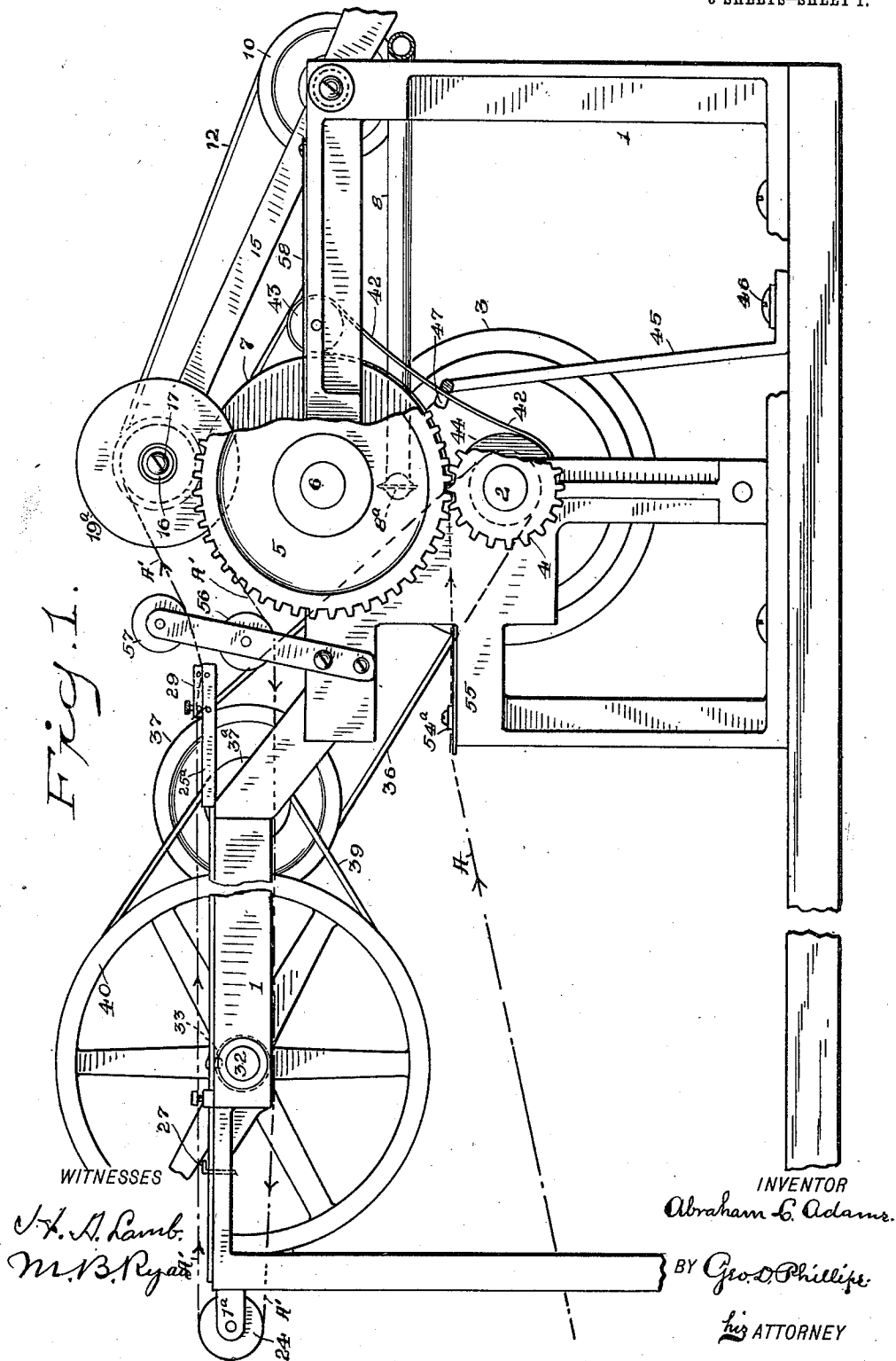


A. L. ADAMS.
 MACHINE FOR FOLDING, IRONING, AND SPOOLING CLOTH STRIPS.
 APPLICATION FILED SEPT. 23, 1907.

1,029,962.

