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Patented Nov. 28, 1899.

G. BARBER & J. CROMIE.
RUBBING MECHANISM FOR CARDING MACHINES.

(Application filed Mar. 7, 1899.)

(No Model.)

Fig. 1.

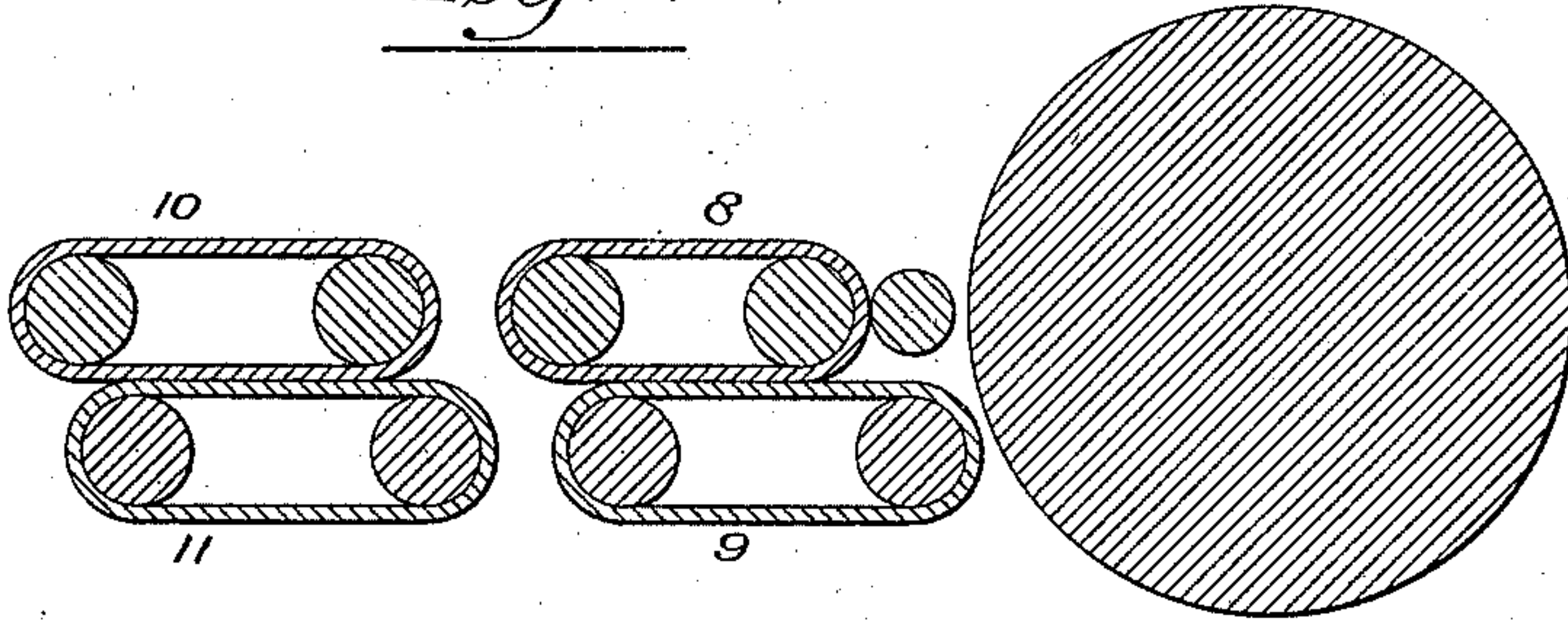
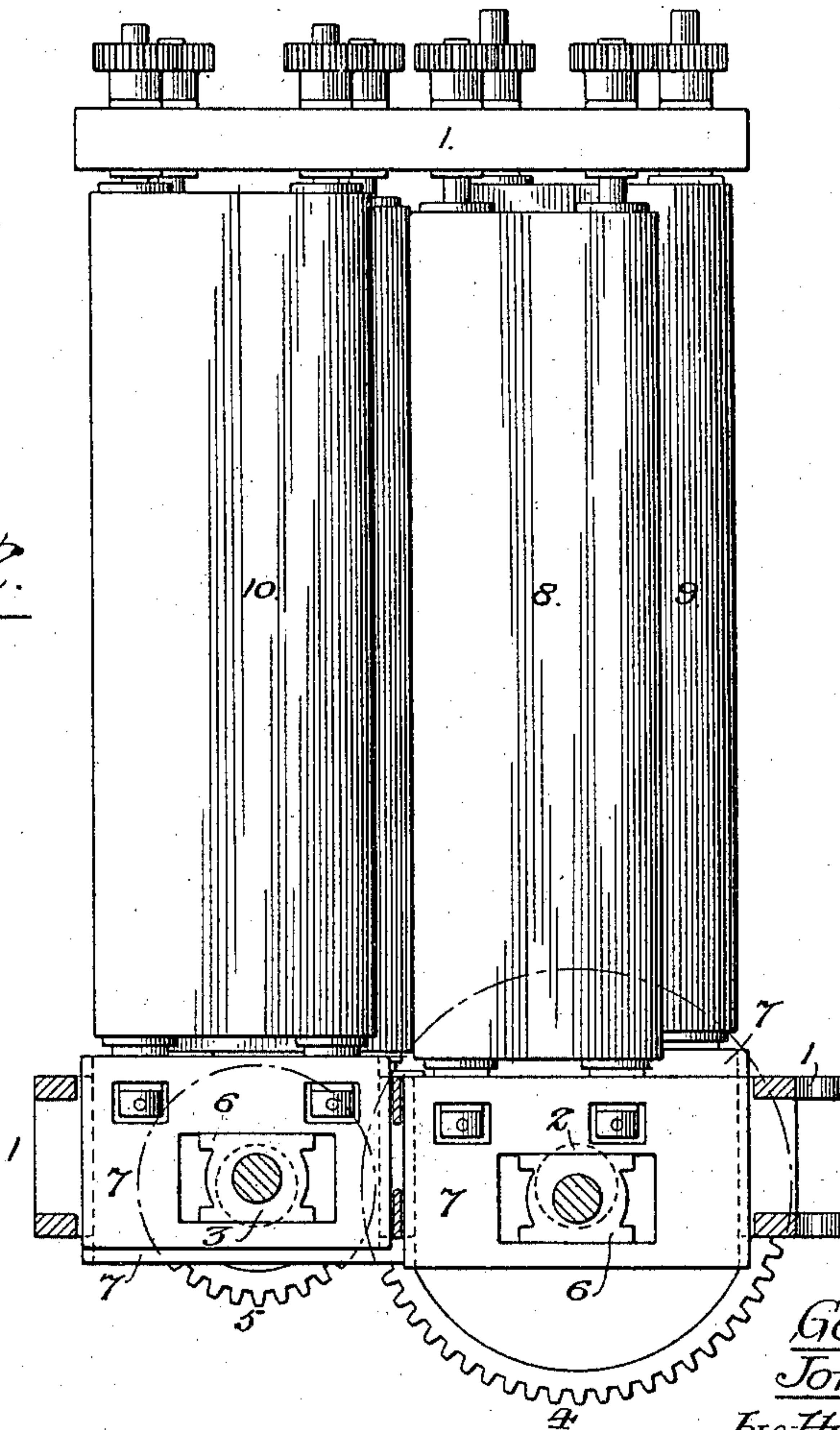


