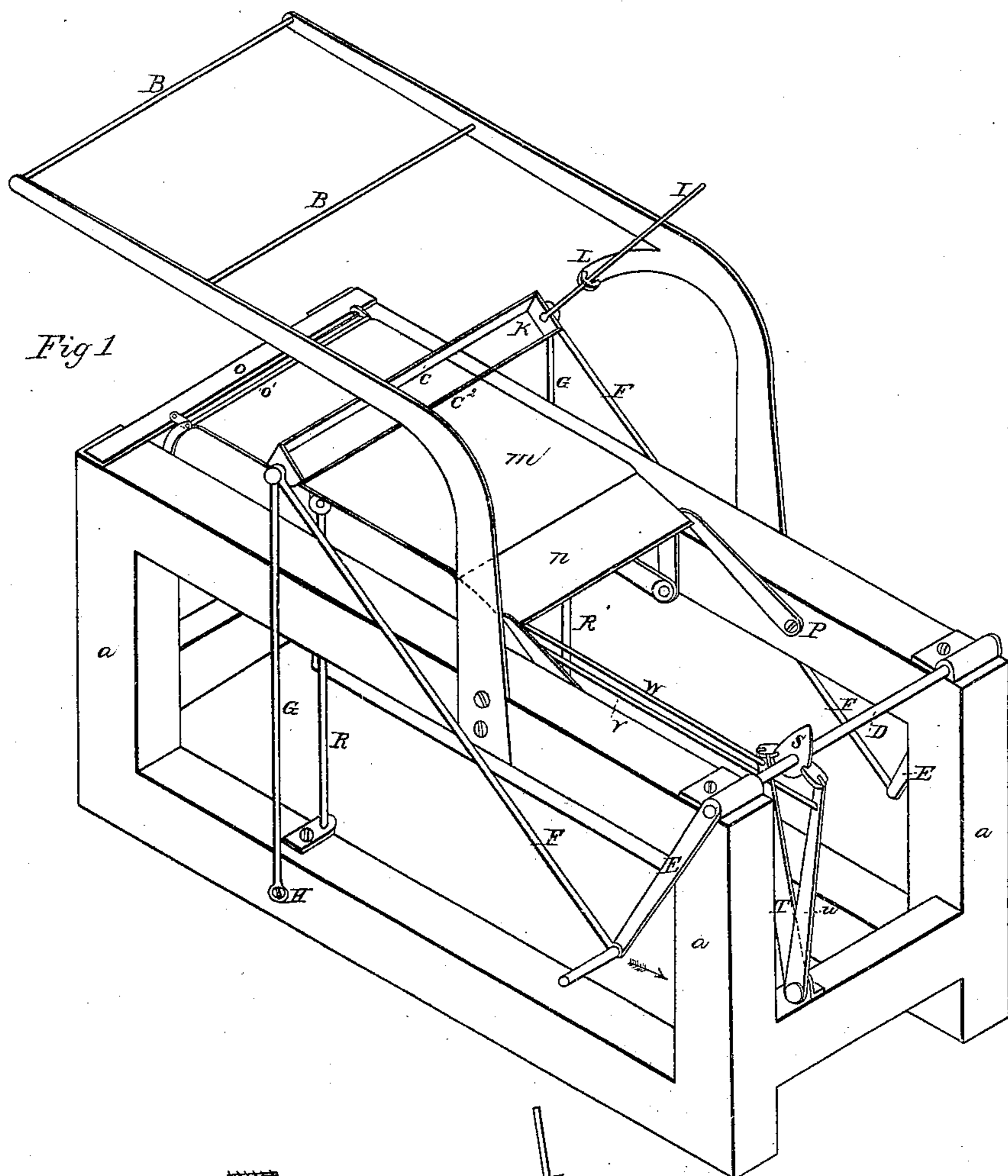


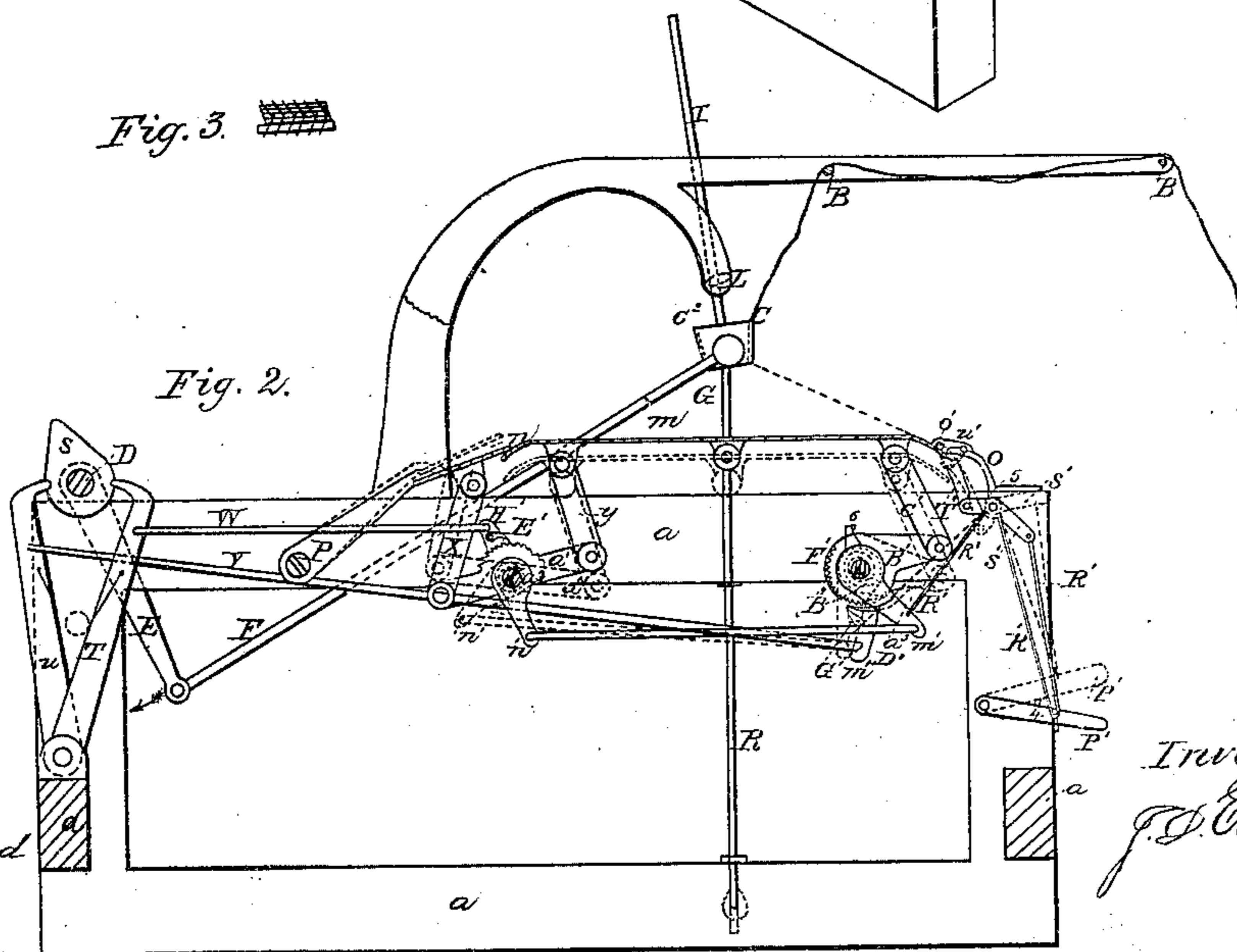
*J. D. Elliot.*  
*Cloth-Folding Mach.*

*N<sup>o</sup>. 757.*  
*32,761.*

*Patented Jul. 9, 1861.*



*Fig. 3.*



*Witnesses.*  
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# UNITED STATES PATENT OFFICE.

