

D. GREENHILL.
 PRINTING MACHINERY.
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991,845.

Patented May 9, 1911.

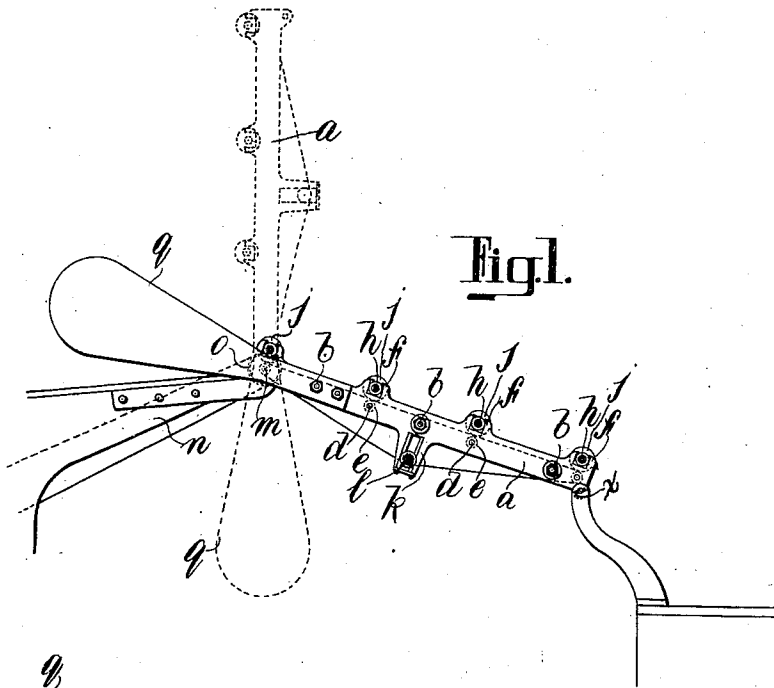


Fig. 1.

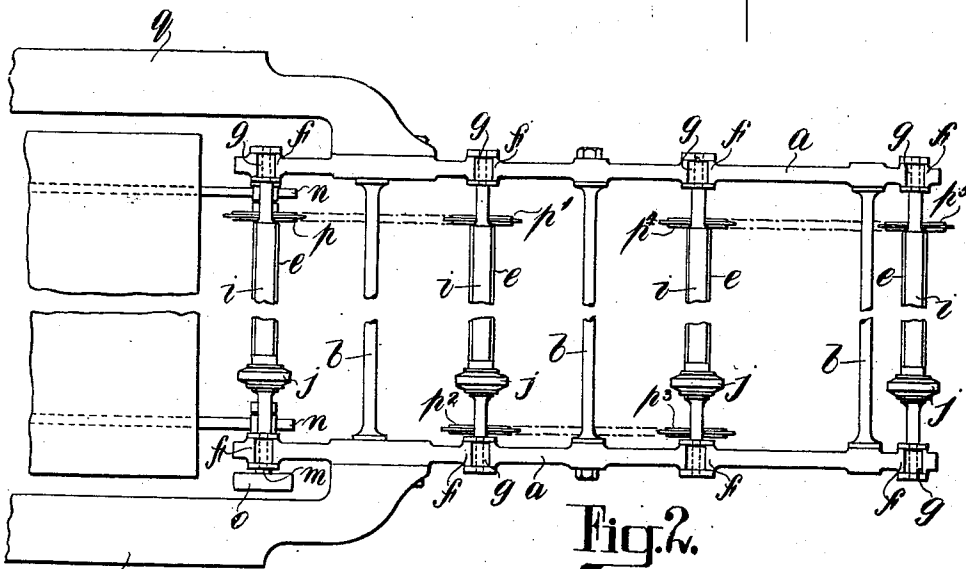


Fig. 2.

Witnesses:
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 atty.

UNITED STATES PATENT OFFICE.

DAVID GREENHILL, OF WATFORD, ENGLAND.

PRINTING MACHINERY.

991,845.

Specification of Letters Patent.

Patented May 9, 1911.

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To all whom it may concern:

Be it known that I, DAVID GREENHILL, a subject of the King of England, residing at 12 Essex road, Watford, Hertfordshire, England, have invented certain new and useful Improvements in Printing Machinery; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to printing machines and refers to means for connecting two independent printing machines, which may be of the usual construction, so that the work may be passed, without handling, from one machine to the other.

The invention is of the type in which a transporting device is employed for conveying a sheet which has already been printed upon in the first machine to the feeding end of the second machine in order that it may be further printed upon, which device may be put into or brought out of action when required so that each machine may be made to work singly or in conjunction with another or other machines.

My invention relates to a special and advantageous transporting device of this description which is located between the delivery end of one machine and the feed end of another machine and which is adapted to be put into position or disconnected at will. Any number of these devices may be employed where it is desired to connect up a series of machines.

The device is so constructed and mounted that it can be put out of action with extreme rapidity, as it is simply necessary to release a catch, when the device tips up, thus disconnecting the first or any other machine from the next succeeding machine.

