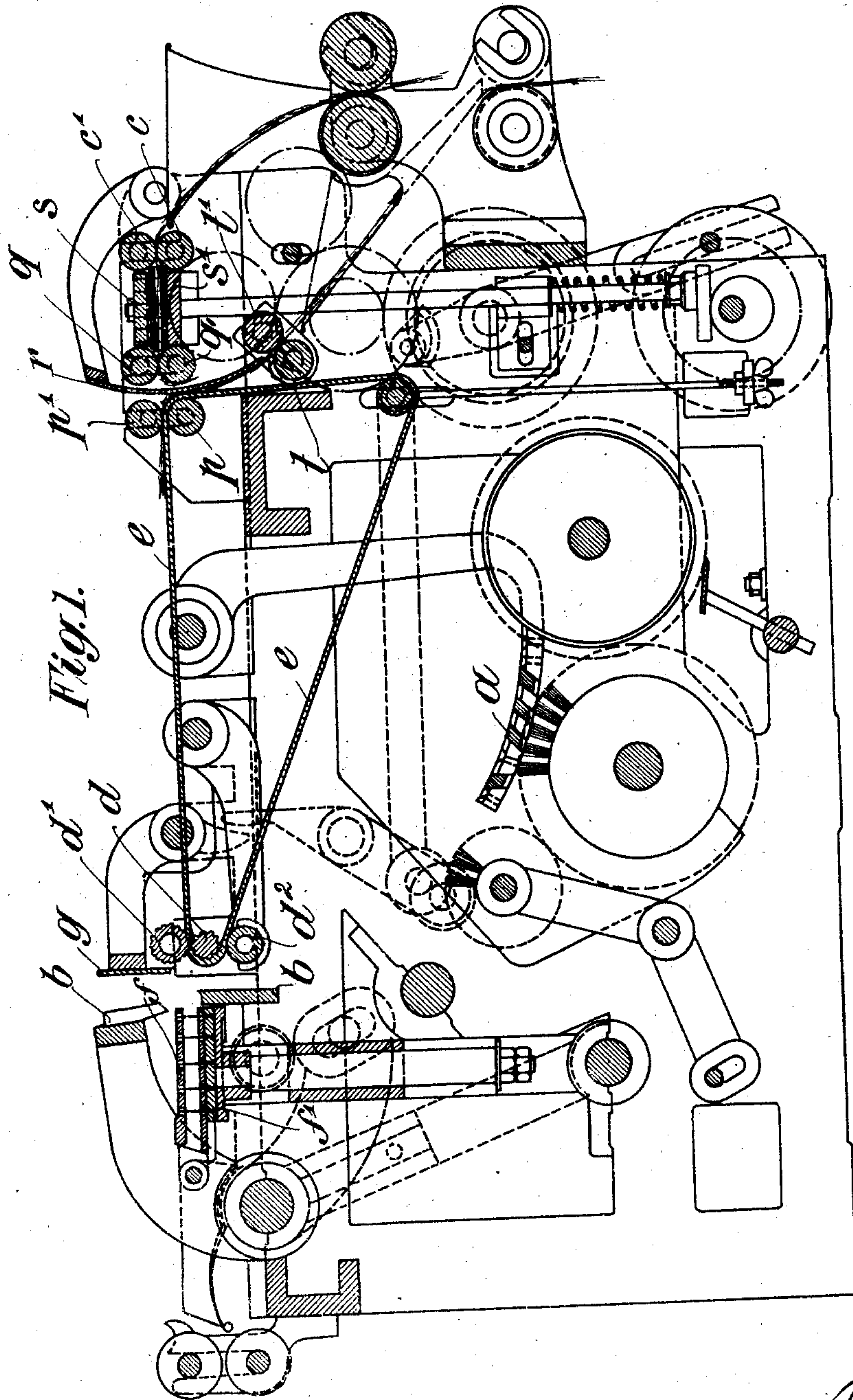


C. KRÖGER.
DRAW-OFF DEVICE FOR COMBING MACHINES.
APPLICATION FILED DEC. 18, 1907.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.

