

F. S. MEAD.

MACHINE FOR COMPRESSING JACKETED TELEGRAPH WIRE  
TREATED WITH INSULATING MATERIAL.

No. 176,978.

Patented May 2, 1876.

Fig. 1.

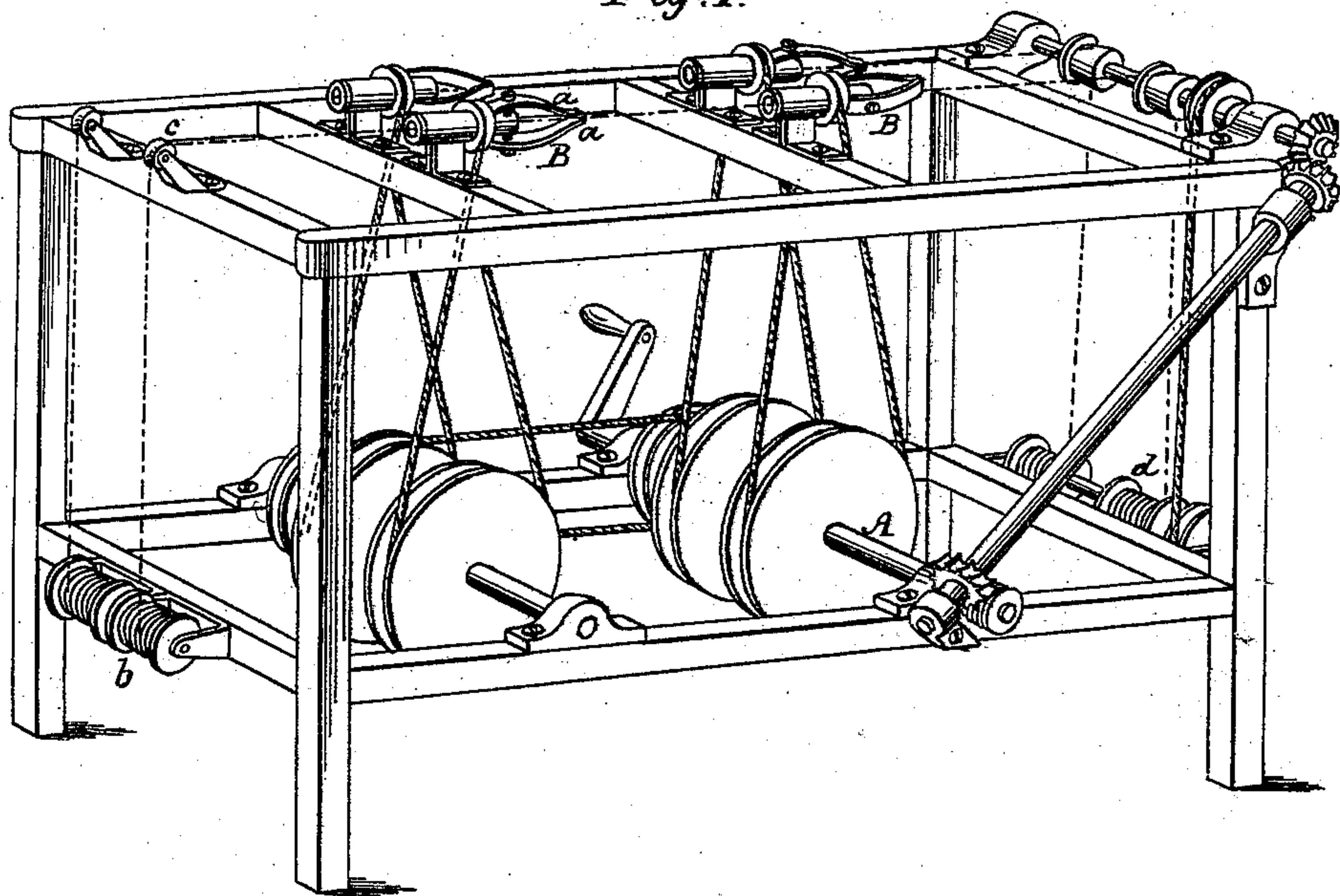
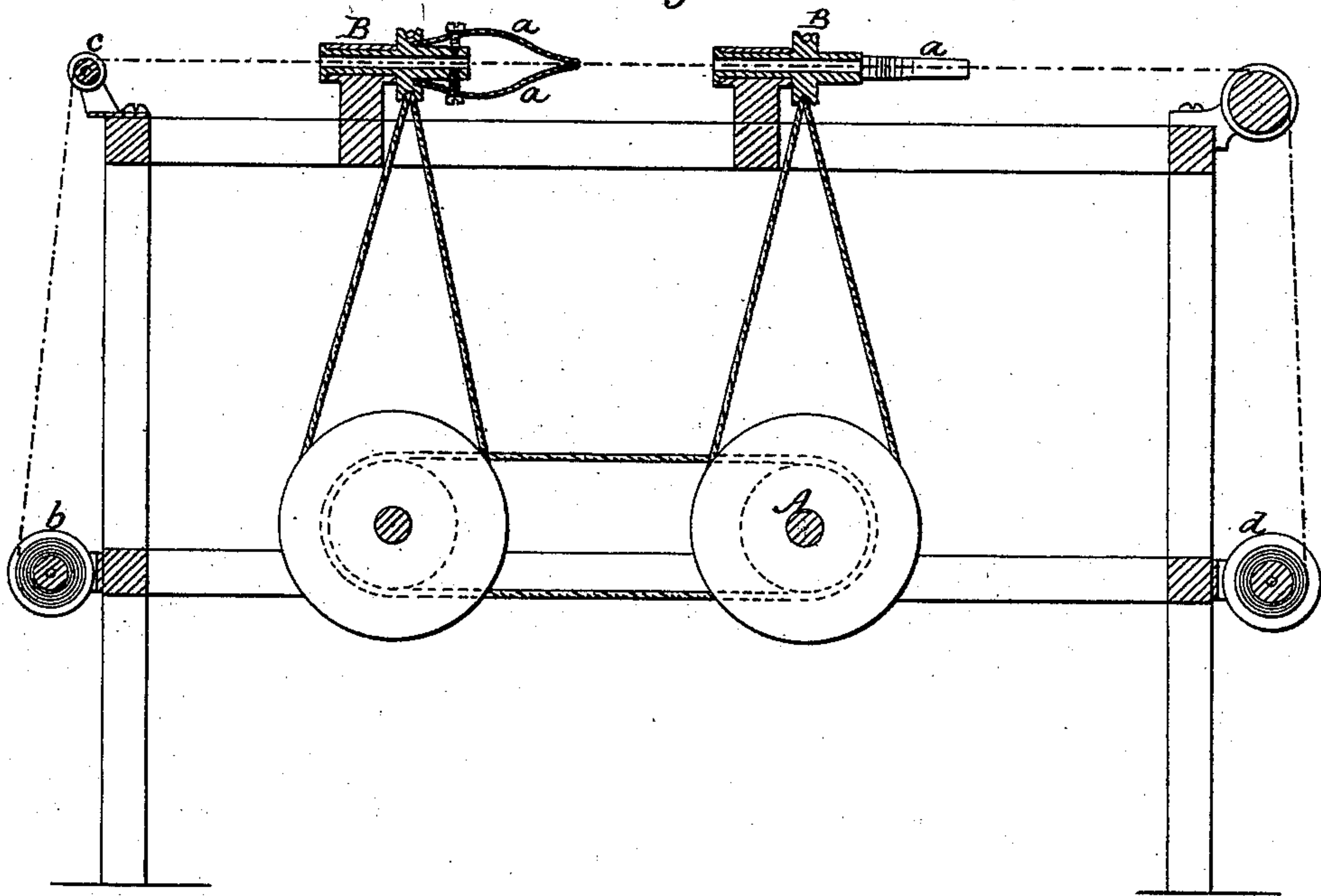