Patented June 18, 1912.

3 SHEETS—SHEET 1.



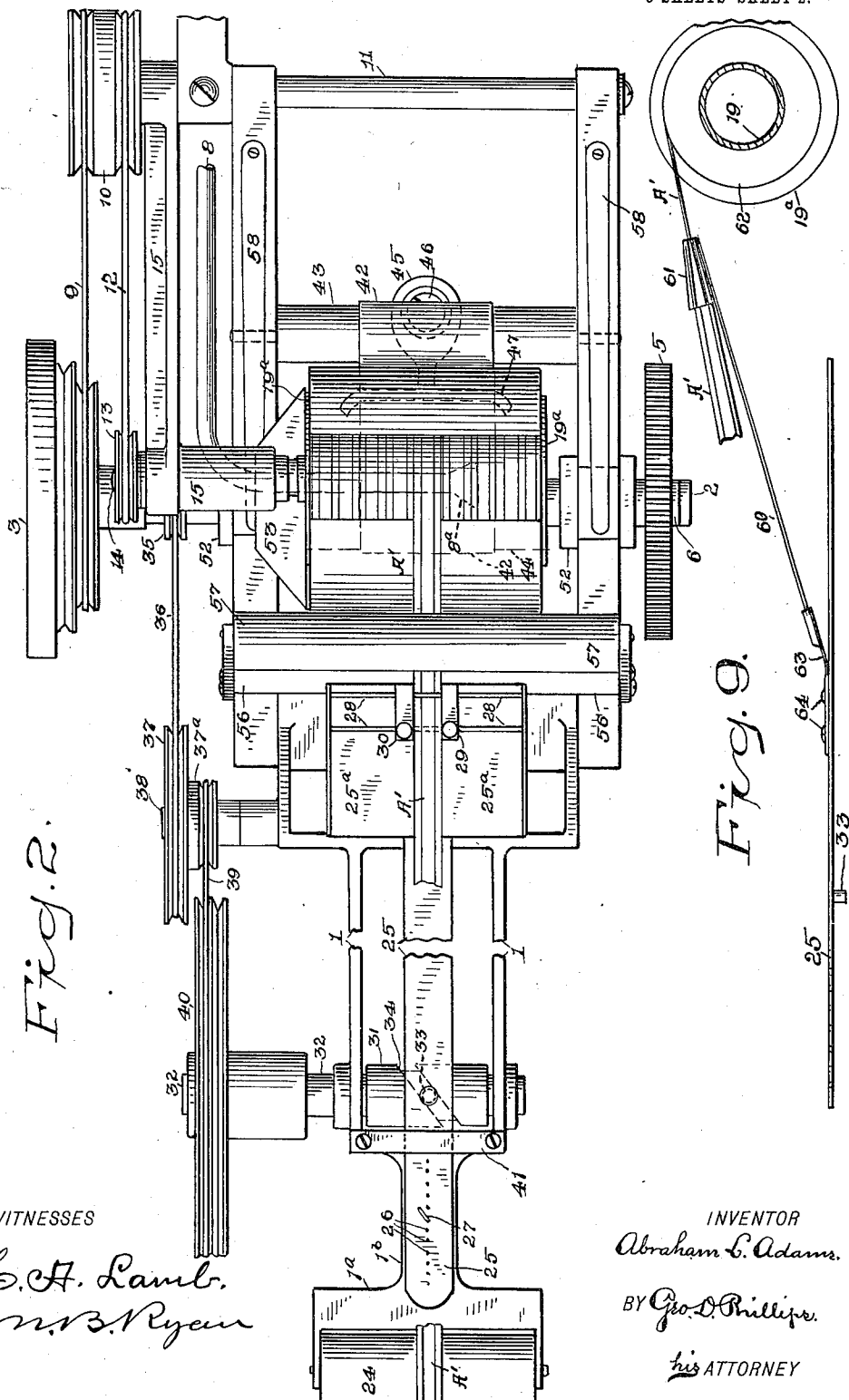
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WITNESSES

