

No. 770,284.

PATENTED SEPT. 20, 1904.

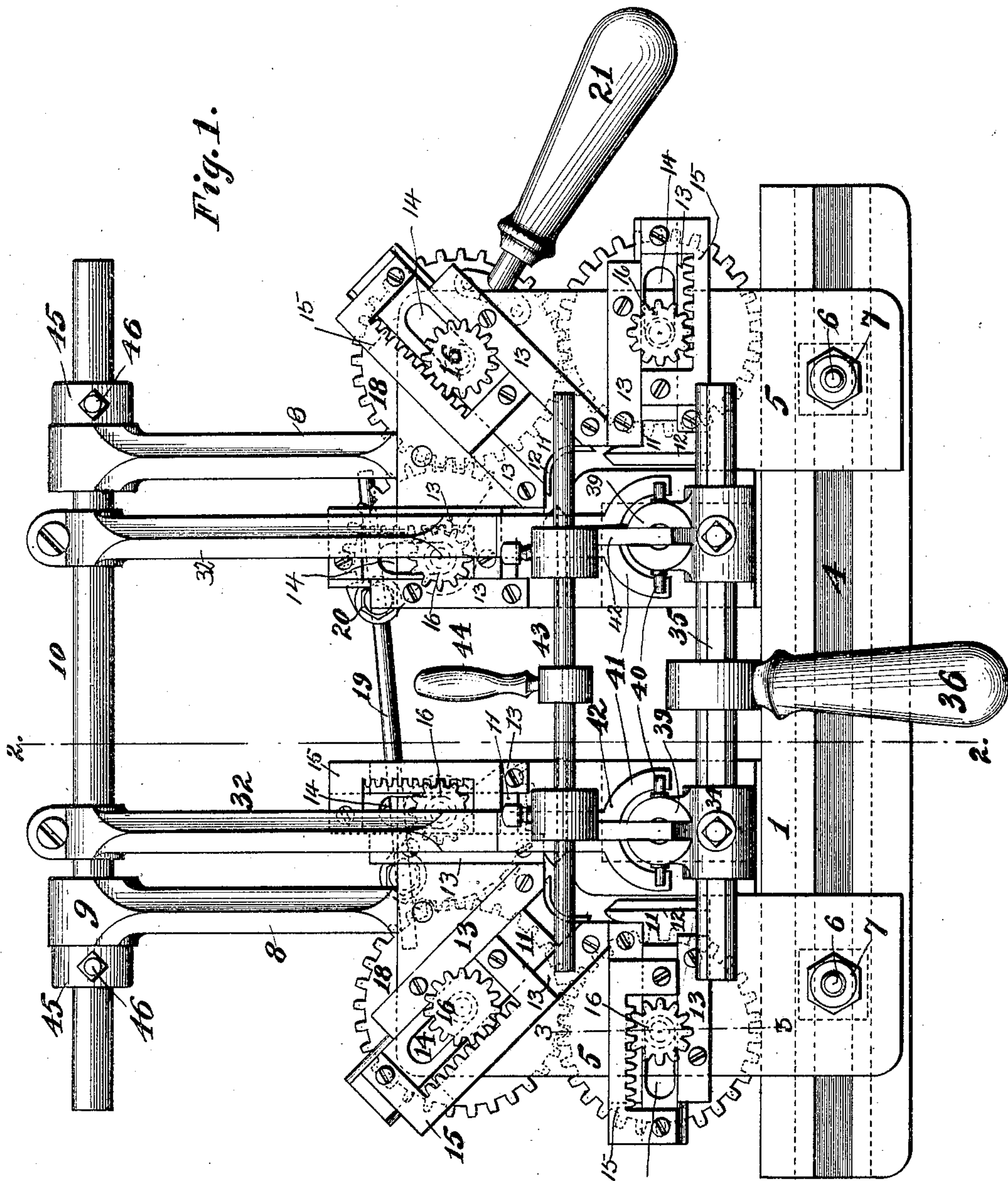
J. B. GURY.

## ROUND CORNER CASE MAKING MACHINE.

APPLICATION FILED JAN. 13, 1903.

NO MODEL.

2. SHEETS—SHEET 1.



Attest:  
Edw. L. Dillon  
Charles Pickles

Inventor:  
J. H. H. H.  
by C. H. H. H.  
Att'ys.

