

No. 825,125.

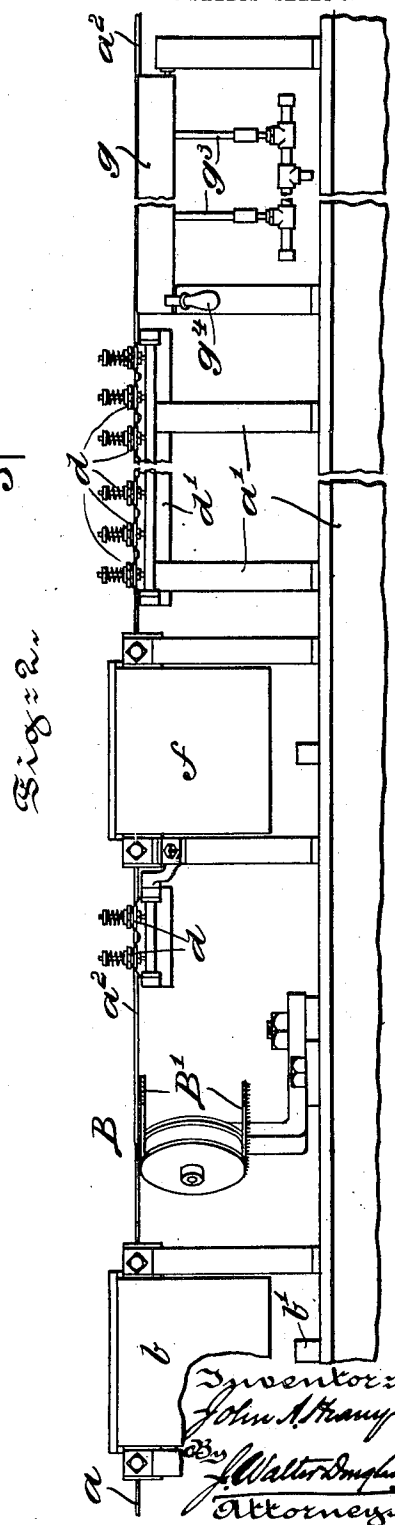
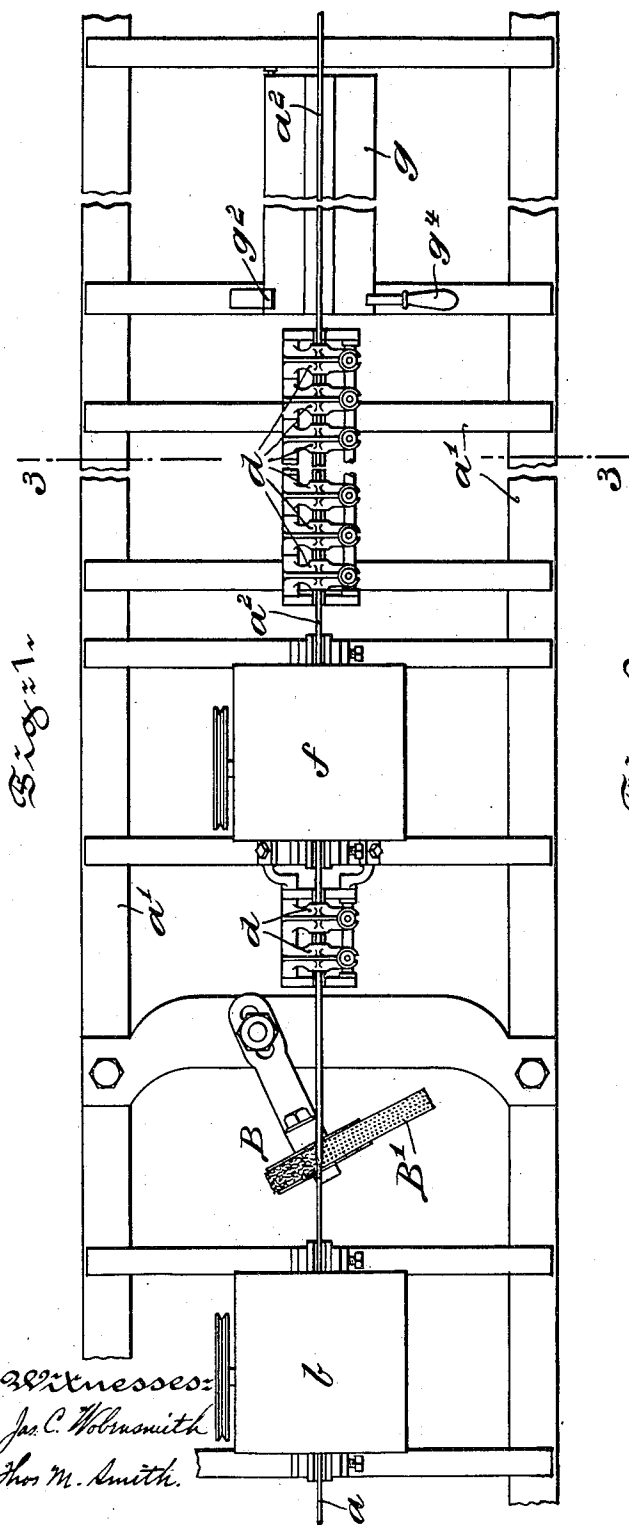
PATENTED JULY 3, 1906.