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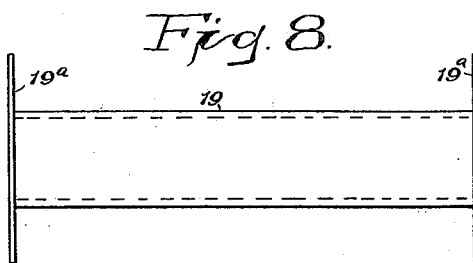
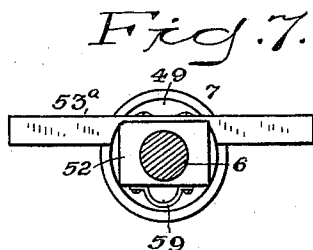
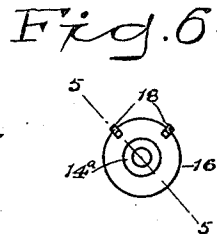
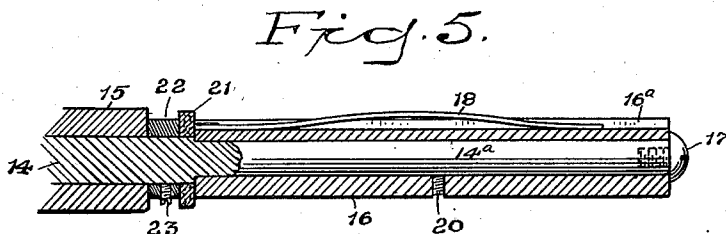
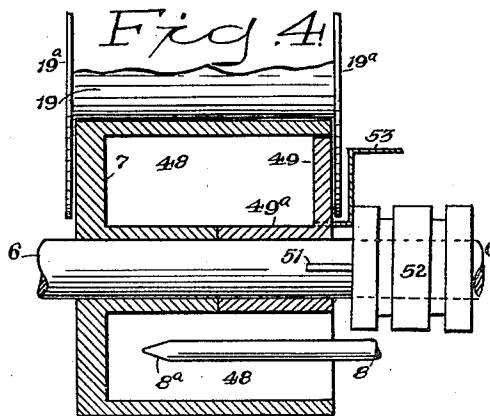
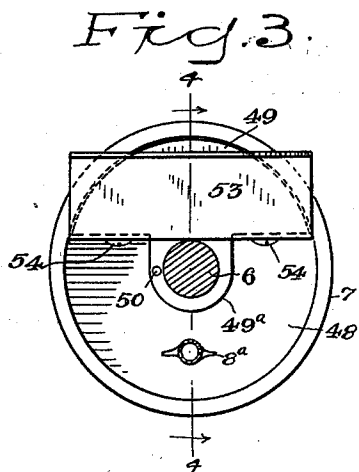
his ATTORNEY

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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ABRAHAM L. ADAMS, OF BRIDGEPORT, CONNECTICUT.

MACHINE FOR FOLDING, IRONING, AND SPOOLING CLOTH STRIPS.

1,029,962.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed September 23, 1907. Serial No. 394,040.

To all whom it may concern:

Be it known that I, ABRAHAM L. ADAMS, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Folding, Ironing, and Spooling Cloth Strips, of which the following is a specification.

My invention relates to improvements in machines for folding, ironing and spooling strips of cloth, and it consists in certain details of construction to be more fully set forth in the following specification.

To enable others to understand my said invention, reference is had to the accompanying drawings, in which:

Figure 1 represents a broken side elevation of the machine; Fig. 2 is a broken upper plan view of the machine; Fig. 3 is a detail elevation of the heating drum and sectional view of the drum shaft and gas pipe; Fig. 4 is a detail longitudinal sectional view of the heating drum and shield on line 4 of Fig. 3, and broken view of the drum shaft and burner pipe, and broken view of a paper spool overlying the drum, also one of the boxes of the drum shaft; Fig. 5 is a broken view of the winding arbor partly in section, and broken sectional view of its support and sectional view of the arbor sleeve, on line 5 of Fig. 6; Fig. 6 is an end view of the arbor and sleeve; Fig. 7 is a reduced view of the heating drum and sectional view of its shaft showing a modified construction of the heat protecting shield; Fig. 8 is a detail side elevation of a paper spool; and Fig. 9 is a detail side elevation of the traversing strip laying or guiding arm with a supplemental refolder carrying arm flexibly connected thereto, also broken sectional view of the spool with a strip roll wound thereon.