No. 770,284.

PATENTED SEPT. 20, 1904.

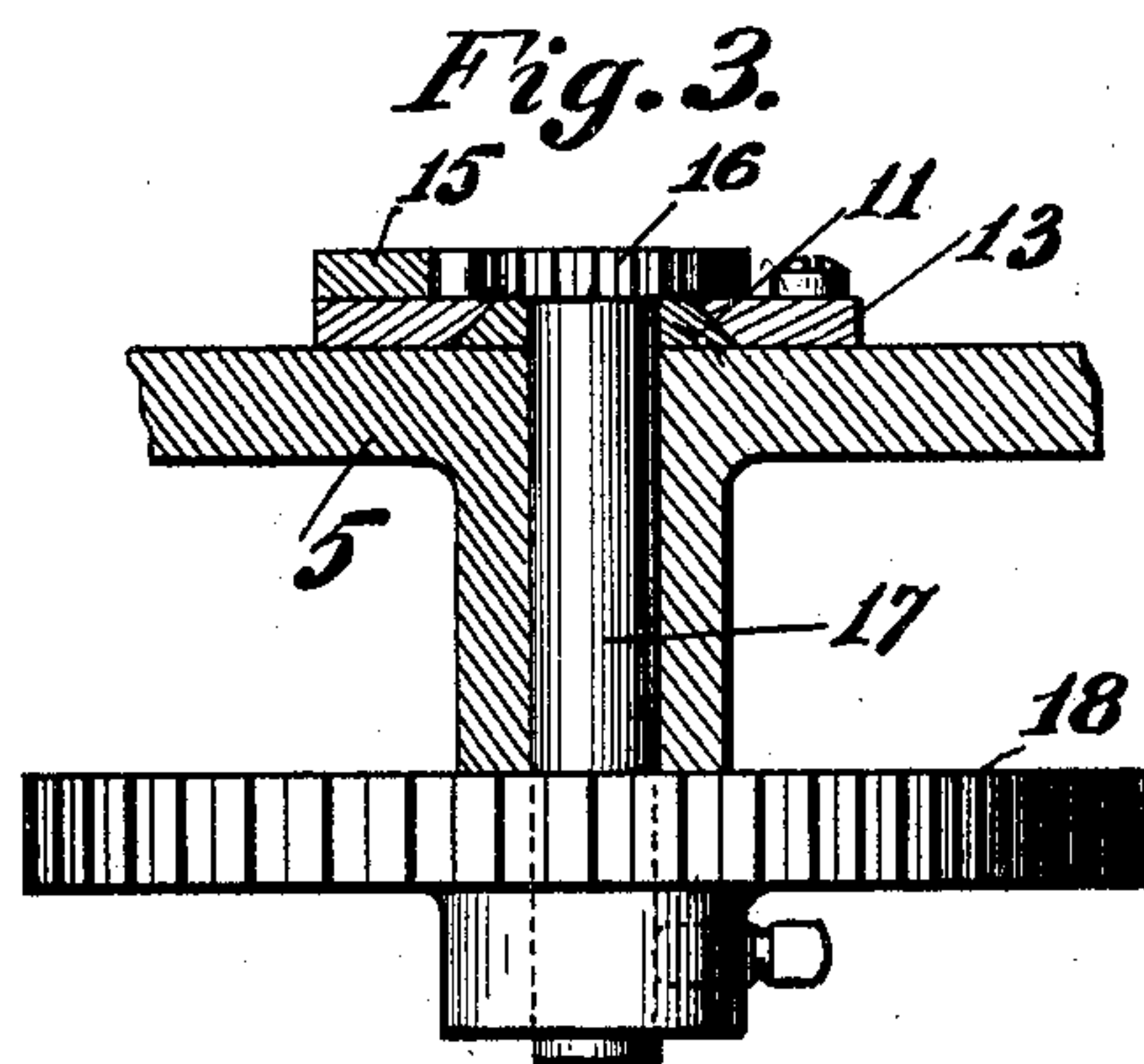