J. A. HEANY.

MACHINE FOR APPLYING COVERINGS TO WIRE.

APPLICATION FILED JAN. 20, 1904. RENEWED DEC. 22, 1905.

3 SHEETS—SHEET 1.



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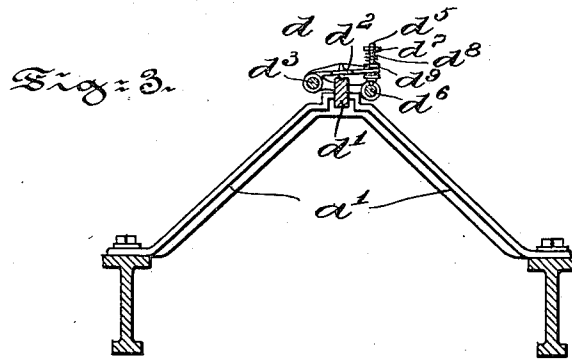


Fig. 4.

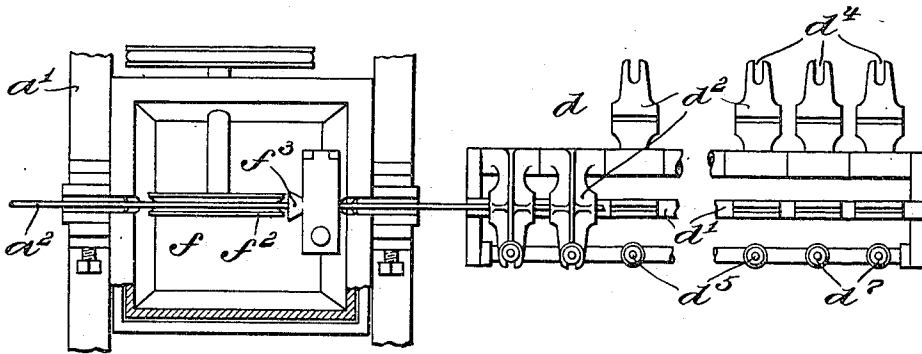
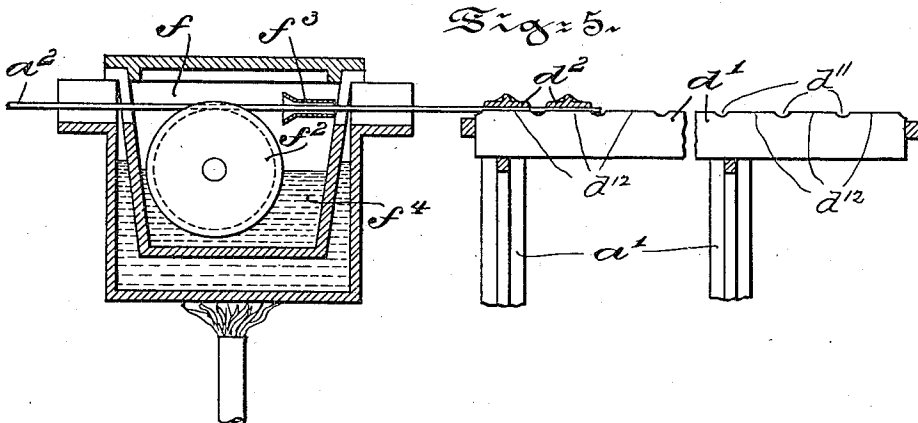


Fig. 5.



