

(No Model.)

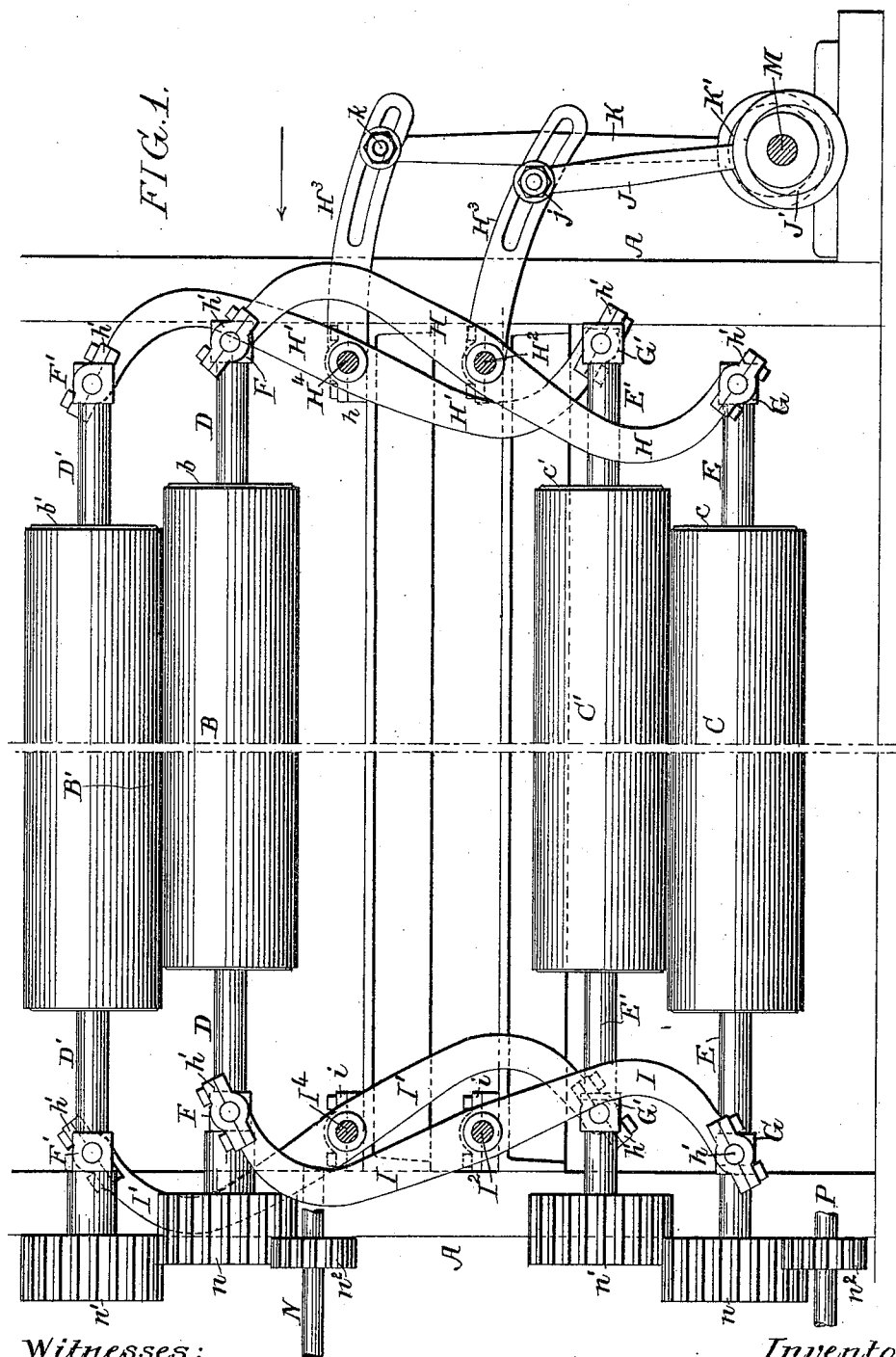
2 Sheets—Sheet 1.

W. GILL.

RUBBING MOTION FOR CARDING ENGINES.

No. 467,093.

Patented Jan. 12, 1892.



Witnesses:
Alex. Barkoff
Murray C. Boyer

Inventor:
Webster Gill
by his Attorneys
Howson & Howson

(No Model.)

