

G. B. GROVER.
WEDGE STRIPPING MACHINE.
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920,456.

Patented May 4, 1909.
2 SHEETS—SHEET 1.

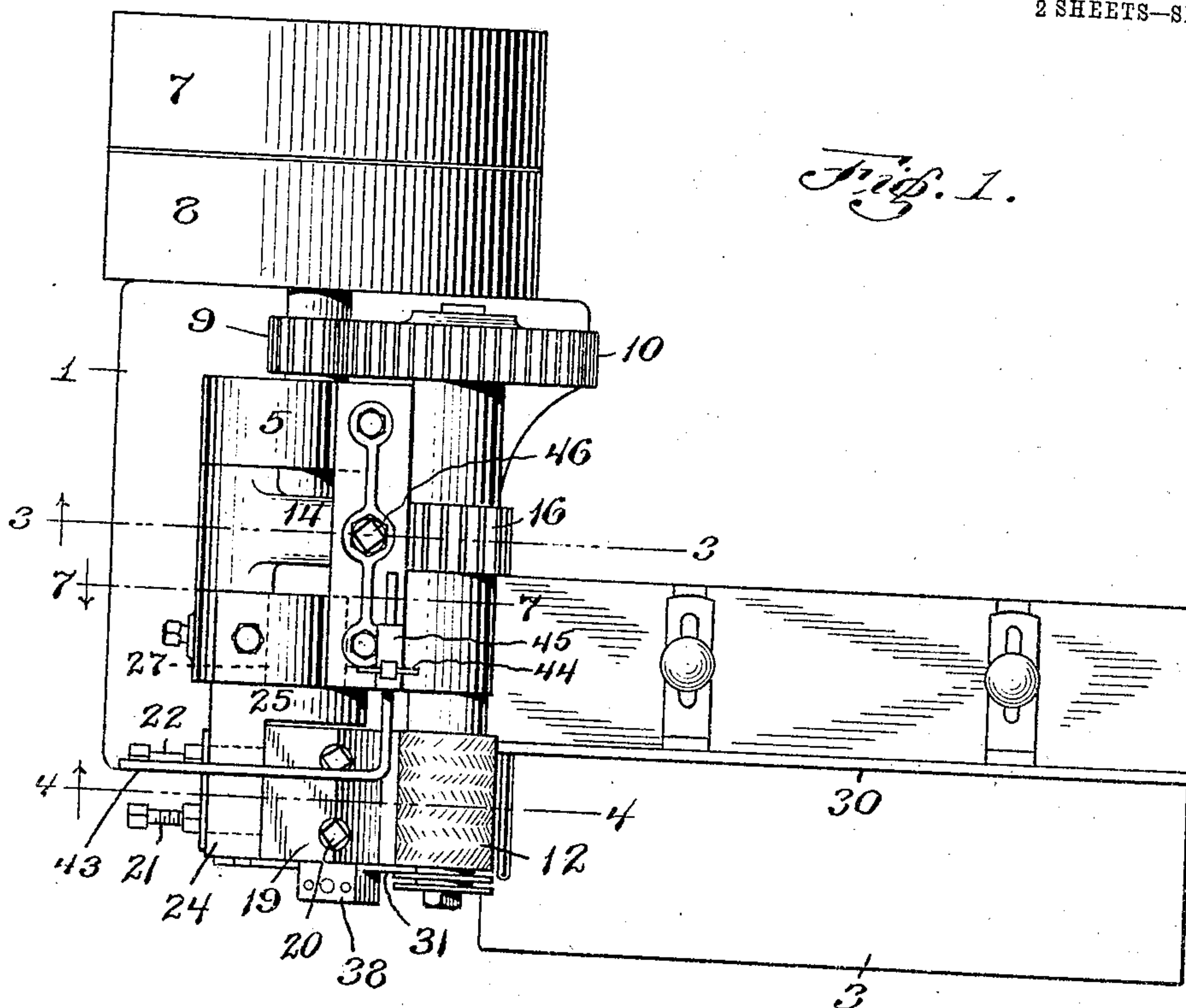


Fig. 1.