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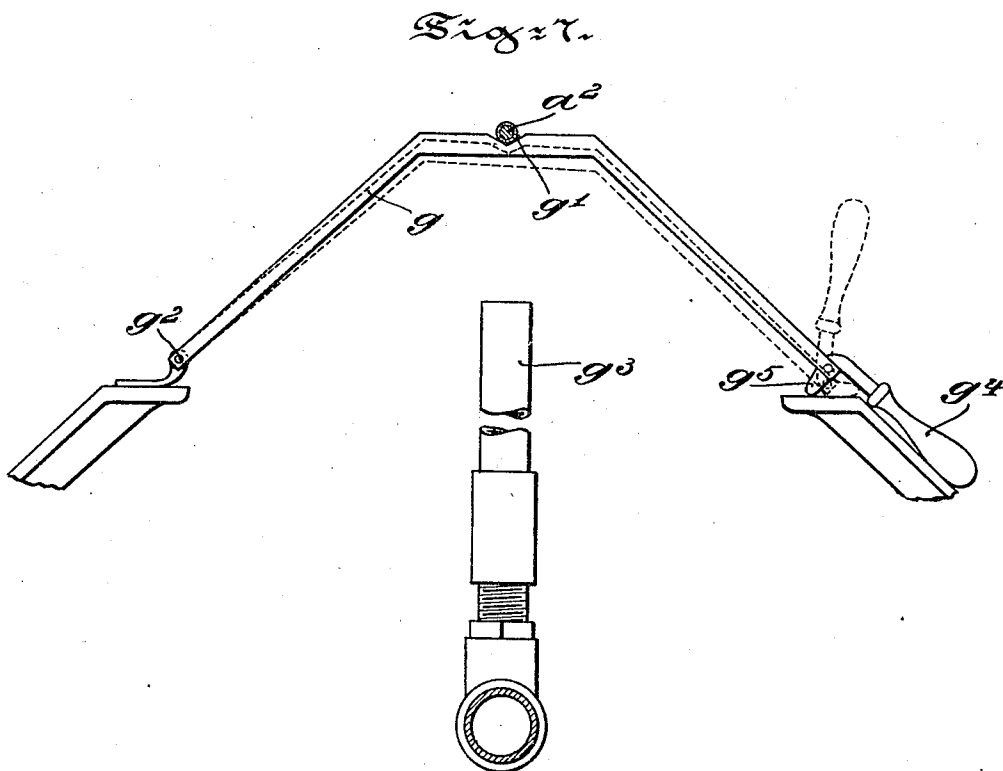
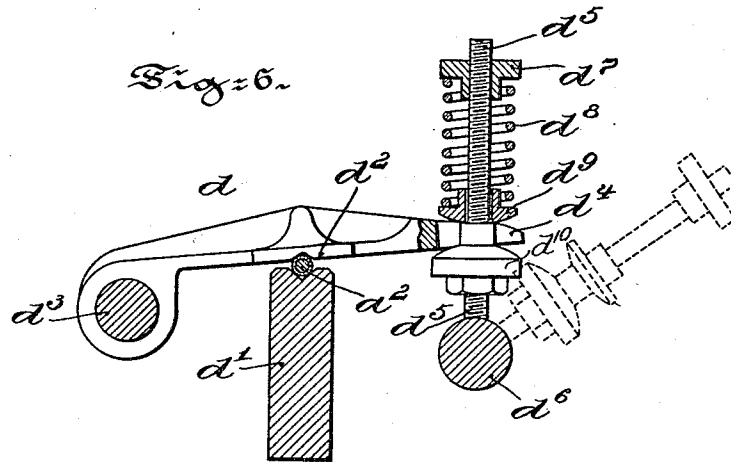
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3 SHEETS—SHEET 3.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN ALLEN HEANY, OF YORK, PENNSYLVANIA, ASSIGNOR TO THE TETER-HEANY DEVELOPING COMPANY, OF CHARLESTON, WEST VIRGINIA, AND YORK, PENNSYLVANIA, A CORPORATION OF WEST VIRGINIA.

## MACHINE FOR APPLYING COVERINGS TO WIRE.

No. 825,125.

Specification of Letters Patent.

Patented July 3, 1906.

Application filed January 20, 1904. Renewed December 22, 1905. Serial No. 292,970.

*To all whom it may concern:*

Be it known that I, JOHN ALLEN HEANY, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Applying Coverings to Wire, of which the following is a specification.

My invention has relation to a machine for applying a covering, such as flocculent asbestos, to a rotating and traveling wire and for compacting and coating the covered wire with a waterproof material and thereafter drying the covering and coating upon the wire, and in such connection it relates to the construction and arrangement of such a machine.