905,714.



Witnesses:

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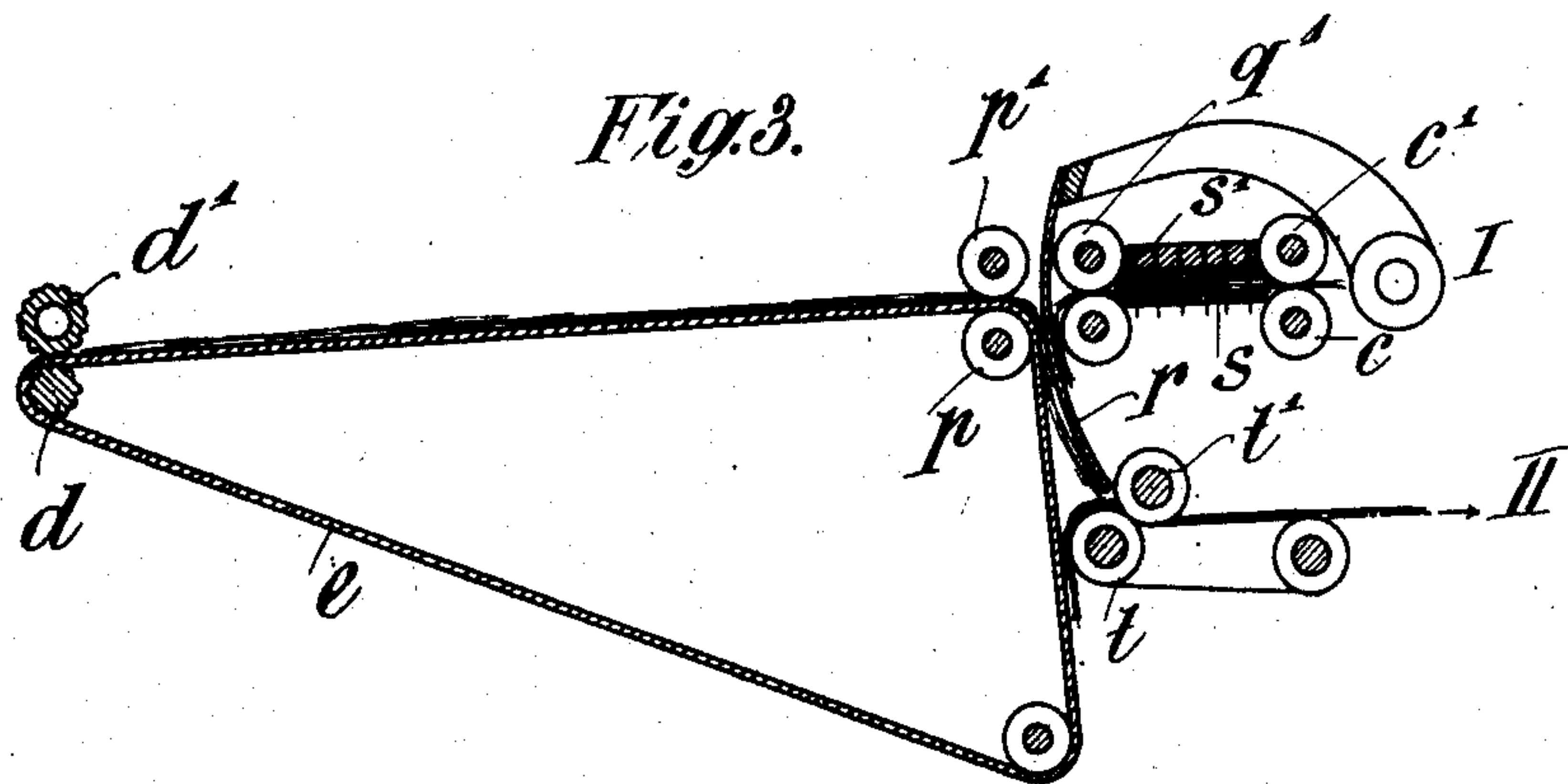