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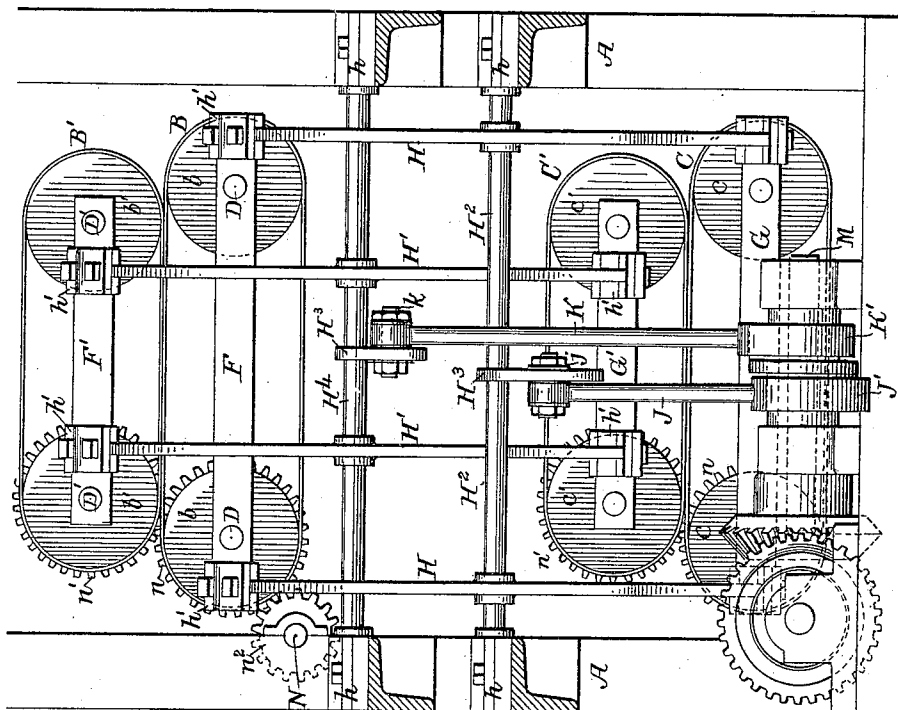


FIG. 2

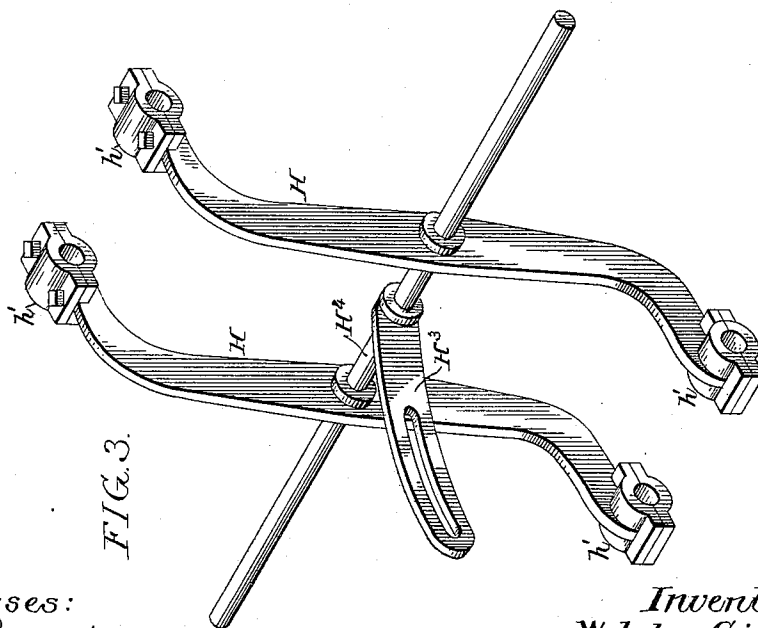


FIG. 3.

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UNITED STATES PATENT OFFICE.

WEBSTER GILL, OF CAMDEN, NEW JERSEY.

RUBBING-MOTION FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 467,093, dated January 12, 1892.

Application filed July 27, 1891. Serial No. 400,823. (No model.)

To all whom it may concern:

Be it known that I, WEBSTER GILL, a citizen of the United States, and a resident of Camden, Camden county, New Jersey, have invented certain Improvements in Rubbing-Motions for Carding-Engines, of which the following is a specification.

The object of my invention is to so construct the rubbing mechanism of carding-machines as to dispense entirely with the slide-guides usually employed, thus reducing the friction between the parts and preventing the splashing of oil.

In the accompanying drawings, Figure 1 is a transverse sectional view of sufficient of a "rubbing-motion" to illustrate my invention. Fig. 2 is a side view looking in the direction of the arrow, Fig. 1; and Fig. 3 is a perspective view of one of the operating-levers.

It will be understood that my invention is adapted not only to apron-rubbers, but also to roll-rubbers, and it will also be understood that the rollers or aprons are given a laterally-reciprocating motion and constant forward or rotary motion, as usual.

Heretofore the journals of the rub-rolls or apron-rollers were either mounted in cross-heads, which were adapted to guides on the frame-work of the machine or were adapted to hollow shafts, the friction between the parts, especially when subjected to the tension of rubbing-aprons, being very great and the parts requiring special attention. I dispense with these ordinary frictional surfaces in the manner which I will now proceed to describe.

A is the frame-work of the machine, of any suitable form.