In United States Letters Patent No. 740,131, granted to me on September 29, 1903, there is described and claimed a method of producing insulated electric conductors. Among the steps therein enumerated are those in which a rotating and traveling wire is coated with a gluey material, then covered with flocculent asbestos, then the covering compacted, and finally the covered wire coated with an indestructible paste or cement. In this present application for a patent the mechanism and means for coating the wire with the gluey material, compacting the covering upon the wire, coating the covered wire with the paste or cement, and drying the coated covered wire forms the subject-matter of the invention.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of a machine embodying main features of my invention, certain of the parts being broken away. Fig. 2 is a side elevational view thereof. Fig. 3 is a cross-sectional view taken on the line 3 3 of Fig. 1, illustrating the construction and arrangement of one of the divided dies for compacting the covering on the wire. Fig. 4 is a top or plan view, partly sectioned, illustrating the construction and arrangement of the vat containing the paste and the means for applying the paste to the covered wire and for compacting the covering upon the wire. Fig. 5 is a longitudinal sectional

view of Fig. 4. Fig. 6 is a still further enlarged cross-sectional view illustrating in detail one of the compacting-dies, and Fig. 7 is an enlarged cross-sectional view illustrating the means for drying the covered wire after the coating has been applied.

Referring to the drawings, the wire *a*, after a rotary and forward movement has been given to it, as described in a companion application for a patent filed by me on January 20, 1904, under Serial No. 189,804, traverses a vat *b*, containing a gluey material. This vat *b* is of an ordinary glue-pot construction and has rotating partly through the gluey mass a grooved wheel over which the wire *a* passes to take up from the wheel sufficient glue to coat the wire. The wire *a* then passes through a funnel-shaped tube in the vat *b*, in order that surplus gluey material may be removed from the wire *a* and returned to the vat. The water-bath in which the vat *b* is held may be heated by a jet *b'*.

The preferred construction and internal arrangement of vat *b* are the same as in the vat *f* illustrated in detail in Figs. 4 and 5.

After being coated with glue, as aforesaid, the wire *a* next passes adjacent to a mechanism *B* for supplying the flocculent material spirally to the wire. This mechanism is described and illustrated in a companion application for a patent filed by me under date of January 20, 1904, and Serial No. 189,805. One of the main elements of this mechanism is the band *B'* of card-clothing, which travels obliquely to the direction of travel of wire *a*, as illustrated in Figs. 1 and 2. After receiving its covering the wire next passes through one or more compacting-dies *d*. Each of these dies consists of two members, the lower *d'* being a stationary bar which is supported by the framework *a'* of the machine, while the other member *d''* consists of a die or arm pivoted at one end to a shaft *d'''*, supported by framework *a'*, and its other end is adapted to be engaged by means for locking the member down upon the member *d'* under spring tension. A preferred construction of divided compacting-die is illustrated in detail in Fig. 6. It consists of a die-bar *d'*, comprising the fixed member having notches *d''*, which separate the grooved die-surfaces *d'''* from each other, and an arm *d''*, having a groove registering with a com-

plemental groove in the bar  $d'$ . The die-arm  $d^2$  is pivoted at one end on the shaft  $d^3$ , and the other end is slotted, as at  $d^4$ , to receive a bolt  $d^5$ , projecting from an oscillatory shaft or pin  $d^6$ . The bolt  $d^5$  has on its upper screw-threaded end an adjustable thumb-nut  $d^7$ , and coiled round the body of the bolt  $d^5$  is a spiral spring  $d^8$ , one end of which bears against the adjustable thumb-nut  $d^7$ , and the other end bears upon or carries a collar  $d^9$ , loosely sliding upon the bolt  $d^5$ . A set-nut  $d^{10}$  is adjusted upon the bolt  $d^5$  below the collar  $d^9$ . When the die-arm  $d^2$  is thrown over, so that its groove registers with the groove in one of the die-surfaces  $d^{12}$  of the bar  $d'$ , the bolt  $d^5$  is swung or locked in the slot of the die-arm  $d^2$ , so that the collar  $d^9$  presses upon the die-arm  $d^2$  with more or less spring-pressure, regulated by the thumb-nut  $d^7$ . The set-nut  $d^{10}$  serves to limit the downward movement of the die-arm  $d^2$  when the same is engaged by the bolt  $d^5$ . The movable collar  $d^9$  is adapted to press upon the die-arm  $d^2$  and to permit uneven surfaces of the covering of the wire  $a^2$  to pass under the die-arm  $d^2$  and at the same time furnish the necessary pressure by the intervention of the spring  $d^8$  to compact or compress the covering upon the wire  $a^2$ . The space between the members of the die through which the covered wire  $a$  must pass may thus be regulated at will. By using a plurality of dies  $d$ , each regulated separately, the flocculent covering on the wire  $a$  is compacted more and more by successive dies until the necessary degree of compactness of the covering by the gradual increasing pressure exerted on the same by the dies  $d$  is obtained. If desired, any one or more of the die-arms  $d^2$ , in series, may be thrown out of action, as required, by lifting up out of engagement one or more of the die-bars  $d'$ , as illustrated, for example, in Fig. 4. After the covering on the wire  $a$  has been applied and compacted, as explained, the covered wire  $a^2$  next traverses a vat  $f$ , containing a paste or cement of fireproof materials. This vat  $f$  is a duplicate of the glue-vat  $b$ . The covered wire  $a^2$  receives its coating of paste or cement from the wheel  $f^2$ , rotating through paste  $f^4$  in the vat  $f$ , and surplus paste is scraped from the wire  $a^2$  by the funnel-shaped tube  $f^3$ , through which the wire  $a^2$  next passes. The wire  $a^2$ , covered and coated, is then drawn through a second series of dies  $d$ , constructed and arranged as hereinbefore described. The coating and covering of the wire  $a^2$  is thus compacted, and the wire next passes to the drying mechanism. This mechanism consists, essentially, of an arched frame  $g$ , having at its top a groove  $g'$ , along which the wire  $a^2$  travels. One or more gas-jets  $g^3$ , located in the frame  $g$  below the top, supply the necessary heat. The frame  $g$  is preferably pivoted at one end, as at  $g^2$ , in a stationary part of the machine, and the other

