

R. W. Moran.
Printing Press.

Patented Apr. 18. 1865.

N^o 47319.

Fig. 5.

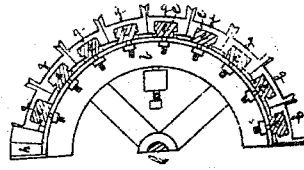


Fig. 3.

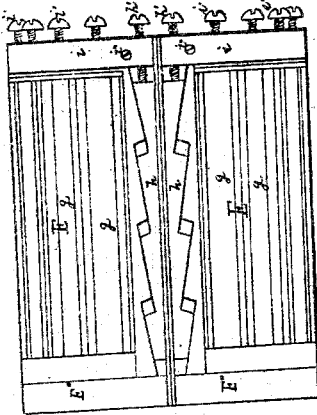


Fig. 4.

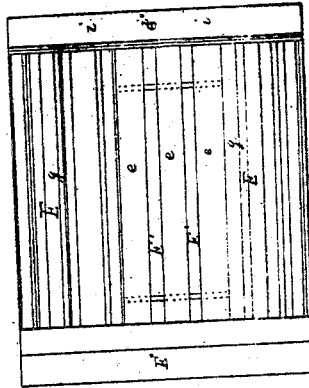


Fig. 6.

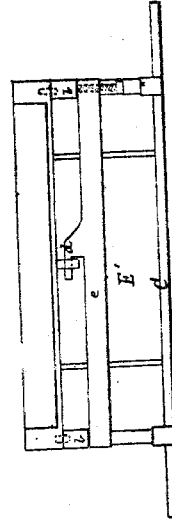


Fig. 2.

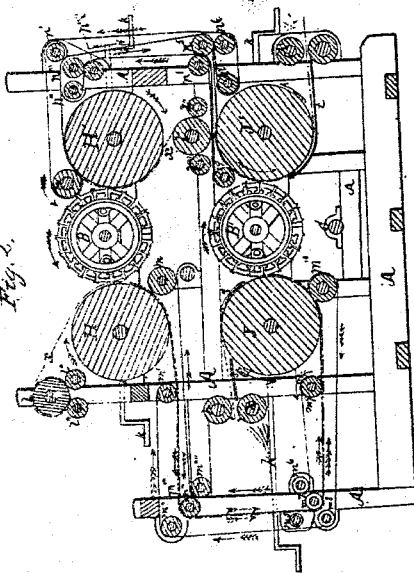
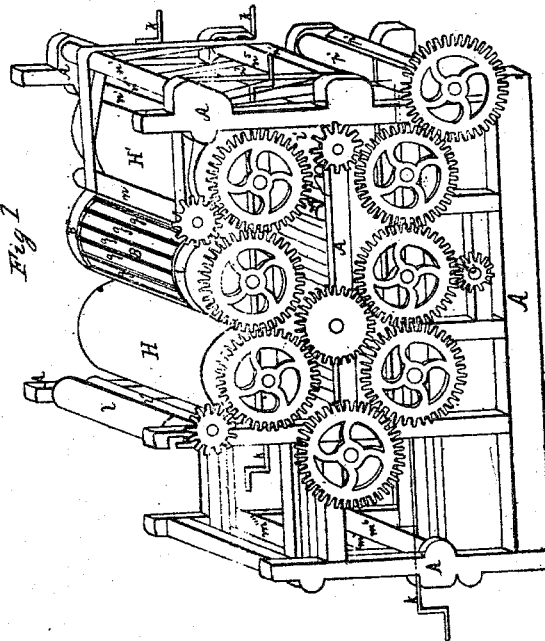


Fig. 1.



UNITED STATES PATENT OFFICE.

RICHARD W. MORAN, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 47,319, dated April 18, 1865.

To all whom it may concern:

Be it known that I, RICHARD W. MORAN, of the city and county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and made to form a part of this specification.

This invention relates, first, to a certain combination of printing and impression cylinders, and of conducting-tapes and tape-rollers, by means of which I am enabled to print both sides of two continuous sheets of paper in passing once through the press; and, secondly, to a peculiar construction and combination of the turtles and galleys.

In the accompanying drawings, Figure 1 is a perspective or isometrical view of the improvement as arranged for use. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a top view of the turtles. Fig. 4 is a similar view, a portion of the galleys being removed. Fig. 5 is a transverse sectional view of one of the type-cylinders, with turtle arranged as for printing. Fig. 6 is a longitudinal sectional view of one of the type-cylinders, showing specially the mode of securing the turtles.

A represents the frame-work of the press, which will be made of suitable material—iron being preferred—in such manner as to be adapted to receive and support the operative parts of the press.

B B represent the printing or type cylinders, the shafts of which will be provided with suitable bearings in frame A, and they will receive motion in the directions of the arrows seen in Fig. 2 from the main shaft C through medium of gear-wheels, so constructed and made to operate that the revolutions of the said cylinders B B' will be in perfect harmony. The shafts of said cylinders B B' will have secured upon them near their ends rings, as b, (seen in Figs. 5 and 6,) which are adapted to afford suitable bearings for the turtles or type-forms, and also to afford the means of securing the said turtles for operation, which may be effected by means of bars, as c, (seen clearly in Fig. 6,) the said bars being provided with hooks, as d, which take into suitable staples secured to the inner sides of the said turtles, as seen in

