(No Model.)

J. W. FRIES.

MACHINE FOR TREATING TOBACCO LEAVES.

No. 534,147. Patented Feb. 12, 1895.

Fig. 1.

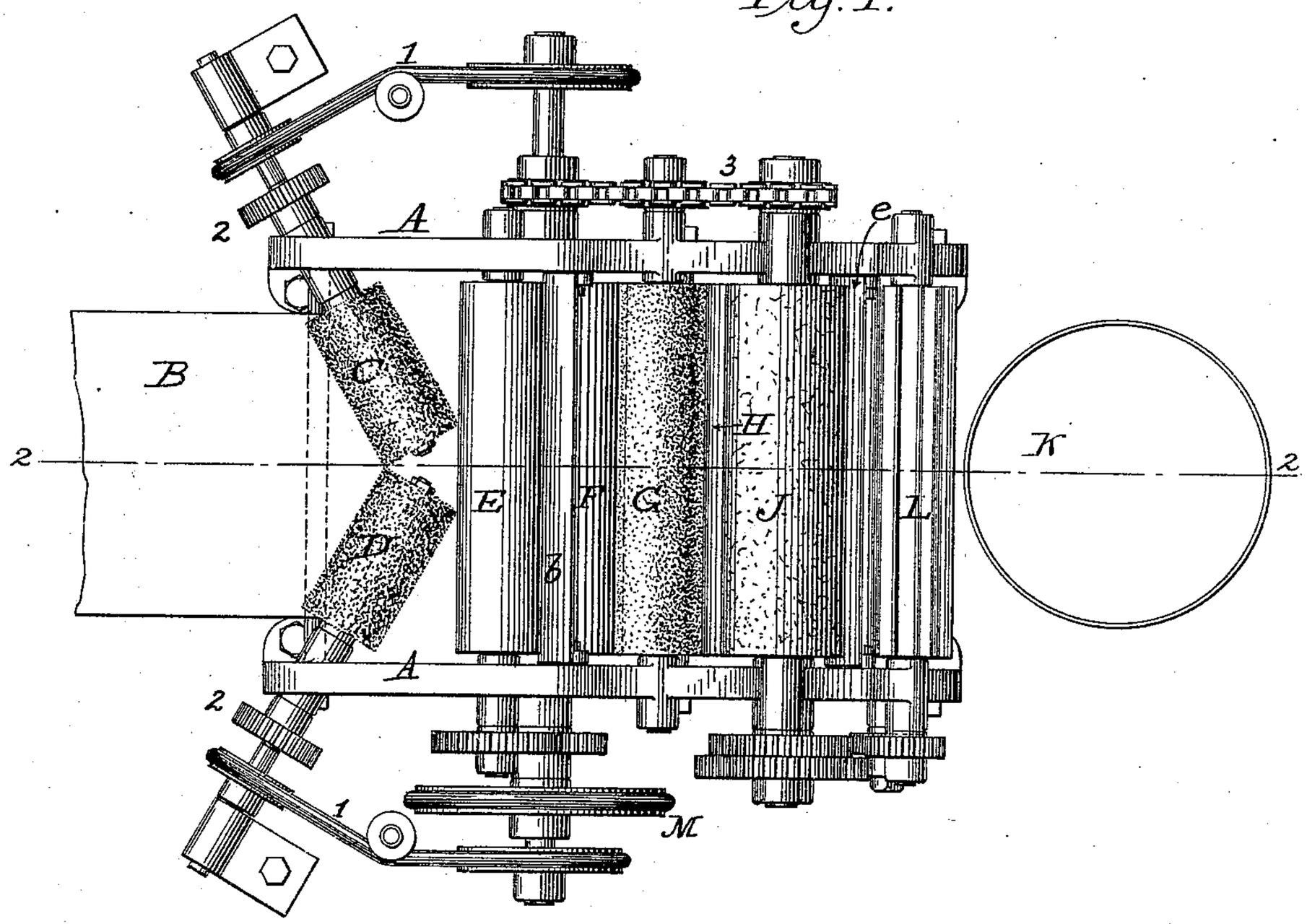
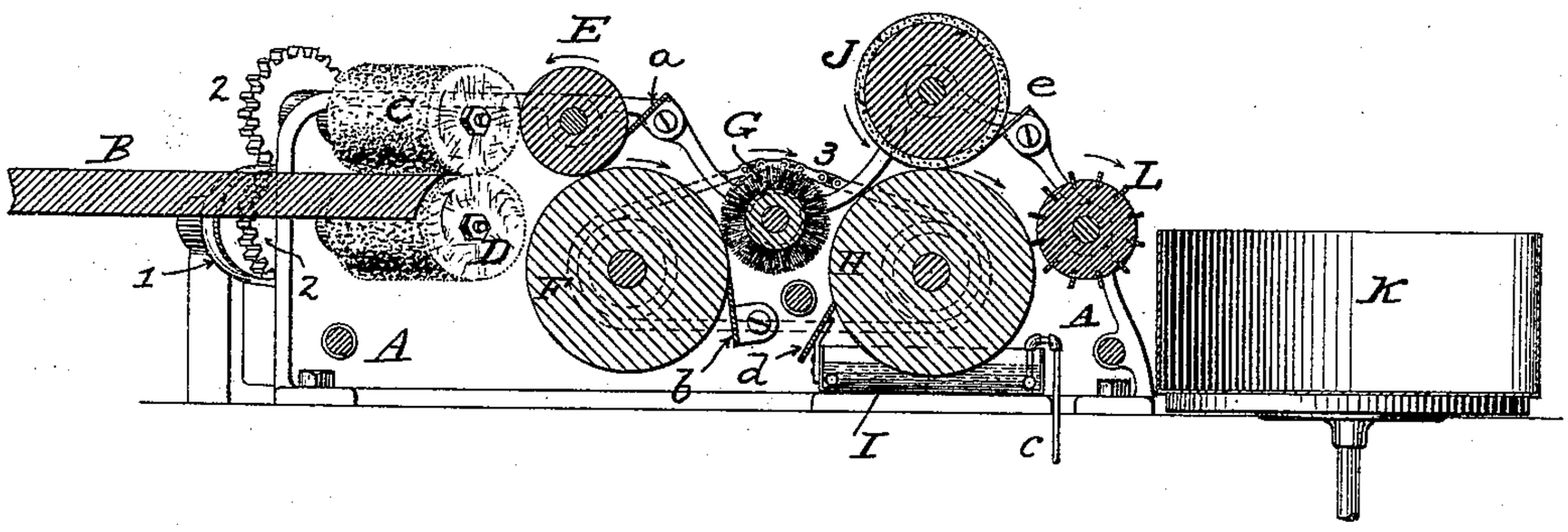


