

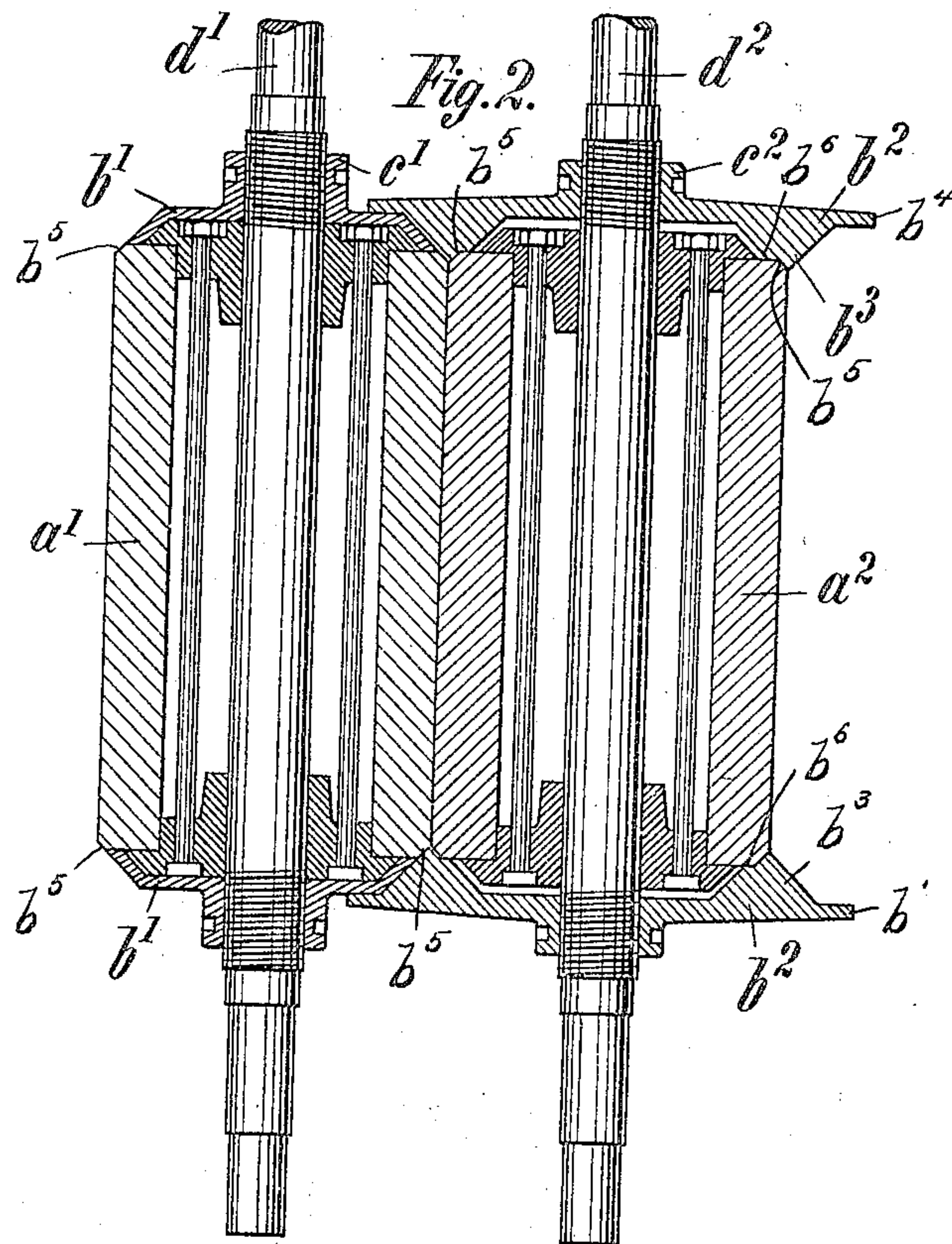
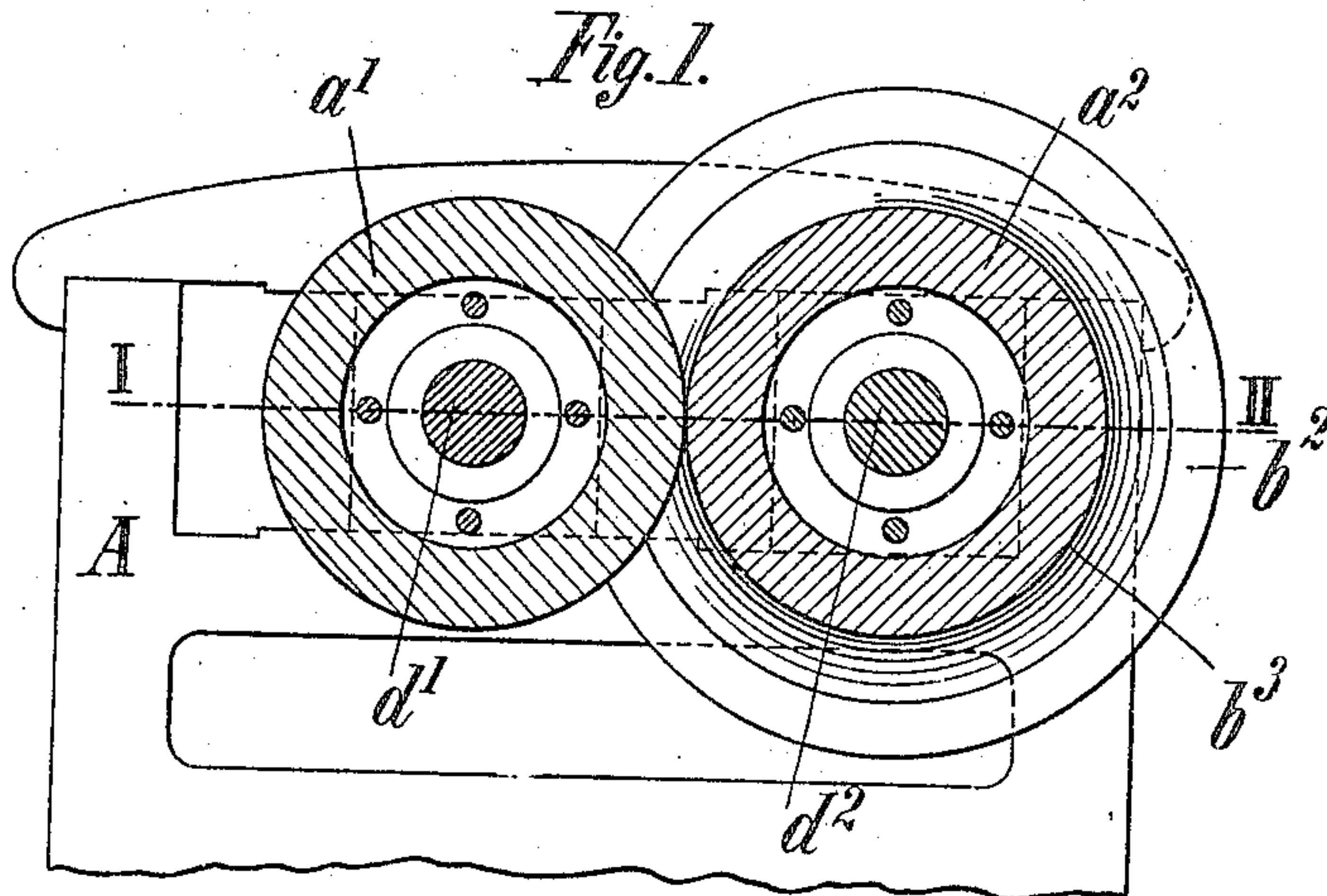
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F. E. F. NEUMANN.