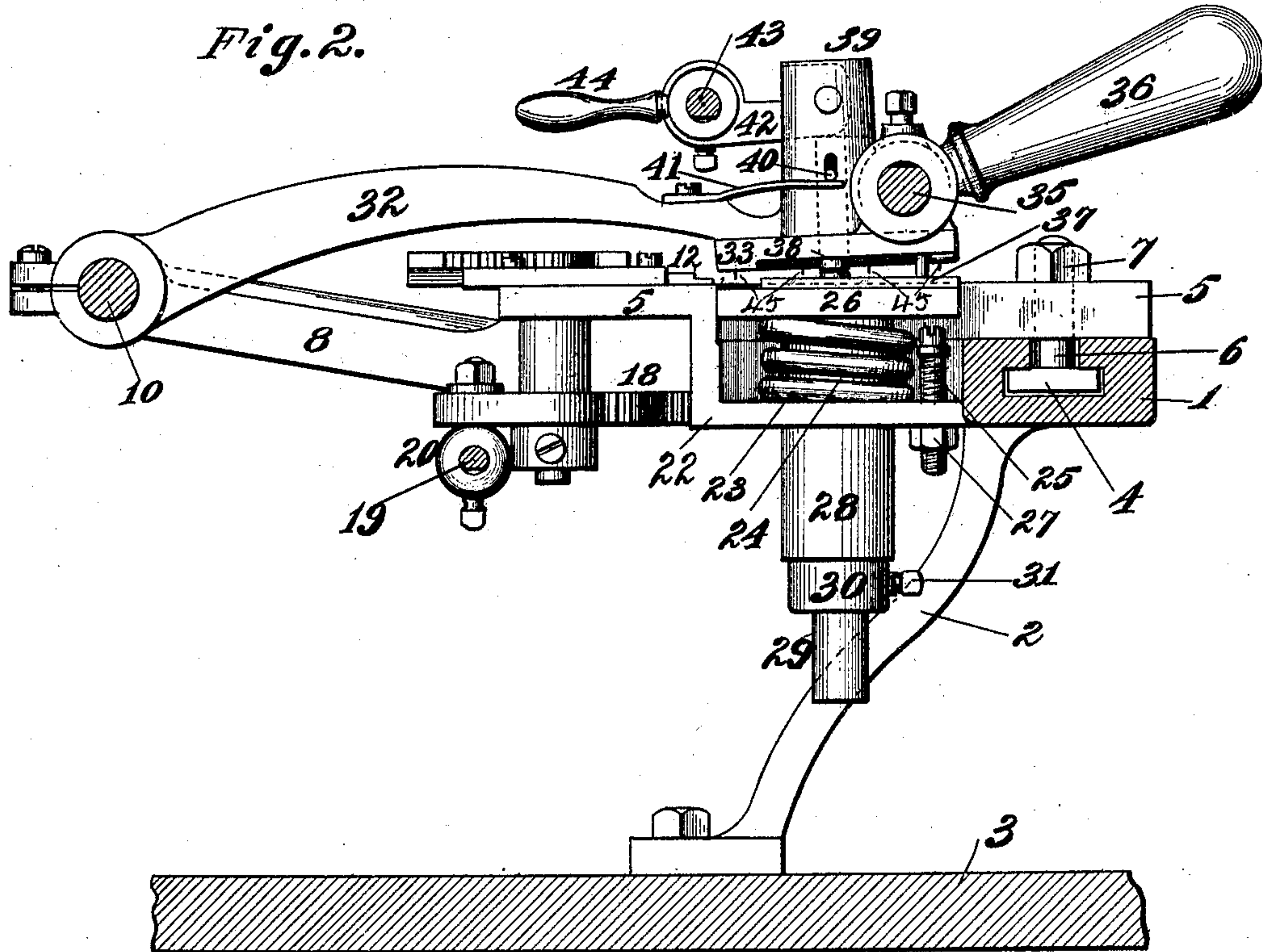
J. B. GURY.

