No. 864,168. PATENTED AUG. 27, 1907.

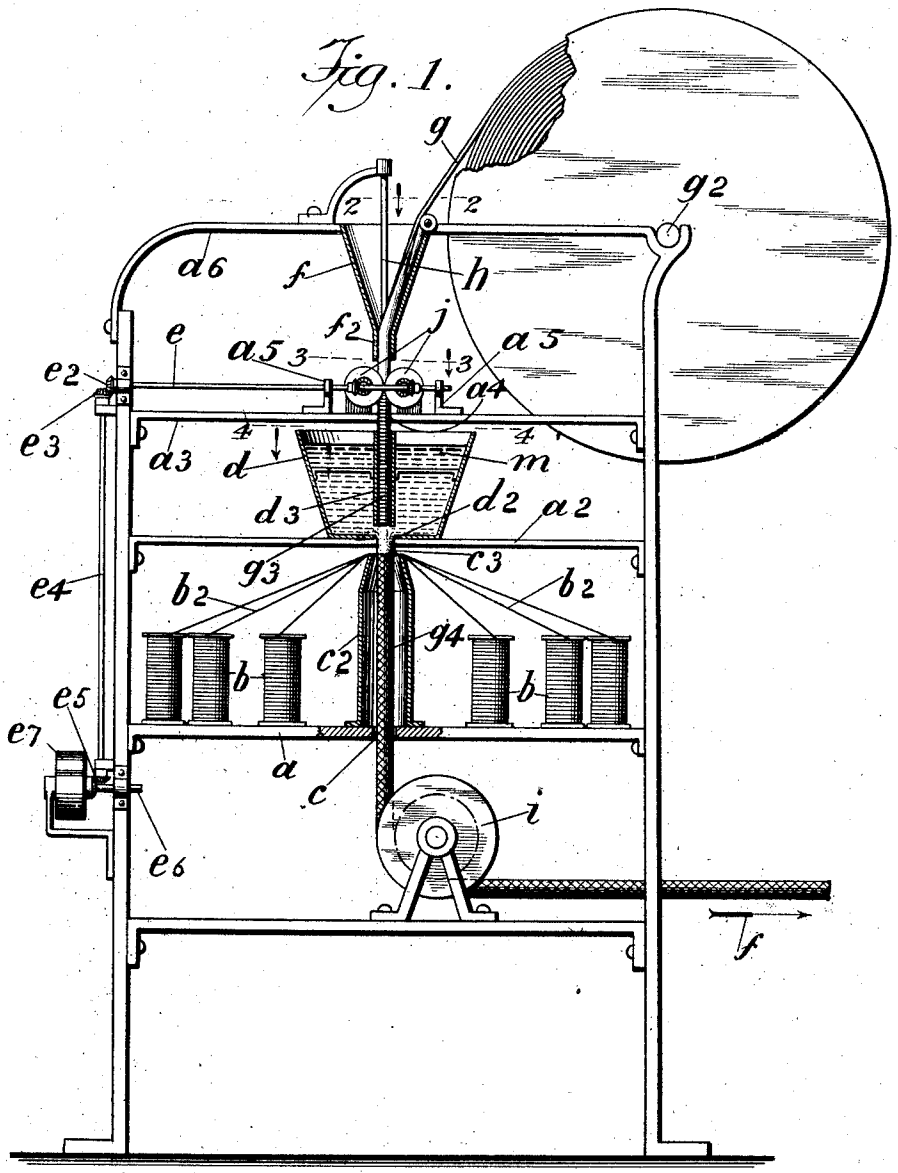
A. P. HINSKY.

MACHINE FOR MAKING TUBULAR ELECTRIC WIRE CONDUITS.

APPLICATION FILED DEC. 3, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



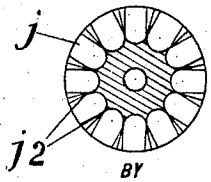


Fig. 6.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

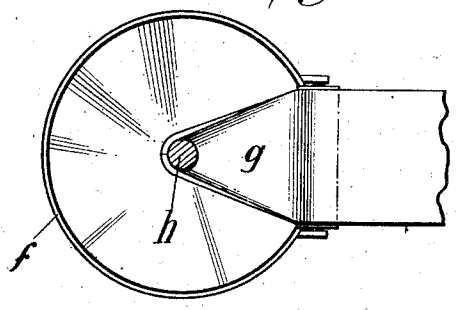


Fig. 3.

