To all whom it may concern:

Be it known that I, HERMAN G. SAECKER, a citizen of the United States, residing at Appleton, in the county of Outagamie and State of Wisconsin, have invented certain new and useful Improvements in Paper-Stock-Refining Engines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to machines of the class shown and described in United States Letters Patent No. 658,856, dated July 17, 1900, and more particularly to the construction of the conical cores and knife-retaining rings of such machines. Its main objects are to prevent the loosening and displacement of the knife-retaining rings and of the knives held thereby, and generally to improve the construction and operation of machines of this class.

It consists in certain novel features of construction and in the peculiar arrangement and combination of parts, as hereinafter described, and defined in the claims.

In the accompanying drawings like characters designate the same parts.

Figure 1 is a view, partly in side elevation and partly in central longitudinal section, of the larger end of the conical core of a machine embodying the present invention; and Fig. 2 is a cross-section of the same on the line 2-2, Fig. 1.

In machines of this kind it has been the customary practice to fit and shrink the knife-retaining rings upon the conical or tapering face of the core, and considerable trouble has been experienced when they are so fitted and secured upon the core from their tendency to slip toward the smaller end of the core, thereby becoming loose and resulting in the loosening, displacement, and improper working of the knives. To overcome this trouble and to attain the above-stated objects is the purpose of the improvements constituting the present invention.

Referring to the accompanying drawings, a designates the larger end of the conical rotating core of a paper-stock-refining machine mounted in the usual or any suitable manner on a shaft b. At intervals in its length the core is formed, as shown in Fig. 1, with circumferential cylindrical seats c, which are concentric and parallel with the axis of the core. Laterally grooved or recessed knife-retaining rings d are fitted to and shrunk or otherwise firmly secured upon the seats c, the bases of these rings being extended laterally or made of sufficient width to prevent the tendency of the rings to tip sidewise when subjected to lateral strain or pressure. The grooves in said rings are preferably rounded or curved on the inner side, as shown in Fig. 1, to avoid weakening the bases of the rings and at the same time to permit the knives to bear at their inner edges firmly against the conical face of the core between said rings.

The knives f, which are arranged lengthwise of and at intervals around the core a, with spacing-strips e, of wood or other suitable material between them, are notched in the ends to fit over and engage with the overhanging rings of the rings d, which thus firmly secure them to and hold them in place upon said core.

The construction of the core and of the knife-retaining rings as herein shown and described effectively prevents any tendency of the rings to slip lengthwise of the core and to become loose, and thereby avoids the trouble which results from the loosening, displacement, and improper operation of the knives.

I claim—

1. In a paper-stock-refining engine the combination of a conical core formed circumferentially at intervals with cylindrical seats, and laterally-recessed knife-retaining rings having extended bases fitted and secured upon said seats, substantially as described.

2. In a paper-stock-refining engine the combination of a conical core formed circumferentially at intervals with cylindrical seats, laterally-recessed rings fitted and secured upon said seats, and knives having end notches engaging the overhanging rings of said rings, substantially as described.

3. In a paper-stock-refining engine the combination of a conical core formed circumferentially at intervals with cylindrical seats, laterally-recessed rings fitted and secured to said seats, longitudinal knives having end notches...
engaging the overhanging rims of said rings, and spacing-pieces interposed between said knives, substantially as described.

4. In a paper-stock-refining engine the combination of a conical core formed circumferentially at intervals with cylindrical seats parallel with its axis, rings fitted and secured to said seats and formed with lateral grooves the inner sides of which are curved or rounded and terminate at the conical face of the core, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses.

HERMAN G. SABECKER.

Witnesses:

P. M. CONKEY,
M. E. GRIGNON.