

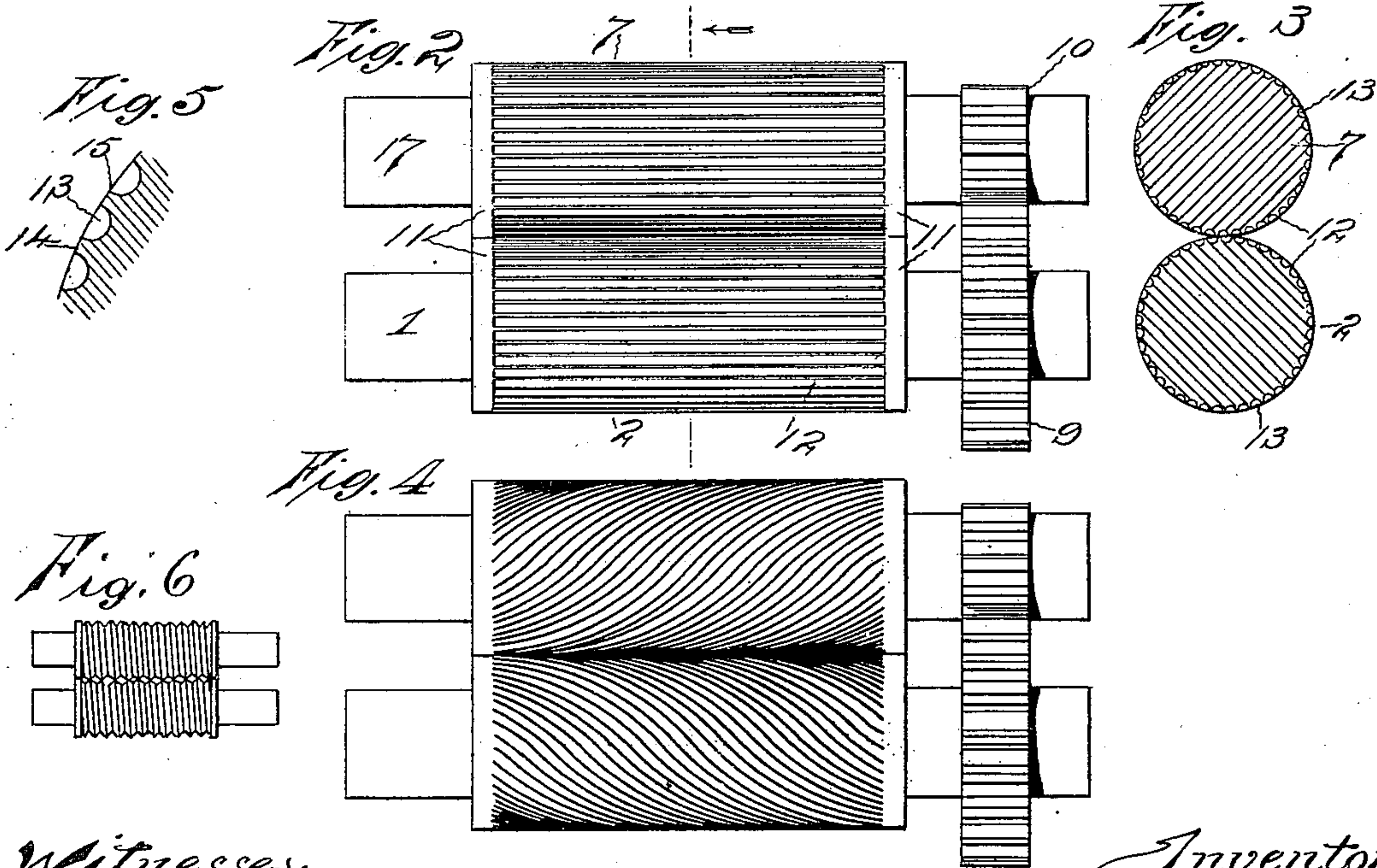
