

No. 618,023.

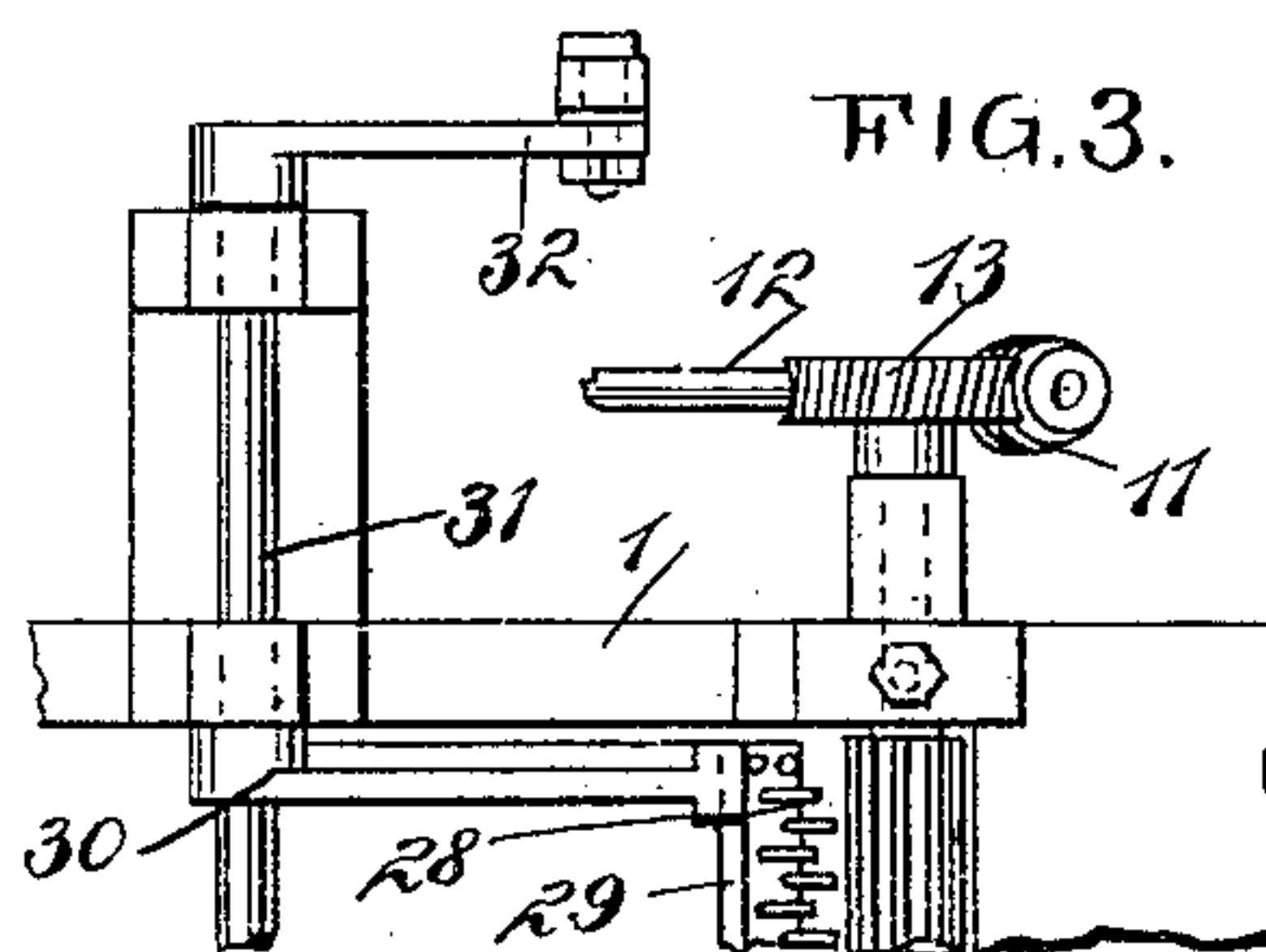