Fig. 2.
ON 2-2



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UNITED STATES PATENT OFFICE.

JOHN W. FRIES, OF SALEM, NORTH CAROLINA.

MACHINE FOR TREATING TOBACCO-LEAVES.

SPECIFICATION forming part of Letters Patent No. 534,147, dated February 12, 1895.

Application filed April 7, 1894. Serial No. 506,749. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. FRIES, a citizen of the United States, residing at Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Machines for Treating Tobacco-Leaves, of which the following is a specification.

My invention relates to machines for treating leaf tobacco, and consists in various features hereinafter set forth and claimed.

In the drawings,—Figure 1 is a plan view of one form of machine for carrying out my invention, and Fig. 2, a vertical sectional view on the line 2—2.

A indicates a suitable frame, and B a table from or onto which the leaves are fed by hand, by endless belt, or in any other suitable manner, to the rollers C, C and D, D arranged in pairs and driven by suitable belts 1, 1, and gears 2, 2. These rollers incline toward each other at their inner ends so that when the leaf is presented to them in a flattened condition, with the large end or butt of the stem foremost, they tend to spread out the leaf, brushing or spreading, and relieve it of wrinkles and folds. In order, however, that these rollers may not bruise the leaf, they will advisably be made up of a series of disks of cotton cloth clamped upon the shaft, with thin washers interposed at two or more points, thereby giving a surface similar to the ordinary cloth buffing wheel. I do not confine myself to such rolls, nor claim that they are the best for the purpose, but actual tests show that they perform admirably the function for which they are designed,—spreading or brushing out the leaf gently and kindly without bruising or tearing, and feeding it firmly but gently to the stem-reducing rollers E and F. These two rollers E and F are arranged parallel with each other, with their meeting edges preferably in the same horizontal plane as the meeting edges of the rolls C and D; but the lower roller F has a greater peripheral speed than the roller E. Roller E will advisably be made of steel or a fine grade of iron, while the roller F may be made of cast iron, and while I have previously spoken of the meeting edges of the rollers, it is not to be understood that they actually touch each other, but that they will be set far enough apart to permit the body of the leaf to pass between them without having its web torn or bruised. These rollers E, F are set close enough to the rollers C, D to receive the leaf from the latter, and as the leaf passes between them, the stem will be crushed or mashed, as will also the larger fibers of the leaf. Owing, however, to the differential speed of the rollers, the stem is not only crushed or broken down, but is thoroughly disintegrated, so that the stem is reduced to a condition resembling a sticky powder, which becomes impacted upon and adheres to the lower roll F. It is removed from the latter by means of a scraper *b*, while the material that adheres to roller E is removed by means of a scraper *a*. The latter is hardly necessary, however, as there is little disposition of the matters to adhere to the steel roll.