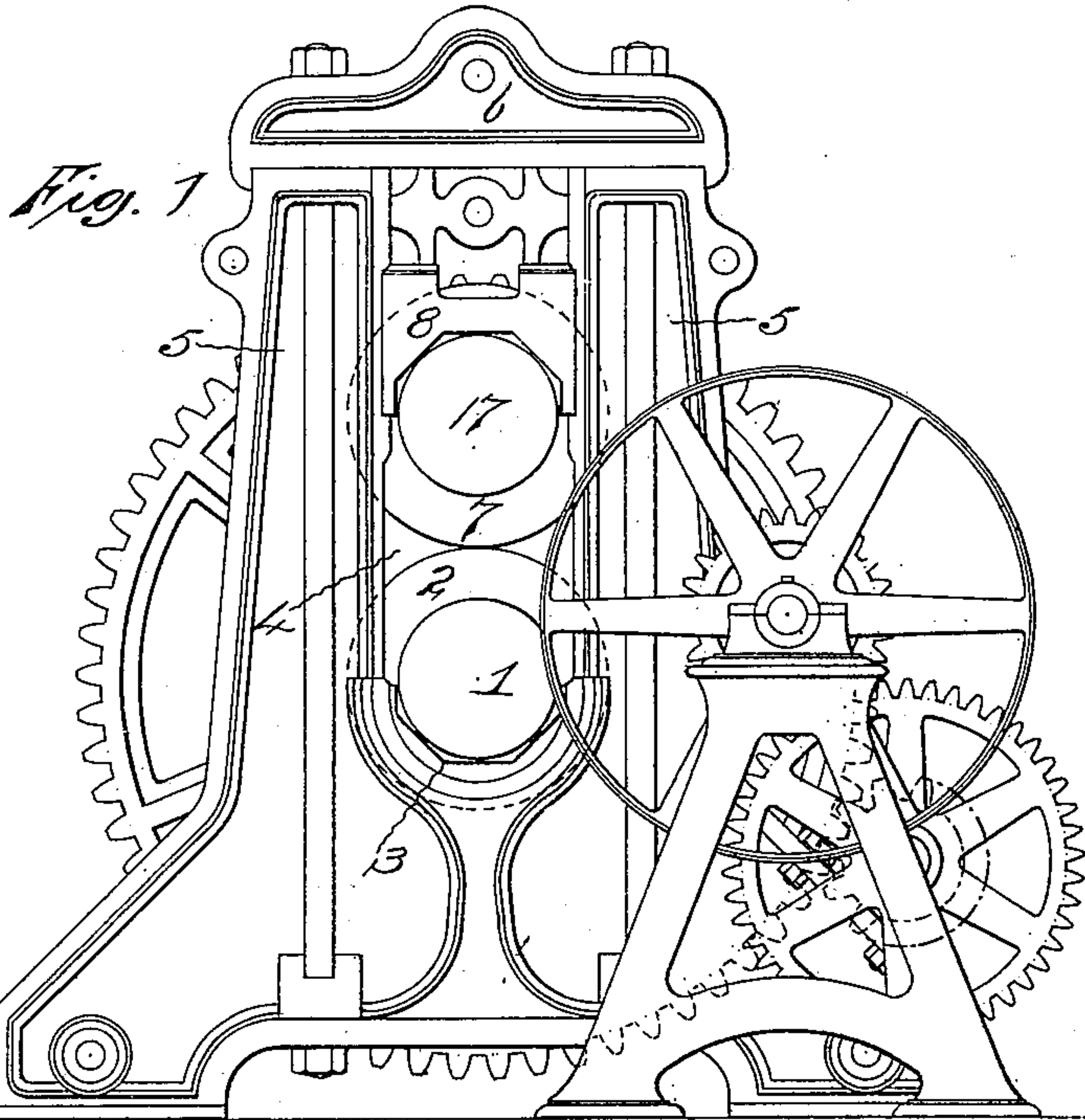
No. 663,559.

