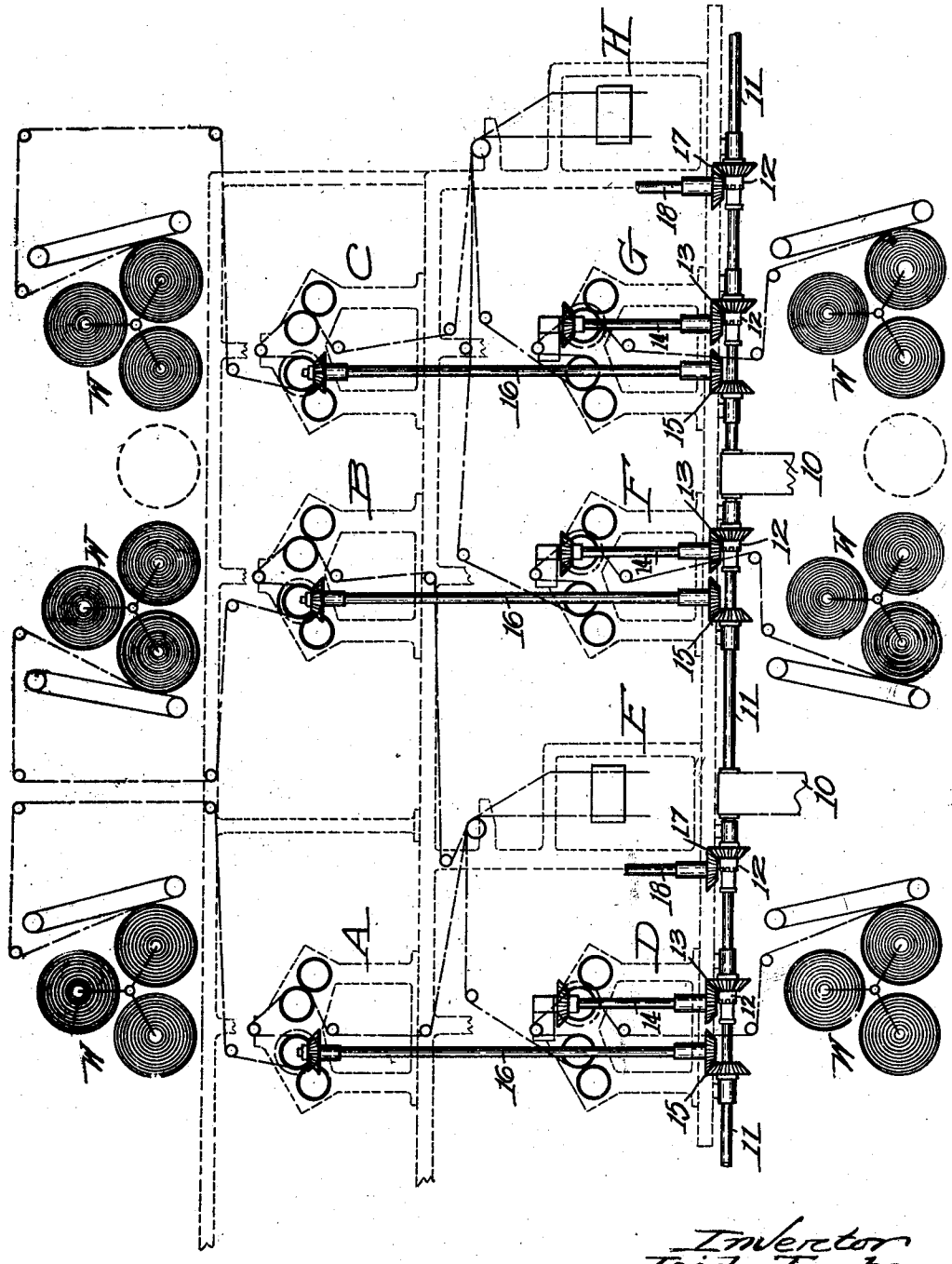
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DOUBLE DECK DRIVING ARRANGEMENT FOR PRINTING PRESSES

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DOUBLE-DECK DRIVING ARRANGEMENT FOR PRINTING PRESSES

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This invention relates to a driving arrangement for the different printing units of a double deck printing press.

The principal objects of the invention are to provide driving connections by which each press unit can have its driving mechanism separated from that of the press unit above or below, so that they can be run separately and each one run as a part of what amounts to a separate press; also to provide a construction in which the two units, one above the other can be used in separate groups or presses and the products delivered to different folders.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, which is a side view of a double deck printing press showing the driving connections in full lines, but the rest of the press in a diagrammatic manner.

