June 22, 1948. G. J. PROSSER ET AL 2,443,869

APPARATUS FOR WINDING TEXTILE STRANDS

Filed Oct. 3, 1944 2 Sheets-Sheet 1

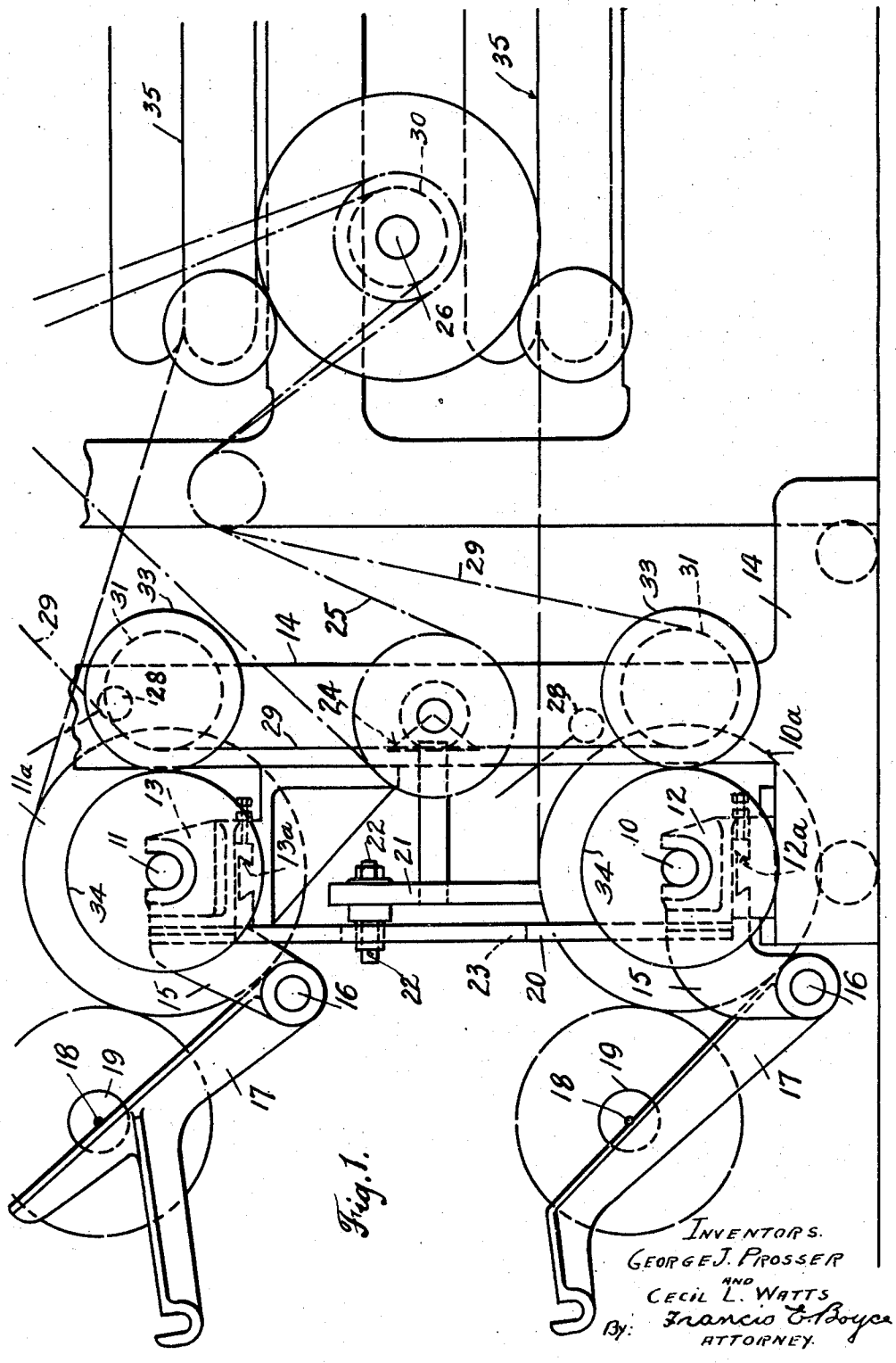


Fig. 1.

