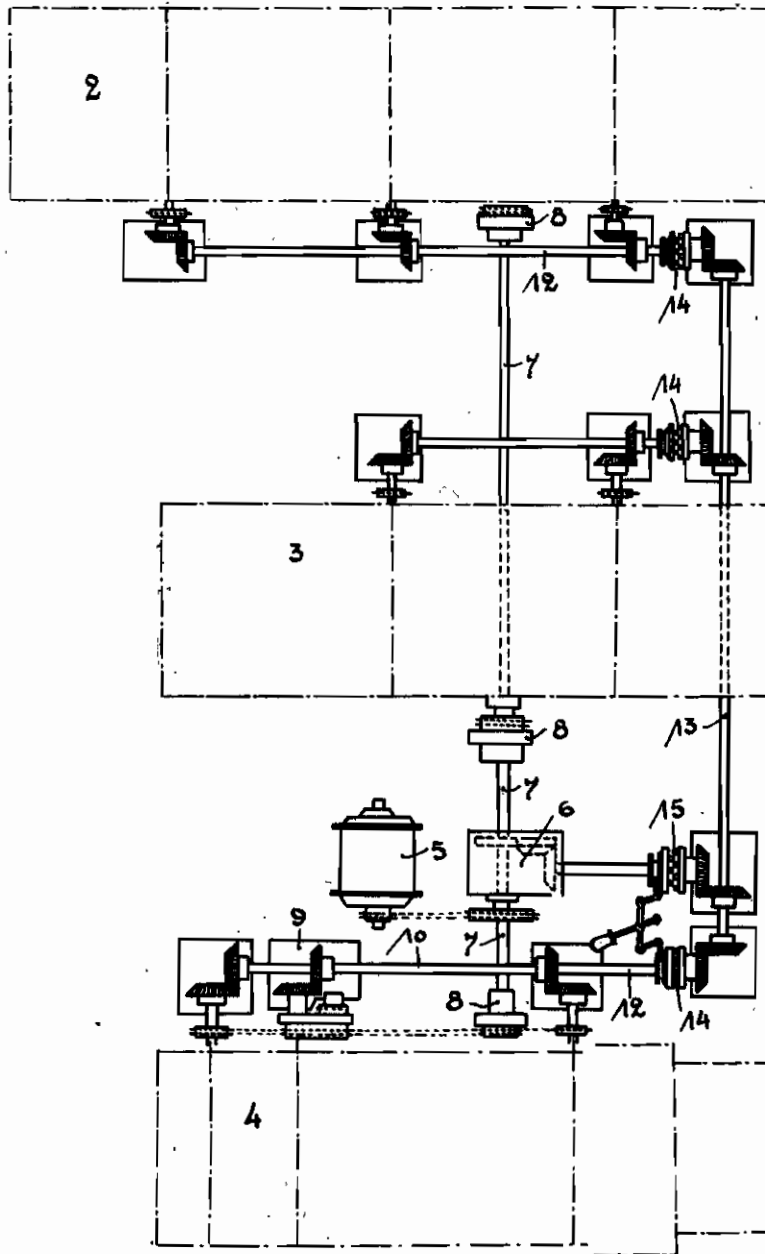


PUBLISHED
APRIL 27, 1943.
BY A. P. C.

H. DUESBERG
CARDING MACHINES WITH DIRECT DRIVE
Filed April 24, 1940

Serial No.
331,471



INVENTOR
HUBERT DUESBERG
By
Young, Emery & Thompson
ATTYS.

ALIEN PROPERTY CUSTODIAN

CARDING MACHINES WITH DIRECT DRIVE

Hubert Duesberg, Brussels, Belgium; vested in
the Allen Property Custodian

Application filed April 24, 1940

The known sets of carders with automatic or semi-automatic drive are open to certain disadvantages, the most serious of which are in particular the following:

1. These sets require for their control the presence of a plurality of motors and couplings permitting sliding which give rise to high costs of installation and the occupation of a large amount of space.

2. These sets, which are frequently described as having "direct drive", have driving connections which comprise in particular belts, and therefore sources of slipping, which entails irregularities in feed and consequently errors in the yarn count.

3. When the desired yarn count is obtained, it is necessary, in order to obtain the optimum production, to modify the initial regulation of the inlet and outlet members of each of the machines of the set. Now, these modifications are effected by successive tests and it will readily be seen that when the production is obtained the initial yarn count may have been modified, especially in the case of high count, this being due to the fact that the initial ratios of transmission of the gears cannot be strictly maintained. Consequently, it is frequently necessary to effect multiple and sometimes empiric regulations, whereby considerable loss of time and production is entailed.

The arrangement according to this invention overcomes all these disadvantages owing to the fact that it only comprises for the entire drive a single point of application of the power, from which the driving of the various members is rigidly effected, and owing to the fact that the arrangement permits of modifying the initial production as desired by a single manipulation without changing the yarn count obtained, all the ratios of driving of the different inlet and outlet members being modified proportionally in each case.

The accompanying drawing shows diagrammatically a construction of the invention given by way of example and relating to a set of cards comprising three automatic machines having direct underneath drive.

The breaker card 2, the intermediate card 3 and the condenser card 4 are driven by a single electric motor 5, from a distributor 6. Extending from the latter are shafts such as 7 which drive the members of each of the aforesaid machines through the intermediary of flexible couplings shown diagrammatically at 8.

In cases where a set of the automatic type is

concerned, the drive of the carding devices of the condenser card 4 co-operates with an arrangement (train of gears) varying the production, which is shown diagrammatically at 9 and the purpose of which will hereinafter be defined. In cases where the set is of the semi-automatic type, this change-speed device is directly coupled with the shaft controlling the inlet and outlet members and fulfills in this type of set the same function as in the automatic type.

The arrangement for varying production drives in turn, through the intermediary of absolutely direct connections (pinions, shafts and the like), such as 10, the inlet and outlet members of the machines.

It is important to note that the arrangement according to the invention permits of rendering the operation of the set automatic, like that of a normal set, that is to say, one comprising independent machines.

In fact, in each of the rigid connections such as 12 controlling the inlet and outlet members from a general rigid connection 13, there is interposed a claw clutch 14 which permits, as desired and if the necessity arises, of placing any one or more of the cards in or out of the working circuit without momentarily influencing either the feed or the outlet.

In addition, the first two machines (2 and 3) may be maintained in operation although the condenser card is stopped.

For this purpose, the distributor 6 is placed in direct relation with the general connection 13 through the intermediary of the claw clutch 15, similar to 14.

Finally, according to the invention, the clutches 15 and 14 (condenser card) are interconnected, so that one alone may be the working phase.

The arrangement for varying production has the effect of modifying the initial production obtained, when the yarn count is attained and this without modifying the latter.

For this purpose, it is only necessary, after the initial regulation of each of the machines, to vary the ratio of transmission of the train of gears forming the arrangement for varying production, in order to modify automatically the initial production obtained. Since this production-varying arrangement drives all the inlet and outlet members of the machines, it will be understood that this modification of production is attained without varying the pre-established speed ratio of the inlet and outlet members of the machines of the set.

It will be understood that the invention also

covers the case of a normal set which would then be driven from a single localised motor having only one point of application.

It is also to be noted that in the case of a semi-automatic set, the flexible coupling of the condenser card is combined with a reversing arrangement permitting of reversing the direction of rotation of the cylinder of this machine, for example for the purpose of facing-up.

In the case of a normal set, each of the flexible couplings, that is to say each of the machines, is provided with a reversing arrangement of the aforesaid type, of which the operation is independent.

HUBERT DUESBERG.