In a grouping of press units in two or more decks, it sometimes becomes desirable to run the product of the upper press unit to one folder, and the lower press unit directly under it to another folder, each one sometimes being connected up with other units so that the upper and lower units, which correspond with each other, will be run as parts of separate presses.

Heretofore a single driving shaft has been used to connect the upper and lower units of a double deck press, and it is not possible therefore to connect up the two units, one above the other, so that they can be used in separate groups.

This invention has for its object the provision of a drive by which these difficulties are avoided. In the first place it may be stated that the three upper deck units A, B and C are shown in the usual way as located directly over the lower units D, F and G, and two folders E and H are also illustrated. What is shown here may be only a small part of a newspaper printing press. A separate web supply W is shown for each unit, in diagrammatic form.

The press is run by a series of motors or other means having driving belts 10 for driving the different sections of the main shaft 11. This main shaft runs throughout the length of the press preferably, and operates the various press units and folders. This shaft is divided into sections and between each two sections there is a clutch 12, shiftable as usual for the purpose of connecting or disconnecting the adjacent sections of this shaft.

On one side of each clutch 12 there is a pair of mitre gears 13 driving a vertical shaft 14 which drives the lower press unit, as for example, F. On the other side of the same clutch there is a pair of mitre gears 15 driving a vertical shaft 16, which, in turn, drives the upper press unit, as for example, B. There is also adjacent to other clutch members a pair of mitre gears 17 driving a vertical shaft 18 which drives a folder, as for example, E. It will be noticed that the clutch in each case is placed betwen two sets of mitres, each of which drives one of the vertical shafts. Therefore, the clutches can be connected up, and the two press units, one above the other, will operate in synchronism driven from one or more of the belts 10 as may be desired.

If this is not desired, the clutch is disconnected, in which case, the two press units, one above the other, can be driven as parts of different presses and for different purposes. In this case, one motor could be made to drive, for example, the press units A, B and D, and the folder E, and another motor could be used to drive the press units C, F and G and the folder H as another press group. In this way the six presses and two folders shown could be run as two presses, using some of the upper deck and some of the lower deck units for each one. These two presses could run independently of each other.

In the case of a big newspaper printing machine, of which the drawing shows only a part, various other combinations could be made. This permits practically any convenient combination of the various press units, no matter whether they are located over each other or not.

Although I have illustrated and described only a single form of the invention, I am aware of the fact that changes can be made

therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims.

Therefore I do not wish to be limited to the exact form shown, but what I do claim is:—

1. In a newspaper printing press, the combination with a series of press units constituting the lower deck, a series of press units constituting an upper deck, and folders, of a main shaft in sections, clutches between the ends of said sections for connecting them together to run as one shaft or disconnecting them at one or more points to run separately, means for driving certain of said sections independently of the others when the clutches are disconnected, a separate vertical shaft for each press unit, and means connected with said main shaft sections on opposite sides of certain of the clutches for driving the shafts of two press units, one of which is located directly above the other.

2. In a newspaper printing press, the combination with a press unit in the lower deck and a press unit in the upper deck, directly over said unit of the lower deck, of a main shaft running the length of the press arranged in sections, a clutch between the ends of two of said sections for connecting them together or disconnecting them, means for driving said sections independently when the clutches are disconnected, two vertical shafts for said press units, and means connected with said main shaft sections on opposite sides of said clutch for driving the vertical shafts of said two press units independently of each other.

3. In a printing press, the combination with a series of press units arranged in the upper and lower decks, of a main shaft in sections for driving said units, clutches connecting said sections together, independent means for driving certain of said sections, a pair of mitre gears on each side of certain of said clutches, a shaft connected with one pair of mitre gears for driving the lower press unit, a shaft connected with the other pair of mitre gears for independently driving the upper press unit directly above the said press unit, whereby when the clutch is disconnected the two press units may be connected up with other press units and driven separately to constitute two complete presses, and a folder connected with one of the main shaft sections for each of the presses so made up.

4. In a newspaper printing press, the combination with two press units, one located above the other, of a sectional main shaft adjacent to the lower deck, two vertical shafts both adjacent to the lower deck connected directly with the main shaft and each connected with one of said units for operating it, one being longer than the other and extending past the lower deck to connect with the upper deck, the two vertical shafts and the sectional main shaft having their axes in the same plane and means for clutching either of the vertical shafts to the main shaft independently of the other.

In testimony whereof I have hereunto affixed my signature.

ISIDOR TORNBERG.