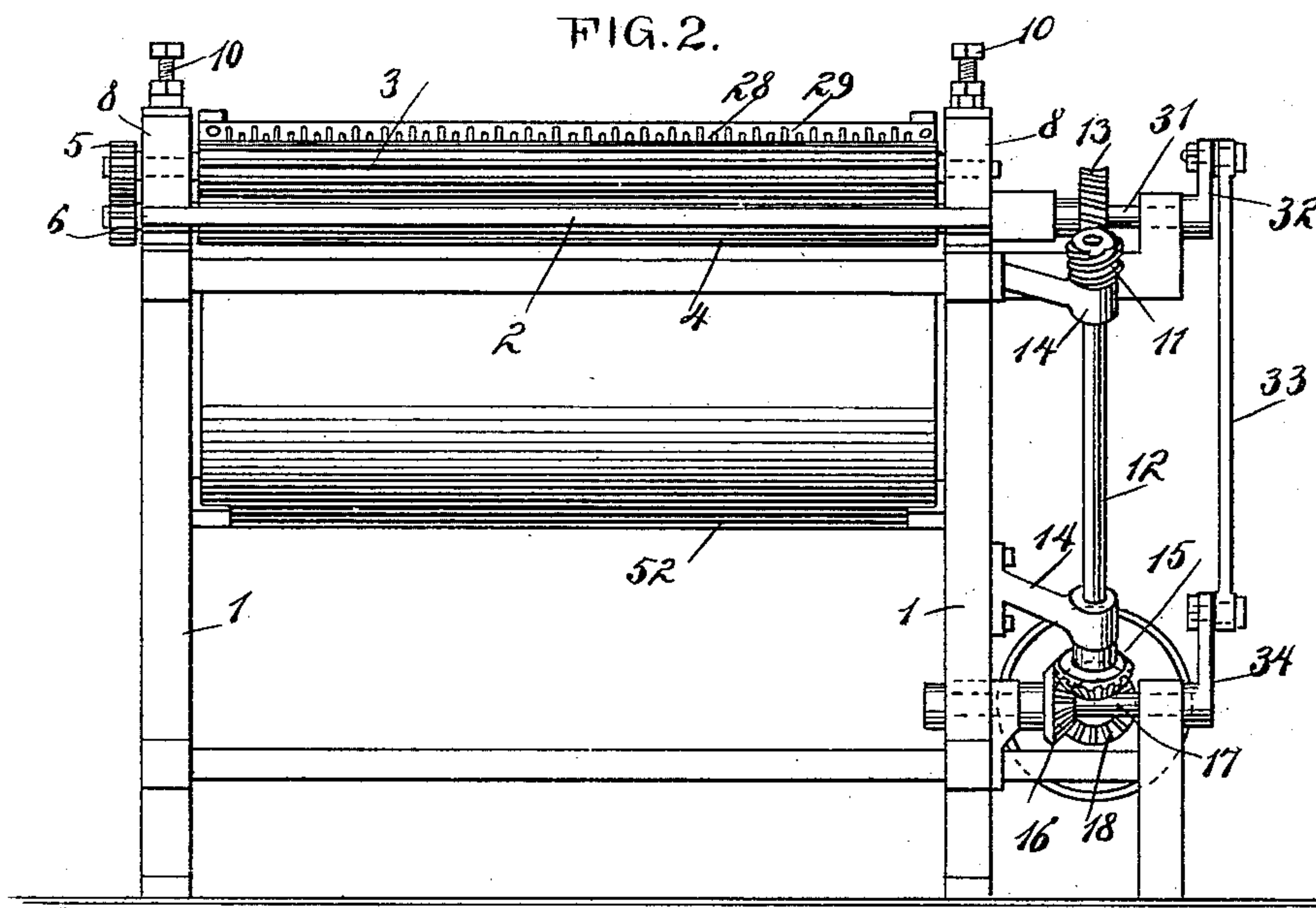