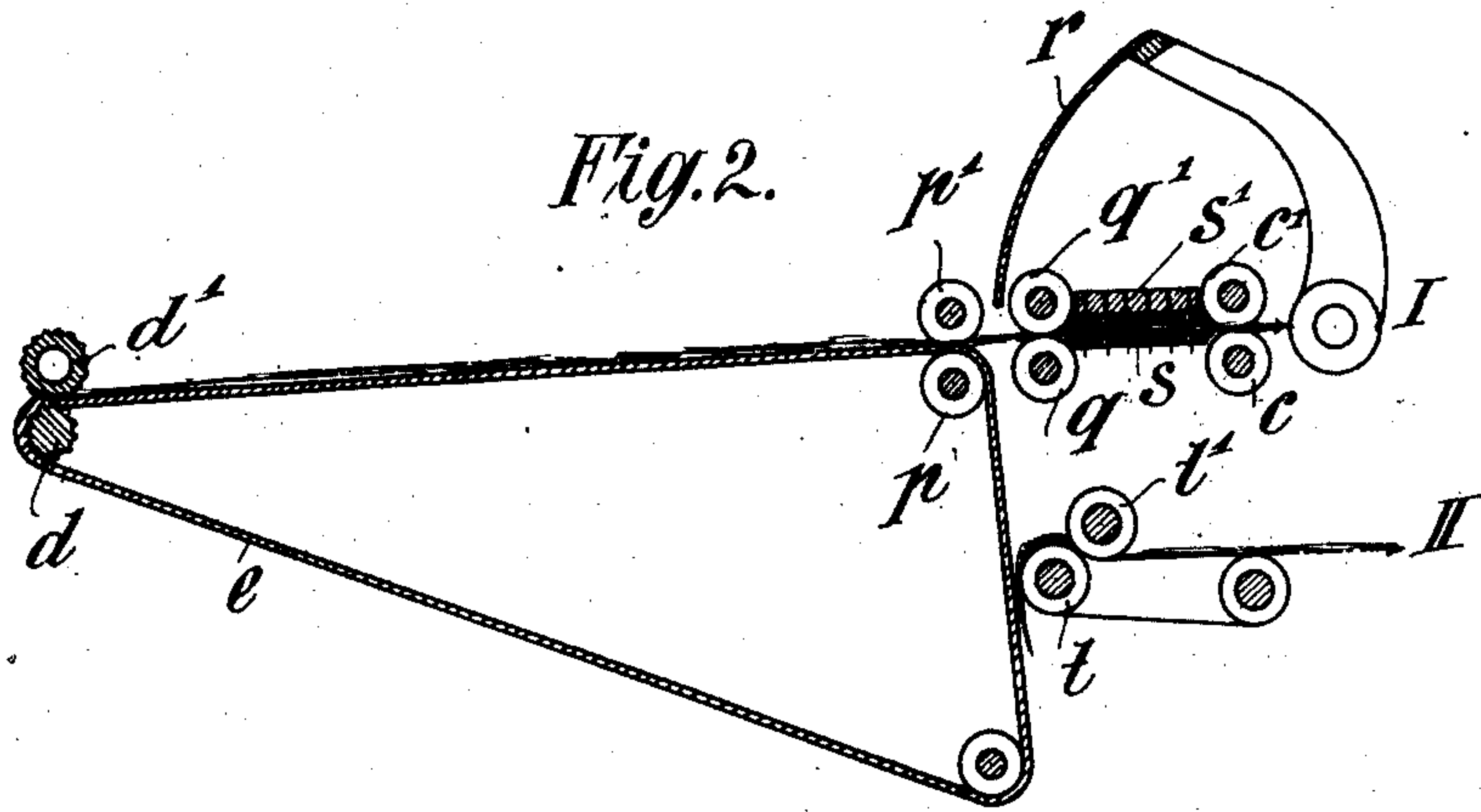
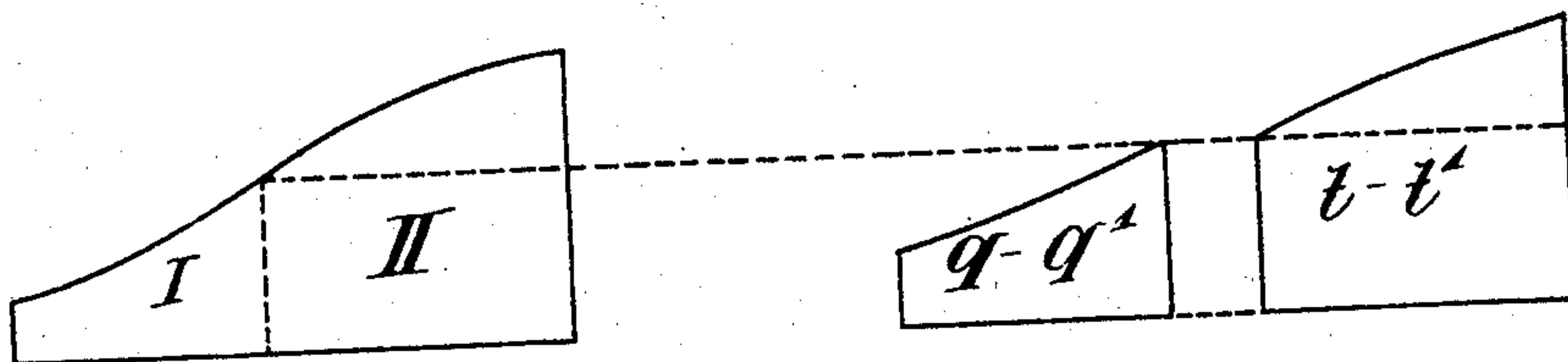