Directly behind the roller F is a rotary brush G made of cloth, bristles, fine wire, or other suitable soft material, designed to pick up the leaf as it comes from the rollers E and F, and deposit it into a suitable receptacle K, which in that case will be placed near to the brush; or to carry it on to be subsequently treated, as required,—the stem being so impacted upon roll F as not to be removed by this soft brush.

In any event, the receptacle K will preferably be placed upon a revolving stand or table, so that the leaves may be placed in the can or receptacle in an even and orderly manner.

In order to apply the licorice or other sweetening to the leaf,—which operation is technically called "casing,"—as it leaves the rollers E, F, I arrange the brush to deliver the leaf to a metallic roller H which is partially immersed in a tank I containing licorice kept at the proper temperature and consistence by means of a steam pipe *c*, the quantity of licorice carried up by the roller being regulated by a doctor or scraper *d*. As the leaf is passed onto the roller H it is coated with licorice on the under side, the upper side or face of the leaf being also coated by means of a roller J whose surface is covered by felt or other absorbent material. This felt covering is supplied with the liquid licorice by allowing the two rollers H and J to run in contact with each other before beginning to feed the leaves thereto. After the leaves begin to pass between these rolls, those portions of the roller J not covered by the leaves, will take up and

hold the licorice like a sponge, and deliver it to the faces of the leaves as they pass beneath it.

A scraper *e* serves to remove the leaf from the upper roll J in case it should adhere to the latter, while the rotating blade roller L takes the leaf from the roller H and delivers it into the can or receptacle K.

The various rollers E, F, H and J, and the strippers or stripping rollers G and L will be driven by suitable gearing, preferably from the shaft of roller F which is provided with a belt wheel M; but as this gearing is susceptible of so many variations, no detailed description of that shown is deemed necessary. It might be mentioned, however, that in the machine illustrated, a chain 3 drives the brush G and roller H; that the roller J and stripper L are driven by suitable gears from the said roller H; and that the roller E is driven by suitable gears from the roller F.

Having thus described my invention, what I claim is—

1. In a machine for treating tobacco leaves, the combination of two rollers arranged to revolve at different peripheral speeds and in proximity, said rollers being formed of materials of different superficial hardness and texture, substantially as and for the purpose specified.

2. In a machine for removing the stems from tobacco leaves, the combination with a bed or table B; of the feed rollers C and D inclined toward each other at their inner ends and fixed in relation to the bed; means for rotating the said rollers; and rollers E and F arranged in position to receive the leaf as it passes from the feed rollers, substantially as shown and described.

3. In a machine for stemming tobacco leaves, the rollers E and F placed close together and having different peripheral speeds, the roller E being made with a hard smooth surface and the roller F having a coarser surface.

4. In combination with the rollers E and F rotating at different speeds; the stripping roller G arranged in proximity to the roller F for removing the leaf from the latter; and the scraper *a* in proximity to the roller E for removing the crushed stem therefrom.

5. In combination with the stemming-rollers E, F, and the coating-rollers H, J, the interposed rotary stripping brush G.

6. In combination with the tank I and the roller H; the superposed roller J having an absorbent covering; and a bladed stripper L.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JOHN W. FRIES.

Witnesses:
W. H. FRIES,
HY. F. SHAFFNER.