C. A. JUENGST.

CUTTING MECHANISM.

APPLICATION FILED DEC. 10, 1919.

1,394,309.

Patented Oct. 18, 1921.

3 SHEETS—SHEET 1.

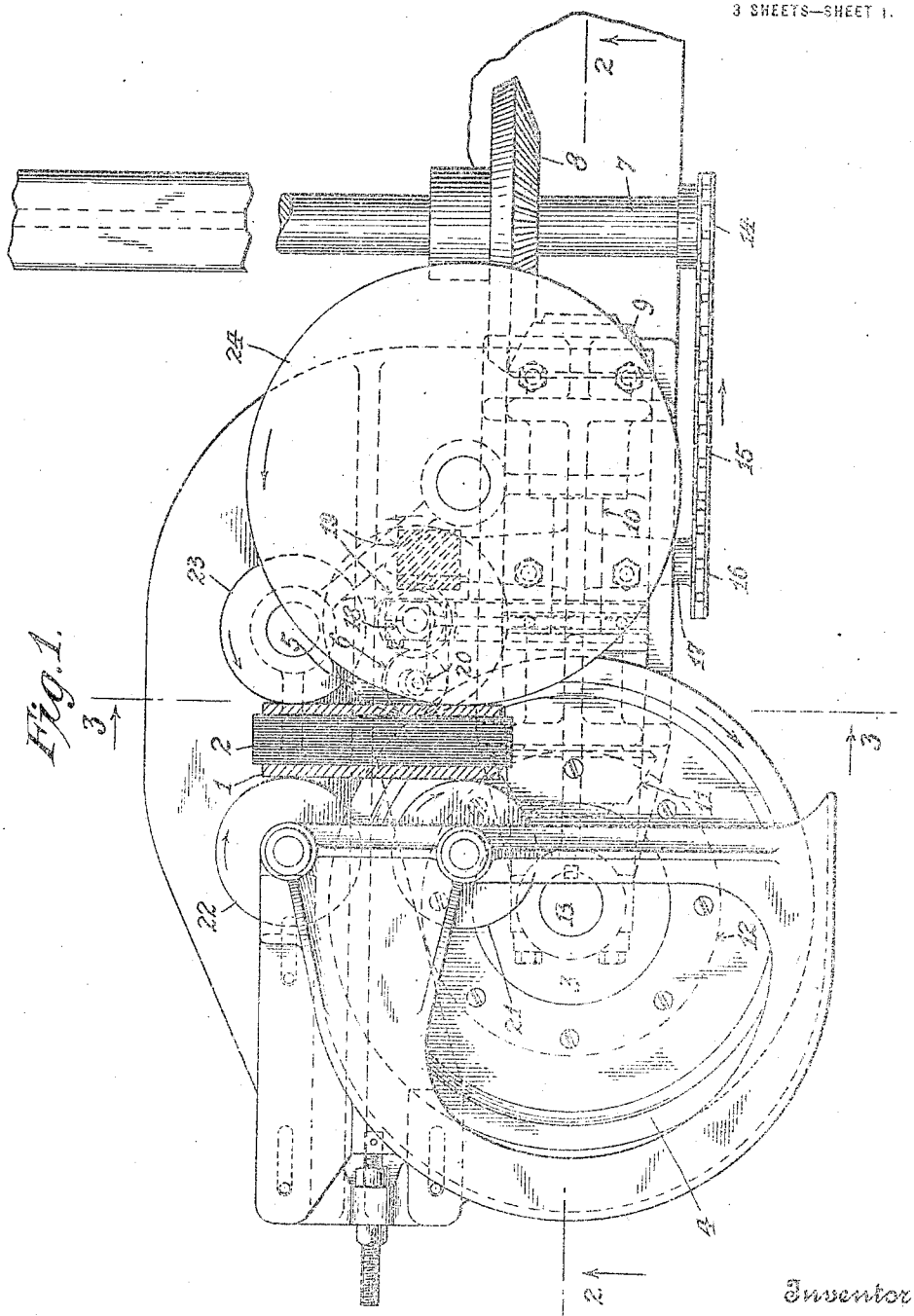


Fig. 1.