Patented Dec. 11, 1900.

A. W. CASE.
FIBER DISINTEGRATOR.

(Application filed Nov. 15, 1899.)

(No Model.)



Witnesses:

F. G. Holcomb.

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UNITED STATES PATENT OFFICE.

ALFRED WELLS CASE, OF HIGHLAND PARK, CONNECTICUT.

FIBER-DISINTEGRATOR.

SPECIFICATION forming part of Letters Patent No. 663,559, dated December 11, 1900.

Application filed November 15, 1899. Serial No. 737,088. (No model.)

To all whom it may concern:

Be it known that I, ALFRED WELLS CASE, a citizen of the United States, residing at Highland Park, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Fiber-Disintegrators, of which the following is a specification.

This invention relates to those disintegrators which have rotating cylinders that cooperate for tearing apart or shredding the material which is to be reduced to a fibrous condition.

The object of the invention is to provide a simple and efficient machine of this character for disintegrating and leaving in a fibrous condition, suitable for use in the manufacture of pulp-board, tough material, such as sole-leather and the like.

In the machine illustrated in the accompanying drawings as embodying the invention there are two suitably-supported cylinders geared together, so that one will rotate faster than the other, with portions of the surfaces of the cylinders grooved, fluted, or chased to form crushing and disintegrating teeth and portions of the surfaces of the cylinders left smooth to prevent the teeth from engaging.

Figure 1 of the views shows a side elevation of a machine that embodies the invention. Fig. 2 shows a front view of the cylinders of that machine. Fig. 3 shows a transverse sectional view of the cylinders. Fig. 4 shows a front view of a pair of cylinders having teeth arranged differently from those of the cylinders shown in Fig. 2. Fig. 5 is an enlarged view showing the form of the teeth of the cylinders illustrated by Fig. 3, and Fig. 6 is a small view of the cylinders with the teeth formed slightly different from those shown in the other views.

The frame of the machine illustrated is of common construction. The shaft 1 of the lower cylinder 2 is supported near each end by a pillow-block 3, located at the lower end of the opening 4 between the uprights 5, which at the top are joined by a head 6. The upper cylinder 7 rests upon the lower, with its shaft 17 held down near each end by a cap-block 8, that is movable up and down between the frame-uprights. The means for forcing the upper cylinder down against the

lower cylinder are not shown, for those means may be any of the common forms employed with calendering-machines.

Near one side of the machine the cylinder-shafts are provided with intermeshing gears. In the form shown the gear 9 on the lower shaft is larger than the gear 10 on the upper shaft, so that one shaft will be rotated faster than the other. These gears are engaged with and rotated by any suitable form of driving means.

The surfaces near the ends of the cylinders are smooth; but between the smooth portions 11 the surfaces are grooved, fluted, or chased, so as to form disintegrating and crushing teeth 12. The teeth may extend longitudinally of the cylinders, as illustrated in Fig. 2, or they may run spirally, as shown by Fig. 4, or they may be formed as screw-threads, as in Fig. 6. The cylinders represented in Figs. 3 and 5 are provided with shallow flutes 13, and the teeth formed between the flutes have flat outer crushing edges 14 with sharp disintegrating corners 15. The smooth portions of the cylinders run in contact and prevent the teeth from engaging and bruising themselves; but the teeth come so close together that the material is crushed and macerated between the outer edges of the teeth and torn apart by the sharp corners.

By means of a machine embodying this invention such material as sole-leather, which is tough and which contains considerable grease, can be disintegrated and placed in condition for use in the manufacture of leather-board and similar pulp-board products in much less time and at considerable less expense than when beaten in a digesting-vat.

I claim as my invention—

A disintegrating-machine consisting of a frame composed of a pair of vertical uprights on each side and a cap joining the ends of each pair of uprights, a shaft supported by pillow-blocks rigidly held between the uprights, a cylinder with a narrow smooth peripheral surface around each end and longitudinally-extending crushing and disintegrating teeth between the smooth end surfaces mounted on the shaft, a shaft borne down by cap-blocks loosely held between the uprights, a cylinder with a narrow smooth peripheral surface around each end and longitudinally-

extending crushing and disintegrating teeth
between the smooth end surfaces mounted on
the shaft and having its smooth end surfaces
resting upon the smooth end surfaces of the
5 other cylinder so that when the cylinders are
rotated the disintegrating-teeth will pass in
close proximity, but not come in contact, a
gear mounted upon one shaft and meshing

with a pinion mounted on the other shaft
whereby one cylinder will be rotated faster 10
than the other, and means for driving the
gear, substantially as specified.

ALFRED WELLS CASE.

Witnesses:

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