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

CARL KRÖGER, OF DELMENHORST, GERMANY, ASSIGNOR TO NORDDEUTSCHE WOLLKÄMMEREI UND KAMMGARNSPINNEREI, OF DELMENHORST, GERMANY.

DRAW-OFF DEVICE FOR COMBING-MACHINES.

No. 905,714.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed December 18, 1907. Serial No. 407,065.

To all whom it may concern:

Be it known that I, CARL KRÖGER, engineer, a subject of the Emperor of Germany, and residing at Privalweg, in Delmenhorst, Duchy of Oldenburg, German Empire, have invented certain new and useful Improvements in Draw-Off Devices for Combing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a new method of and device for removing the combed bunches from Heilmann's combing machine.

Combing machines are known in which a fiber-tuft held by the nippers is combed out, this combed tuft being then pulled away through a top comb after the nippers have been opened, as in Heilmann's system, and supplied to the delivery rollers in the form of broad bunches which are placed to overlap one another, like the tiles of a roof, for the purpose of forming one connected fleece. The front thick part of one bunch is always laid over the rear thin part of the previous one, and thus a comparatively even fleece or band is formed which has fibers of the small length of the comb up to the greatest length of fiber in the material, as the diagram in Figure 4 represents in which the ordinates represent the length of the fibers. Now for certain purposes it is desirable to have combings which only contain the long and longest fibers, whereas those of medium length and the short ones are particularly suitable for other purposes.

The present invention relates particularly to a method of removing the combed bunches in Heilmann's combing machines, and it is characterized by the combed bunches being divided up into parts of different length of fiber, these portions of the bunches being taken away separately; the invention also relates to a device for putting this method into practice.

In order that the invention may be clearly understood, reference is made to the accompanying drawing in which one embodiment of a device for executing the method is represented by way of example.

