

Oct. 18, 1927.

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J. FORKIN  
MACHINE FOR CLEANING, OPENING, AND COMBING COTTON,  
COTTON WASTE, AND LIKE MATERIALS  
Filed Nov. 2, 1926

3 Sheets-Sheet 1

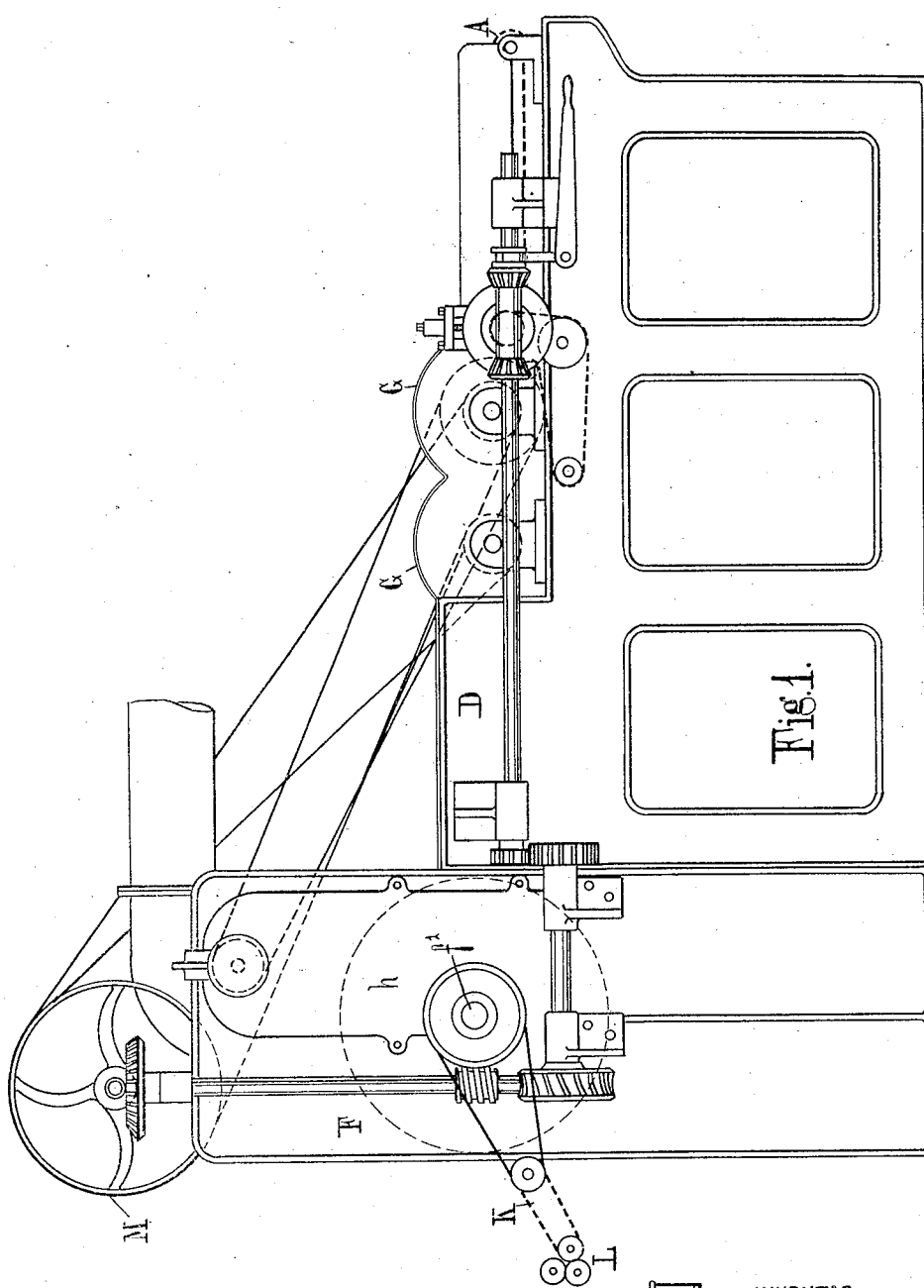


Fig. 1.