Inventor

Charles A. Juengst

By his Attorney

Orell Becker

C. A. JUENGST.

CUTTING MECHANISM.

APPLICATION FILED DEC. 10, 1919.

1,394,309.

Patented Oct. 18, 1921.

3 SHEETS—SHEET 2.

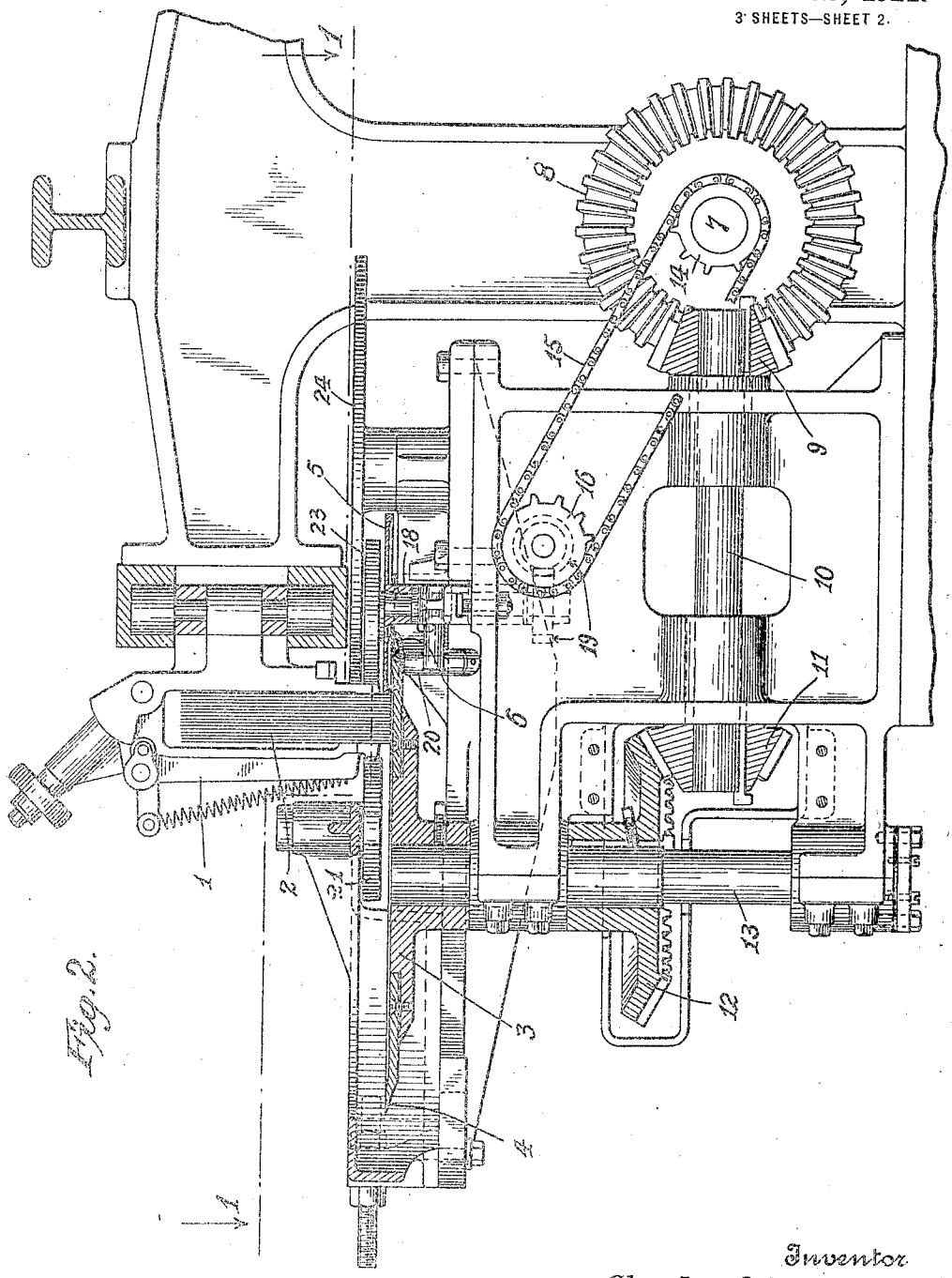


Fig. 2.