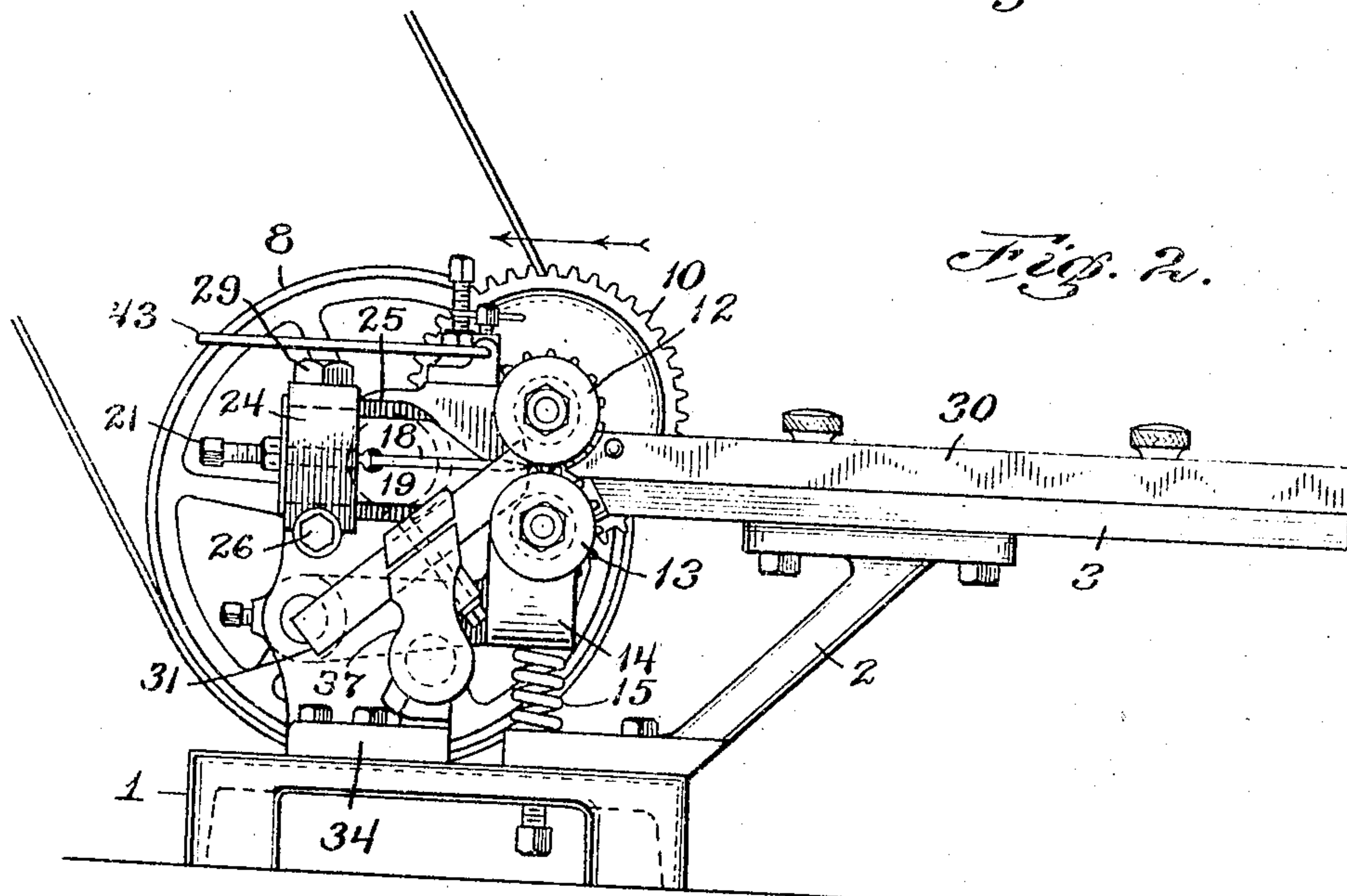


Fig. 2.