end is provided with a handle  $g^4$ , by means of which the frame may be raised from or lowered toward the jets  $g^3$ . The handle  $g^4$  has for this purpose a cam projection  $g^5$ , bearing upon a fixed part of the machine, so that being swung around, as indicated in dotted lines in Fig. 7, the frame  $g$  may be lowered.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, in combination with means for supplying glue to a rotating and traveling wire and means for supplying a covering of flocculent material thereafter to said wire, a die-bar and movable dies engaging said die-bar, said die-bar and movable dies being arranged to compact with a gradually-increasing pressure the covering upon said wire.

2. In a machine of the character described, in combination with means for supplying glue to a rotating and traveling wire and means for supplying a covering of flocculent material thereafter to said wire, of die-bars and a series of movable dies, each engaging one of said die-bars, said movable dies and die-bars being arranged to compact the covering upon the wire by a gradually-increasing pressure before and after a coating of paste or cement is applied thereto.

3. In a machine of the character described, in combination with means for supplying glue to a rotating and traveling wire, and means for supplying a covering of flocculent material thereafter to said wire, of die-bars and a series of movable dies, engaging each of said die-bars, said movable dies and their die-bars being arranged to compact the covering upon said wire with a gradually-increasing pressure before and after a coating of paste or cement has been applied and prior to drying and heating of the coated covering on the wire.

4. In a machine of the character described, stationary and movable dies, said stationary die being notched to form independent dies, each of said dies being adapted to be engaged by one of said movable dies.

5. In a machine of the character described, a stationary die-bar and movable dies, said stationary die-bar being notched to form independent dies, each of said independent dies being adapted to be engaged by one of said movable dies, and means adapted to lock each movable die to the complementary independent die of said stationary die-bar.

6. In a machine of the character described, a stationary die-bar and movable dies, said stationary die-bar being divided into independent complementary dies for each of said movable dies, and means adapted to lock each movable die to its complementary stationary die under spring-pressure.

7. In a machine of the character described, a die-bar having independent dies separated

from each other, movable dies arranged complementally to the independent dies of said die-bar and adapted to engage the same, movable bolts for said movable dies, a movable collar arranged on each of said bolts, and a spring adapted to hold said collar under pressure on each bolt to depress a movable die toward the complemental independent die of said die-bar on a covered and coated wire passing therethrough.

8. In a machine of the character described, a drying mechanism, comprising a frame having a groove, one end of said frame being hinged to a stationary part of the machine, means for raising and lowering the free end of said frame, and a source of heat located within the frame.

9. In a machine of the character described, a die-bar having grooved dies separated from each other, movable grooved dies arranged complementally to the dies of said die-bar and adapted to engage the same, bolts for

said movable dies, a movable spring-controlled collar and an adjustable set-nut arranged on each of said bolts, said set-nut adapted to limit the movement of a movable die in one direction, and said spring-controlled collar adapted to move said movable die in a direction toward said adjustable set-nut.

10. In a machine of the character described, a drying mechanism, comprising a frame having means adapted to receive a covered wire, means for raising and lowering said frame to bring the same into and out of engagement with said covered wire, and a source of heat located within said frame.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

JOHN ALLEN HEANY.

Witnesses:

J. WALTER DOUGLASS,  
THOMAS M. SMITH.