

(No Model.)

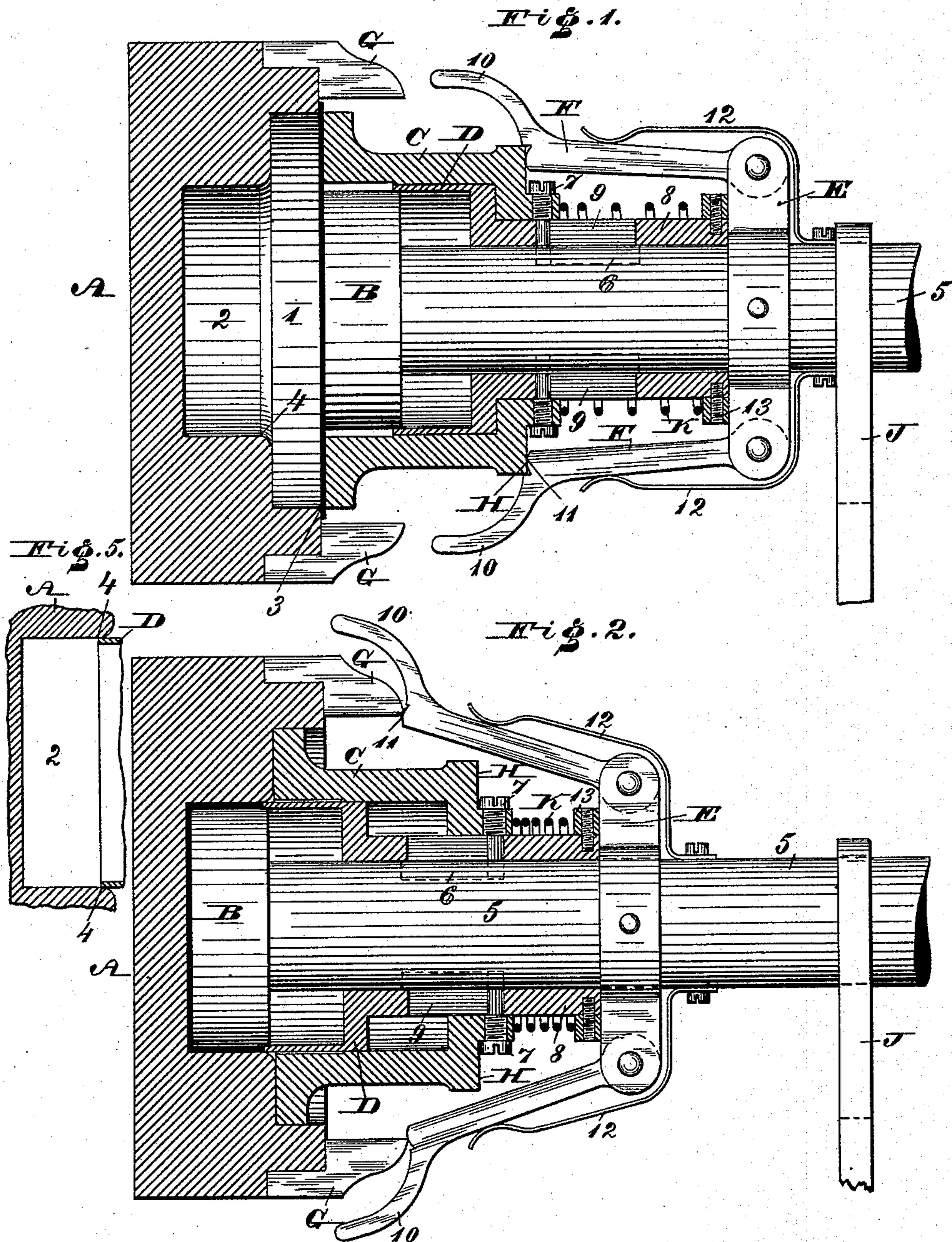
2 Sheets—Sheet 1.

