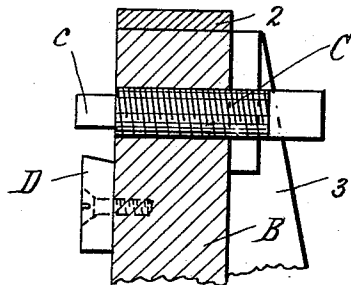
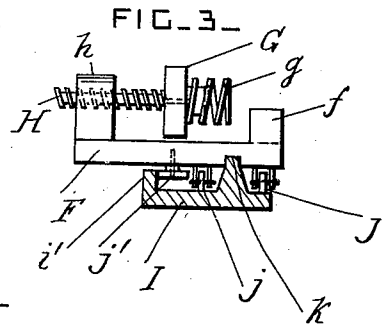
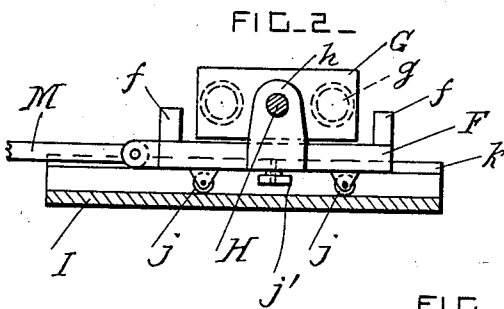
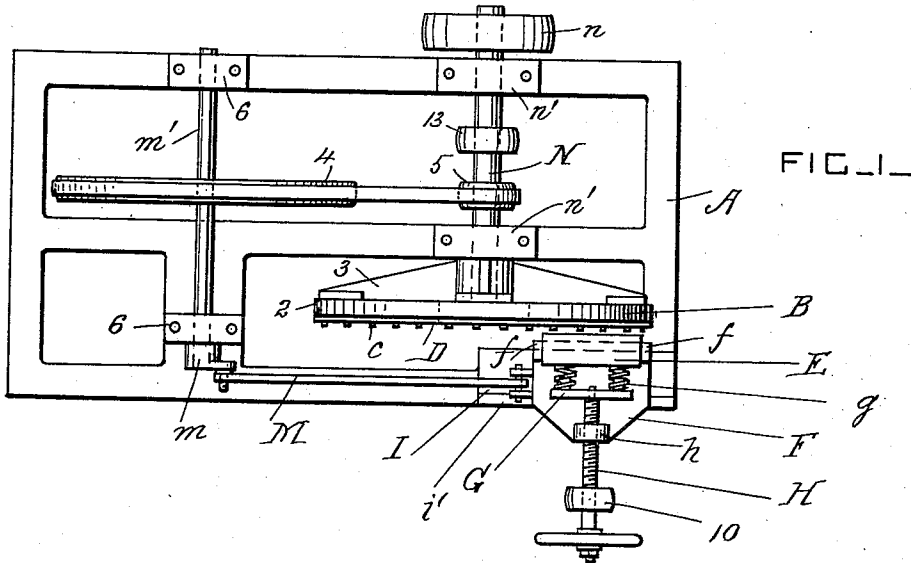


F. KLINGLER.
SHREDDING MACHINE.
APPLICATION FILED NOV. 8, 1910.

1,007,577.

Patented Oct. 31, 1911.

3 SHEETS—SHEET 1.



Witnesses

Geo C. Butler
W. C. Greenley.