In the drawing Fig. 1 is an elevation partly in section of a combing machine of the Heilmann type embodying the invention;

Figs. 2 and 3 are diagrammatic representations of the invention at different stages of operation; and Figs. 4 and 5 are diagrams illustrating the product of the machine as will be more fully explained hereafter.

In Fig. 1 *a* is a sickle-like comb which swings past the nippers *b* and effects the combing of the bunches. *f'* is a feed gill, which penetrates from below into the feed grating *f*. The latter can be swung upwards and the feed-gill is thereby freed. The bottom jaw of the nippers is firmly secured to the frame while the upper jaw is movable. *d, d'* are drawing-off rollers and *d²* a counter-roller, before which a front comb *g* is provided. A delivery apron *e* leads over the drawing-off roller *d*, to a pair of rollers *p, p'* and serves for carrying the combed bunches away. The upper roller *p¹* is raised somewhat, so that the bunches can run between the pair of rollers *p, p¹*. They are then seized by a second pair of rollers *q, q¹* and pushed through a needle-comb frame *s, s¹*. As soon as a certain length of the bunch enters into the needle-comb frame, the upper roller *q¹* of the second pair of rollers is raised, the needle-comb *s* is simultaneously lowered through the perforated plates *s¹*, and the upper roller *p¹* of the first pair of rollers is lowered (Fig. 2), the latter clamping the ends of the longest fibers which are still on the traveling belt *e*. If the beater *r* (Fig. 3) now descends quickly between the two pairs of rollers *p, p¹* and *q, q¹*, it pulls back the longest fibers from the needle-comb frame and simultaneously delivers them to a third lower pair of rollers *t, t¹* which pull them forward a certain distance and then become stationary. At the next throw new portions of the bunches are added both to the short fibers which are retained between the rollers *q, q¹* and also to the longer fibers between the rollers *t, t¹* and are placed to overlap the pendent end, so that both in the upper removing device, as in the lower, a band is carried away; the upper band at I containing the short and medium sized fibers, and the lower band at II, on the contrary, the medium sized and longest fibers. Fig. 4 is a diagram of the undivided bunches, and Fig. 5 is a diagram of the parts of the bunches of fiber material delivered at I and II respectively.

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

1. In a combing machine, the combina-

tion, with the feed rolls, and the draw-off rolls, of a needle comb arranged therebetween, means to the rear of the needle comb to clamp the fiber band, and means between 5 the clamping device and needle comb to sever the band and withdraw the longer fibers from the needle comb and deliver the same to a second set of draw-off rolls.

2. In a combing machine, the combination, with the feed rolls, and the draw-off rolls, of a beater arranged to move transversely between the two sets of rolls and sever the fiber band into two parts, and a 10 second set of feed rolls to receive the rear fiber-portion from the beater.

3. In a combing machine, the combination, with feed rolls, a feed belt, draw-off rolls, and a needle comb arranged between the two sets of rolls, of a clamping device interposed between the needle comb and feed 20 rolls, and a beater arranged to move transversely between the clamping device and needle comb and sever the fiber band into

two parts, and a second set of feed rolls to receive the rear fiber-portion from the beater 25 and clamping device.

4. In a combing machine, the combination, with feed rolls, a feed belt, draw-off rolls, a needle comb and frame arranged to the rear of the draw-off rolls, and two spaced 30 sets of clamping rolls arranged between the needle comb and the feed rolls and belt, of a beater arranged to move transversely between the sets of clamping rolls to withdraw from the needle comb, the longer fibers held 35 by the rear clamping rolls and push the same downward, and a second set of draw-off rolls arranged to receive the long fiber-portion from the beater.

In testimony whereof I hereunto affix my 40 signature in the presence of two witnesses.

CARL KRÖGER.

Witnesses:

FERDINAND REICH,
FREDERICK HOYERMANN.