

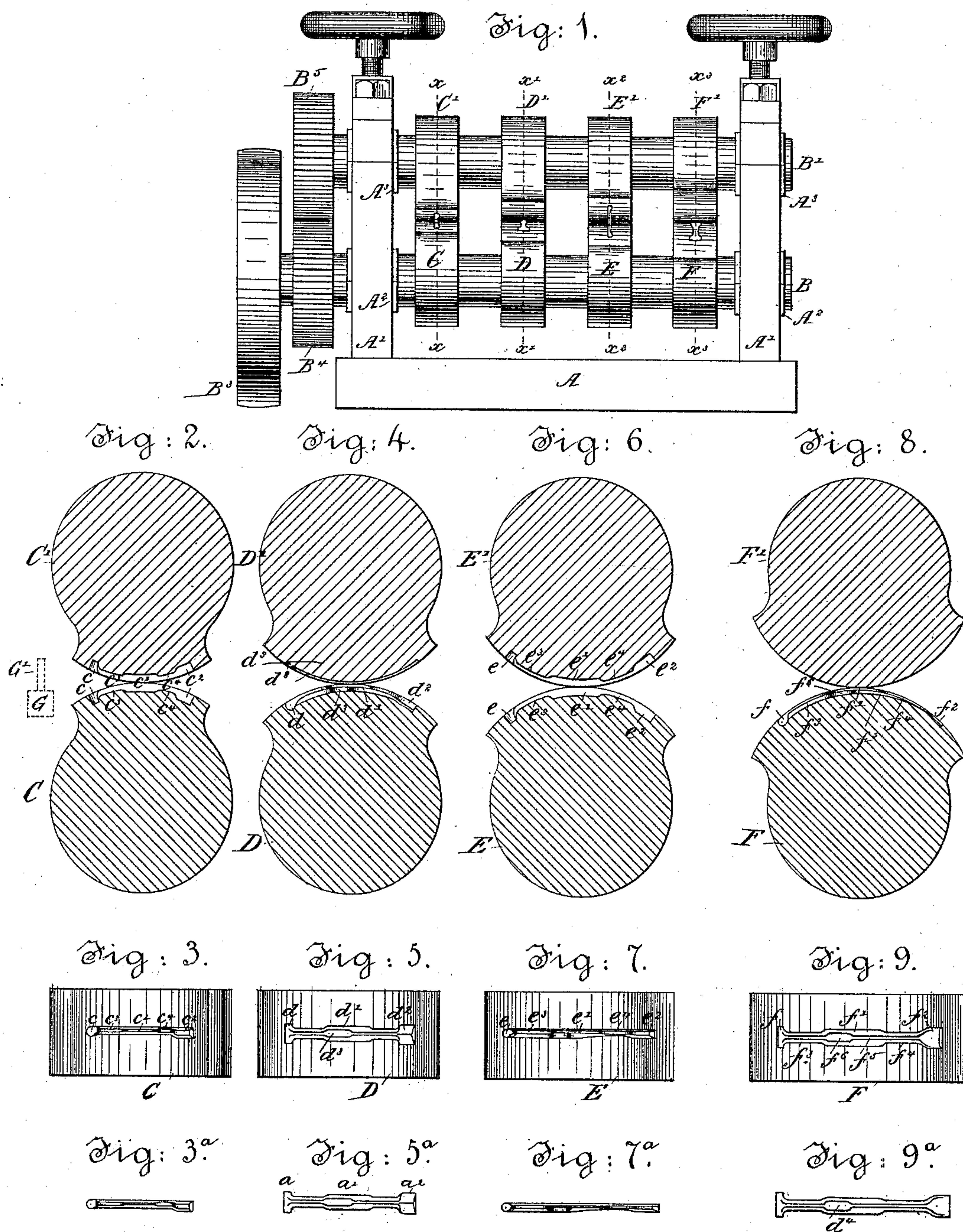
(No Model.)

H. W. WYMAN & L. F. GORDON.

ROLL FOR MAKING SHUTTLE BOX BINDERS.

No. 330,954.

Patented Nov. 24, 1885.



Witnesses:
John A. Rennie
Fred L. Emery.

Inventors,
Horace W. Wyman
Per: Lyman F. Gordon
Crosby & Gregory
their Attys.

UNITED STATES PATENT OFFICE.

HORACE W. WYMAN AND LYMAN F. GORDON, OF WORCESTER, MASS.

ROLL FOR MAKING SHUTTLE-BOX BINDERS.

SPECIFICATION forming part of Letters Patent No. 330,954, dated November 24, 1885.

Application filed October 7, 1885. Serial No. 179,216. (No model.)

To all whom it may concern:

Be it known that we, HORACE W. WYMAN and LYMAN F. GORDON, of Worcester, county of Worcester, and State of Massachusetts, have
5 invented an Improvement in Mechanism for the Manufacture of Shuttle-Box Binders, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing
10 like parts.

This invention has for its object the production of a machine by which shuttle-box binders may be cheaply and quickly rolled to shape.