Inventor
Charles A. Juengst
By his Attorney
Fred Becker

C. A. JUENGST.

CUTTING MECHANISM.

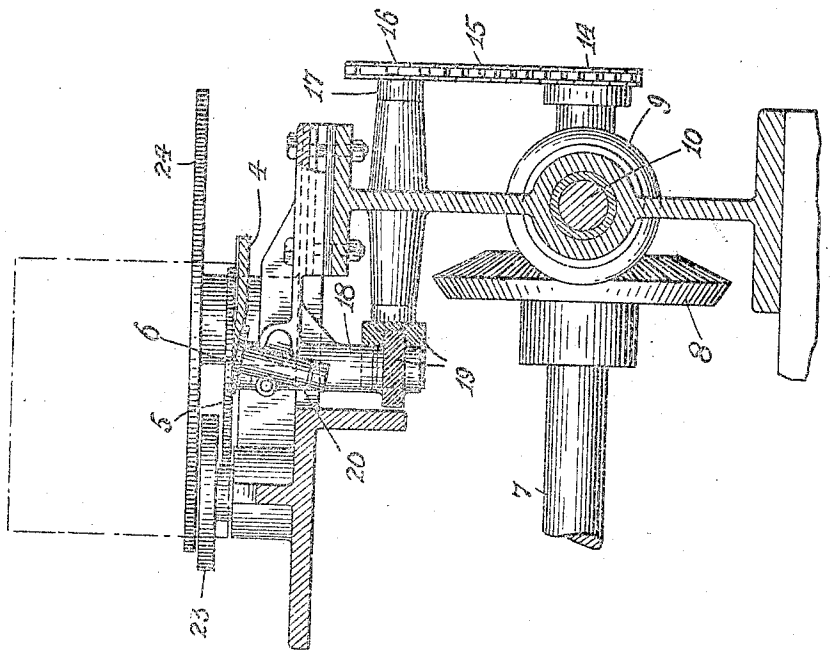
APPLICATION FILED DEC. 10, 1919.

1,394,309.

Patented Oct. 18, 1921

3 SHEETS—SHEET 3.

Fig. 3.





Inventor

Charles A. Juengst

By his Attorney

Arthur Becker

UNITED STATES PATENT OFFICE.

CHARLES A. JUENGST, OF CROTON FALLS, NEW YORK, ASSIGNOR TO AMERICAN ASSEMBLING MACHINE COMPANY, INC., OF MEMPHIS, TENNESSEE, A CORPORATION OF DELAWARE.

CUTTING MECHANISM.

1,394,309. Specification of Letters Patent. Patented Oct. 18, 1921.

Application filed December 10, 1919. Serial No. 343,697.

To all whom it may concern:

Be it known that I, CHARLES A. JUENGST, a citizen of the United States, and a resident of Croton Falls, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Cutting Mechanism.

The present invention relates generally to cutting machines and has more particularly reference to means for cutting a pack of sheets or signatures that may constitute a book to be bound in the manner shown in United States Letters Patent No. 1,244,861.

In machines of this character the cutter cuts the lowermost exposed edge of the book while the latter is on the run and the main object of the invention is to obtain a smooth cutting action without interfering with the passage of the book.

In the accompanying drawings the invention is disclosed in a concrete and preferred form in which—

Figure 1 is a plan view in section, on the line 1—1 of Fig. 2, of a device embodying the invention.