LATERAL PACKING FOR THE END FACES OF PAIRS OF ROLLERS.

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LATERAL PACKING FOR THE END FACES OF PAIRS OF ROLLERS.

No. 813,320.

Specification of Letters Patent.

Patented Feb. 20, 1906.

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To all whom it may concern:

Be it known that I, FRIEDRICH ERNST FERDINAND NEUMANN, a subject of the German Emperor, and a resident of Wandsbek, near Hamburg, in the German Empire, have invented certain new and useful Improvements in Lateral Packings for the End Faces of Pairs of Rollers, of which the following is a specification.

This invention relates to the lateral packing or inclosing of the end faces of pairs of rollers by means of lateral disks or plates for the purpose of laterally limiting the working space of a pair of rollers in such a manner that the material which is being treated—that is to say, thick and pasty substances, such as paints, cocoa paste, or the like—cannot escape sidewise of the rollers. Lateral bordering or bounding means for this purpose as hitherto constructed consist, as is well known, of surfaces rigidly connected with one of the rollers and engaging over the ends of the other roller—that is to say, of fixed end flanges. By this means it is impossible to obtain a permanently tight joint at the ends of the rollers as the tightness is destroyed by wear, so that the thick pasty material is yet able to escape at the ends of the rollers. In accordance with this invention this defect is obviated, owing to the fact that the packing-disks engaged upon the ends of the rollers are mounted adjustably and independently of the end faces of the rollers.

In the accompanying sheet of drawings, Figure 1 is a cross-section of a pair of rollers of a roller-mill constructed in accordance with and embodying my invention; and Fig. 2 is a horizontal sectional view on the line I II, Fig. 1.

Similar letters of reference refer to similar parts throughout both figures.

Each of the lateral packing or inclosing devices for a pair of rollers a' and a^2 , mounted with their shafts d' and d^2 in a suitable frame A, is composed of two special disks b' and b^2 , which are independent of the end faces of the rollers a' and a^2 and adjustably arranged on the respective shafts d' and d^2 of the said rollers, so that the disks b' inclose the ends of the roller a' , while the other disks b^2 , which engage over the former, serve to laterally in-

close the end faces of the other roller a^2 , one or both sets of disks being adjustably mounted, so that a tight joint may always be obtained, owing to the fact that one or both sets of disks may be removed from the roller ends when the packing-faces of the former have been worn out for the purpose of being redressed, the shoulder b^6 of end disks b^2 being turned down to compensate for any truing up of the contact-faces that may be necessary. To this end the packing disks or heads b' for the ends of rollers a' are cup-shaped and preferably of the form of a hollow frustum of a cone, while the packing disks or heads b^2 for the ends of roller a^2 have a circular rib b^3 of triangular form in cross-section bearing on the outer inclined face of heads b' , said heads b^2 being furthermore provided with a circular flange b^4 , overlapping the outer faces of the heads b' . To more effectually prevent material from escaping at the ends of the rollers along the line of contact, I bevel the edges of their end faces, as shown at b^5 , to form a V-shaped recess at the opposite ends of said line of contact, into which recesses the edges of the ribs b^3 of packing-heads b^2 project, and I provide said ribs with a shoulder b^6 , bearing on the end faces of the roller a^2 .

Each of the disks b' b^2 is adapted to be screwed upon the roller-shafts d' or d^2 , respectively, or upon the bearings for the same by means of a hub c' or c^2 , respectively, in order to allow of adjusting the position of the said disks as required.

This arrangement may be adopted with roller pairs or runs already in use and in all cases insures an efficient lateral joint, because by the arrangement of the disk b' upon one roller a special bearing-surface is provided for the inclosing disk b^2 of the other roller, which always fits the same, so that the disk b^2 forms a perfectly tight and adjustable joint.

In cases of slight wear sufficient adjustability may be obtained if only one of the two heads b' b^2 is adjustably mounted; but in case that a greater wear takes place between the ribs b^3 of the heads b^2 and the inclined faces of heads b' it will be necessary to true the beveled edges b^5 of rollers a' and a^2 ac-

cordingly in order to secure a close joint between the surfaces in question.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination with a pair of rolls, of cup-shaped packing-heads rotatable with the rolls, those for one roll adapted to cover the ends of the line of contact between the rolls and to have bearing on the packing-heads for the other roll.

