

(No Model.)

2 Sheets—Sheet 1.

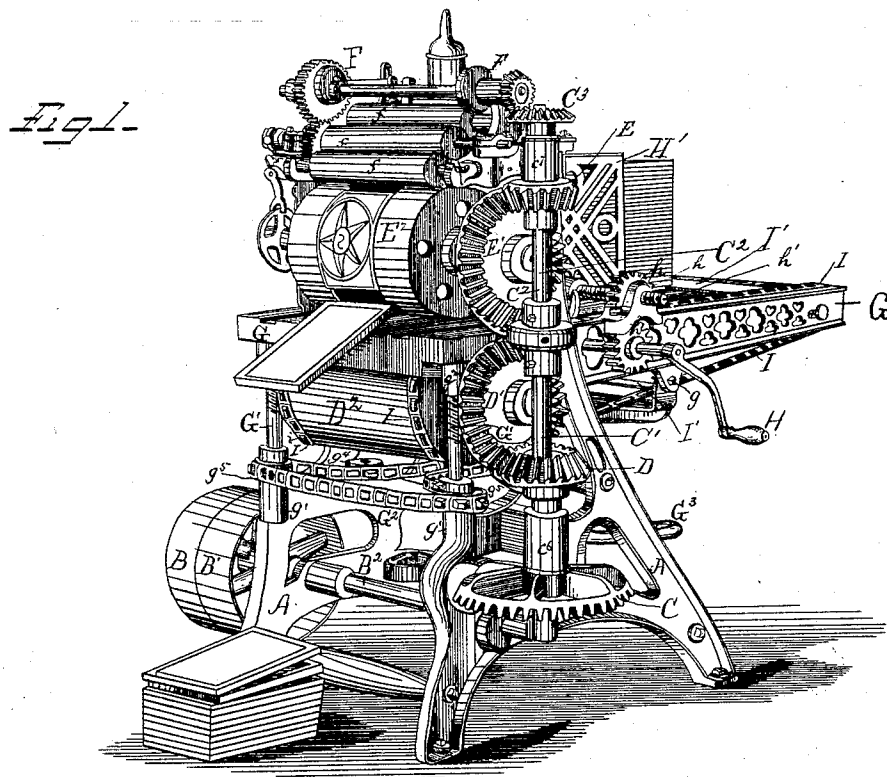
J. R. CROSS, Dec'd.

M. L. CROSS, administratrix.

WOOD PRINTING MACHINE.

No. 317,518.

Patented May 12, 1885.



~~WITNESSES~~ _____

J. Everett Brown
A. M. Sunday.

INVENTOR:

John A. Cross
per Munday Everts & Adcock
his Attorney's.

(No Model.)

2 Sheets—Sheet 2.

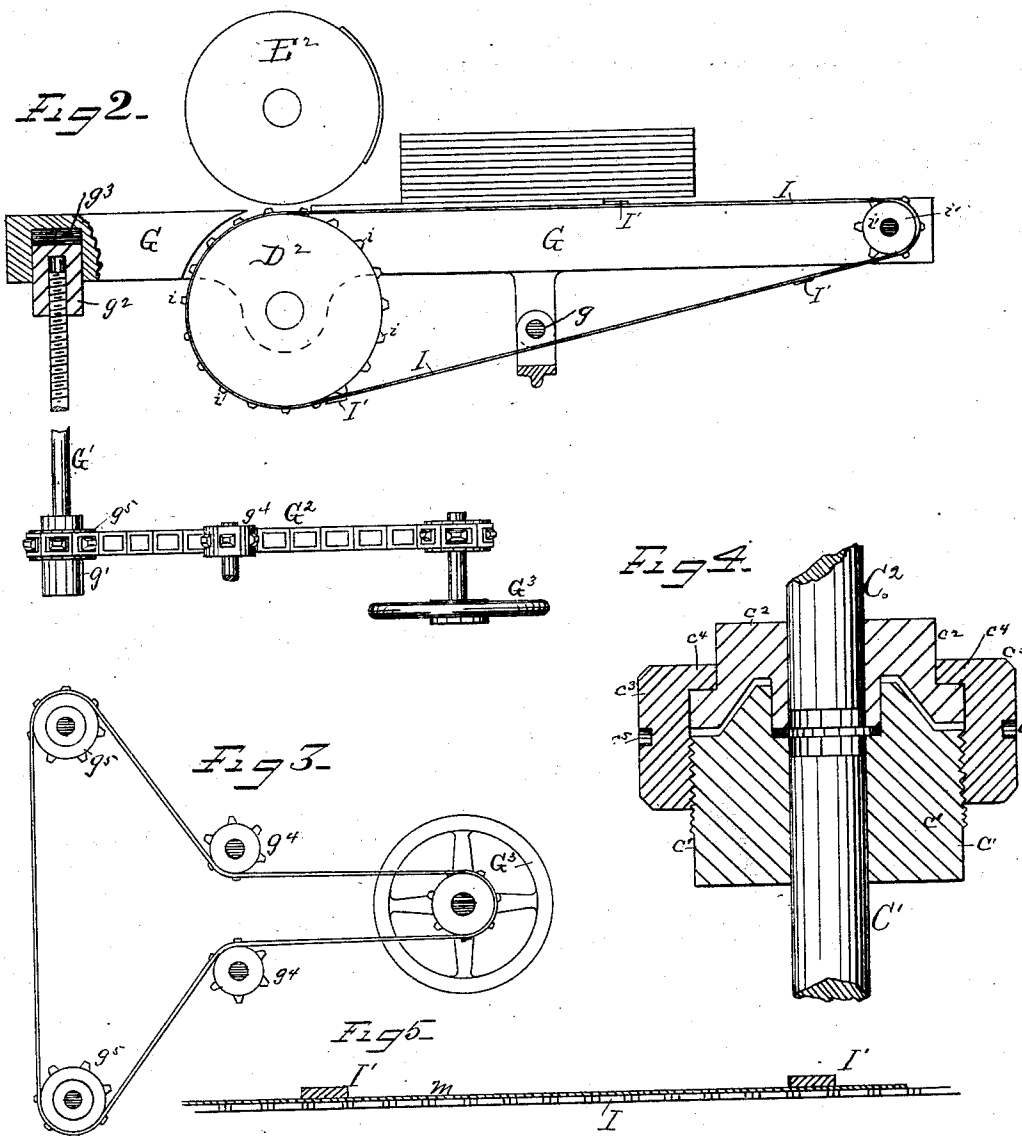
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J. Everett Brown
A. M. Munday.