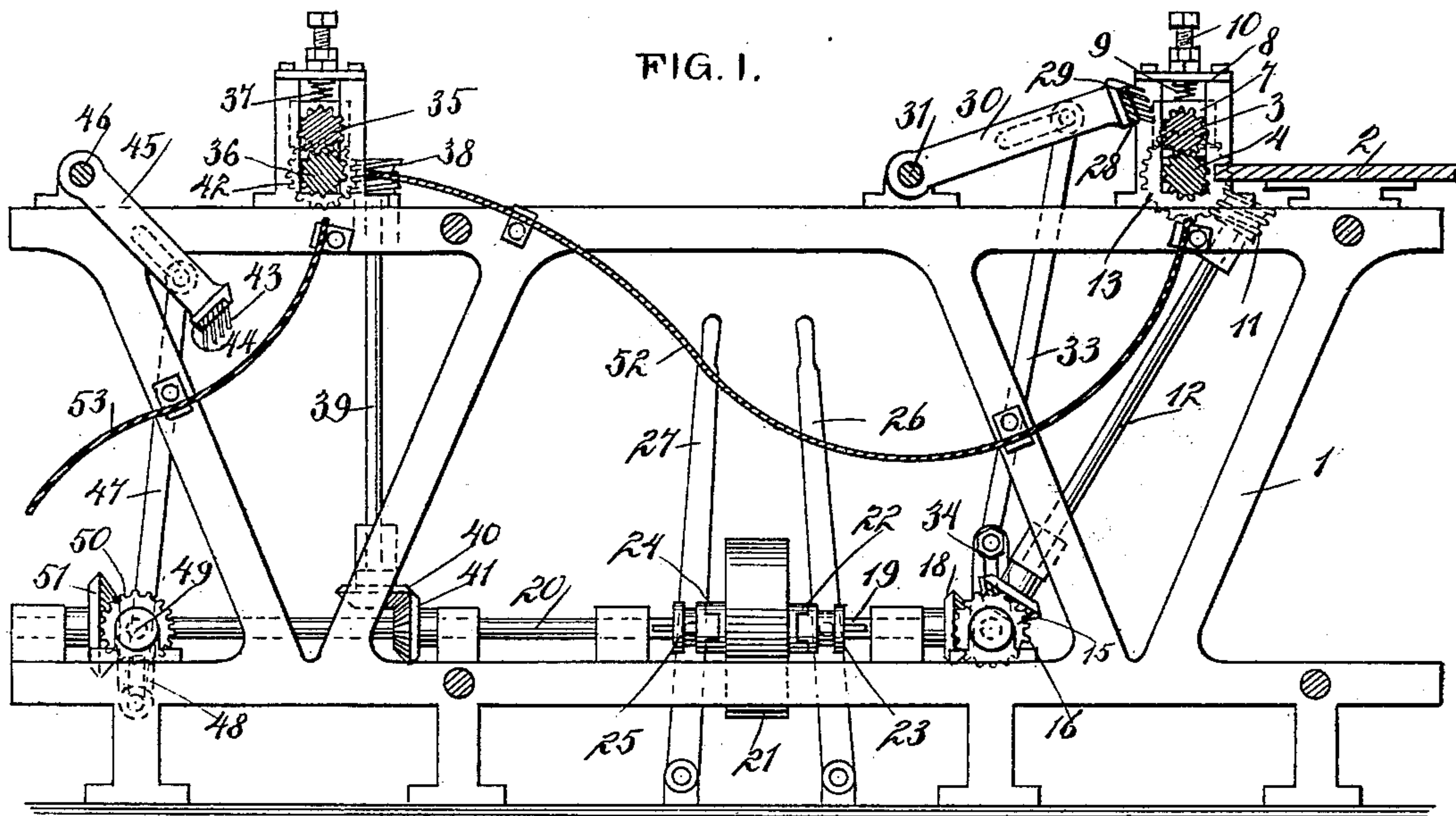
Patented Jan. 17, 1899.