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal sectional view on the line 3—3 of Fig. 1.

The machine to which the cutter is applied is a binding machine such as is shown in United States Letters Patent No. 1,244,861, in which a train of clamps travel in a horizontal orbit with a continuous motion while the various operations necessary to bind the book are performed.

1 indicates one of such clamps adapted to hold a pack of sheets or signatures, constituting a book 2, in an upright position with the lowermost edge or back exposed. 3 is the cutting member here shown as a rotatable disk provided with a tapering peripheral cutting edge 4, said member being located at one side of the traveling clamp and beneath the same and intersecting the path of travel of the pack of sheets. On the opposite side of the clamp, and above the plane of the cutter, is an upper thrust roller 5 and below roller 5 and cutter 3 is a lower thrust roller 6 that occupies an inclined position, as shown. As will be seen, more particularly from Fig. 3, the cutting edge of the cutter enters between rollers 5 and 6 which thus prevent the sheets from becoming distorted during the cutting action.

The cutter and the upper thrust roller are both rotated in the same direction and preferably at the same speed as that of the advancing movement of the book. In order to accomplish this, power is derived from power shaft 7 in the following manner. 8 indicates a bevel gear on shaft 7, meshing with bevel pinion 9 on cross shaft 10, said shaft having at its other end a bevel pinion 11 meshing with bevel gear 12 on upright shaft 13 to the upper end of which cutter 3 is fastened. Mounted also on shaft 7 is a sprocket wheel 14 driving chain 15 that passes over sprocket wheel 16 on the end of stub shaft 17. From this shaft, motion is transmitted to the upright shaft 18 that carries thrust roller 5 by means of worm gearing 19.

Roller 6 is suitably supported in a bracket bearing 20. 21, 22, 23 and 24 indicate idler rollers engaging opposite sides of the clamp to assist in preventing the opening of the clamp during the cutter action. Roller 24 is larger than, and, to afford space for the location of roller 5, is in a different plane from, 21, 22 and 23.

I claim:

1. Cutting mechanism for a pack of sheets comprising: a clamp for holding a pack of sheets with one edge exposed, means for moving the clamp in a given path during the cutting action, a rotating cutter, having a tapering edge, at one side of and beneath the clamp and intersecting the path of travel of the exposed edge of the sheets, an upper thrust roller at the other side of the clamp engaging one side of the sheet pack above the plane of the cutter, means for rotating the cutter and thrust roller in the same direction as that of the advancing movement of the clamp, and a lower thrust roller beneath the cutter and occupying an inclined position in contact with the pack of sheets.

2. Cutting mechanism for a pack of sheets comprising: a clamp for holding a pack of sheets with one edge exposed, means for moving the clamp in a given path during the cutting action, a rotating cutter at one side of and beneath the clamp and intersecting the path of travel of the exposed edge of the sheets, a thrust roller at the other side of the

clamp engaging one side of the sheet pack above the plane of the cutter, means for rotating the cutter and thrust roller in the same direction as the advancing movement of the clamp, and idler rollers engaging opposite sides of the clamp adjacent the point of intersection of the cutter with the pack of sheets.

3. Cutting mechanism for a pack of sheets comprising: a clamp for holding a pack of sheets with one edge exposed, means for moving the clamp in a given path during the cutting action, a rotating cutter at one side of and beneath the clamp and intersecting the path of travel of the exposed edge of the sheets, two rollers at the other side of the clamp, one, an upper thrust roller engaging one side of the sheet pack above the plane of the cutter and the other, a lower thrust roller beneath the cutter, said rollers receiving between them the outer cutting edge of the cutter, means for rotating the cutter and upper thrust roller in the same direction as that of the advancing movement of the clamp, and idler rollers engaging opposite sides of the clamp adjacent the point of intersection of the cutter with pack of sheets.

Signed at New York, in the county of New York, and State of New York, this 26th day of November, 1919.

CHARLES A. JUENGST.