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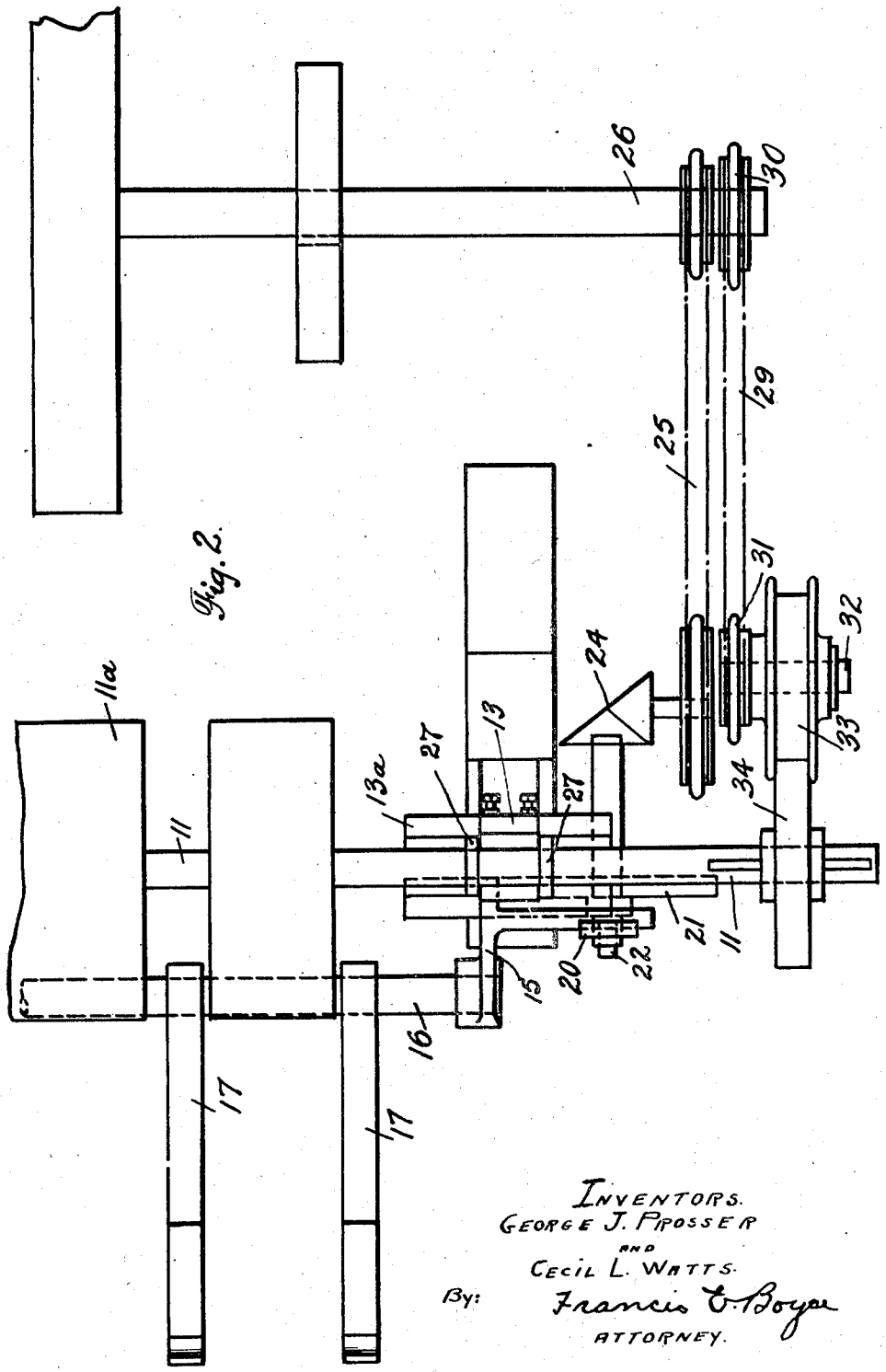


Fig. 2.

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APPARATUS FOR WINDING TEXTILE STRANDS

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3 Claims. (Cl. 19—158)

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These improvements are concerned with means for mounting, traversing and driving the surface winding drums and their complementary bobbins, and such as are used with leather tape condensers or other condenser systems known in the textile trade.

The improvements may be applicable to a single unit arrangement, but generally double units, each comprising two sets of rubbers and two sets of surface winding drums, etc., are in question, that is, two, four, six or more sets of superposed rubbers, and two, four, six or more surface winding drums, etc., as the case may be.

For simplicity of explanation, a unit comprising two sets of rubbers and two surface winding drums etc. will be referred to, further superposed units being in general a mere repetition.

Use is made of stationary guide rails or thread guides to guide the slivers delivered by the rubbers to the surface winding drums and bobbins, this being known.

According to the invention, means for mounting, traversing and driving surface winding drums and their bobbins of textile condensers, comprises bearing means adapted for separate axial movement of each surface drum relative to the bobbin frame, means for imparting axial movement to the drums, means for moving the bobbins axially simultaneously with their drums and driving means for rotating the surface drums in all positions of axial movement.

In the accompanying drawings,

Fig. 1 is a side elevation of the two lower winding drums and their adjacent parts of a condenser;

Fig. 2 is a plan showing the bearing and driving end of the construction shown in Fig. 1.

