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PROCESS FOR THE PRODUCTION OF WOOD PULP.

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The present invention relates to improvements in the process of making wood pulp and has particular reference to wood pulp used in the manufacture of light paper such as is used in the newspaper business although not necessarily confined to that purpose. Wood pulp of this character is commonly produced at the present time by grinding suitable blocks of wood. A rotating grindstone is usually employed and previously prepared blocks of wood are forced against the same in radial direction whereby the wood is ground into small particles and completely defiberized. In the present invention it is proposed to cut pieces of wood of any form across the grain into relatively short blocks and in subjecting the blocks to further treatment whereby they are separated into fibers which latter form the pulp without being cut into small particles. The wood pulp thus obtained is of considerably better quality than wood pulp obtained by grinding action and requires the addition of considerably less sulphide pulp for producing a suitable mixture for the production of paper. Other advantages of my process will appear as the specification proceeds.

In its preferred form my process embraces the following steps. Pieces of wood of any suitable form are fed into a machine known as a chipper consisting essentially of a plurality of rotary knife blades mounted axially in spaced relation, and are cut across the grain into blocks of comparatively short length, say three-fourths of an inch. These blocks are passed through a crusher or wood hog with the result that the blocks are separated into slivers of the same length and preferably of the thickness of a match. To facilitate the further breaking up of these slivers it is advisable to pass the same through a pair of rollers whereby the slivers are flattened. From the rollers, or if none are used, from the crusher the slivers are fed into a beater which separates the slivers into fibers in the presence of water. The use of hot water in the beater is preferred to cold water. The pulp produced by this process may be further subjected to treatment in refiners or brushers.

The advantages of my process are apparent; in the first place any waste wood may be used while in the grinding process it is necessary to use pieces of wood of certain dimensions for conveniently handling the same. A comparatively small amount of water is necessary while the grindstone has to be flushed continuously to wash away the ground pulp. There is a considerable saving in power since the wood instead of being attacked at the line of highest resistance as in the grinding process is separated along the lines of least resistance. The product is superior in so far as the fibers in the final process inter-twine and exercise a binding action as distinguished from the ground wood in which the pulp is held together by cohesion only. As a further advantage it should be mentioned that my process requires less skillful handling than the grinding process in which latter a highly skilled mechanic has to maintain close watch continuously because it is necessary that the surface of the stone be maintained just right, with the grain on the same neither too sharp and deep nor too dull and shallow. It is also necessary in the grinding process to exert an even pressure since too strong a pressure will cause too much friction and produce a burning action while lack of pressure renders the operation inefficient. The single steps of my process and the handling of the machines for carrying out the same are so simple as to require little expert supervision.

I claim:

The process of making wood pulp which consists in cutting pieces of wood across the grain into comparatively short blocks, in crushing the blocks to produce slivers substantially of the thickness of a match, in rolling the slivers for flattening the same and in beating the slivers thus obtained into pulp in the presence of water.

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