1 represents the frame of the machine, 2 the main driving shaft carrying the driving pulley 3 on one end and the pinion 4 at the opposite end. This pinion meshes with the gear 5 on the drum shaft 6, carrying the ironing drum 7. 8 is a gas pipe with its burner 8^a projecting within the open mouth of the drum, for the purpose of heating it.

9 is a belt which conveys motion from the main driving pulley 3 to the double pulley 10 mounted on the end of the shaft 11. From this double pulley the belt 12 runs to the small pulley 13 mounted on the rear end of the winding arbor 14 journaled in the free

end of the gravity arm 15. This arm is journaled on the shaft 11 so that the arbor will gradually rise as the spool, presently to be described, increases in size.

16 (Fig. 5) is a sleeve mounted on the free end 14^a of the arbor and is, when rotating, maintained thereon by the screw 17 in the end of the arbor.

18 are friction springs secured by their inner ends to the bottom of the longitudinal grooves 16^a formed in the arbor. The spool on which the tape or folded strips are wound comprises (Fig. 8) the paper tube body portion 19 with the circular ends or flanges 19^a. The spool is operatively mounted on the sleeve 16 and is frictionally held thereon by means of the springs 18.

20 (Fig. 5) is a screw for locking the sleeve to the arbor.

21 is a friction washer on the winding arbor, and 22 is a friction collar between said washer and the bearing end of the swinging arm 15. 23 is a set screw for securing said collar to the arbor for the purpose presently to be more fully described.

24 is a guide roll journaled in the head 1^a integral with the machine frame, over which the folded tape, presently to be described, is carried.

25 is a traversing strip laying arm having the series of pivoted holes 26 there-through and at its rear end as shown at Fig. 1. A similar series of holes (not shown) is provided in the neck portion 1^b of the frame, and 27 is a locating pin to determine the lateral vibratory travel of the opposite end or head 25^a of the arm.

28 are rods carrying the adjustable strip guiding blocks 29 and 30.

31 is a cam mounted on the shaft 32, and 33 is a pin projecting through the traversing arm to engage with the groove 34 of said cam. Through the medium of this cam and pin, said arm is given a lateral vibratory movement. This cam shaft is run at a slow speed as follows: 35 is a small pulley mounted on the driving shaft 2 and transmits motion through the belt 36 to the large pulley 37 mounted on the shaft 38, and from the grooved hub 37^a of this pulley the belt 39 transmits motion to the large pulley 40 on the cam shaft.

41 is a cap adapted to maintain the engagement of the vibrating arm 25 with the cam.

42 (Figs. 1 and 2) is an endless belt car-

ried by the upper roll 43 and the lower roll 44, which lower roll may be secured to the shaft 2 or form a part thereof. One face of this belt runs against the heated surface of the drum 7 for the purpose of ironing the folded strips, presently to be described.

45 is a shipper rod adjustably secured to the floor of the machine by the screw 46, and 47 are the shipper fingers embracing the belt 42 so that said belt can be laterally shifted within the lateral range of the drum 7.

When the paper spool 19 is mounted on the winding arbor, its flanges 19^a embrace the ends of the drum 7, as shown at Figs. 1 and 4. To protect the flange, embracing the upper portion of the open mouth of the chamber 48, from the heat that would escape from the upper portion of this chamber, I employ a novel arrangement comprising the semi-circular filling piece 49 or heat protector (see also Fig. 3), having the hub portion 49^a loosely embracing the shaft 6, and to keep this filling piece from rotating with the drum, the hole 50 is formed in the outer face of the hub 49^a to receive the pin 51 projecting from the box 52.

53 is a shield secured to the lower edge of the heat protector by the screw 54 to protect the spool flange from the flame escaping from the lower part of the chamber 48.