By

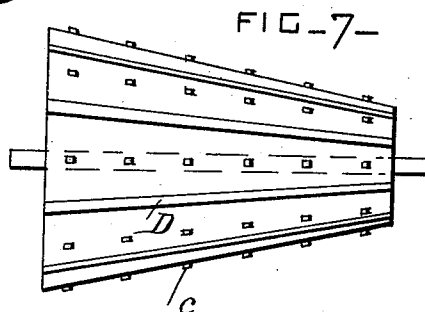
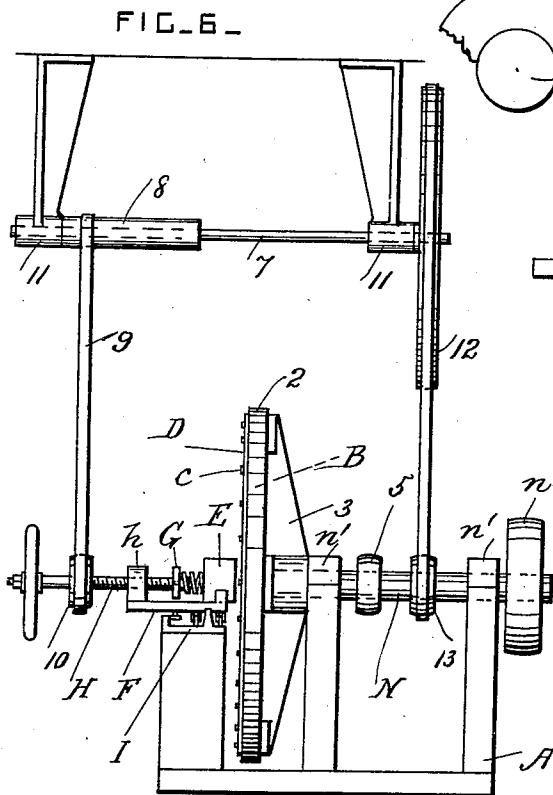
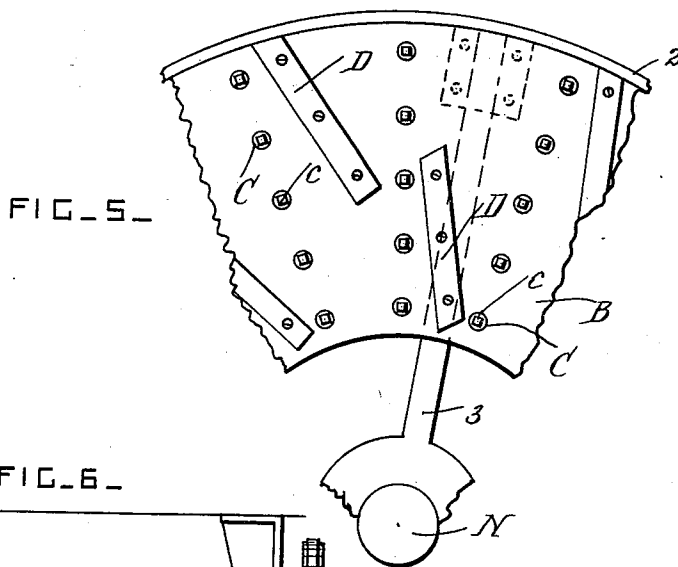
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANK KLINGLER, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO RAY NEAL, OF AKRON, OHIO.

SHREDDING-MACHINE.

1,007,577.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed November 8, 1910. Serial No. 591,377.

To all whom it may concern:

Be it known that I, FRANK KLINGLER, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Shredding-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for shredding blocks of wood into material suitable for use in plastering and packing; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a plan view of the machine, with the automatic feed mechanism removed. Fig. 2 is a side view, and Fig. 3 is an end view, of the feed slide, drawn to a larger scale. Fig. 4 is a detail view of a cutter showing the cutter carrier in section. Fig. 5 is a front view of a portion of the cutter carrier disk. Fig. 6 is a side view of the automatic feed mechanism. Fig. 7 is a side view of a cutter carrier in the form of a cone.

A is a supporting frame, and B is a disk which carries the cutters. This device for carrying the cutters may be made of various forms in carrying out this invention, and in Fig. 5 the cutter carrier is shown in the form of a cone. The disk or cutter carrier B is strengthened by a ring 2 at its periphery and by spider arms 3 on its back.

C are the shanks of the cutters carried by the disk B. The shanks are screw threaded so as to engage with screwthreaded holes in the disk, and so that they can be adjusted longitudinally. At the front face of the disk these screws are provided with square cutters *c* which are adjusted to project from the face of the disk to any desired extent.

D are scrapers consisting of flat blades secured against the front face of the disk. These scrapers are formed in sections and are arranged so as to break joint with each other as the disk is revolved. The cutters *c* are arranged radially in rows, and the scrapers are arranged between the rows of cutters. The scrapers are arranged at any desired angles, and the scrapers nearest the center of the disk are arranged more nearly radial than those near its periphery, but the

scrapers are inclined from a radial portion so as to scrape the wood from end to end of the block with a slicing motion. The scraping edges of the scrapers are beveled but they are not sharp knives, as their use is to scrape off and remove the shreds of wood which have been partially cut off by the cutters *c*, and not to cut the solid block.