Fig. 2.



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## IMPROVEMENT IN MACHINES FOR COMPRESSING JACKETED TELEGRAPH-WIRE TREATED WITH INSULATING MATERIAL.

Specification forming part of Letters Patent No. **176,978**, dated May 2, 1876; application filed March 18, 1876.

*To all whom it may concern :*

Be it known that I, FRANK S. MEAD, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Machines for Compressing Jacketed Telegraph-Wires Treated with Insulating Material; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

My invention consists in the combination, with suitable wire-feeding mechanism, of a co-operative series of two or more compressing-heads provided with axial openings and compressing clamps or springs, mounted successively in a line which corresponds with their several axes, and connected with mechanism which revolves some of said heads in one direction and others in the opposite direction, whereby a wire jacketed with fibrous material and treated with insulating matter, may be continuously passed longitudinally through all of said heads, receive peripheral compression from the springs of each, and have the rotative strain on the wire, exerted by the heads which revolve in one direction, counteracted or balanced by the strain of those which revolve in the opposite direction.

Referring to the drawings, Figure 1 represents in perspective a machine embodying my invention. Fig. 2 represents the same in longitudinal vertical section on a line with the axes of one set of revolving heads.

A denotes the main driving-shaft, from which power is communicated to the moving parts of the machine. B denotes, in each instance, a revolving compressing-head, composed, preferably, of iron or steel. Each has an axial opening throughout its length, and a groove at its rear end for receiving a cord or belt, as shown. Each head is also provided with a clamp, preferably composed of two flat springs, as at *a*, which are secured, in each instance, to the head by a screw, so arranged with relation to the bearings of the spring on the head, that the outer ends of said spring may be deflected to any desired extent, and

made to compress the wire when it is interposed between the coincident flat or curved faces of the outer ends of each pair of springs. The heads are arranged in one or more co-operative series, or, in other words, the several heads in each set or series revolve in an axial line, which is common to all the heads in the set, so that all of them may simultaneously operate upon the same wire. Any desired number of these co-operative series, arranged side by side, may be embodied in any one machine by having its several parts properly proportioned, but it will seldom be desirable to have a capacity for operating on more than eight or ten wires at the same time.

The covered and insulated wire is fed to the heads from one of a series of reels, shown at *b*, over a guiding-roll at *c*, thence through a set of heads, thence over a driven roll to the receiving-reel at *d*. These reels and rolls, as shown, constitute a desirable wire-feeding mechanism.

For many years prior to my invention, machines embodying a revolving head, provided with a compressing-spring and a counter-rest have been employed for compressing and finishing bonnet-wire covered with fibrous material and dressed with starchy compounds, and machines of the same general character as the bonnet-wire machines, with two springs on the head, have been heretofore used for compressing telegraph-wires covered with fibrous material and insulating matter.

It will be seen that in the proportion to the degree of compression exerted on the part of the springs upon the covered wire, there exists a tendency on the part of the head as it revolves to twist the wire and its covering. In using a single head on a wire it is unsafe to exert much compressive force with the springs, as in practice the wire will, when under a heavy compression, be twisted off, broken, or otherwise injured by the revolving head. In my improved machine each head counteracts the twisting-force of the next succeeding head, and as a result, it is practicable with the two or more heads, operating on the same



wire, to cause their springs to exert a much greater degree of compressive force than would be practically possible with the single head as heretofore employed. Moreover, with two or more heads arranged in series, and revolved in accordance with my invention, I am enabled to attain on the wire a more true and even surface than can be attained by the use of the single head. There is, of course, more or less rotative displacement of the fibrous covering and insulating matter by reason of the compressive action of each pair of springs, and in my improved machine the second head of each set corrects any displacement which may be due to the action of the first head, and so on throughout the series, if it have more than two heads. I am enabled, too, with my improved machine, to secure better compressing results on wire when it is passed through the heads, at twice the speed at which it is practicable to feed it to a machine having the single head, as heretofore.

I prefer to employ an even number of heads in each co-operative series, because, in that case, they can be equally divided and one half of them revolved in one direction, and the other half in the opposite direction. The best results will be attained by arranging them so that between each two heads which revolve in one direction there will be a head revolving in the opposite direction. If three heads are employed in a series, the central one will be

revolved oppositely to the other two, and its springs may be set so as to bear more heavily upon the wire than the springs of either of the other heads. By this means a complete counteraction or balancing of the twisting strain is secured. The distance between the heads should be as little as is consistent with convenience in adjusting the heads, so that there will be but a short length of wire between them. For wires of small size, two heads in a series are sufficient, while with complex wires or cables as many as six co-operative heads may be successfully employed with valuable results.

Having thus described my invention, I claim as new and desire to secure by these Letters Patent—

In a machine for peripherically compressing telegraphic wires covered with fibrous and insulating matter, the combination, with suitable wire-feeding mechanism, of two or more compressing-heads, each having an axial opening, and a compressing clamp or suitable springs, all arranged to operate simultaneously on the same wire, and provided with driving mechanism for revolving some of said heads in one direction and others in the opposite direction, substantially as described.

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