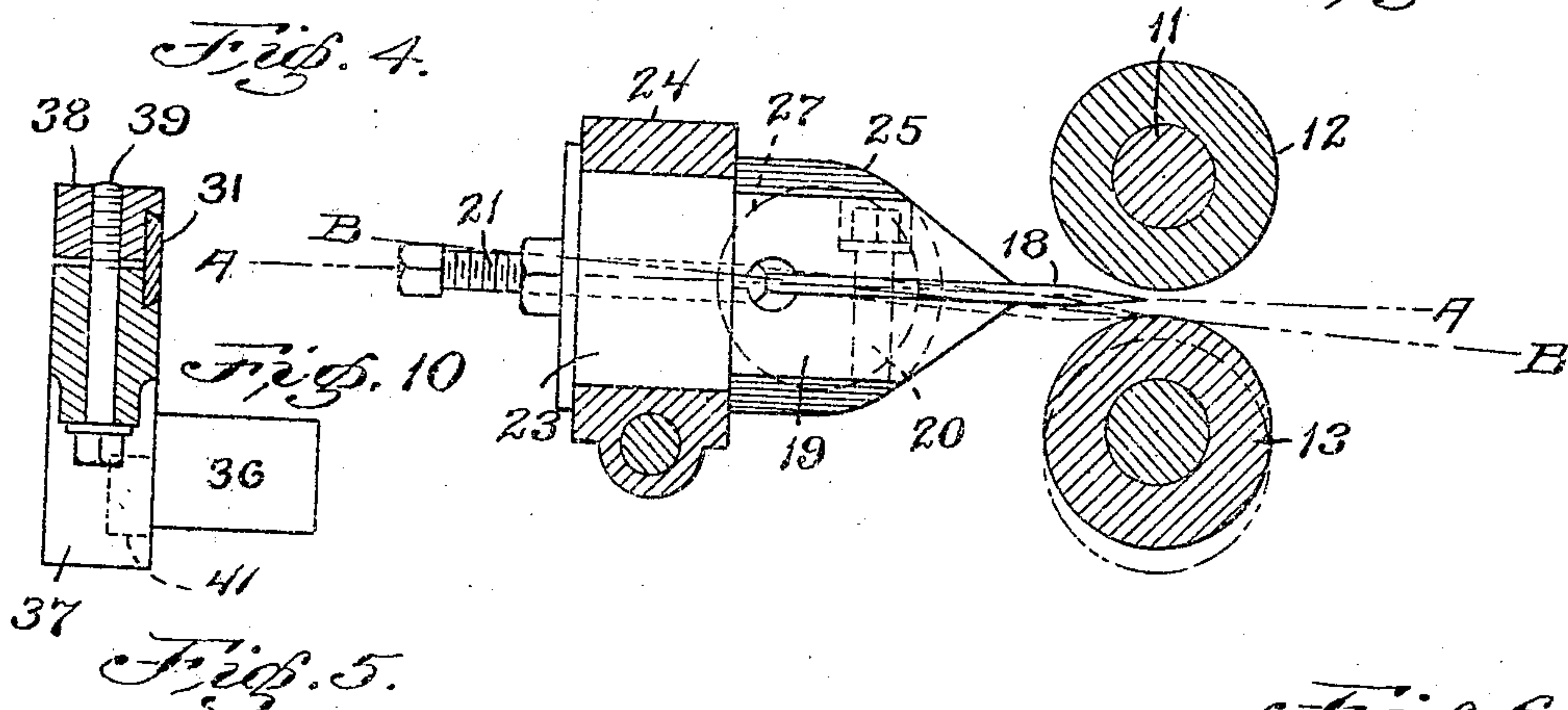
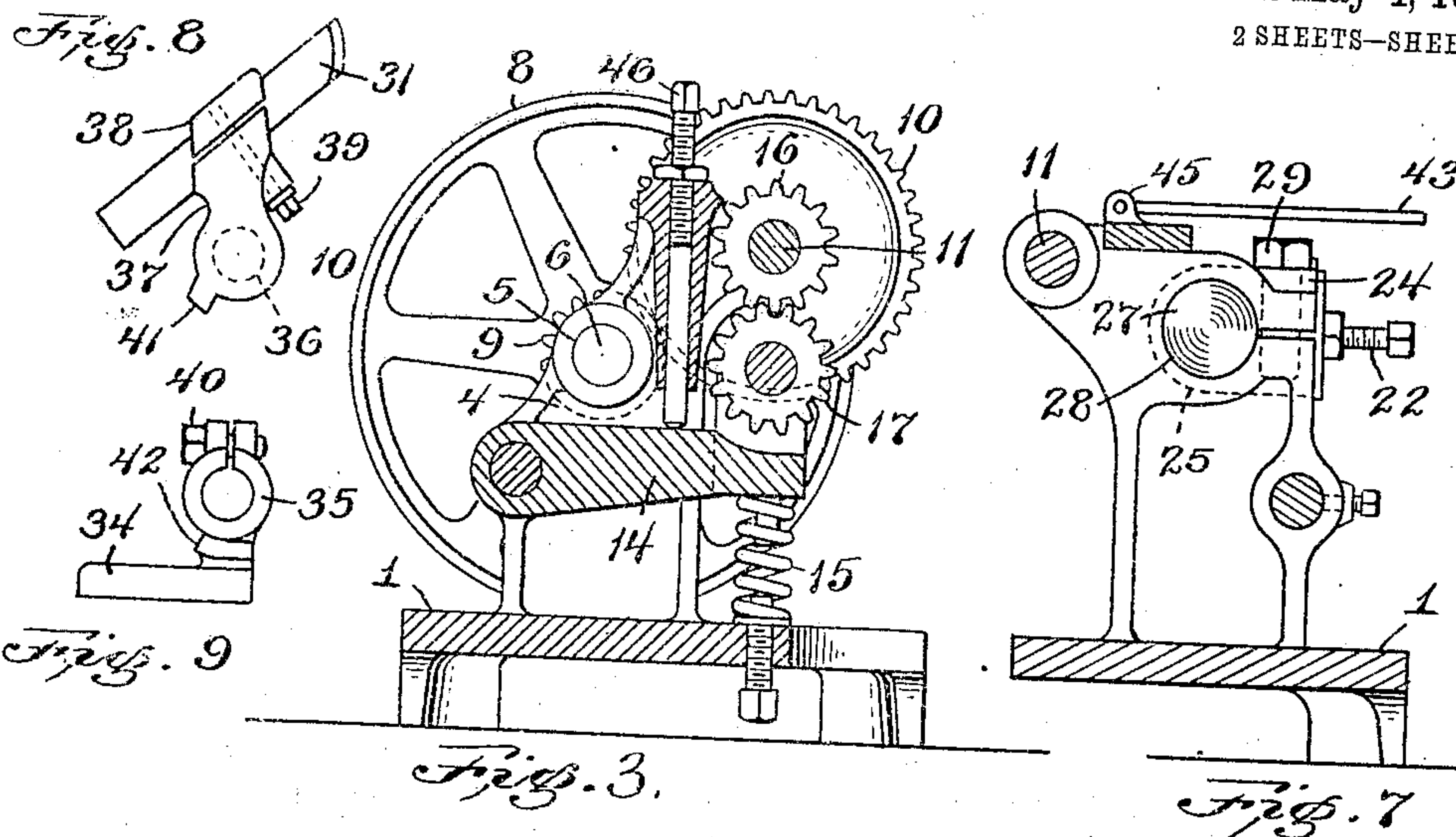
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE B. GROVER, OF LYNN, MASSACHUSETTS.