E. BEERS.

MACHINE FOR PICKING CURLLED HAIR.

(Application filed Dec. 2, 1897.)

(No Model.)



WITNESSES:

*Donn Twitchell*  
*C. R. Ferguson*

INVENTOR

*E. Beers*

BY

*Mundt & Co.*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

EDGAR BEERS, OF GEORGETOWN, CONNECTICUT, ASSIGNOR OF ONE-HALF  
TO JOHN GALLAGHER, OF NEW YORK, N. Y.

## MACHINE FOR PICKING CURLED HAIR.

SPECIFICATION forming part of Letters Patent No. 618,023, dated January 17, 1899.

Application filed December 2, 1897. Serial No. 660,501. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR BEERS, of Georgetown, in the county of Fairfield and State of Connecticut, have invented a new and Improved Machine for Picking Curled Hair, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in picking-machines, such as are especially adapted for picking curled hair; and the object is to provide a machine of this character, of a very simple and comparatively inexpensive construction, which shall be strong and durable and by means of which the hair may be rapidly picked from the rope and finished in a sheet form, and thus adapted for use in upholstering.

I will describe a machine embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section of a machine embodying my invention. Fig. 2 is a front end view thereof, and Fig. 3 is a fragmentary plan view taken at the right-hand end of Fig. 1.

The frame comprises side pieces 1, to one end of which, at the top, a table 2 is attached. Arranged at the forward end of the frame, one above the other, are feed-rollers 3 and 4. The shafts of the feed-rollers at one end are provided with intermeshing pinions 5 and 6, and the upper roller 3 has its bearings in blocks 7, adapted to move vertically in guides 8. Springs 9, bearing against the upper sides of the block 7, will serve to hold the upper roller yieldingly toward the lower roller, and the tension may be adjusted by means of screws 10, passing through the top of the guides 8 and engaging with the spring.

The rollers 3 and 4 are longitudinally corrugated, as plainly indicated in the drawings, and motion is imparted to the rollers by means of a worm 11 on a shaft 12 and meshing with a work-wheel 13 on an outwardly-extending portion of the shaft of the lower roller 4. The shaft 12 is arranged at an incline and has bearings in brackets 14, ex-

tended from one of the side pieces 1. The lower end of the shaft 12 is provided with a bevel-gear 15, which meshes with a bevel-gear 16 on a counter-shaft 17, and also meshing with this bevel-gear 16 is a bevel-gear 18 on a main shaft, consisting of two sections 19 and 20.

Mounted on the sections 19 and 20 of the main shaft is a driving-pulley 21, on one side of which is a clutch member 22, designed to be engaged by a clutch member 23, mounted to slide on the section 19 of the main shaft, but to rotate therewith. The opposite side of the pulley has a clutch-section 24, designed to be engaged with a clutch-section 25, mounted to slide on the section 20 of the main section, but to rotate therewith. The movable clutch-sections in order to make them rotate with the shaft-sections may be each provided with a feather to engage in a groove formed in its shaft-section, and they may be moved into and out of engagement with the clutch-sections on the pulley by means of levers 26 and 27, having pins or lugs extended into annular channels formed in the movable clutch-sections.

Rearward of the feed-rollers 3 and 4 and movable across the same in the arc of a circle is a picking-comb comprising teeth 28, extended from a bar 29, which bar is connected to arms 30, mounted on a shaft 31, having bearings in blocks on the upper sides of the side pieces 1. One end of the shaft 31 is provided with a crank 32, from which a connecting-rod 33 extends to a crank 34 on the crank-shaft 17. Obviously as the counter-shaft 17 rotates and as the crank 32 is longer than the crank 34 a reciprocating motion in the arc of a circle will be imparted to the picking-comb, and the degree of movement may be regulated by moving or adjusting the connection between the rod 33 along the slot formed in the crank 32.

Rearward of the feed-rollers 3 and 4 and the picking-comb just described is a second set of feed-rollers 35 and 36, which are longitudinally corrugated like the first-named rollers, and the upper one has adjustable bearing-blocks and a spring-yielding presser 37, as above described in connection with the rollers 3 and 4. Motion is imparted to the feed-roller 36 by means of a worm 38 on a



vertical shaft 39, to the lower end of which a bevel-gear 40 is attached, the said bevel-gear 40 meshing with a bevel-gear 41 on the section 20 of the main shaft. The two rollers 5 35 and 36 will be geared together in the same manner as the first-named rollers. It is intended that the rollers 35 and 36, which may be termed the "finishing" feed-rollers, shall have a faster rotation than the feed-rollers 3 10 and 4. Therefore the worm-wheel 42 on the shaft of the roller 36 is somewhat smaller than the worm-wheel 13 on the roller 4.

Rearward of the rollers 35 and 36 is a picking-comb comprising teeth 43, mounted on a 15 bar 44, which is connected to arms 45, mounted on a shaft 46, having bearings in blocks on the upper sides of the side portions of the frame, and on this shaft 46 is a crank from which a rod 47 extends to a connection with 20 a crank 48 on a counter-shaft 49, which has a bevel-gear 50, meshing with a bevel-gear 51 on the shaft-section 20. The rod 47 may be adjusted on the crank affixed to the shaft 46, so that a greater or less throw of the comb 25 may be secured. This comb, it will be understood, operates in a similar manner to the first-named comb, but somewhat faster, and for this purpose the bevel-gear 51 is made somewhat larger than the bevel-gear 18.