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3 Sheets-Sheet 2

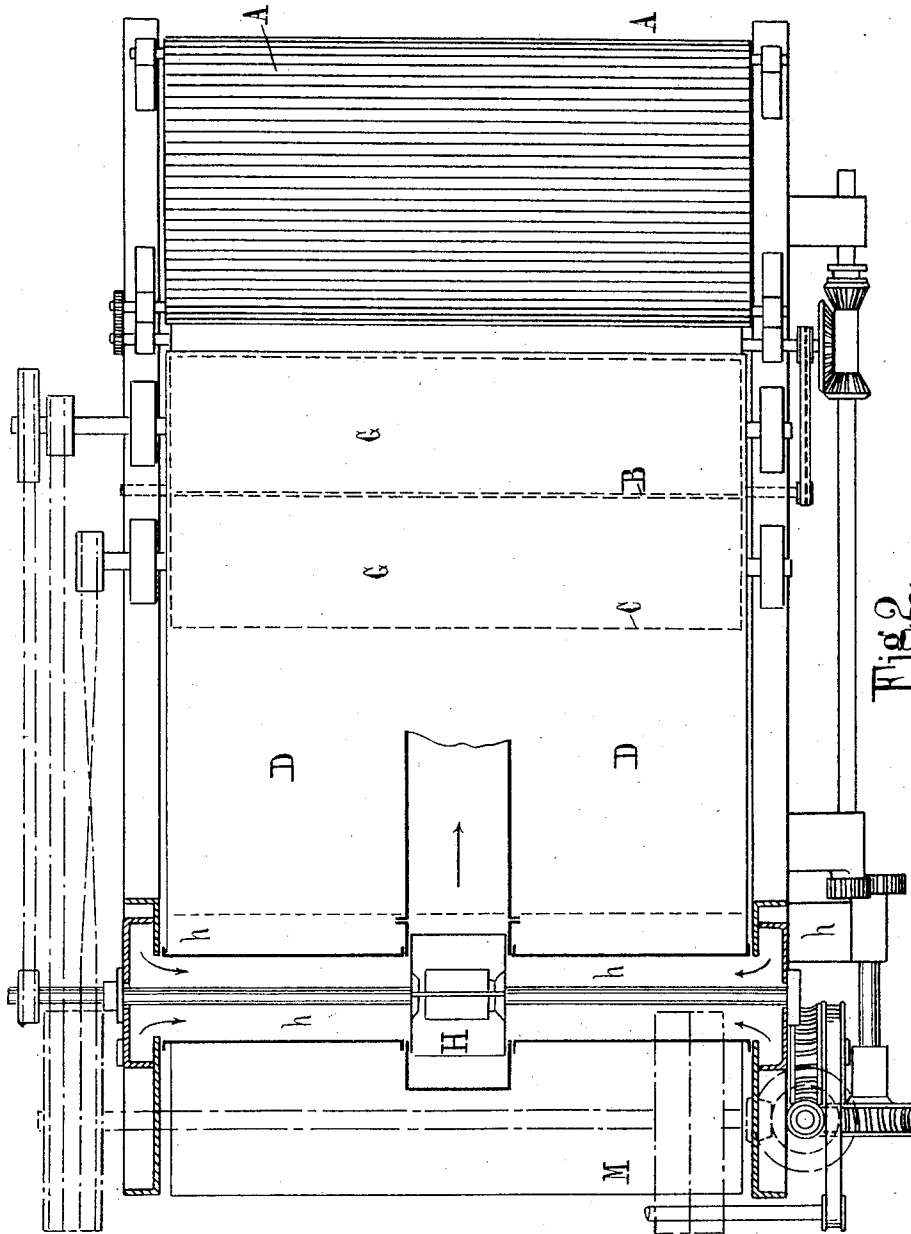


Fig. 2.

INVENTOR.