As shown in the drawings the shafts 10 and 11 of the surface winding drums 10*a* and 11*a* are revolvably mounted in half bearings formed in brackets 12 and 13 carried upon undercut or like slides 12*a* and 13*a* supported upon stationary brackets secured to the bobbin frame 14 of the condenser apparatus. The end members of the frame 14 are advantageously movable and adapted to be detachably coupled to framework of the condenser apparatus, and they carry the mechanism for traversing the surface winding drums end-on and the mechanism for driving said drums, as is requisite. The bearings which are adapted to support the shafts of the surface winding drums and which require to be traversed have secured to them brackets 15 carrying a shaft 16 to which are fixed bobbin brackets 17 for supporting the axles 18 of the frictionally

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driven bobbins 19 on which the slivers are wound in cheese form or sections.

Each two slidable bearing brackets 12 and 13 one above another and comprising a unit, are coupled or interconnected by bars or uprights 20 intermediate of each two slidable bearings, thus producing one end of a traversible frame like a parallelogram which can be slid or easily moved end-on to traverse the two surface winding drums constituting one unit. For this purpose a traversing mechanism is used, a convenient means being a cam 21 for each unit of two surface winding drums, the pin 22 of the cam engaging a slot 23 in the upright bar 20 intermediate of each two sliding bearings. The cam for each unit of two surface drums can be driven by bevel gear 24 actuated through a continuous chain or chains 25 from a stud shaft 26, using change wheels if requisite. The shafts 10 and 11 of the winding drums have collars 27 which compel the drums to move axially with the bearing brackets.

From the foregoing, it is apparent that each two surface winding drums 10*a* and 11*a* mounted in their slidable bearing brackets 12 and 13 and also their attendant bobbins 19 will be traversed with respect to fixed guide rail or thread guides 28, the slidable structure moving easily and being guided upon the before-mentioned slides.

It remains to drive the surface winding drums on which the bobbins bear, and this is done by or through an endless chain and chain wheels driven from the aforesaid stud shaft or other driving shaft, using change wheels if requisite.

To effect the requisite drive of the surface winding drums, through their shafts while being traversed, there is provided for each winding drum shaft a chain 29 and sprockets 30, 31 to a driving shaft 32 parallel with the shaft of the surface winding drum, the parallel shafts being interconnected by constantly meshing gear wheels 33, 34, the wheel 33 being flanged to hold the wheel 34 from sliding with the shaft, the wheel 34 of each set being slidably keyed to its respective winding drum shaft 10 or 11, all in such manner as to permit the shaft of the surface winding drum to be traversed along with its bearings whilst being driven through the constantly meshing gear wheels 33, 34.

The mechanism described enables slivers from the rubbers 35 to be uniformly dealt with or equally acted upon, and enables cheeses of greater length and therefore greater capacity to be wound on the bobbins than has hitherto been possible. By this mechanism an existing condenser can

be converted for winding such longer bobbins or cheeses. For example, a condenser which has been designed for a 2½ inch gauge, can be converted to say a 3 or 4 inch gauge as may be required, with the known advantages obtainable therefrom.

What we claim is:

1. In a textile condenser, the combination of bearings mounted for sliding movement on the condenser frame, a shaft mounted for rotation in said bearings and non-slidable relative thereto, a winding drum secured on said shaft for rotation therewith, brackets carried by said slidable bearings, a bobbin supported on said brackets in frictional contact with said drum, means for rotating the drum, and means for imparting sliding movement to said bearings thereby to move said drum and bobbin simultaneously in axial direction, the organization being such that the shaft is relieved of the major part of the weight of the bobbin.

2. In a textile condenser, the combination of a plurality of pairs of bearings mounted for sliding movement on the condenser frame, one pair being disposed above another, a shaft mounted for rotation in each pair of bearings, a winding drum secured on each of said shafts for rotation therewith, links connecting the bearings of the respective pairs, means associated with said links for moving the same laterally and thereby imparting axial movement to said bearings, means for supporting a bobbin in frictional contact with each of said drums and for axial movement simultaneously with said bearings, and means for rotating said drums.

3. In a textile condenser, the combination of a plurality of pairs of bearings mounted for sliding movement on the condenser frame, one pair being disposed above another, a shaft mounted for rotation in each pair of bearings, a winding drum secured on each of said shafts for rotation therewith, links connecting the bearings of the respective pairs, means associated with said links for moving the same laterally and thereby imparting axial movement to said bearings, means for supporting a bobbin in frictional contact with each of said drums and for axial movement simultaneously with said bearings, and means for rotating said drums, said bobbin supporting means comprising brackets carried by said slidable bearings.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
11,627	Whitehead	Aug. 29, 1854
16,842	Johnson	Mar. 17, 1857
113,831	Archibald	Apr. 18, 1871
1,797,393	Abbott	Mar. 24, 1931
2,294,771	Campbell	Sept. 1, 1942

FOREIGN PATENTS

Number	Country	Date
7,669	Great Britain	1838