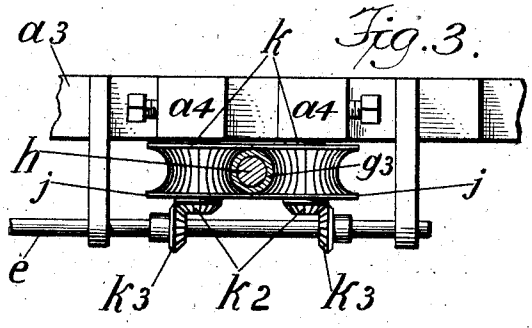


Fig. 4.

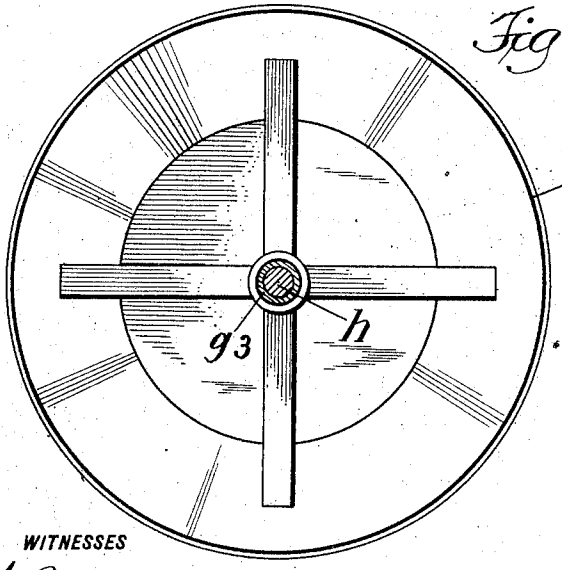
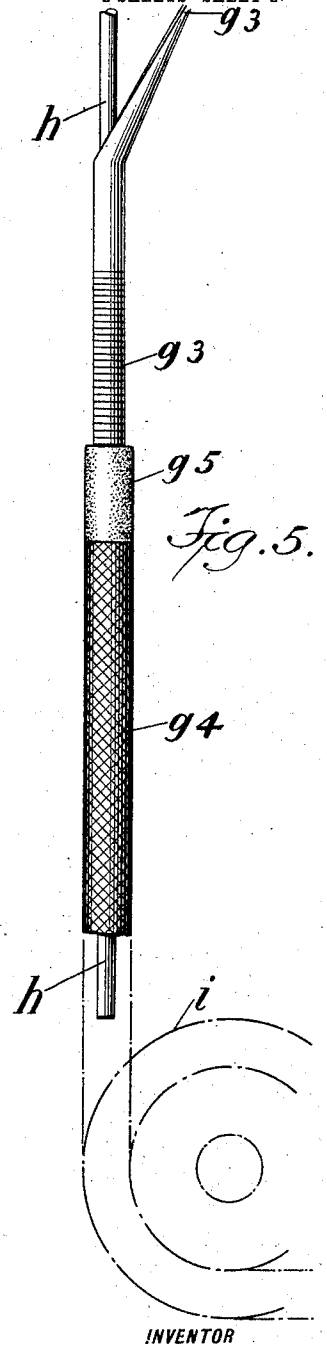


Fig. 5.



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UNITED STATES PATENT OFFICE.

ANTHONY P. HINSKY, OF HOBOKEN, NEW JERSEY.

MACHINE FOR MAKING TUBULAR ELECTRIC-WIRE CONDUITS.

No. 864,168. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed December 3, 1906. Serial No. 345,985.