INVENTOR—
John R. Cross.
per *Munday, Evans, & Adeock*
his Attorneys.

UNITED STATES PATENT OFFICE.

JOHN R. CROSS, OF CHICAGO, ILLINOIS; MARY L. CROSS, ADMINISTRATRIX OF JOHN R. CROSS, DECEASED, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MARY L. CROSS, OF SAME PLACE.

WOOD-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 317,518, dated May 12, 1885.

Application filed June 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. CROSS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Power Wood-Printing Machines, of which the following is a specification.

This invention relates to wood-printing machines, and more especially to the manner of
10 supporting and adjusting the bed thereof, and to a feature whereby the impression-cylinder may be conveniently adjusted to register correctly with the feed mechanism.

The nature of the invention fully appears
15 in the subjoined description and the accompanying drawings, in which latter—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a partial vertical
20 section showing the bed, the mechanism for adjusting and supporting it, and the feed-belt. Fig. 3 is a plan of said adjusting mechanism detached. Fig. 4 shows a detail section of the
25 clutch by which the parts of the cylinder-driving shaft are united. Fig. 5 is an enlarged partial longitudinal section of the endless feed
and the protecting rubber blanket sometimes employed therewith.

Similar letters of reference indicate like parts wherever used in the several figures.

30 In said drawings, A represents the frame of the machine; B B', the fast and loose pulleys carrying the power-giving belt by which the machine is operated, and B² the driving-shaft. The latter carries a bevel-gear which engages
35 with the bevel-gear C upon the lower end of the cylinder-driving shaft. This shaft is a vertical one, and is made in two parts, C' C², the former whereof is provided with vertically-adjustable gear D, meshing with the gear D'
40 upon the shaft of the lower cylinder, D², and the latter whereof is provided with a gear, E, meshing with a gear, E', upon the shaft of the impression or die cylinder E². The parts C' C² are united by a suitable coupling, which
45 will allow them to be disconnected whenever the feed and the impression-cylinder need change in their relative adjustment. Such a clutch is illustrated, and consists of the collar

c', keyed upon the part C', a collar, c², upon the part C², and an interiorly-threaded ring, 50 c³, which engages with the thread upon the exterior of collar c', and is given an inwardly-projecting rim, engaging with the outward rim, c⁴, upon the collar c'. When the clutch is to
55 be closed, the ring is turned down upon the collar c' until the opposing surfaces of the two collars are brought into firm contact. The ring may be operated by a semicircular wrench, entering the holes c⁵ at opposite sides thereof.

The shaft C' C² is provided with bearings at 60 c⁶ and c⁷, and at its upper end carries also a pinion, C³, through which and suitable connecting-gears the inking mechanism and rollers F f f f are actuated.