B B' are the upper rubbing-aprons, and C C' the lower rubbing-aprons, the upper aprons being adapted to drums *b b'* and the lower aprons to drums *c c'*, as shown in Fig. 2. The shafts D D' of the upper sets of drums *b b'* are adapted at each end to bearings in cross-bars F F', and the shafts E E' of the lower sets of drums *c c'* are adapted at each end to bearings in like cross-bars G G'.

On one side of the machine are two sets of levers H H', carried, respectively, by fulcrum-shafts H² H⁴, adapted to suitable bearings *h h'* on the frame of the machine, and on the opposite side of the machine are similar sets of levers I I', carried by fulcrum-shafts I² I⁴,

adapted to bearings *i*. The upper arms of the levers H and I have boxes *h'* for the reception of the trunnions of the bars F, the lower arms of these levers carrying the bars G, and in like manner the upper arms of the levers H' and I' carry the bars F', and the lower arms of said levers carry the bars G'. I prefer to cast the levers H I H' I' with the shafts; but I may find it advisable to make them separately and secure them in any manner to the shafts, and the number of levers on each shaft can be increased as the construction of the machine demands.

Projecting from the shaft H² is a slotted segmental arm H³, and adapted to the slot in said arm is an adjustable block *j*, coupled to the eccentric-rod J of an eccentric J' on the driving-shaft M, and the shaft H⁴ has a similar slotted segmental arm H³, to which is adapted an adjustable block *k*, the strap K of which is adapted to an eccentric K' on the shaft M. By this means the desired lateral reciprocation of each pair of aprons B B' and C C' in opposite directions is effected.

By moving the blocks *j* and *k* on the arms H³ toward or from the fulcrum-shafts the extent of lateral reciprocation of the aprons can be diminished or increased, as desired.

The fulcrum-shafts H² H⁴ and I² I⁴ are the same distance apart vertically as the axes of the aprons B B' and C C', so that said aprons always bear the same vertical relation to each other.

One set of rollers *b b'* is geared together by spur-wheels *n n'*, the wheel *n* being geared to the driving-pinion *n*² on a driven shaft N, the faces of the wheels *n n'* being so wide that the shafts will be in gear at all times during their lateral movement. The rolls *c c'* of one set are geared in a similar manner to each other and to a driving-shaft P.

It will be seen that I dispense with the slide-guides usually employed, and I mount the eccentrics for giving the necessary rubbing motion at the base of the machine, and can make them much smaller than those usually employed, as I obtain the desired throw by the use of levers, and I can regulate the transverse movement of the aprons or rub-rolls by simply adjusting the blocks on the arms H³, thus increasing or diminishing the stroke of the rubbers without neces-

sitating any change or adjustment of the eccentrics themselves, as usual.

By mounting the eccentrics at the base of the machine away from the rub-rolls or aprons, I overcome an objection to eccentrics mounted on a vertical shaft opposite each set of rubbers—namely, the splashing of oil from the eccentrics onto the rubbers or onto the fibers which are being rubbed.

It has been customary to provide an eccentric for each line of rubbers. Thus on a two-high rubber four eccentrics were needed, two for each set; but I so arrange the parts that only two eccentrics are needed.

I have illustrated my invention as applied to a machine having two lines of rubbing-aprons, necessitating the use of two-armed levers; but it will be understood that when but a single set or line of rubbing-aprons is mounted on the levers one set of carrying-arms may be dispensed with, and when rub-rolls are employed they may be carried by bars F F' and G G' in the same manner as the rollers of the aprons. Cranks or cams may also, as will be evident, be used in place of eccentrics for actuating the levers, and hence such substitutes are considered to be the equivalents of the eccentrics.

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

1. The combination of the rubbers of a carding-machine with opposite levers carrying said rubbers, and means for vibrating said levers, substantially as specified.

2. The combination of upper and lower sets of rubbers with opposite levers carrying the

same, and means for vibrating the levers, the upper rubber of each set being carried by one set of levers and the lower rubber of each set by another set of levers, substantially as specified.

3. The combination of upper and lower sets of rubbers with opposite levers and means for vibrating the same, one set of levers carrying the upper rubbers of each set and the other set of levers carrying the lower rubbers of each set, the fulcrums of the two sets of levers being separated vertically to the same extent as the axes of the upper and lower rubbers of each set, substantially as specified.

4. The combination of the rubbers of a carding-machine, bars carrying the same, opposite levers to which said bars are hung, and means for vibrating said levers, substantially as specified.

5. The combination of the rubbers of a carding-machine, opposite levers carrying said rubbers, arms connected to said levers, and operating-eccentrics having rods connected to said arms, substantially as specified.

6. The combination of the rubbers of a carding-machine, opposite levers carrying said rubbers, slotted arms connected to said levers, and operating-eccentrics having rods adjustably connected to said slotted arms, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WEBSTER GILL.

Witnesses:

WILLIAM D. CONNER,
HENRY HOWSON.