WEDGE-STRIPPING MACHINE.

No. 920,456.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed February 26, 1908. Serial No. 417,324.

To all whom it may concern:

Be it known that I, GEORGE B. GROVER, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Wedge Stripping-Machines, of which the following is a specification.

This invention relates to machines for cutting plane or beveled strips from sheets of leather, sheet-heeling, leather-board or other material suitable for heel-lifts. Its object is to enable a machine of this character to produce work having any desired thickness or angle of bevel.

To this end, therefore, the invention consists of the novel elements and arrangement of parts hereinafter described and specifically pointed out in the claims.

Of the accompanying drawings,—Figure 1 represents a plan view of a machine embodying the principles of my invention. Fig. 2 represents an elevation of the machine. Fig. 3 represents a cross section of the machine on line 3—3 of Fig. 1. Fig. 4 represents a sectional view of the splitting knife and feed rolls, taken on line 4—4 of Fig. 1. Figs. 5 and 6 represent front elevations of the feed rolls and splitting knife, showing different adjustments thereof. Fig. 7 represents a section on line 7—7 of Fig. 1. Fig. 8 represents an elevation of the trimming knife and the holder therefor. Fig. 9 represents an elevation of a bracket by which the trimming-knife holder is secured to the machine. Fig. 10 represents a sectional elevation on an enlarged scale, of the trimming knife and holder, taken on line 10—10 of Fig. 8.