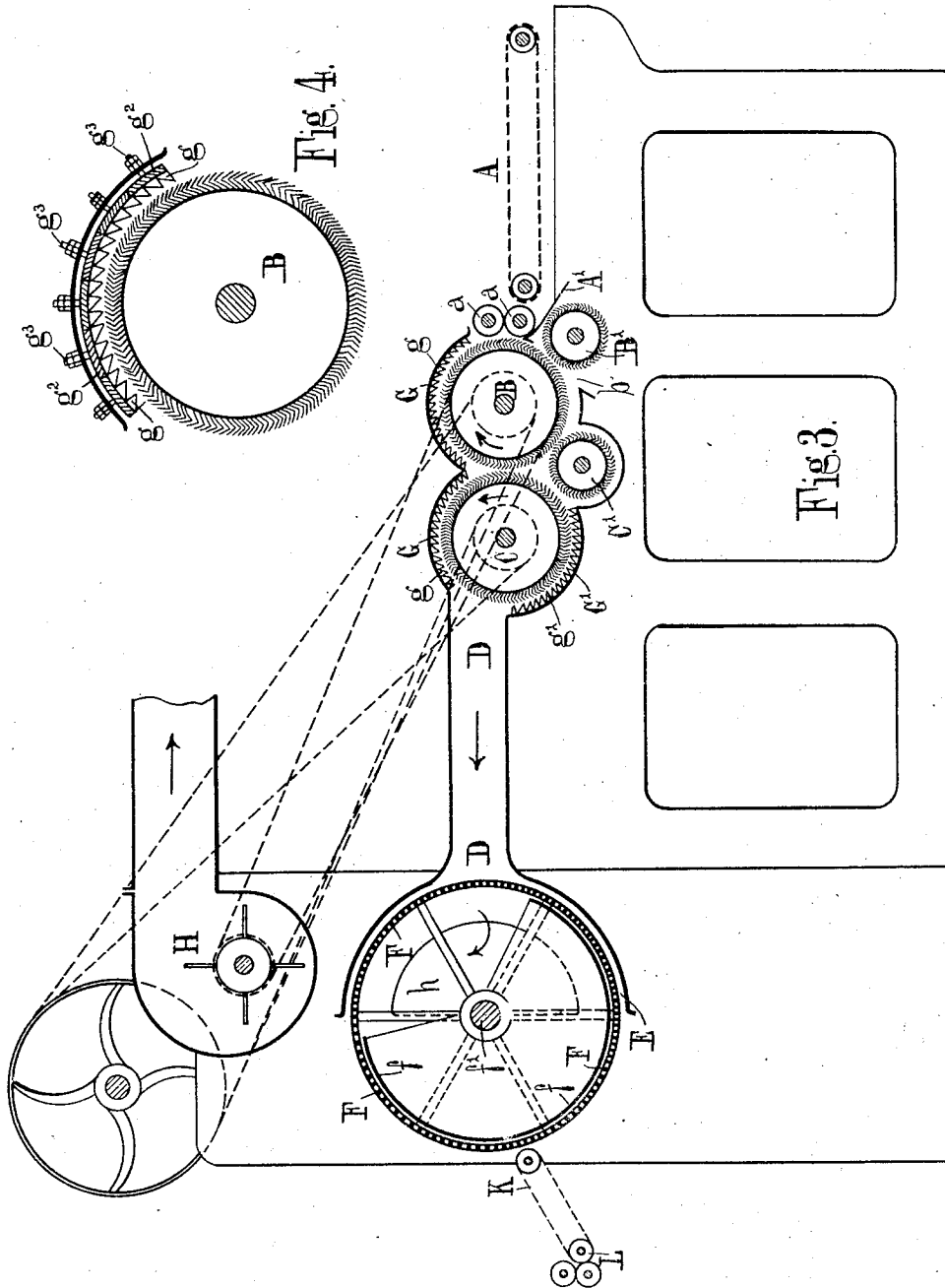
*John Forkin*  
by *Edward A. Smith*  
*Pat.*

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3 Sheets-Sheet 3



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## UNITED STATES PATENT OFFICE.

JOHN FORKIN, OF MANCHESTER, ENGLAND.

MACHINE FOR CLEANING, OPENING, AND COMBING COTTON, COTTON WASTE, AND LIKE MATERIALS.

Application filed November 2, 1926, Serial No. 145,882, and in Great Britain October 16, 1926.

This invention relates to improvements in machines for opening, cleaning and combing cotton, cotton waste and similar materials of the type in which the fibres are fed to a licker-in roller from which they are drawn by suction through a duct to a revolving perforated cylinder which has certain parts blanked off or provided with a guard so that the cylinder is not acted on by the suction at such parts to allow the fibres deposited on the cylinder to fall or be removed therefrom.

According to the present invention a casing having saw teeth is arranged above the licker-in roller and a second clearing roller where such is employed and also below the second clearer roller.

The invention will be described with reference to the accompanying drawings in which,

Fig. 1 is a side view of the machine.

Fig. 2 is a plan of same.

Fig. 3 is a longitudinal section.

Fig. 4 is a detail view of the casing of the licker-in roller.

The machine is constructed with a travelling feed lattice A which delivers the fibres to the feed rollers *a* which deliver them to the licker-in roller B which is covered with wire clothing, Garnett teeth or the like. A second cleaning roller C is arranged behind the licker-in roller B between the latter and the duct D leading to the chamber E in which the perforated drum or cylinder F is mounted. The roller C is covered with wire clothing, Garnett teeth or the like.

A roller B<sup>1</sup> also covered with wire clothing or Garnett teeth is mounted below the licker-in roller B and acts on the fibres to clean and straighten them as they are carried round on the roller B. A further roller C<sup>1</sup> similarly covered with wire clothing or Garnett teeth is arranged below and between the rollers B and C and which roller has a further cleaning and straightening action on the fibres.