ROUND CORNER CASE MAKING MACHINE.

APPLICATION FILED JAN. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



*Attest*  
*Edw. L. Dillon*  
*Charles Pickles*

*Inventor:*  
*J. B. Gury,*  
*by C. A. Kane*  
*Att'ys.*



# UNITED STATES PATENT OFFICE.

JOHN B. GURY, OF ST. LOUIS, MISSOURI.

## ROUND-CORNER-CASE-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 770,284, dated September 20, 1904.

Application filed January 13, 1903. Serial No. 138,905. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. GURY, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Round-Corner-Case-Making Machine, of which the following is a specification.

My invention relates to machines for folding a sheet of leather or cloth over the cardboard of a book-cover, and has for its principal object to fold such sheet over the rounded corners of such cardboard.

It consists in the machine and in the arrangements and combinations of parts herein after described and claimed.

In the accompanying drawings, which form part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a plan view of my machine. Fig. 2 is a vertical cross-section thereof on the line 2 2 of Fig. 1, the machine being in the position assumed immediately after the material has been creased and before the folding movement occurs; and Fig. 3 is a vertical sectional detail on the line 3 3 of Fig. 1.

The frame of my machine comprises a main body-plate 1, mounted upon supports 2, whereby it may be bolted or otherwise secured upon a suitable table or platform 3. This main body-plate is arranged longitudinally of the machine and has an undercut or T slot 4 extending the full length thereof. Two frame-plates 5 are arranged transversely of this main body-plate and are adjustably secured thereto by means of bolts 6. The head of each bolt fits in the enlarged portion of the T-slot, and its shank extends upwardly through the narrow portion of the slot and through its frame-plate and is screw-threaded to cooperate with a clamping-nut 7 working thereon. Each of these adjustable frame-plates has a rigid arm 8 extending rearwardly therefrom and terminating in an enlarged boss 9, said bosses being perforated in alinement with each other to serve as bearings for a shaft 10, which extends therethrough. Upon each of the adjustable frame-plates are mounted three reciprocating slides or folding-bars 11, two of the folder-bars on each frame-plate being ar-

ranged at right angles to each other and the third folder-bar being arranged midway between them. The intermediate folder-bar has a concave end, and the other folder-bars have flat ends and are provided near the ends with shoulders 12, which serve as guides for positioning the cloth or leather. Each of these folders has its side edges beveled and works in guides 13, whose edges are likewise beveled to overlap the beveled edges of the folders, said guides being mounted flatwise upon the adjustable frame-plates 5. Each of the folder-bars has an elongated slot 14 arranged lengthwise thereof, and each of said folder-bars has also a rack 15 fixed thereto. As shown in the drawings, a convenient construction of said rack consists of a flat plate overlapping one of the guide-plates and having at its ends lateral projections overlapping the folder-bar and secured thereto by means of screws. Meshing with the rack is a pinion 16, fixed to a vertical shaft 17, mounted in suitable supports and extending upwardly through the elongated slot of the folder-bar plate and having at its lower end a larger gear wheel or segment 18. The three large gear wheels or segments 18, corresponding to the three folder-bars of a group, intermesh with each other, and the two groups are arranged to be operated simultaneously by means of a connecting-rod 19, secured to crank-pins 20, which extend through the faces of the corresponding wheels in the two groups and are pivotally secured thereon. The direction of the motion of each of the folder-bars is determined by the position of the rack on one side or the other of the pinion intermeshing therewith, so that at whatever point the connection for the transmission of motion from one group of wheels to the other may be made the proper direction of motion of the folder-bars is secured by properly positioning the rack. Motion is communicated to the wheels by means of a handle 21, fixed radially to one of the wheels.

Each of the adjustable frame-plates has a depressed portion 22, whose edge is shaped to conform to the rounded corner of a book. This depressed portion is equipped with an upwardly-pressing stiff spring 23, coiled about



a suitable stud 24, and equipped also with a threaded bolt 25, which works in a threaded hole provided therefor in the bottom of said depressed portion. The head of this bolt 25 serves as a stop for the movable bed-plate 26, hereinafter mentioned, and its position is adjusted by turning the bolt. The bolt 25 is secured in its adjusted position by means of a set-nut 27, screwing on the outer end thereof and jamming against the under side of the depressed portion of the frame-plate. Projecting below the bottom of said depressed portion is an elongated hub 28, which serves as a guide for a vertically-movable stem or shank 29, which extends therethrough and carries at its upper end the vertically-movable bed-plate 26. Said shank or stem has an adjusting-collar 30, secured thereto by means of a set-screw 31, and said collar is arranged to bear against the lower end of said hub, and thereby limit the upward movement of the shank and movable bed-plate. The downward movement of said bed-plate is limited by the adjustable bolt 25, hereinbefore mentioned, and the movable bed-plate is normally held in its uppermost position by means of the coiled spring 23, hereinbefore mentioned, which surrounds its shank and bears against the under side of said movable bed-plate.