The same reference characters indicate the same parts in all the figures.

The machine consists of a base 1 from which rises a bracket 2 supporting a work-holding table 3. Also rising from the base at one end, is a standard 4 having a bearing 5 for a drive shaft 6. The latter carries fast and loose pulleys 7 and 8 by one of which it is driven. Also attached to the shaft is a pinion 9 meshing with a gear 10 on the shaft 11 of one of the work-feeding rolls 12. There are two such rolls 12 and 13, the second of which is carried in bearings in a swinging support 14 and pressed toward the first roll by a spring 15. The first roll 12 is held in

fixed bearings, and both rolls are driven positively in unison by gears 16 17 secured to their respective shafts. The rolls are so located that the space between them comes at the level of the table 3 so as to grasp and draw forward the leather or equivalent material fed toward them upon the table.

Immediately in rear of the table and projecting slightly between the rolls is a splitting knife 18 which divides the material between its upper and lower surfaces into two beveled strips. This knife is mounted with capacity for adjustment so that it may be inclined at any angle desired, and its edge placed at any desired height with respect to the feed rolls of the table for the purpose of producing work of the required thickness and angle of bevel. The knife is held by a block 19 which is split to receive it and between the split portions of which it is clamped by screws 20. The forward end of the block is beveled from top and bottom to the knife, so as to afford no obstruction to the passage of the work. There are adjusting screws 21 and 22 threaded into the block from the rear, which bear against the rear end of the knife and serve to determine the amount by which the edge of the knife projects from the block. The latter is provided with a cylindrical hub or stud 23 which is contained in a bearing sleeve 24 of a holder 25. The sleeve 24 is split at one side so that the parts may spring away from each other and allow the hub or stud 23 to be turned, and is tightened upon the hub by a screw 26 to secure the knife block in any adjusted position. It will be observed that this adjustment is a rotary one about an axis lying in the direction of feed of the work, and that it permits the knife to be slanted so as to cut the work with the desired angle of bevel. The knife block holder 25 also has a cylindrical hub or stud 27 shown by dotted lines in Figs. 1 and 4, and by full lines in Fig. 7. This stud is approximately at right angles to the axis of the bearing in the sleeve 24 and is contained in a bearing 28. One side of this bearing is divided so that it can be clamped on the stud 27 by a screw 29. This manner of mounting permits an adjustment of the knife about an axis parallel to its edge so that the edge may be raised or lowered to make skivings of different thicknesses. Fig. 4 illustrates two adjustments of the knife about

this axis, one shown in full lines in which the knife extends on the line A—A, and the other in dotted lines, where the knife is on a slant corresponding to the line B—B. This latter adjustment is used when the material operated upon is of greater thickness, and it is desired to cut it into two approximately equal parts. For this class of work the lower roll is depressed as illustrated by dotted lines. Fig. 5 shows in side elevation the adjustment for thin work, and Fig. 6 that for the thicker grade of stock, the splitting knife being adjusted in both cases so as to cut the stock into two equal parts diagonally across from the upper outer edge to the lower inner edge. It is to be borne in mind of course that the angular adjustment of the knife need not be of just this character, for it is possible to produce wedge strips with a certain thickness at their lesser edges.

It will be seen that the construction of the knife block and its holder above described, permit adjustments of the knife about two axes, both of which are approximately in the plane in which the work is fed and are perpendicular to each other.

It is possible to produce strips of any desired width as well as of variable bevel, and for gaging this width there is mounted on the table an adjustable guide 30 which locates the inner edge of the work. The outer edge is trimmed off even with the end of the splitting knife by a trimming knife 31 which is held against the end of the splitting knife and has its edge in a plane transverse to the edge of the latter. The end of this knife which carries the cutting edge projects into grooves 32 and 33 formed in the feed rolls near their outer ends, and is maintained very nearly in line with the edge of the splitting knife. The trimming knife is mounted so that its cutting edge may project as fast as worn away, and so that it may be held directly against the end of the splitting knife in all adjustments of the latter. The support for this trimming knife consists of a bracket 34 detachably secured to the base 1 and having a split sleeve 35 which forms a bearing for a stud 36 on the knife holder 37. This knife-holder has a recess on its inner face and carries a detachable clamp 38 having a complementary recess, the two recesses together forming a dovetail groove in which the knife 31 is clamped so that its surface becomes substantially flush with the inner face of the holder. The clamp is an entirely separate piece from the holder and is held thereto by a clamping screw 39. The stud 36 can be moved axially in its bearing sleeve so as to bear against the end of the splitting knife, and at the same time permit the latter to be adjusted angularly. It may be secured in any adjustment by the clamping screw 40. There is a lug 41 on the knife-holder which bears against a complementary stop 42 on the

bracket and prevents the knife being displaced by the pressure of the material crowded against it.

