April 6, 1943. J. OETTLI ET AL 2,315,813

WEIGHTING DEVICE

Filed Oct. 16, 1941

Fig. 1.

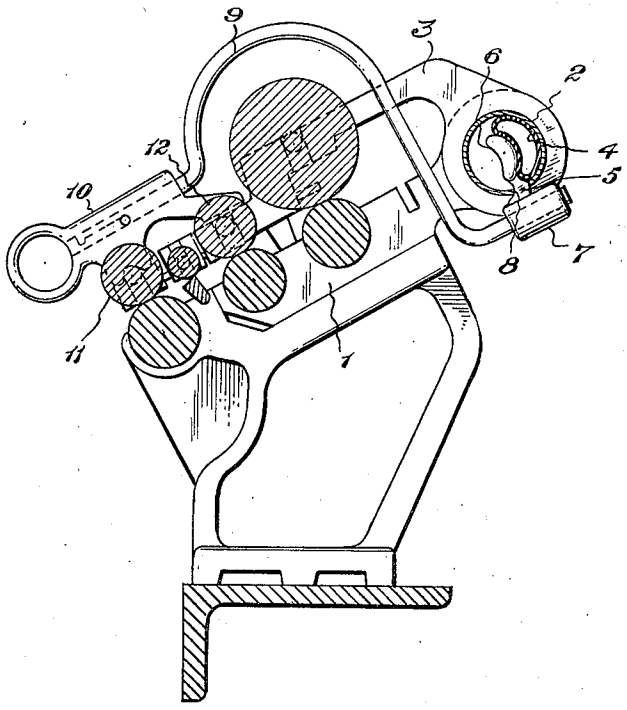
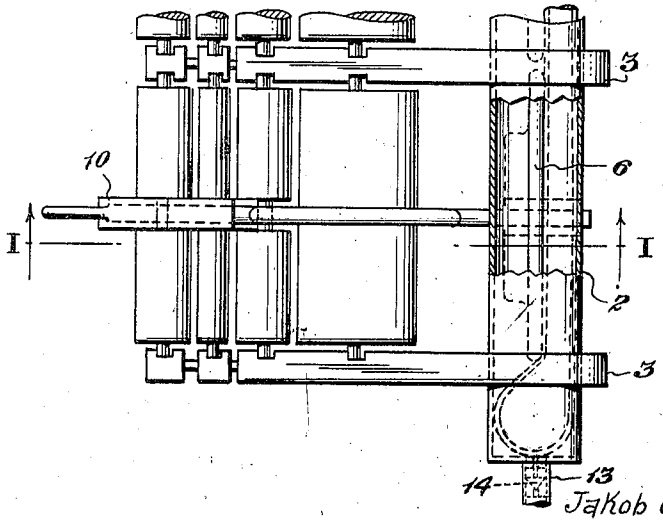


Fig. 2.



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WEIGHTING DEVICE

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2 Claims. (Cl. 19—135)

This invention relates to a device for weighting the press rollers of draw frames for spinning machines, and has for its object to provide for easy adjustability, variation or relief of the top roller pressure at some or all gripping points from a central station while eliminating the vibrations resulting from the use of weights and lever weighting or the different tensional stresses in case spring elements are employed.

It is known to utilize hydraulic pressure means instead of springs in loading devices for press rollers, for instance in wet press machines and calenders. However, the invention is not concerned with merely substituting hydraulic pressure means for springs and weights in loading the press rollers of draw frames, but aims at obtaining particular structural and technical advantages as well as uniform regulatable weighting and relieving of a plurality of gripping points of a draw frame by applying these known pressure means in a special manner.

Devices for jointly relieving weights in draw frames are known, in which eccentric discs disposed under the weights are controlled by a common shaft. Furthermore, it is also part of prior knowledge to load the drawing rollers with weight levers that can be centrally controlled to insure uniform regulation of weighting. These known constructions fail, however, to get rid of the effects produced by the vibration of the weighting elements or of the machine and to provide for uniform weighting of the top rollers.

The invention overcomes these defects by employing a single pneumatic or hydraulic means subjected to regulatable pressure for weighting the top rollers at some or all points of a machine side. The use of hydraulic or pneumatic weighting means prevents the effects of vibration and obviates the necessity of providing bothersome relieving means, since the roller pressure is controlled by reducing or abolishing the hydraulic or pneumatic pressure itself. Furthermore, a considerable saving in material and thereby a reduction of initial cost and of the weight of the machine are effected, apart from the fact that the pressure can be uniformly distributed over the entire machine in a simple and convenient manner. Machines of this type can, moreover, be installed much more easily in buildings of lighter construction. The principal advantage, however, is that the pressure can be readily varied throughout the machine and adapted to spinning conditions.

The device according to the invention is preferably constructed by introducing into a tube a hose subjected to pneumatic or hydraulic pressure and acting upon pressure plates provided within the tube and connected by levers with the weighting saddles. The tube may serve also as support for the top roller holders. Each pressure plate possesses a protruding portion projecting from the tube and resting in a notch in the slotted wall. On its other end, the protruding portion of the plate supports a weight lever and swings it about the slotted wall serving as fulcrum. The hose and pressure plates may be replaced by pneumatically or hydraulically controlled pistons.

The invention is illustrated by way of example in the accompanying drawing, in which

Figure 1 is a section on the line I—I of Fig. 2 which shows the draw frame of a spinning machine and shows in side elevation, and partly in section, the means provided for the transmission of pressure; and

Fig. 2 is a plan of the draw frame.

In the rear of the slide 1 a support 2 having the form of a tube for the top roller holders 3 contains a hose 4 extending as required over an entire machine side or a plurality of pressure points. At each of these points the tube 2 is provided with slots 5 through which pressure plates 6 are introduced and bear against the hose 4. The pressure plates 6 are fitted below with an eye 7 and rest with a notch 8 on one side of the slots 5 of the tube 2. In the eye 7 a weight lever 9 is secured which acts in front upon the saddle 10 resting with two notches on the top rollers 11, 12. Into the end of the tube 2 enters a pressure piping 13 connected with the hose 4 by a valve 14.

The device functions as follows:

The hose 4 is subjected to pressure by the piping 13 with the aid of the valve 14, which pressure is adapted to the pressure to be exerted upon the top rollers 11, 12. In accordance with known physical laws, the pressure spreads uniformly throughout the hose 4 and is transmitted to the pressure plates 6 each of which swings about the notch 8, acting as fulcrum, in counterclockwise direction and takes along the eye 7 and the weight lever 9, so that pressure is transmitted to the saddle 10 and thus to the top rollers 11, 12.

The tube 2 for the reception of the hose 4 and of the abutting plates 6 need not always be centrally arranged inside the support for the top rollers, but may also be disposed so as to extend beside and along it. This latter arrangement is

particularly suited for installing the device in already existing drawing frames.

What is claimed is:

1. A weighting device for the top rollers of draw frames in spinning machines, comprising a slotted support for the top roller holders, a hose in said support, a pressure piping connected with said support, a valve connecting said piping with said hose, pressure plates introduced through the slots of said support and bearing against said hose, said pressure plates having a notched projection engaging through a slot of said support and resting with its notch on one side of the slot, an eye formed in said pressure plates and a weight lever secured in said eye and acting in front upon the saddle of the frame resting on the top rollers and thus subjecting the top rollers to pressure variable as to spinning conditions.

2. A device according to claim 1, in which the support for the top roller holders is formed as a tube.

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