Mounted upon the shaft 10 are two elongated arms 32, each of which carries a creasing or forming die 33. Each of said creasing-dies 33 has a boss 34 on its upper side with a perforation therethrough. The two perforations are arranged in alinement for the passage of a bar 35, which extends therethrough and is provided with a handle 36, whereby said creasing-dies and connected parts are operated simultaneously. The inner portion of the faces of said creasing-dies is countersunk, and each has a separate face-plate 37, fitted in said countersunk portion flush with the rim portion of the creasing-die. The movable face-plate is loosely mounted upon a shank 38, which extends vertically through a boss or hub 39, provided therefor, and is provided with a pin 40, extending laterally through said boss and arranged to be pressed upwardly by a spring 41, mounted upon the elongated arm. Pivotaly mounted upon said hub is an eccentric cam 42, whose lower edge bears against the top of the shank of the movable face-plate. The tail of each cam is perforated, the perforations of the two cams being in alinement with each other and having a rod 43 extending through both. Said rod is equipped with a handle 44, whereby the two cams may be operated simultaneously. In the normal position of the face-plate it is flush with the surface of the creasing-die; but when the rod-handle 44 is manipulated to operate the cams the face-plate and the creasing-die are separated—that is to say, when the face-plates and the creasing-die rest against the bed-plate the

manipulation of the cams will cause the lifting of the creasing-dies, leaving the face-plates pressing against said bed-plate.

The operation of my device is as follows: The creasing-dies and connected mechanism are turned back on their shaft, and the sheet of leather or cloth is then laid over the bed-plates with its edges against the shoulders of the folder-bars to properly position it, the upper margin of the leather or cloth strip having been previously glued, as usual. While the creasing-dies are turned back the cardboard is loosely secured thereto by forcing it against short pins 45, provided in the faces of the dies, which pins are sufficient to hold the cardboard in proper relation to the creasing-dies during the downward movement thereof. The creasing-dies are then swung on their shaft, whereby the cardboard is brought against the leather or cloth sheet and said sheet is creased and raised along the edge of the cardboard preparatory to turning it back over said cardboard. The hand-lever 44 is then manipulated to actuate the cams, and thereby lift the creasing-die a short distance above said cardboard, at the same time leaving the face-plates with the entire weight of the clamping mechanism bearing against said stock. The handle 21 is then manipulated to transmit motion to the train of gears and the respective folder-bars. At the time when the forward movement of the folder-bars begins the edge of the sheet of leather or cloth sticks up above the edges of the folder-bars, but the body of said sheet is below the edges of said folder-bars, which lie slightly above the upper face of the cardboard. Consequently the forward motion of the folder-bars causes the edges of the sheet to be folded back over the cardboard, the elevation of the creasing-die at that time being sufficient to permit this action. When the forward movement of the folder-bars is completed, the power is applied to the hand-lever 36 in a downward direction to depress the two bed-plates against the force of their springs, and thereby relieve the folder-bars from contact with the work. The hand-lever 21 is then manipulated to restore the folder-bars to their initial position, whereupon the cam-operating handle 44 is manipulated to let down the creasing-dies against the glued overlapping margin of the leather, and then pressure is applied to the hand-lever 36 to press said overlapping margin firmly against the cardboard. Then the entire upper portion is swung back on its shaft ready to repeat the operation.

As shown in the drawings, the machine is adjustable for various sizes. For this purpose the body-plates are bolted together by a bolt whose head is free to slide longitudinally in an elongated T-slot of the main body-plate. The shaft upon which the folding mechanism swings has adjusting-collars 45, which bear



against the hubs which constitute its bearings, said collars being adjustable by means of the set-screws 46, which clamp them to the shaft. In like manner the arms of the folding mechanism and their connecting-bar and the rod for manipulating the cams and also the rod for transmitting motion from one group of wheels to the other are all adjustably connected.

The adjustment hereinbefore described relates to the length of the cover. It is obvious that as one side of the device is open it will accommodate any width of cover without special provision, as the inner edge of the cover is not affected by the operation. It is obvious, however, that the mechanism shown could be duplicated, so as to operate on four corners at once, in which case it is obvious that the distance between the two sides of mechanism could be adjusted at pleasure by any convenient means. It is equally obvious that the machine may be used for operating on only one corner at a time, in which case the mechanism for operating on the second corner may be dispensed with.