J. MOHS.

APPARATUS FOR MAKING PAPER BOXES.

No. 413,533.

Patented Oct. 22, 1889.



Witnesses

Theo. Rollé.
A. P. Jennings.

Inventor

Julius Mohs

By his Attorneys

Giedersheim & Fintner

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Fig. 3.

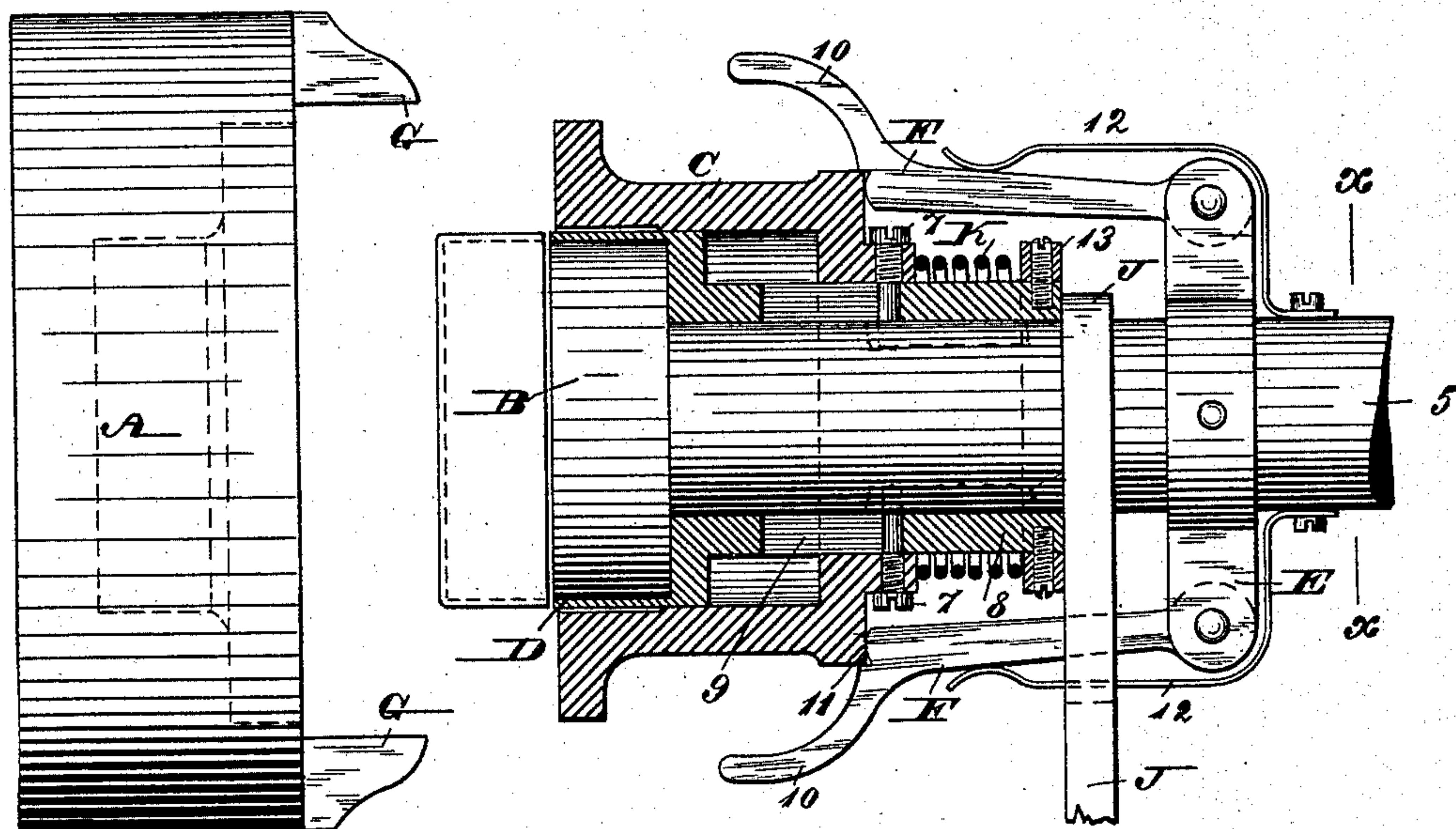
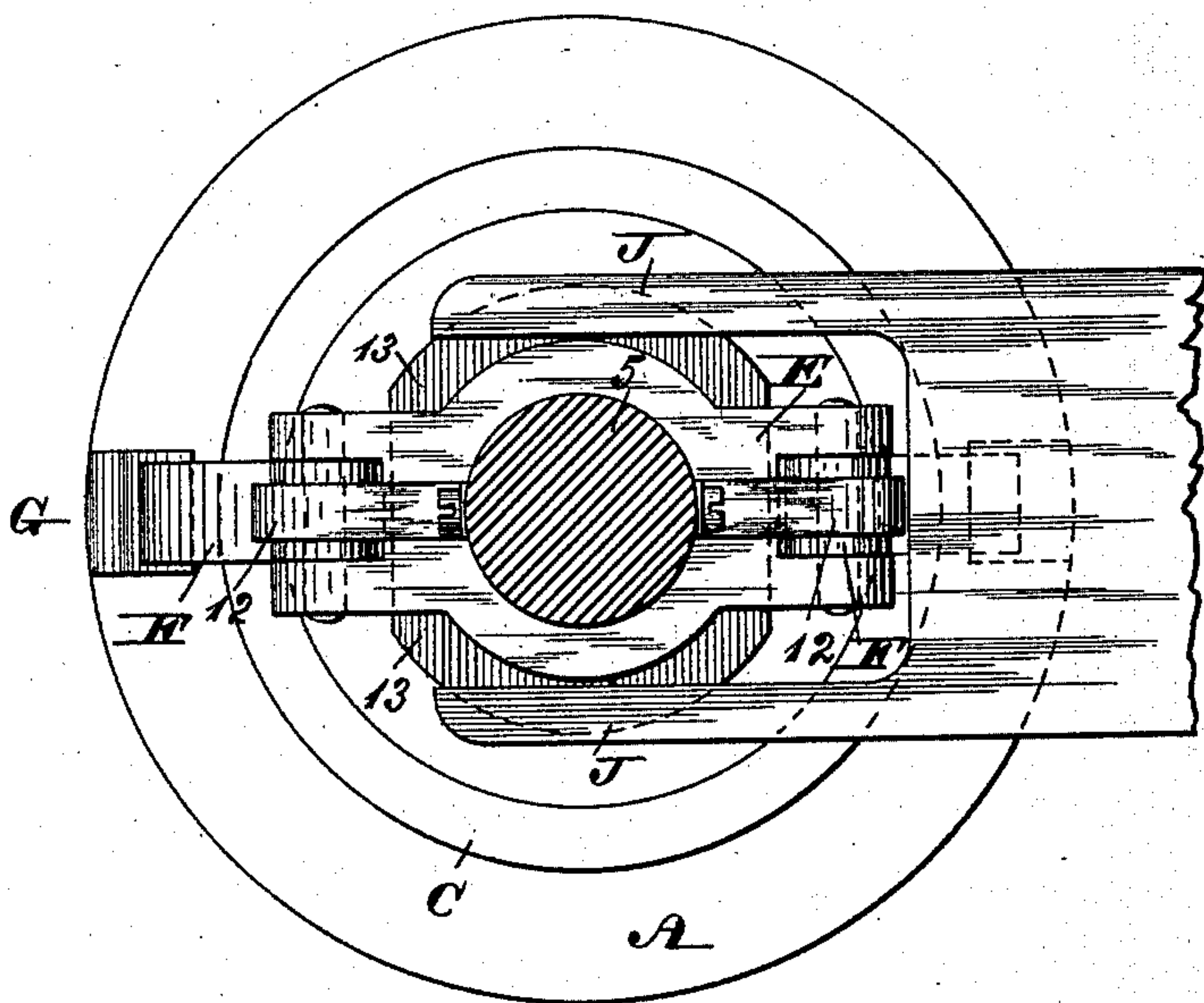


Fig. 4.