The upper strip split off from the stock worked upon rises up on the upper bevel of the knife block and passes over the holder. It is prevented from rising and curling back over the upper feed-roll by a rod 43 adjustably secured by means of a set screw 44 in a fixed socket 45. The lower strip cut from the stock passes downward and off to the rear of the machine.

As has been previously stated, the lower feed-roll is held in bearings upon a pivoted arm 14, and the latter is pressed upward by a spring 15 to cause the roll to bear with a yielding pressure upon the work and allow it to give way for the accommodation of parts of unequal thickness. Adjustment of the lower roll for different grades of stock is made by a screw stop 46 threaded into a fixed part of the machine frame and bearing upon the arm 14. This stop limits the minimum distance between the rolls.

I claim:—

1. A machine for cutting wedge strips from sheets, consisting of a splitting knife, feed-rolls flanking the edge of said knife and having grooves close to the end thereof, and a trimming knife arranged close to the end of said splitting knife with its cutting edge extending into said grooves, said edge being transverse to the edge of the splitting knife and approximately in line therewith, and the trimming knife being adjustable as a whole toward and from the adjacent end of the splitting knife.

2. In a machine for making wedge-shaped strips, a knife block carrying a splitting knife, adjusting means for determining the amount of projection of the edge of said knife relatively to said block, a stud on said block, a holder having a sleeve in which said stud is rotatably contained, a stud on said holder extending approximately at right angles to the axis of said sleeve, and a sleeve on the machine frame in which said holder stud is rotatably held.

3. In a machine of the character described, a knife block carrying a splitting knife, a stud on said block, a holder having a split sleeve in which said stud is rotatably contained, a stud on said holder extending approximately at right angles to the axis of said sleeve, a split sleeve on the machine frame in which said holder stud is rotatably held, and clamps for tightening said sleeves about the studs to retain the holder and block in any angular adjustment.

4. In a machine of the character described, in combination with the splitting knife and work-feeding means, a width trimming knife and a holder therefor; said holder consisting of a block and a clamp gripping said trimming knife between them so that one side of

the knife is flush with their inner surface, said block being movably mounted so that it may bring and hold said knife adjacent to the end of the splitting knife in a plane transverse thereto.

5 5. In a machine of the character described, in combination with the splitting knife and work-feeding means, a width-trimming knife and a holder therefor; said holder consisting
10 of a bracket fixed to the machine and having a sleeve, a block provided with a stud rotarily and adjustably held in said sleeve and a clamp detachably secured to said block for gripping the knife between itself and the
15 block; said block being arranged to hold the knife in a plane transverse to the splitting knife and adjustable to place it close to the end of said splitting knife.

20 6. In a machine of the character described, in combination with the splitting knife and work-feeding means, a width-trimming knife and a holder therefor; said holder consisting of a block and a cooperating clamp adjustably secured together and having complemental
25 recesses arranged to receive and grip the knife with its surface substantially flush

with one of the faces of said block and clamp, the block being so mounted that the side of the trimming knife may be brought against the end of the splitting knife.

30 7. In a machine of the character described, in combination with the splitting knife and work-feeding means, a width-trimming knife and a holder therefor; said holder consisting of a bracket fixed to the machine and having
35 a sleeve, a block provided with a stud rotarily and adjustably held in said sleeve, and a clamp detachably secured to said block for gripping the knife between itself and the
40 block; said block being arranged to hold the knife in a plane transverse to the splitting knife and adjustable to place it close to the end of said splitting knife, and the block and bracket having complemental stops to limit
45 the backward swinging movement of the trimming knife.

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

GEORGE B. GROVER.

Witnesses:

H. ASHLEY BOWEN,
ELINOR I. MATTSON.