Divers changes may be made in the construction hereinbefore described without departing from my invention, and I do not wish to be restricted to such construction.

What I claim is—

1. A case-making machine comprising a frame-plate having a depressed portion therein, a bed-plate adjustably mounted in said depressed portion, folder-bars on said frame-plate arranged to reciprocate over the edge of said bed-plate, and a creasing-die arranged to cooperate with the wall of the depression in said frame-plate, said creasing-die having a countersunk portion and a face-plate in said countersunk portion movable perpendicularly to the face of said die.

2. A case-making machine comprising a frame-plate having a depressed portion therein, a spring-pressed movable bed-plate in said depressed portion, folder-bars on said frame-plate arranged to reciprocate above the edge of said bed-plate and having shoulders thereon, and a creasing-die arranged to cooperate with the wall of the depression in said frame-plate, said creasing-die having a countersunk portion and a cam-actuated face-plate in said countersunk portion movable perpendicularly to the face of said die.

3. A case-making machine comprising a frame-plate having a depressed portion therein, a spring-pressed movable bed-plate in said depressed portion, folder-bars on said frame-plate arranged to reciprocate above the edge of said bed-plate and a creasing-die arranged to cooperate with the wall of the depression in said frame-plate, said creasing-die having a countersunk portion and a cam-actuated face-plate in said countersunk portion movable perpendicularly to the face of said die.

4. A case-making machine comprising a frame-plate having a depressed portion therein, a spring-pressed movable bed-plate in said depressed portion, folder-bars on said frame-plate arranged to reciprocate above the edge of said bed-plate, and a creasing-die arranged to cooperate with the wall of the depression in said frame-plate, said creasing-die having pins therein and having a countersunk portion and a movable face-plate in said countersunk portion movable perpendicularly to the face of said die.

5. A case-making machine comprising a frame-plate having a depressed portion therein, an adjustable spring-pressed movable bed-plate in said depressed portion, adjustable stops for limiting the movement of said bed-plate, folder-bars on said frame-plate arranged to reciprocate above the edge of said bed-plate, and a creasing-die arranged to cooperate with the wall of the depression in said frame-plate.

6. A case-making machine comprising a frame-plate having a depressed portion therein, a spring-pressed movable bed-plate in said depressed portion, folder-bars on said frame-plate arranged to reciprocate above the edge of said bed-plate, and a creasing-die arranged to cooperate with the wall of the depression in said frame-plate, two of said folder-bars being arranged to move at substantially right angles to each other and a third folder-bar arranged midway between them and having a concave end.

7. A case-making machine comprising a frame-plate having a depressed portion therein, a spring-pressed movable bed-plate in said depressed portion, folder-bars on said frame-plate arranged to reciprocate above the edge of said bed-plate, and a creasing-die relatively movable with respect to said frame-plate, conforming to the wall of the depression therein and arranged to cooperate with said wall to crease the cover-sheet, and shoulders on said folder-bars for positioning the cover-sheet.

8. A case-making machine comprising frame-plates, spring-pressed movable bed-plates mounted thereon, folder-bars on said frame-plates arranged to reciprocate over the edges of said bed-plates, and creasing-dies arranged to cooperate with portions of said frame-plates, said frame-plates being relatively adjustable.

9. A case-making machine comprising frame-plates, spring-pressed movable bed-plates mounted thereon, folder-bars on said frame-plates arranged to reciprocate over the edges of said bed-plates, and creasing-dies arranged to cooperate with portions of said frame-plates, said frame-plates being relatively adjustable and having rearwardly-extending arms for supporting a shaft and said creasing-dies having rearwardly-extending arms adjustably mounted on said shaft.

10. A case-making machine comprising

frame-plates, spring-pressed movable bed-plates mounted thereon, folder-bars on said frame-plates arranged to reciprocate over the edges of said bed-plates, and creasing-dies arranged to coöperate with portions of said frame-plates, said frame-plates being relatively adjustable and having rearwardly-extending arms, a shaft adjustably mounted in

said rearwardly-extending arms, and means for operating said folder-bars, the device for connecting said means being adjustable.

JOHN B. GURY.

Witnesses:

JAMES A. CARR,  
EUGENE BUDER.