30 Supported in the frame and designed to carry the hair from the rollers 3 and 4 to the rollers 35 and 36 is a bed-plate 52. This bed-plate 52 is curved downward between its ends, the object of which is to give a sufficient slack to the sheet of hair as it extends 35 between the two pairs of rollers to prevent its being torn or broken as it is fed between the rollers 35 and 36, which, as before stated, have an increased speed of rotation relatively to the feed-rollers 3 and 4. The hair 40 when operated upon by the teeth 43 is discharged upon a downwardly inclined or curved table 53, from which it passes to the floor or to a suitable receptacle.

45 It is obvious that when starting the machine the shaft-section 20 may be thrown out of engagement with the pulley 21; but when the sheet extends to and connects with the rollers 35 and 36 the said shaft-section 50 20 must be placed in engagement with the pulley. Then upon finishing the material or while it is passing between the rollers 35 36 only the shaft-section 19 may be disconnected or thrown out of engagement with the 55 pulley 21, thus stopping the rollers 3 and 4.

In operation the ropes of hair are fed along the table 2 and between the feed-rollers 3 and 4, and as these feed-rollers are rotated a reciprocating motion will be imparted to the 60 picking-comb comprising the teeth 28. At each downward stroke of the comb the teeth will engage with the ends of the rope and draw the hairs forming the same downward, so as to loosen said rope and thoroughly pick 65 the hairs composing the same. As the upper roller is capable of a slight vertical movement, it adapts itself to the slight inequalities

of thickness of the ropes passing between the two rollers, so as to prevent injury to the hair, and as the comb moves upward the 70 teeth 28 thereof, being inclined downward, readily withdraw themselves from the hair, and in this way the hair is evenly and thoroughly picked and loosened without being 75 torn or injured, since each tooth is permitted to clear itself on the upstroke. In passing through the second machine, comprising the rollers 35 and 36, the same operation takes place and more thoroughly picks and evens 80 the sheet formed during the first operation, thus putting the sheet in the best possible form for use by upholsterers.

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 85

1. A machine for picking curled hair and the like, comprising two sets of feed-rollers, one set being rearward of the other set, a reciprocating comb rearward of each set of rollers, and mechanism comprising a sectional 90 shaft and clutches whereby both sets of feed-rollers may be operated together or either set operated while the other set is at rest, substantially as specified.

2. A machine for picking curled hair and 95 the like, comprising a set of feed-rollers, means for rotating the same, a picking-comb operating at the rear side of said rollers, another set of rollers for receiving the material from the first-named rollers, means for 100 operating the same at a greater speed than the first-named rollers, a picking-comb operating at the rear side of the last-named rollers, and means, comprising a sectional shaft and clutch mechanism whereby both sets of 105 rollers may be operated together, or either set operated while the other set is at rest, substantially as specified.

3. A machine for picking curled hair and the like, comprising a set of feed-rollers, 110 means for rotating the same, a picking-comb operating at the rear side of said rollers, another set of rollers for receiving the material from the first-named rollers, means for operating the same at a greater speed than 115 the first-named rollers, a picking-comb operating at the rear side of the last-named rollers, means, comprising a sectional shaft and clutch mechanism, whereby both sets of rollers may be operated together, or either set 120 operated while the other set is at rest and a longitudinally-curved bed-plate extended between the two pairs of rollers, substantially as specified.

4. A machine for picking curled hair and 125 the like, comprising a frame, a pair of feed-rollers mounted on the frame, a main driving-shaft comprising two sections, a pulley mounted on said sections, clutches for engaging the sections with the pulley, a worm-shaft driven 130 from one section of the main shaft, a worm on said shaft engaging with the worm-wheel on the shaft of one of the rollers, a set of finishing feed-rollers, a worm-shaft driven



from the section of the main shaft, a worm  
on said shaft engaging with the work-wheel  
on the shaft of one of the finishing-rollers,  
picking-combs operated from the main shaft  
5 rearward of each pair of feed-rollers, the  
finishing-rollers and their picking-comb hav-  
ing a faster motion than the other feed-roll-  
ers and their picking-comb, and a longitu-

dinally-curved bed-plate extended from one  
pair of rollers to the other, substantially as 10  
specified.

EDGAR BEERS.

Witnesses:

ALBERT W. CHASE,  
J. HOWARD LANG.