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UNITED STATES PATENT OFFICE.

JULIUS MOHS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO WOLF BROTHERS, OF SAME PLACE.

APPARATUS FOR MAKING PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 413,533, dated October 22, 1889.

Application filed November 20, 1888. Serial No. 291,350. (No model.)

To all whom it may concern:

Be it known that I, JULIUS MOHS, a subject of the Emperor of Germany, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Making Paper Boxes, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of improvements in apparatus for making paper boxes, as will be hereinafter fully set forth, and definitely pointed out in the claims.

Figures 1, 2, and 3 represent longitudinal sections of an apparatus for making paper boxes, showing the parts in different positions in the several figures. Fig. 4 represents a section on line *x x*, Fig. 3. Fig. 5 represents a view of a portion of Fig. 2, showing the shear action formed by the stripper or wiper and the female die.

Similar letters and numerals of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a bed or female die, having on the working-face thereof sockets 1 2 of different diameters, leaving the shoulders 3 4.

B designates a male die or plunger, which is adapted to enter the socket 2, and C designates a cup or holder, which is adapted to enter the socket 1, said cup encircling or surrounding the plunger B when the parts are in their normal positions. In the periphery of the rod or stem 5 of said plunger are longitudinal recesses 6, which receive the end or points of screws 7, which latter are connected with the end of the cup C farthest from the socket 1. Within the cup is a wiper or stripper D, which is hollow so as to encircle the plunger B, and having a neck portion 8, which encircles the rod 5, said neck portion being formed with a longitudinal slot 9, through which freely passes a portion of the screw 7. Secured to the rod 5, in the present case at the right of the neck 8, is a cross-head E, to whose ends are pivoted arms F, which extend in the direction of the length of the rod 5 and have their outer ends 10 curved and extending outwardly, so as at a certain time

to strike lugs or projections G, forming deflectors on the bed A, the faces of said projections or deflectors being also curved. The ends of the arms F, within the portions 10 thereof, form shoulders 11, which are convex and adapted to rest at times against shoulders H on the ends of the cap C, adjacent to the screws 7. Bearing against the arms F are springs 12, the tendency of which is to force said arms inwardly for operative purposes.

J designates a bifurcated arm, which is screwed to a proper part of the frame of the apparatus, so as to be stationary, the width of the bifurcation or fork being such that the cross-head E, which encircles the rod or stem 5, may pass through the same, while the neck of the stripper will come in contact with said fork and be stopped by the same, in which case the spring K, which encircles said neck, is compressed, as will be seen in Fig. 3, said spring bearing against the end of the cup and also against a shoulder or stop 13 on the neck of the stripper.

The apparatus is preferably placed in horizontal position, as shown in the drawings.

The operation is as follows: A piece of pasteboard, card-board, or other suitable material is placed against the shoulder 3, between the same and the plunger B, as seen in Fig. 1. The rod 5 is then advanced, whereby forward motion is imparted to the plunger, the cup, and stripper, it being noticed that the cup receives its motion owing to the contact with the shoulder H of the same with the arms F, which latter, as has been stated, are pivotally connected with the cross-head E. When the cup reaches the base of the socket 1, it having forced the blank thereagainst, and holding it thereat, the ends 10 of the arms F strike the projections G on the bed A and act as deflectors for said arms, throwing them outwardly clear of the shoulders of the cup. The cross-head E continues its advance with the rod 5, and the plunger B fully enters the socket 2, carrying the blank with it and converting it into box shape. The stripper is also advanced and comes in contact with the upper edge of the box, as shown in Fig. 2, and imparts a finish thereto,