G is the bed of the machine, and it is piv- 65 oted to the frame upon transverse pivots g, so it may be tipped thereon to accommodate the various thicknesses of stuff operated upon, and also, if required, when the feed and cylinder are to be adjusted. It carries the bear- 70 ings of the lower cylinder. The cylinder end of the bed is supported upon screw-columns G', which are stepped at g' upon the frame. These columns enter threaded boxes g'', inserted in the bed in recesses, which also con- 75 tain rubber cushions g³, as clearly indicated in Fig. 2. These screws are operated in adjusting the bed by an endless chain, G², which is operated by a hand-wheel, G³, and passes from thence around guide-wheels g⁴ and sprock- 80 ets g⁵ upon the screw-columns. Uniformity in the operation of both columns is thus obtained, and the needed range of adjustment for the bed is secured.

The rubber cushion already mentioned, which 85 lies between the box at the head of each of the columns and the top of the recess in the bed, allows the bed to yield a little to accommodate irregularities in the material being printed.

Through the handle H and connecting-gears 90 h is operated the right and left screw h', by which the sides H' of the hopper for holding the material to be printed upon are adjusted. From the bottom of this hopper the boards or pieces of stuff are fed in between the cylinders 95 one at a time by two endless feed-chains, I, con-

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nected at intervals corresponding in length
with the circumference of the impression-cyl-
inder by cross-bars I', which, as they pass along
under the hopper, engage with one of the pieces
5 and carry it forward to the cylinders, the re-
mainder of the material in the hopper gravi-
tating then immediately, so that the next cross-
bar will carry forward the next piece. These
endless chains are operated by passing them
10 around the ends of the lower cylinder, which
are provided with sprocket-teeth *i* to engage
therewith. At the opposite end of the bed
the chains pass around sprocket-rollers *i'*.

When the blanks are to be printed upon
15 both sides, it is necessary to make some pro-
vision to avoid defacing the already printed
side when the other side is to be printed. For
this purpose a rubber sheet or blanket, *m*, is
secured to the feed-chains I under the cross-
20 bars, upon which said already-printed faces
lie during the passage of the blanks through
the machine, so that all danger of abrasion or
scratching is obviated.

The operation of the machine will be suffi-
25 ciently apparent to those skilled in the art
without being detailed. Sometimes two pieces
of material are passed through the machine
simultaneously and side by side. These pieces
may vary slightly in thickness, so that when
30 they enter between the cylinders, if there were
no other means of insuring their discharge, the
thinner of the two might fail to pass out un-
less, indeed, the cylinders exerted sufficient
pressure thereon to compel that result. So,
35 also, if any of the blanks were thinner than
the average they might fail for the same reason
to pass entirely through the machine. To
obviate this evil, I adopt the endless-feed plan
shown, and by passing it over the ends of one
40 of the cylinders cause the cross-bars to actu-
ate the boards at a speed uniform with the
speed of the cylinders until they have moved
entirely beyond the impression-point.

Instead of the endless chains shown other
45 descriptions of belts may be used, and it is not
necessary that they be placed at the sides so
as to pass over the ends of the cylinder. In-
deed, a single belt centrally placed may be sub-
stituted, if it is sunken in the cylinder so as to
50 present a surface flush with that of the rest of
the cylinder.

By making the shaft which operates the two
cylinders in two parts, with the coupling where-
by those parts are united located between the
cylinders, the adjustment of the type-cylinder 55
and the feed relative to each other is permitted
to be changed by simply loosening the coup-
ling.

I claim—

1. In a wood-printing machine, the bed car- 60
rying the lower cylinder, pivoted upon trans-
verse pivots and provided with adjustable
supports at its cylinder end, substantially as
set forth.

2. In a wood-printing machine, the pivoted 65
bed provided with supports at the cylinder
end, having interposed rubber cushions, sub-
stantially as set forth.

3. In a wood-printing machine, the combi- 70
nation, with the pivoted bed, of the screw-col-
umns supporting the the end of the same, the
sprocket-chain by which the columns are uni-
formly adjusted, the wheels around which said
chain passes, and the hand-wheel for actu-
ating the chain, substantially as specified. 75

4. In a wood-printing machine, the type-
cylinder, the impression-cylinder operating
the endless feed, and said feed, in combination
with the shaft for operating said cylinders,
when said shaft is made in two parts, substan- 80
tially as and for the purpose specified.

5. In a wood-printing machine, the combi-
nation, with the endless feed, of a blanket for
preventing injury to the under surface of the
wood blanks secured to and traveling with 85
said feed, substantially as specified.

6. In a wood-printing machine, the combi-
nation, with the type and impression cylin-
ders, of an endless feed passing around the
impression-cylinder, and consisting of the 90
sprocket-chains and the cross-bars, the latter
being constructed and serving to connect such
chains, and to feed the boards to the cylinders
at the proper intervals, substantially as speci-
fied.

JOHN R. CROSS.

Witnesses:

H. M. MUNDAY,
T. EVERETT BROWN.