According to my invention the transporter is held by eyes near one end on a cross shaft the latter being carried in suitable bearings connected to a double bracket extending from one machine; by this shaft the revolving parts of the transporter are driven. The other end of the transporter is connected by any suitable securing and releasing means to a double bracket extending from another printing machine frame at that end of the transporter. The end of the transporter beyond its holding eyes is weighted so that when the other end is re-

leased from the securing brackets the transporter swings upward and thus the machines are disconnected and may if desired work independently. And in order that my said invention may be better understood I will now proceed to describe the same with reference to the drawing accompanying this specification, which shows one method of applying a transporting device for connecting two printing machines, but it is to be understood that I do not limit the invention to the details and construction illustrated in the drawings.

In the drawings Figure 1 is a side elevation of the device attached to the delivery end of one machine, and shown in full lines connected to the feed end of a second machine and in dotted lines in the disconnected position. Fig. 2 is a plan of the transporter drawn to an enlarged scale.

The same letters of reference are employed to denote the same parts in both the views.

a, *a* is the framework, the sides of which are held by two cross bars *b* secured at the outside of the frames by nuts. Fitting in the frame so as to revolve therein are shafts *d* carrying rollers *e* to support the tapes and sheets. The shafts *d* are revolved by chain gearing as hereinafter described. On the top of the frame *a* are jaws *f* carrying bearings *g* for shafts *h* upon each of which is fitted a roller *i*. The rollers *i* are circumferentially grooved to carry an india rubber ring *j* in contact with the roller *e* to keep the sheet down. The bearings *g* of the shafts *h* are secured in jaws *f* by outer nuts or by other suitable means. Projecting from the other side of the frame are slotted arms *k* carrying adjustable bearings for a shaft *l*. This shaft *l* carries a tension roller for the tapes which enables a working tension to be given to such tapes when they get slack.

One end of the frame *a* is formed with eyes through which a shaft *m* passes. This shaft *m* is carried in suitable bearings attached to brackets *n* extending from the frames of the feed end of one of the printing machines and is fitted at one end with a belt pulley *o* by means of which the shaft is revolved from some source of power. Secured upon the said shaft *m* is a chain wheel *p* engaging by means of a chain with another chain wheel *p*¹; on the shaft which carries this latter wheel is a second chain

wheel p^2 connected by means of a chain with a chain wheel p^3 on the next shaft which shaft also carries a chain wheel p^4 which engages by means of a chain with a chain wheel p^5 . By this means all the chain wheels p^1 to p^5 are rotated carrying with them the shafts d upon which they are mounted.

Attached to the frame a near to the driving end are weights q which are sufficiently heavy to overbalance the transporter when it is free to swing upward, in which case it rises into the position shown in dotted lines at Fig. 1. When it is required to connect the two machines the transporter is secured by means of a thumb screw X with its forward end to the delivery end of the second machine.

When it is required to disconnect the machines it is simply necessary to unloosen the screw or to remove any other equivalent device such as a pin which has been employed for holding the transporter in position, and it immediately swings upward and the disconnecting of the machines is effected.

In place of using weights for raising the transporter I may of course employ springs adapted to raise the frame into the disconnected position when such frame is released.

What I claim and desire to secure by Letters Patent of the United States of America is:—

1. In combination with two press structures arranged adjacent to each other with one thereof having bearing brackets and the other supporting brackets, of a supporting and drive shaft carried by said bearing brackets, means driving said shaft, framework supported by said shaft, transversely disposed carrying rollers having bearings in said frame, means transmitting motion from said drive shaft to said carrying rollers, tapes carried by said rollers, means adjusting the tension of said tapes, shafts carrying contact rollers having bearings in said framework and arranged parallel and superjacent to said carrying rollers, means locking said frame to said supporting bracket, and a counterbalance secured to said frame to swing the latter out of operative relation

to said presses upon releasing the locking means.

2. The combination with two press structures arranged with the delivery end of one adjacent to the feed end of the other, of supporting brackets secured to the delivery end of one press, bearing brackets secured to the feed end of the other press, a supporting and drive shaft carried by said bearing brackets, means driving said shaft, transporting means comprising, framework supported by said shaft, carrying rollers and transporting tapes carried by said framework, means transmitting motion from said drive shaft to said carrying rollers, means locking said transporting means to said supporting brackets in operative relation to the delivery end of the press, and means tilting said delivery means upon releasing said locking means to throw the former out of operative relation to the delivery end of the press.

3. The combination with two press structures arranged with the delivery end of one adjacent to the feed end of the other, of supporting brackets secured to the delivery end of one press, bearing brackets secured to the feed end of the other press, a supporting and drive shaft carried by said bearing bracket, means driving said shaft, transporting means comprising, framework supported by said shaft, carrying rollers and transporting tapes carried by said framework, means transmitting motion from said drive shaft to said carrying rollers, means adjusting the tension of said tapes, means locking said transporting means to said supporting brackets in operative relation to the delivery end of the press, and means tilting said transporting means upon releasing said locking means to throw the former out of operative relation to the delivery end of the press.

In testimony whereof, I affix my signature, in presence of two witnesses.

DAVID GREENHILL.

Witnesses:

A. E. VIDAL,
L. SIMMONDS.