates by gravity upon said bed, of a plurality of rotating, horizontally disposed squirrel cages equal in number to the drums, located respectively directly beneath the several drums, and each comprising parallel end heads connected by a plurality of parallel rods, and baffles for directing the plates or flakes falling from the drums through said squirrel cages.

In testimony whereof I affix my signature.

LOUIS McCARTHY.