In accordance with our invention we have
15 provided the peripheries of a set of rollers with die grooves or spaces to act upon and shape the metal blank inserted between them to form a shuttle-binder, the dies shaping and pressing the said binders.

20 The rolls herein described contain four sets of dies, all of which it is preferred to retain and use, the first and third set acting to indent or shape the edge of the metal of which the binder is to be formed, the other two sets of
25 grooves acting on the face and back.

Figure 1 in front elevation represents a machine embodying our improvements; Fig. 2, an enlarged section of Fig. 1 in the line $x x$; Fig. 3, a face view of one of the die-grooves
30 shown in Fig. 2. Fig. 3^a shows the metal blank as shaped by the rolls C C'. Fig. 4 is a section of Fig. 1 in the line $x' x'$; Fig. 5, a plan view of the die shown in Fig. 4. Fig. 5^a shows the metal blank as left by the die-rolls D D';
35 Fig. 6, a section of the rolls alone in the line $x^2 x^2$; Fig. 7, a plan of the die shown in Fig. 6. Fig. 7^a shows the metal blank as left by the die-rolls E E'. Fig. 8 is a section of Fig. 1 in the dotted line $x^3 x^3$; Fig. 9, a section of the
40 die-groove of Fig. 8; and Fig. 9^a shows the completed binder.

The frame-work shown consists of a base, A, having uprights A', slotted to receive boxes A² A³, which receive in usual manner and sustain the shafts B B'. The shaft B has fixed to
45 or forming part of it the rolls C D E F, and the shaft B' the opposed rolls C' D' E' F'. The shaft B, rotated by a belt on the pulley B³, or in other usual manner, has a gear, B⁴, which
50 engages a gear, B⁵, on and rotates the shaft B'.

The rolls referred to, or they may be called "shouldered projections," fast on the shafts re-

ferred to, are provided with die-grooves which will now be described.

The rolls C and C', which constitute the rolls
55 of the first pass, have cut into them recesses $c c' c^2$, leaving projections $c^3 c^4$, the same co-operating together on a blank inserted edgewise, leaving the same as in Fig. 3^a. The roll D of the pair of rolls D D' is cut, as best shown
60 in Fig. 5, to leave spaces $d d' d^2$, which receive the projections $a a' a^2$ of the blank shown in Fig. 5^a, the bottom of the groove left in the roll D being provided with a long groove, d^3 , to form the central longitudinal rib for the
65 outer side of the shuttle-binder, the said rib being shown by the letter d^4 in Fig. 9^a. The upper roll, D', or that part of it represented by the letter d^5 is slightly cut out, as shown at
70 d^6 , it acting upon one side of the blank put into the die of the roll D'. The third pass is made between the rolls E E', part of which are cut out in like manner to again receive the blank edgewise, the dies having depressions
75 $e e' e^2$ and projections $e^3 e^4$ of substantially the same shape as those in the rolls C C', only larger, as the blank on its arrival at the rolls E E' is longer and thinner. The roll F of the pair of rolls F F' for the final pass has a die-groove of the shape best shown in Figs. 8 and
80 9, it serving the blank shown in Fig. 7^a as left by the rolls E E', and shaping it as shown in Fig. 9^a.

The die-groove in the roll F is of substantially the same shape as that in the roll D,
85 only larger, it having the recesses $f f' f^2$ and projections or raised parts $f^3 f^4$ between. The roll F also has a groove, f^5 , with a broad part, f^6 , to shape the rib at the back or outer side of the binder.
90

The machine in operation will have a guide or rest for the blank and the tongs holding the blank while the latter is being inserted between the slowly-rotating rolls to be caught by the shoulders of the rolls, as usual.
95

A guide, G, common to rolling-machines of the class shown, is represented by dotted lines in Fig. 2 of the drawings, it being a metal bar supported at its opposite ends by the frame A' A', and having upright pins G' about op-
100 posite the die-grooves.

We claim—

1. In a machine for forming binders for shuttle-boxes, the rolls C C', each cut to leave

recesses $c\ c'\ c^2$, with projections $c^3\ c^4$, to shape the edge of the blank passed between them, substantially as shown and described.

2. In a machine for forming binders for shuttle-boxes, the rolls $C\ C'$, each cut to leave recesses $c\ c'\ c^2$, with projections $c^3\ c^4$, to shape the edge of the blank passed between them, combined with two rolls, $D\ D'$, one of which is cut to leave recesses $d\ d'\ d^2$, the rolls $C\ C'$ $D\ D'$ operating successively upon the blank, for the purposes described.

3. In a machine for forming binders for shuttle-boxes, the roll F , having a die-groove cut therein, leaving spaces $f\ f'\ f^2$ and projections at $f^3\ f^4$, combined with a roll, F' , to force the blank into the said spaces, substantially as described.

4. In a machine for forming binders for shuttle-boxes, the roll F , having a die-groove cut therein, leaving spaces $f\ f'\ f^2$ and projections at $f^3\ f^4$, and having the groove f^3 to shape the rib of the binder, combined with the roll F' , to force the blank into the said spaces, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HORACE W. WYMAN.
LYMAN F. GORDON.

Witnesses:

ROBT. RICHMOND,
J. A. WARE.