To all whom it may concern:

Be it known that I, ANTHONY P. HINSKY, a citizen of the United States, and residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Machines for Making Tubular Electric-Wire Conduits, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to machines for making tubular electric wire conduits, and the object thereof is to provide an improved machine for this purpose by means of which tubular electric wire conduits may be made from a strip of paper board, or thick heavy cardboard and provided with a fabric covering, the tubular conduit consisting of a core or inner member formed from a strip of paper or other fibrous material and coated or covered with preservative and insulating solution and a fabric coating or covering applied thereto and also saturated and covered or coated with a preservative and insulating solution.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which;—

Figure 1 is a sectional side view of my improved machine for making tubular electric wire conduits; Fig. 2 a partial section on the line 2—2 of Fig. 1; Fig. 3 a partial section on the line 3—3 of Fig. 1; Fig. 4 a partial section on the line 4—4 of Fig. 1; Fig. 5 a side view showing details of construction, Figs. 2, 3, 4 and 5 being on a scale larger than that of Fig. 1, and Fig. 6 a transverse section of one of a pair of feed wheels or rollers which I employ.

In the practice of my invention, I take an ordinary braiding machine of this class manufactured by the N. E. Butt Company of Providence, Rhode Island part of which is shown in Fig. 1. The braiding machine only part of which is shown in Fig. 1 involves a suitable frame provided with a table a on which is placed spools b provided with threads b^2, and machines of this class have long been used for braiding and covering tubular electric conduits, and only a partial view thereof is given in Fig. 1 in order to show the application of my improvement thereto.

In the practice of my invention, the spool table a is provided centrally with an aperture c, above which is placed a tubular guide c^2 the top of which is preferably tapered, and over which the frame of the machine is provided with a transverse support a^2 on which is placed a tank d the bottom of which is provided with an aperture d^2, and the support a^2 is provided with a corresponding aperture, and said tank is provided centrally and in line with the aperture c in the table a and the aperture d^2 in the bottom of said tank with a vertically arranged tubular guide d^3. The frame of the machine is also provided over the tank d with a transverse support a^3, and said support is provided with two upright bearings a^5 in which is mounted a shaft e provided with a beveled gear e^2 which meshes with a corresponding gear e^3 on a vertically arranged shaft e^4 which is geared in connection at e^5 with a drive shaft e^6 provided with a pulley e^7. The shaft e^6 is the drive shaft of the braiding machine but the detail construction of the braiding machine and the connection of the shaft e^6 therewith is not shown, as it forms no part of this invention and the construction thereof being well known. At the top of the machine frame is another transverse support a^6, centrally, of which is supported a depending hopper f, which forms a guide for the strip g of paper which is formed into a roll or wound on a roller g', and the hopper guide f is provided at its lower end with a tubular sleeve f^2, and supported vertically of the machine and centrally thereof and passing down through the hopper guide f^2 and through the tubular guide d^3 is a rod or mandrel h which terminates just below the horizontal support a and just above the guide wheel i supported in the bottom portion of the framework of the machine, the relative position of the lower end of the rod or mandrel h and the wheel i being indicated in Fig. 5.

The support a^3 in the top portion of the main frame of the machine is provided with supplemental bearings or supports a^4 in which are mounted short shafts k provided with grooved wheels or rollers j and the grooves in the said wheels are provided with teeth j^2 as clearly shown in Fig. 6 and as indicated in Fig. 3, and the shafts k are provided with beveled gears k^2 which mesh with corresponding gears k^3 on the shaft e.

In practice, the tank d is filled or partially filled with a solution m which is intended as a preservative coating for the paper or fibrous core of the tubular conduit, and which also serves as an insulation for said core, and it will be observed that the rod or mandrel h passes downwardly between the wheels or rollers j.

In the operation of this machine, the end of the strip g of paper is passed downwardly through the hopper guide f and forced downwardly through the tubular sleeve f^2 at the lower end thereof, and in this operation the said paper strip is formed into a tube, and said tube is forced downwardly until it is caught by the wheels or rollers j by which it is fed downwardly through the tank d, and one of which is shown in section in Fig. 6, and in this last operation the said tube is grooved annularly by the teeth of the wheels or rollers j so as to form annular or circularly arranged ribs or projections and corresponding annular or circularly arranged grooves in said tube as indicated at g^3 in Figs. 3 and 5, and this renders the tubular conduit when finished more flexible than ordinary devices of this class as usually constructed. The tube g^3 formed from the paper strip g after it leaves the

tank d passes downwardly through the tubular guide c^2 and at the top c^3 of the tubular guide c^2 the said tube g^3 is given the fabric covering indicated at g^4, this operation being the same as that of the original machine hereinbefore referred to and to which my improvement is applied, and after the tubular conduit is provided with a fabric covering it passes on down around the guide wheel i, and is drawn out in the direction of the arrow x, and may be rewound on a drum or on any other suitable device, and may also be given its last coating or covering of preservative and insulating material in the usual or ordinary manner.