The wood to be shredded is formed into blocks E, and these blocks are placed in a slide F. The slide F has end pieces *f* which prevent the block from moving endwise.

G is a follower which is slidable crosswise of the slide and which is provided with springs *g* for engaging with the block E. A screw H works in a nut *h* on the slide F, and bears against the follower. This screw may be turned by hand to feed the block against the cutters, or it may be operated automatically. The slide F is reciprocated crosswise of the disk upon a guide I which is supported by the frame A. The slide F has small wheels or rollers *j* which run on the guide I, and it has a wheel *j'* which runs horizontally against a projecting track *i'* on the guide. The guide has also a rib *k* which engages with a groove or grooves formed in the underside of the slide F.

M is a connecting-rod for reciprocating the slide F. This rod is worked by a crank *m* carried by a crank-shaft *m'*, and the crank-shaft *m'* is operatively connected with the main shaft N on which the disk or cutter carrier B is secured. Any suitable wheels 4 and 5, or other suitable driving mechanism, are used to connect these shafts so that they revolve together at suitable speeds. The shaft N is provided with a belt pulley *n* or other suitable means for revolving it, and it is journaled in bearings *n'*. The crank-shaft is journaled in bearings 6.

The feed slide is operated automatically by means of a countershaft 7 having a drum 8 secured on it and arranged above the shaft N. A belt 9 works on the drum and on a driving pulley 10 secured on the feed screw H. The countershaft is journaled in bearings 11, and it is operatively connected with the main shaft N by wheels 12 and 13, or by any other suitable driving devices, such as belts and pulleys, which will drive it at the required speed. The disk is revolved rapidly, and the wooden block is cut into shreds by the cutters. The shreds which adhere to the block are removed by the

scrapers. The block is reciprocated by the connecting-rod, and fed forward by the feed screw.

The shredding cutter *c* in Fig. 4 is shown with a broad shredding edge. The edge may be of any desired width and may be reduced to a mere point. The variation in the width of the shredding edge enables different grades of material to be turned out. The block to be shredded is formed of cotton-wood or other similar wood, and the cutters are arranged to operate on it crosswise of the length of its grain. The cutters are run at a high speed, and the block is oscillated at a comparatively slow speed. The amplitude of the oscillations of the block are such that every portion of the surface of the block is in turn operated on by the cutters. While being oscillated the block is fed forward slowly so that each cutter removes a portion of the surface of the block in the form of fine threads or filaments. The shredded material is as fine as hair, and greatly resembles the cow-hair used in fine plastering. The block is fed forward so slowly that the scrapers *D* never touch its surface, but only remove therefrom any shreds or filaments which hang to or partially adhere to it.

What I claim is:

1. In a shredding machine, the combination, with a driving shaft, and a cutter carrier secured thereon and provided with a multiplicity of shredding cutters; of a stationary guide, a slide mounted on the said guide and adapted to hold the block to be cut, a countershaft driven from the said driving shaft but at a slower speed, and driving devices operated by the said countershaft and adapted to reciprocate the said slide.

2. In a shredding machine, the combina-

tion, with a supporting frame, a driving shaft journaled in the said frame, and a cutter carrier secured on the said shaft and provided with a multiplicity of shredding cutters; of a crankshaft journaled in the said frame and provided with a crank, driving devices for revolving the crankshaft from the driving shaft, a guide carried by the said frame, a slide mounted on the said guide and adapted to hold the block to be cut, and a connecting-rod for reciprocating the slide from the said crank.

3. In a shredding machine, the combination, with a driving shaft, and a cutter carrier secured thereon and provided with a multiplicity of shredding cutters; of a stationary guide, a slide for holding the block to be cut supported by the said guide, a feed screw for the block mounted in the said slide and having a belt pulley secured on it, a countershaft having a belt drum secured on it, a driving belt connecting the said drum and pulley, and means for revolving the countershaft from the driving shaft.

4. In a shredding machine, the combination, with a revoluble disk, and shredding cutters arranged in radial rows and projecting from the face of the disk, of scrapers formed of flat bars having their rear faces arranged to bear against the front face of the disk to which they are secured, said bars being of less thickness than the length of the projecting portions of the cutters, and being adapted to remove any loose shreds from the block without touching the solid portion of the block.

In testimony whereof I have affixed my signature in the presence of two witnesses.

FRANK KLINGLER.

Witnesses:

WM. H. HERT,
RAY R. NEAL.