J. D. ELLIOT, OF GRAFTON, MASSACHUSETTS.

## MACHINE FOR FOLDING CLOTH.

Specification of Letters Patent No. 32,761, dated July 9, 1861.

*To all whom it may concern:*

Be it known that I, J. D. ELLIOT, of Grafton, in the county of Worcester, in the State of Massachusetts, have invented a new and useful Improvement in Machines for Measuring and Folding Cloth; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the characters of reference marked thereon.

Similar characters of reference indicate the same device in all the figures.

To enable others skilled in the arts to comprehend, make and use my invention I proceed to describe its nature, construction and operation.

The nature of my invention consists in a pair of reciprocating blades, constructed and operating so as to fold cloth or similar fabrics upon a table, with jaws at either end arranged to catch and hold fast each fold as it is laid upon the table and so arranging the said table that in the passing of the said blades under either jaw the table shall drop away from the jaw in advance of the blade so as to prevent the rubbing of the blade on the cloth, and pulling the cloth from under the opposite jaw; also to facilitate the removal of the cloth folded from the table.

Figure 1 is a perspective view. Fig. 2 is a longitudinal section showing in black the machine as in operation, and in blue when at rest or preparatory to receiving the cloth. Fig. 3 represents card teeth filled up more or less with glue, shellac or any substance that will adhere to the leather and teeth, to prevent the teeth from growing loose in the leather and to hold them in their position, as well as to prevent the teeth from holding on to the cloth when the table is dropped or jaw hoisted to remove the cloth when folded.

A is the frame of the machine, B B bars over which the cloth to be folded passes; C C<sup>2</sup> are two blades connected together at both ends and between which the cloth passes.

D is the driving shaft. E E the cranks, F F the pitmen connecting the cranks E E with the blades C C<sup>2</sup>, G and G are rods hung at the lower end H and to the end of the blades C C<sup>2</sup> for the purpose of raising them from the table M while passing from one extremity of their motion to the other, given by the cranks E E; I is a rod made fast to the end of the blades C C<sup>2</sup> and passing up through the swivel L, and serves to turn the

blades while in motion, M is a movable table, N is a movable jaw hung at P, O is a fixed jaw, R R are guide rods to hold the movable table M in place; S is a cam on the shaft D for operating the table M and the jaw N through the levers T, and U rods V and W and their connecting levers X, Y—A'—B'—C'—D' and the ratchets E' and F' and the pawl G' and H'; A<sup>+</sup> is a shoe on which the pawl G' rests when not acting.

K and L are shafts on which are the levers A' and B' M' and N' and the ratchets E' and F', the red lines on the levers M' and N' represent spiral springs with one end fast to the shaft K and L, the other end made fast to the levers M' and N' which are loose on the shaft K and L.

O' is a movable rod attached to the stationary jaw O and operated by the lever P' through the cord R' and lever S'—T'—U' and spiral spring 5.

The machine is operated as follows: The table M being in position as denoted by blue lines, pass the end of the cloth as indicated by the heavy blue lines over the bars B B down and between the blades C C<sup>2</sup> leaving the end on the table M and under the jaw O then with the foot press down the lever P' to the catch 4 which through its connections by the cord R' to the levers M' and N' winds up the spiral springs A<sup>3</sup> and B<sup>3</sup> which are sufficiently strong to turn the shafts K and L which turning serves through the connecting levers B' C' A' and Y to raise the table M to a position denoted by the black lines also raising the rod O' from under the jaw O through the cord R' and levers S' and T' and the end of the cloth will be held fast between the end of the table M and the card teeth on the under side of the jaw O—which teeth are shown at Fig. 3. Then by turning the crank in the direction of the arrows, the blades C C<sup>2</sup> are moved forward and the blade C carries the cloth under the jaw N which is raised by the action of the cam S upon the pawl H' through the lever T and the rod W and shaft K which in turning raises the jaw N and lowers the end of the table M, allowing the blade C to pass between them and when the blade is on the point of returning the cam S ceasing to act, the pawl H' falls back and the jaw N falls, the table M rises and the cloth is caught between the jaw N and table M and held while the blade C, is drawn out leaving the cloth; and continuing the motion the blades

