

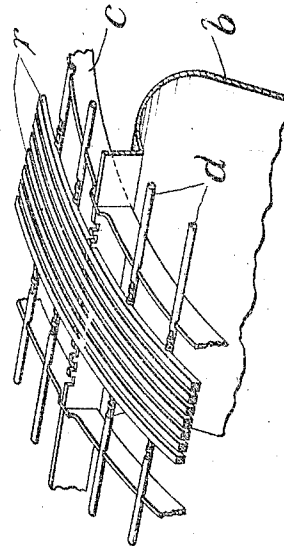
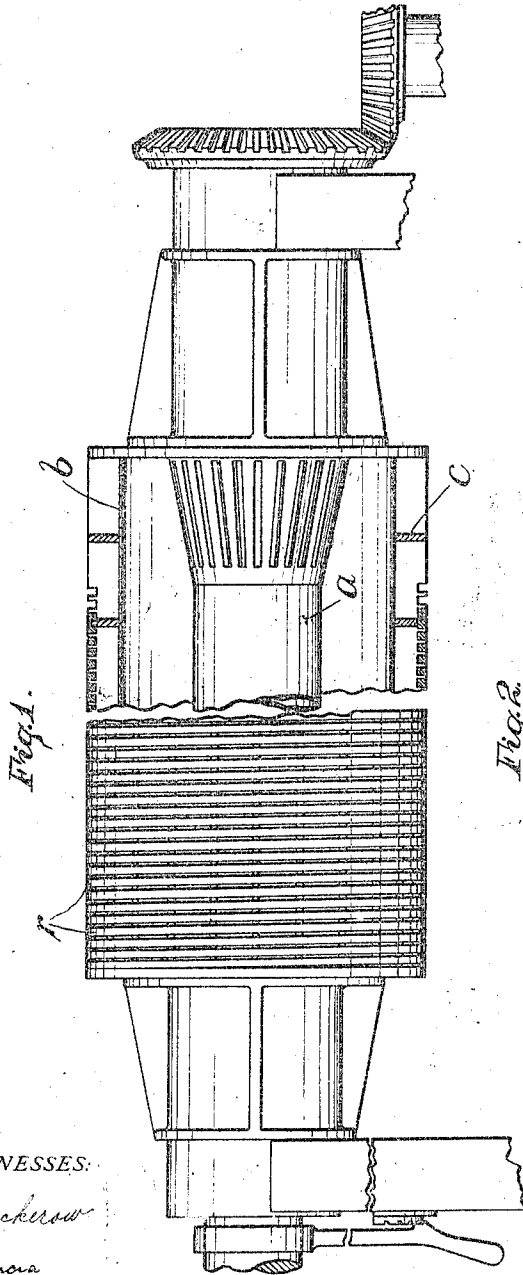
H. PARKER.

ROLL.

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1,039,067.

Patented Sept. 17, 1912.



WITNESSES:

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ROLL.

1,039,067.

Specification of Letters Patent. Patented Sept. 17, 1912.

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To all whom it may concern:

Be it known that I, HOWARD PARKER, a citizen of the United States, and resident of Nashua, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Rolls, of which the following is a specification.

The object of this invention is to produce a roll for use in the manufacture of pulp and paper having features of novelty and advantage.

The construction is particularly advantageous as applied to suction rolls, such for instance as are used for the extraction of moisture from a web of pulp or paper. In Patent No. 747,632 granted to me December 22d, 1903 the general structure of a roll of this sort, or at least one type of construction, is clearly illustrated, where it will be seen that the roll is divided into longitudinal compartments, provision being made for applying suction so as to draw moisture from the web, which contacts with a portion of the surface of the roll, into the core of the roll.

The present invention is concerned with the formation of the surface or shell of the roll. The purpose being to produce a shell of sufficient rigidity to withstand the excessive strains to which devices of this kind are subjected and to form the shell in such manner that it will not mark the web of pulp or paper which comes in contact with it and yet is so constructed as to provide a maximum of suction or drainage area. A practical and economical construction combining all of these desirable features is illustrated and described herein in connection with a roll made in accordance with my invention.

In the drawings: Figure 1 is a side view of a roll made in accordance with my invention part being shown in central vertical section. Fig. 2 is a detail perspective view of a portion of a roll illustrating the construction of the shell in accordance with my invention.

Inasmuch as the invention is not concerned with the detail construction of the frame or skeleton of the roll, except that it shall be of sufficient strength to properly support the shell, and when used as a suction roll that it shall be provided with suitable compartments, I have illustrated and

will briefly describe a conventional construction of this portion of the device.

a is the core, *b* the partitions with their edges joined together and spaced apart by the rings *c* which are soldered into the slots in the partitions in which they rest, *d* being rods extending lengthwise of the roll between the partitions resting in notches in the rings *c* and with their ends secured in the flanges of the roll. A series of notches in spiral arrangement are now cut in the edges of the partitions and the surfaces of the rods.

The shell is formed by winding on to the frame a rod *r* of metal, which is polygonal in cross section and which is seated in the notches in the partitions and rods *d*. The cross section of this rod *r* is polygonal and preferably in the shape of a parallelogram, and more particularly rectangular, and the convolutions are spaced apart only a slight amount, for instance, from $\frac{1}{16}$ th to $\frac{1}{8}$ nd of an inch. The upper surface of the rod *r* when in place on the frame is preferably flush with the edges of the partitions and the rod is soldered into the notches in the partitions in order that each compartment shall be completely isolated from the adjacent compartments to prevent the breaking of the vacuum in any one compartment, it being understood that in the ordinary use of a device of this kind but a small number of compartments are subjected to the action of the suction at the same time. If the rod *r* be of greater dimension one way than the other it is wound on edge so that the greater dimension becomes the depth. It will be apparent that this construction produces a smooth, flat, even surface for the roll, that the opposing sides of adjacent convolutions which form the walls of the suction or drainage passages are parallel, and that the full strength of the rod is utilized to give such stiffness to the shell that it will not yield or buckle under great pressure. By constructing the shell in this way an amply large suction or drainage way is provided and at the same time the surface of the shell is so practically continuous owing to the close proximity of the various convolutions that marking of the web which comes in contact with the surface of the shell is obviated. The regularity in the shape of the cross section of the suction or drainage spaces is advantageous in

insuring a more regular and uniform action of the vacuum.

By this construction I produce a roll the shell of which might be described as made up of a series of circumferentially arranged bars separated by circumferentially extending suction spaces, the completed structure having the appearance of a solid plate circumferentially slit between the partitions forming the compartments within the roll.

Facility and economy in construction and efficiency in use are characteristics of a roll made in accordance with my invention.

It is my intention to seek herein and in the appended claims protection on such modifications of the herein described structure as fairly come within the spirit of the invention.

I claim as my invention:

1. A working surface for a roll adapted for use in pulp and paper machinery formed from a metallic rod of rectangular cross sec-

tion wound spirally onto a frame with adjacent convolutions spaced slightly apart to form suction and drainage spaces.

2. The combination with a roll frame comprising a shaft, longitudinally extending, radially disposed partitions, spacing rings connecting the edges of said partitions, and frame rods supported by said rings and extending longitudinally of the frame, of a working surface for said roll formed of a rod of metal of rectangular cross section wound spirally onto said frame and seated in notches in said partitions, the adjacent convolutions of said bar being spaced apart slightly, said bar being sealed in the notches in the partitions in order to isolate the compartments between the partitions from adjacent compartments.

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Witnesses:

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