Fig. 6. The said turtles E (shown clearly in Figs. 3 and 4) will be formed in two semicircular parts, in such manner that when two of said parts may be arranged together for operation, as seen in Fig. 1, and furnished with type, as hereinafter described, they may afford the complete and necessary cylindrical printing-surface. The base plates of said turtles (seen at E', Fig. 4) will have made in them transverse slots, by means of which, through the agency of bolts and nuts, as seen in Fig. 5, the galley-bars e may be secured upon the said beds of the turtles in such manner as to be allowed free lateral motion, in order to facilitate the easy insertion of the galleys and their proper relative adjustment after insertion. The said galley-bars e will have formed in their sides longitudinal grooves adapted to receive suitable shoulders of the galleys, as seen in Fig. 5, and thereby secure or anchor the said galleys in a proper manner with reference to their axis of rotation. The said galleys (marked g) will be of length and width adapted to the columns of ordinary newspaper, with projecting flanges adapted to serve as column-rules, and also to secure the type laterally, so that the matter may be set up in the galleys and without change or alteration of any kind inserted in the turtles. The number of galleys in a turtle will be equal to the number of columns required for a single page of the newspaper to be printed, so that two of the said turtles, forming one complete cylinder, will embrace the forms of type necessary for printing the two pages of the paper that appear upon the same side of the unfolded sheet and the other cylinder will afford the forms for the other two pages. The said galleys g will be secured in such manner as to hold their flanges or column-rules firmly and compactly together by means of the inclined wedges h h, (seen in Fig. 3,) which may be suitably operated for the purpose by means of the screws h' h', which work through the foot stocks i, and the type will be properly secured and locked in the different galleys by means of followers at the foot of each galley, operated by means of screws, as i', working through the stocks i. The said foot-stocks i are made easily removable by means of screws i'', by means of which they are secured to the turtles. The said galleys g will be properly constructed and arranged with reference to

the head-lines of those pages which require them.

H H' J J' represent the blank cylinders, which will be of the same size, and made to rotate in harmony with the printing-cylinders B B', and they will be adjustable with reference to said printing-cylinders by means of suitable impression-rods, as *k*, or other equivalent proper means.

l' represent cylinders or rolls of paper, which may be unwound and properly fed to the press by means of friction-rollers l' l'. m' m' m' m' m' m' m' m' m' m' m' and n' n' n' n' n' n' n' n' n' n' n' represent pulleys, which will be furnished with suitable bands or tapes and operated by means of proper gearing or belts in such manner as to be adapted, in harmony with the other working parts of the press, to convey the paper to the printing-cylinders, as hereinafter explained.

p p p' p' represent the cutting cylinders or rollers, which by means of suitable gearing will be made to revolve in harmony with the printing-cylinders. They will be provided with adjustable longitudinal knives or cutters, (seen in Figs. 1 and 2,) arranged to operate as shears, so that at certain proper periods in the operation of the press they may be adapted to sever the complete printed papers from the continuous printed sheets that may be delivered from the printing cylinders.

The head-stocks E" of the turtles E will be made to afford suitable shoulders or bearings for the type in the galleys.

The operation of this improvement may be briefly explained as follows: Proper inking-rollers being provided and arranged in such manner as to furnish the necessary supply of ink to the printing-cylinders, and the paper being supplied in continuous sheets from the rolls *UV*, all the tape-rollers being so geared and operated as to carry the tapes in the proper direction with the speed required, and the press being set in operation, the paper from the roll *t*, following the red line *x*, will pass between the blank cylinder *H* and printing-cylinder *B*, receiving thereby the proper imprint from the type upon the side next the cylinder *B*, thence upon the tapes of roller *m*, under roller *m'*, and its tapes between the rollers *m'' m'''* downward under roller *m''* and roller *m''*; thence around the blank cylinder *J*, where it will receive the imprint from the printing-cylinder *B'* upon the side opposite that already described; thence under the guard *S* and over the plate *S'*, between the cutting-cylinders *p p*, by means of which the paper will be severed at the proper marginal point and delivered finished and complete upon a table prepared

for the purpose. The paper of roll *l'*, following the red line *x'*, will pass up between the cylinders B and H, where it will receive its first impression; thence under the roller *n* and its tapes, over the roller *n''* and its tapes; thence between said tapes over roller *n'''* down under roller *n^o* over roller *n^a*; thence under the tapes of roller *n^o* over and between the cylinder J' and cylinder B', where it will receive the finishing impression; thence it will pass over the plate *t* between the cutting-cylinders *p' p'*, by means of which the same will be severed and delivered in the same manner as the sheet before described.

Stereotype plates, properly constructed and arranged in the form of cylinders, may be employed instead of forms of type, as herein set forth, thereby dispensing with the within-described construction of turtles.

Should it be found necessary, in order to overcome the set-off, the conducting-tapes may be so arranged as to convey the paper a longer distance between impressions.

I do not wish to confine myself to the precise position of the said tape-rollers and their tapes, either with reference to each other or to the cylinders, the principal object being to secure the proper arrangement of a system of tape-rollers and tapes to conduct the paper from the first printing-cylinder, B, to the second, B', in such manner that two continuous sheets of paper may at the same time be delivered to the said cylinder B' for printing, substantially as described.

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

1. The combination, in a single printing press, of two independent type-cylinders, B B', and corresponding impression-cylinders H H' and J J' with each other and with independent systems of tape-rollers and endless tapes, substantially as herein set forth, whereby two separate rolls or sheets of paper may, in passing simultaneously through the press, both receive on each side opposite impressions from each type-cylinder.

2. The within-described combination of distinct galleys *g g* with the turtles *E E* of a printing press, when the same are constructed and arranged substantially in the manner and for the purpose herein set forth.

In testimony of which invention I have hereunto set my hand and seal, this 4th day of April, 1884, in the presence of witnesses.

WITNESSES: RICHARD W. MORAN. [L. S.]

Witnesses:

H. E. CLIFTON,
J. M. RANDOLPH.