are lifted from the table M by the rods G and turned by the rod I and as the blades approach the jaw O the cam S acting upon the pawl G' through the lever U and rod V 5 turns the shaft K' and lowers that end of the table from the jaw O by means of the connecting levers B' and C' and the blade C<sup>2</sup> with the cloth passes between the jaw and table and when under, to the extent of the 10 motion of the cranks the cam ceases to act and lets the table up to the blade C<sup>2</sup> and the teeth on the under side of the jaw O catch the cloth on the top of the blade, the table holding it on the under side of the blade, 15 which can be withdrawn leaving the cloth between them, and the table M lowers as fast as the cloth folded increases upon it and by levers C' and B' other ratch teeth F' are brought past the point of the shoe A<sup>4</sup> and 20 are caught by the pawl G' and the table is carried down for the next fold of cloth only enough to receive it; thus continuing the motion of the machine until the cloth is folded. To remove the cloth folded from 25 the table, release the lever P' from the catch 4 and the spiral springs A<sup>3</sup> and B<sup>3</sup> will unwind until the projections 6 on the levers M' and N' come in contact with levers A' and B' then the spiral springs are inert and 30 the table M falls by its own weight as the pawls G' and H' are not in contact with the ratch teeth E' and F' but rest upon the shoe A<sup>4</sup> and the spiral spring 5 draws the rod O' down and between the bed M and the card 35 teeth on the under side of the jaws through the connection of S' T' and U' and if the cloth should hang to the teeth the rod O' will clear it off and prevent the cloth from catching on the teeth when taken from the 40 table.

The advantages that my machine has over others are 1st, by attaching the pitmen F and F' to the end of the folding blades C C<sup>2</sup> or near them they have a positive motion 45 given them, consequently I have a positive length of fold or positively even measure whether the speed of the machine is high or low or whether the resistance of the cloth be regular or irregular. 2d, giving the table 50 on which the cloth is folded a downward positive motion in advance of the folding blades which prevents their sliding upon the cloth, which sliding in other machines increases as the cloth is folded. (Calendered 55 goods when brought to the folder are more or less damp and sticky with starch which

adheres to the blades, and the cloth is often from this cause drawn from under the opposite jaw, or if held on to by the jaw, the glazing or face of the goods is injured, to 60 prevent which they rub the blades frequently with a piece of cloth filled with oil or tallow which stains the goods more or less—this my invention avoids as follows:) 3d, the table does not fall nor the jaws rise 65 from their starting place only enough to receive the blade and a fold of cloth whether that starting place is the table or a cut of cloth upon the table and so quietly are the goods returned and pressed against the jaws 70 that I can use card teeth to catch and hold the cloth without defacing the goods or finish; this result is produced by the combination of the pawl G', shoe A<sup>4</sup> and ratch F'; all of which are practical difficulties in other 75 machines.

The card teeth on the underside of the jaw O, and shown in Fig. 3, I make as follows: The teeth may be set in leather in the usual way, and are filled up more or less with 80 glue, shellac, or other similar substance, that will adhere to the leather and the teeth, to prevent the latter from getting loose, as well as to prevent them from holding onto the cloth, when not required to do so. 85

What I claim as my invention and desire to secure by Letters Patent is,

1. Attaching the pitman to the end of the folding blades or to the staffs holding the blades at or near the upper ends of said 90 staffs when applied to a machine for folding cloth as described.

2. The combination of the pawl G' ratch F' and shoe A<sup>4</sup> with the yielding table of a cloth folding mechanism, operating in the 95 manner, and for the purpose herein specified.

3. Giving the table a positive motion down in advance of the folding blades for the purpose herein set forth. 100

4. Giving both the table and jaw a positive motion in advance of the folding blades for the purpose herein set forth.

5. Constructing the jaws N O, with a roughened surface for holding the folds of 105 the cloth, made substantially as herein set forth.

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Witnesses:

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