2. The combination with a pair of rolls, of rotatable packing-heads for one roll having the form of a hollow frustum of a cone, and rotatable packing-heads for the other roll having a circular rib adapted to cover the ends of the line of contact between the rolls and have bearing on the peripheral inclined faces of the heads for the first-named roll.

3. The combination with a pair of rolls, of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib and an encompassing flange, said ribs adapted to cover the ends of the line of contact between the rolls and to have bearing on the peripheral inclined faces of the heads for the first-named roll, and said flanges adapted to overlap the last-named heads.

4. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib triangular in cross-section projecting into the recess formed by the beveled edges of the rolls at the opposite ends of the line of contact and with a shoulder having bearing on the end faces of the roll, said ribs having bearing also on the conical heads of the first-named roll.

5. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a truncated hollow cone, and discoidal packing-heads for the other roll overlapping the heads for the first-named roll and provided with a circular rib triangular in cross-section bearing on the aforesaid conical heads and projecting into the recesses formed at the ends of the line of contact between the rolls by their beveled edges, said ribs also provided with a circular shoulder bearing on the end faces of their roll.

6. The combination with a pair of rolls, of cup-shaped packing-heads, those for one roll adapted to cover the ends of the line of contact between the rolls and to have bearing on the packing-heads for the other roll, and means to compensate for the wear of the contacting surfaces.

7. The combination with a pair of rolls, of packing-heads for one roll having the form of a hollow frustum of a cone, and packing-heads for the other roll having a circular rib

adapted to cover the ends of the line of contact between the rolls and have bearing on the peripheral inclined faces of the heads for the first-named roll and means to compensate for the wear of the contacting surfaces.

8. The combination with a pair of rolls, of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib and an encompassing flange, said ribs adapted to cover the ends of the line of contact between the rolls and to have bearing on the peripheral inclined faces of the heads for the first-named roll, said flanges adapted to overlap the last-named heads and means to compensate for the wear of the contacting surfaces.

9. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib triangular in cross-section projecting into the recess formed by the beveled edges of the rolls at the opposite ends of the line of contact and with a shoulder having bearing on the end faces of the roll, said ribs having bearing also on the conical heads of the first-named roll, and means to compensate for the wear of the contacting surfaces.

10. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a truncated hollow cone, and discoidal packing-heads for the other roll overlapping the heads of the first-named roll and provided with a circular rib triangular in cross-section bearing on the aforesaid conical heads and projecting into the recesses formed at the ends of the line of contact between the rolls by their beveled edges, said ribs also provided with a circular shoulder bearing on the end faces of their roll, and means to compensate for the wear of the contacting surfaces.

11. The combination with a pair of rolls and their shafts; of cup-shaped packing-heads for each roll mounted on their respective shafts, the packing-heads for one roll adapted to cover the ends of the line of contact between the rolls and to have bearing on the packing-heads for the other roll and means to adjust the said packing-heads relatively to their rolls.

12. The combination with a pair of rolls and their shafts; of packing-heads for one roll having the form of a frustum of a hollow cone mounted on the roll-shaft, and packing-heads for the other roll likewise mounted on its shaft and having a circular rib adapted to cover the ends of the line of contact between the rolls and to have bearing on the conical heads for the first-named roll, and means to adjust the said heads relatively to the rolls.

13. The combination with a pair of rolls and their shafts; of packing-heads for one

roll mounted on its shaft and having the form of a frustum of a hollow cone, and packing-heads for the other roll likewise mounted on the shaft thereof and provided with a circular rib and an encompassing flange, said rib adapted to cover the ends of the line of contact between the rolls and to have bearing on the conical heads of the first-named roll and

said flanges adapted to overlap the last-named heads and means to adjust the packing-heads relatively to their rolls.

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