In Fig. 5 of the drawing, I have shown diagrammatically the rod or mandrel h, the paper tube g^3 thereon, said tube g^3 being partially covered with fabric as shown at g^4, and I have also indicated in Fig. 5 at g^5 a part of the covering of insulating and preservative material which the tube g^3 is given before it receives its fabric coating or covering.

It will be observed that the tubular guide d^3 does not extend to the bottom of the tubular tank d but passes through the liquid preservative and insulating material at this point and the coating of said material is applied thereto during this time and the aperture d^2 in the bottom of the tank d is of such size only as to permit of the requisite amount of liquid material in the tank d to adhere to the paper tube g^3, and in Fig. 5 of the drawing the thickness of the insulating and preservative material g^5 is exaggerated.

The tubular conduit or construction of which is herein shown and described, is not claimed in this application but is made the subject of a separate application executed and filed by me of equal date herewith. It will be understood, of course, that the tubular conduit after it leaves the guide wheel i may be connected with the drum or roller on which it may be wound, and the coating of preservative and insulating material given to the complete tubular conduit after it leaves the wheel i may be applied thereto at any time and in any preferred way. It will also be apparent that my improvement may be applied to what is known as a circular loom instead of a braiding machine of the class herein referred to, and my invention is not limited to any particular form of machine for this purpose except as herein modified.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A braiding or weaving machine provided with a central guide tube over the top of which the braiding or weaving takes place, a tank placed over said guide tube and provided with a central vertically arranged guide sleeve which does not extend to the bottom thereof, said tank being also provided in the bottom thereof with an aperture, a pair of grooved guide and feeding rollers mounted over said tank, a guide hopper mounted over said rollers, and a rod or mandrel passing vertically down through said guide hopper between said rollers, through the sleeve in said tank, through the aperture in the bottom of said tank and through said guide tube.

2. A braiding or weaving machine provided with a central guide tube over the top of which the braiding or weaving takes place, a tank placed over said guide tube and provided with a central vertically arranged guide sleeve which does not extend to the bottom thereof, said tank being also provided in the bottom thereof with an aperture, a pair of grooved guide and feeding rollers mounted over said tank, a guide hopper mounted over said rollers, and a rod or mandrel passing vertically down through said guide hopper between said rollers, through the sleeve in said tank, through the aperture in the bottom of said tank and through said guide tube, said machine being also provided in the bottom portion thereof with a grooved guide wheel above which said rod or mandrel terminates.

3. A braiding or weaving machine provided centrally of the thread spools thereof with a vertically arranged tubular guide above which the braiding or weaving takes place, another tubular guide arranged over the first named tubular guide, a rod or mandrel passing downwardly through both of said tubular guides, and means for feeding a strip of paper downwardly through the last named tube or guide by which it is formed into a tube around said rod or mandrel and for feeding said tube downwardly through the first named tubular guide, means for coating said tube with a preservative and insulating compound before it reaches the first named tubular guide, the feeding means being also provided with means whereby the said tube is corrugated and grooved annularly.

4. A braiding or weaving machine of the class described provided centrally of the thread spools with a tubular guide above which the braiding or weaving takes place, a tank supported over said tubular guide and over the point where the braiding takes place and adapted to contain insulating and preservative material, and means above said tank for forming a strip of flexible material into a tube and feeding it downwardly through said tank and through said tubular guide.

5. A braiding or weaving machine of the class described provided centrally of the thread spools with a tubular guide above which the braiding or weaving takes place, a tank supported over said tubular guide and adapted to contain insulating and preservative material, and means for forming a strip of flexible material into a tube and feeding it downwardly through said tank and through said tubular guide and for corrugating said tube annularly.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 30th day of November 1906.

ANTHONY P. HINSKY.

Witnesses:
C. E. MULREANY,
PAUL BARTELT.