A casing G is arranged over the top of the rollers B and C and is provided on its underside with saw teeth *g* preferably inclined in opposition to the wires or teeth on the rollers B and C. A similar casing G<sup>1</sup> is arranged below the rollers C and C<sup>1</sup> a space *b* being left between the casing G<sup>1</sup> and the roller B<sup>1</sup>. The portion of the casing G below the roller C is provided with saw teeth *g*<sup>1</sup> on its inner

face, the teeth *g*<sup>1</sup> being inclined in opposition to the wires or teeth on the roller C.

The teeth *g* and *g*<sup>1</sup> on the casings G and G<sup>1</sup> give an increased cleaning and combing or straightening effect on the fibres as they are carried round by the rollers B and C.

The teeth *g* and *g*<sup>1</sup> may be fixed or they may be adjustable so that the distance between their points and the wires or teeth on the rollers B and C can be altered so as to suit different conditions and types of fibres. To make the teeth adjustable they may be carried on suitable frames or flats *g*<sup>2</sup> as shown in Fig. 4 and moved in relation to the casing by screws *g*<sup>3</sup>.

A fixed plate A<sup>1</sup> is arranged between the feed rollers *a* and the licker-in roller B and this plate serves to remove any heavy matter from the fibres before the latter pass to the second roller C. Furthermore, any dirt or foreign matter removed by the roller B<sup>1</sup> is discharged through the gap *b* at the end of the bottom casing G<sup>1</sup>.

A fan H is mounted in the frame of the machine above the chamber E in which the perforated drum F is mounted and this fan is connected by the ducts *h* with the interior of the perforated cylinder or drum F and produces the suction necessary to convey the fibres along the duct D to the surface of the cylinder or drum F. An adjustable segment *f* pivoted about the shaft *f*<sup>1</sup> on which the drum F is mounted is arranged inside the drum F to mask a portion of the surface thereof so that as the drum rotates the fibres can be removed from the surface thereof as they pass over the masked portion.

The fibres are delivered from the masked portion of the drum or cylinder on to a travelling lattice K which delivers them to the rollers *l* of the coiler mechanism L.

The different parts of the machine are driven from the fast and loose pulley M in the usual way through suitable gearing and/or belt, rope and chain drives.

What I claim as my invention and desire to protect by Letters Patent is:—

1. A machine of the type referred to for opening, cleaning and combing cotton waste and similar material comprising in its construction the combination with a feed device of a licker-in roller to receive the fibres from the feed device, a second cleaning roller behind the licker-in roller, a straightening roller below the licker-in roller, a sec-

ond straightening roller between and below the licker-in roller and the second cleaning roller, a casing above the licker-in roller and the second roller, saw teeth on the surface of said casing adjacent to the rollers, a casing below the second cleaning roller and saw teeth on the surface of said casing adjacent to the roller.

2. A machine of the type referred to for opening, cleaning and combing cotton waste and similar material comprising in its construction the combination with a feed device, of a licker-in roller to receive the fibres from the feed device, a second cleaning roller behind the licker-in roller, a straightening roller below the licker-in roller a second straightening roller between and below the licker in roller and the second cleaning roller, a casing above the licker-in roller and the second roller, saw teeth on the surface of said casing adjacent to the rollers, a casing below the second cleaning roller saw teeth on the surface of said casing adjacent to the roller and a fixed plate in front of the licker-in roller.

3. In a machine of the type referred to for opening, cleaning and combing cotton, cotton waste and similar material compris-

ing in its construction the combination of the following parts: a feed lattice, a pair of feed rollers, a licker-in roller to receive the fibres from the feed rollers, a second cleaning roller behind the licker-in roller, a straightening roller in front of and below the licker-in roller, a second straightening roller between and below the licker-in roller and the second cleaning roller, a casing above the licker-in roller and the second cleaning roller, saw teeth on the surface of said casing adjacent to the rollers, a casing below the second cleaning roller, saw teeth on the surface of said casing adjacent to the roller, a fixed plate in front of the licker-in roller, a perforated drum to receive the fibres from the cleaning rollers, a duct leading from said rollers to said drum, a fan to produce a suction in the perforated drum, ducts connecting the fan to the interior of the drum, a masking device for cutting off the suction from a portion of the periphery of the drum, a travelling lattice to receive the fibres from the drum and coiler mechanism to which the lattice delivers the fibres.

In testimony whereof I have hereunto set my hand.

JOHN FORKIN.