as will be hereinafter explained. When the plunger is advanced to full extent, the shoulder 11 of the arms F come in contact with the ends of the projections G and rest there-
 5 against. The rod 5 now receives its return motion, whereby the plunger recedes from the socket 2 and carries the box with it, the hold of the box on the plunger being assisted by forming grooves in the side of said plun-
 10 ger. The spring K is now operative and presses against the shoulder 13, imparting return motion to the stripper D until said shoulder, or the neck portion of the stripper, reaches the bifurcation J. The screw 7 is en-
 15 gaged by the end wall of the recess 6, whereby the cup is withdrawn, the cup, however, continuing its motion with the plunger, so that both fully emerge from the respective sockets and leave the die A. The stripper is held
 20 stationary, while the plunger, continuing its motion, enters the stripper, whereby the outward edge of the stripper, being in contact with the box, forces the same from the plun-
 25 ger and fully strips it therefrom, as will be seen in Fig. 3. Another blank may now be placed on the bed or die A and the rod 5 ad-
 30 vanced, the parts then being in position shown in Fig. 1, after which the operation of the apparatus will be a repetition of that here-
 inbefore stated.

Referring to Fig. 5, it will be seen that the shoulder 4 of the socket or die 2 is rounded and the advance edge of the stripper is flat, making its outward edge sharp and serving
 35 as a cutter, whereby, after the blank is forced into box shape in the socket 2 when the advance edge of the stripper passes the rounded edge of the shoulder, the contiguous part of the side wall of said socket or die and the ad-
 40 vance edge of the stripper constitute shears, thus cutting off surplus material from the edge of the box and nicely trimming the same.

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

1. A die and a plunger, in combination with a stripper movably connected with the rod of said plunger and a spring bearing against said
 50 stripper, and a cup or holder surrounding the plunger, substantially as described.

2. A die and a plunger, in combination with a cup or holder and a stripper therein, said holder and stripper being movably connected
 55 to said rod and adapted to engage with the

holder, thus advancing said holder with the plunger, substantially as described.

3. In an apparatus for making paper boxes, the plunger-rod 5, the cup or holder C, and the stripper D between said holder and plun-
 60 ger, movably connected with said rod, in combination with the spring K, bearing against said holder and stripper, and the cross-head E, against which said stripper is stopped, whereby the spring is compressed, substan-
 65 tially as described.

4. In an apparatus for making paper boxes, a die, a plunger, and holder, in combination with arms pivoted to the rod of the plunger, a shoulder on the holder with which said arms
 70 abut, and deflectors on the bed or die, the ends of the arms being set out so as to engage with the deflectors, and thus form throw-offs, whereby the arms are disconnected from the
 75 holder.

5. A die and a plunger, in combination with a holder and an inclosed stripper surrounding said plunger, said holder having connected with it a screw which passes through a slot
 80 in the neck of the stripper and enters a recess in the plunger-rod, substantially as described.

6. A die and plunger, in combination with a stripper, which is movably connected with the plunger-rod, the outer edge of the die being
 85 rounded or beveled, whereby the front end of the stripper forms a shear with the wall of the die, substantially as described.

7. A die and a plunger, in combination with a cup-shaped holder, a spring bearing against
 90 the neck of said stripper and the end of the holder, a cross-head connected with the rod or stem of the plunger, a stationary arm against which the neck of the stripper abuts, and a screw, which is connected with the
 95 holder, passes through the slot in the stripper, and enters a recess in said rod or stem, substantially as described.

8. A die, a plunger having the recess 6 and provided with the cross-bar E and arms F, the
 100 latter connected to said cross-bar, the stripper D, with slots 9 and stop 13, the cup C, with screw 7, the spring K, and the stationary arm J, said parts being combined substantially as described.

To the above I have signed my name.

JULIUS MOHS.

In presence of—

CLINTON O. MAYER,
 JACOB BANCE.