The line A, Fig. 1, represents a plain strip of cloth being fed to the machine. This strip passes through the ordinary folder 54^a secured to the machine bed 55. After the edges of the strip have been turned over by the folder, said strip passes between the belt 42 and the drum 7 so as to iron said edges firmly down on to the body of the strip. After passing over the drum it emerges therefrom as the folded and ironed strip A'. From the drum 7 it is carried under the lower tension roll 56 and around the roll 24, and from thence under one of the rods 28 and between the guide blocks 29 and 30 and under the upper tension roll 57 to the spool 19 about which it is wound, the traversing arm guiding the strip thereto so as to fill the spool true and even.

As the machine is adapted to fold, iron and spool both straight and bias goods, great care must be taken, when operating on bias strips, not to stretch them. When, therefore, any lump or uneven thickness occurs in a bias strip, the drum is so arranged that it will lift or rise to let the obstruction pass between said drum and the roll 44. This upward movement of the drum will also carry the boxes 52 with it and against the tension of the springs 58.

In the modification of the heat protecting arrangement shown at Fig. 7, the shield 53^a is secured to the box 52, and 59 is a bracket secured to the underside of the box for the gas pipe.

When folding straight strips, both screws,

20 and 23 (Fig. 5), are brought against the arbor; but for bias strips the screw 20 is loosened so that the sleeve 16 will turn and thus prevent undue strain on the bias strip.

When strips from soft pliable goods are to be spooled, the turned over edges or folds of the strips are difficult to keep in place so that, by the time the strip reaches the roll on the spool, these folds or turned over edges are apt to open. To obviate this, I connect the supplemental arm 60 (Fig. 9) to the laterally traversing arm 25, dispensing with the head 25^a and the guiding blocks 29 and 30, and mount the second folder 61 on the extreme free end of said arm 60 so that the strips will be refolded just before they reach the strip roll 62 on the spool 19. The rear end of arm 60 is attached to the free end of the flexible support 63 mounted on the traversing arm 25 and is secured thereto by means of the screws 64. The flexible connection of arm 60 enables it to rise vertically as the strip roll 62 increases in size so that the folder 61 will always be in a tangential line with respect to the roll 62. This feature is of the greatest importance in spooling bias strips, as all strain or pull on the strips is thereby avoided.

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

1. In a machine of the character described, a rotatable open ended heating drum, means for applying heat to the interior thereof, a winding arbor, a non-rotatable heat protector for said arbor, for the purpose set forth.

2. In a machine of the character described, a rotatable open ended heating drum, means for applying heat to the interior thereof, a rotatable and vertically movable arbor adapted to carry a flanged spool about which folded strips are wound, a non-rotatable heat protector partially closing the open mouth of the drum, and a shield projecting from said protector adapted to partially embrace one of the flanges of the spool, for the purpose set forth.

3. In a machine of the character described, a driving shaft carrying a roll, an open ended heating drum, means for applying heat to the interior thereof, means for rotating said drum from said shaft, a guide roll adjacent to said drum, an endless belt running between said roll and the driving shaft roll and contacting with the drum, a gravity arm, a rotatable arbor journaled therein adapted to carry a winding spool, a heat protector partially closing the open mouth of the drum, an adjustable laterally traversing and strip laying arm, means for vibrating the same, a roll located at the rear of said arm, strip guiding blocks on the forward end or head of said arm, upper and lower strip tension rolls, a folder, all com-

bined so that a strip of cloth is fed through the folder and carried from thence between the endless belt and drum, and from said drum under the lower tension roll and around the guide roll to the traversing arm guide blocks, and from thence under the upper tension roll to the arbor, for the purpose set forth. 15

4. The combination, with the laterally traversing arm 25, of the vertically movable folder carrying arm 60 flexibly secured to the arm 25, for the purpose set forth. 20

5. In a machine of the character described, a rotatable heating drum, a rota-

table strip winding spool in workable relation therewith and having flanges embracing the sides of the drum, a laterally traversing strip laying arm and means for adjusting the throw of the arm to wind a roll of different widths of tape on the same spool. 20

Signed at Bridgeport in the county of Fairfield and State of Connecticut this 20 day of Sept. A. D. 1907.

ABRAHAM L. ADAMS.

Witnesses:

JOHN B. CLAPP,

H. A. LAMB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."