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE BARBER, OF PHILADELPHIA, PENNSYLVANIA, AND JOHN CROMIE, OF CAMDEN, NEW JERSEY, ASSIGNORS TO THE M. A. FURBUSH & SON MACHINE COMPANY, OF CAMDEN, NEW JERSEY.

RUBBING MECHANISM FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 638,163, dated November 28, 1899.

Application filed March 7, 1899. Serial No. 708,101. (No model.)

To all whom it may concern:

Be it known that we, GEORGE BARBER, of Philadelphia, Pennsylvania, and JOHN CROMIE, of Camden, New Jersey, citizens of the United States, have invented certain Improvements in Rubbing Mechanism for Carding-Machines, of which the following is a specification.

The object of our invention is to so construct rubbing mechanism for carding-machines as to produce a better roving or sliver than is possible with rubbing mechanism of the usual construction. This object we attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional diagram illustrating the elements of our improved rubbing mechanism; and Fig. 2 is a sectional plan view of the same, together with sufficient of the operating mechanism to convey a proper understanding of our invention.

Usually the rubbing mechanism employed in connection with each doffer of a condensing carding-machine for rubbing the narrow webs of fleece into rovings or slivers consists of upper and lower reciprocated frames, each carrying its respective element of the rubbing device—as rolls or an apron, or both—one frame being moved to the right as the other is moved to the left, so that each element of the rubbing device, whether upper or lower, moves as a unit, and consequently there is the same extent of lateral reciprocation and the same speed of reciprocating movement from the receiving to the delivery end of the rubbing device. It is advisable in many cases, however, to employ two sets of rubbing mechanism—that is to say, a primary set for acting upon the narrow webs of fleece as they come from the doffer and rubbing the same into the form of crude slivers or rovings, and a secondary set for acting upon these crude slivers or rovings and rubbing them into their final form—the two sets being independently driven, so that the second set may, if desired, be given a shorter stroke and a higher speed than the primary set. Attempts heretofore made in this direction have not been successful, because, mainly, of the character of the rubbing

devices employed. Thus in one instance with which we are familiar the primary set of rubbing mechanism comprised three rub-rolls, one above and two below, and the secondary set comprised five rub-rolls, two above and three below.

In carrying out our invention we use rubbing mechanism comprising two pairs of aprons, the primary pair being so driven as to form the desired crude sliver and the secondary pair being independently driven, whereby they are adapted to rub this crude sliver into a finished sliver of any desired degree of fineness. The first pair of aprons rub the narrow webs of fleece without any drawing action thereupon, and hence have no tendency to break even a fine and delicate fleece, and in the second pair of aprons also there is a lack of draft upon the partly-rubbed sliver, while owing to the fact that the aprons grip the sliver from end to end of the run they are well adapted for condensing the sliver by means of a short quick rub.

In the drawings, 1 represents the fixed frame of the rubbing mechanism, and 2 and 3 eccentric or crank shafts vertically mounted in bearings at one end of said framework, the shaft 2 being intended for imparting reciprocating movement to the primary pair of aprons 8 and 9, and the shaft 3 being intended for imparting reciprocating movement to the secondary pair of aprons 10 and 11. The two shafts are geared together by spur-wheels 4 and 5, which in the present instance are so designed that the shaft 3 will rotate at a higher speed than the shaft 2, and the eccentrics or cranks of said shaft 3 have a shorter throw than those of the shaft 2, so that in connection with this higher speed of reciprocation of the secondary pair of aprons there will be a shorter stroke or lateral reciprocation of the same. The cranks or eccentrics of each shaft act upon boxes 6, which are free to slide laterally in yokes, each forming part of a frame 7, carrying the rolls which support and operate one of the aprons, there being one of these frames for each apron of each pair and each frame being suitably guided in or on the fixed structure of the device.

Having thus described our invention, we claim and desire to secure by Letters Patent—

5 The combination, in rubbing mechanism for carding-machines, of primary and secondary sets of rubbers, each set comprising upper and lower aprons, with mechanism for reciprocating said secondary set of rubbers at a higher rate of speed than the primary set, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEO. BARBER.
JOHN CROMIE.

Witnesses:

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F. E. BECHTOLD.