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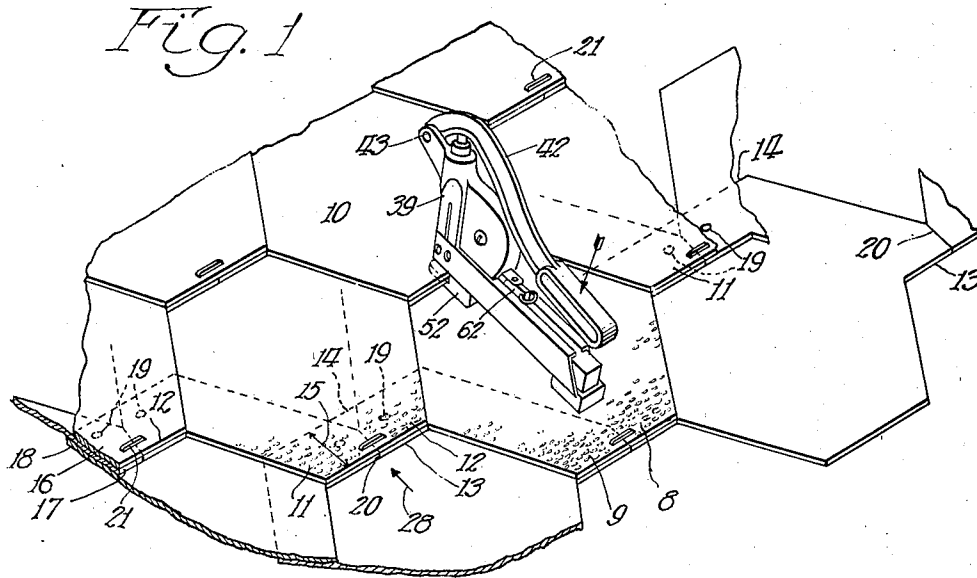
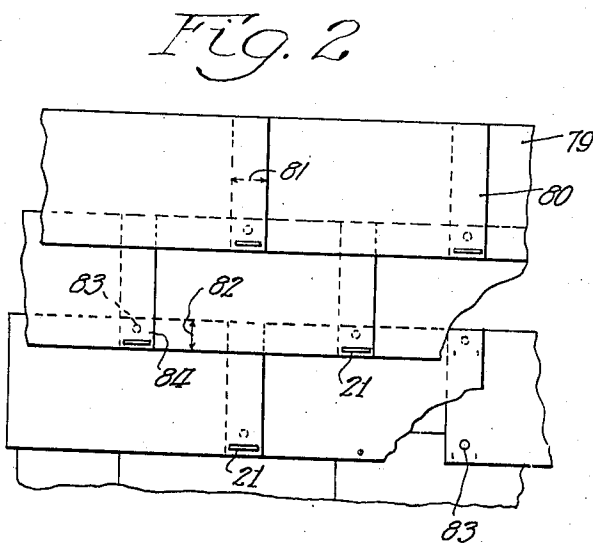
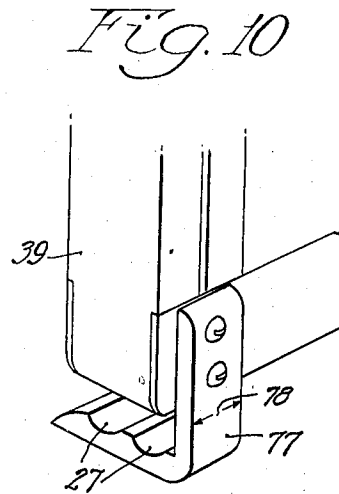
H. L. GUY

2,080,912

ROOFING FASTENER

Filed May 15, 1933

3 Sheets-Sheet 1



Inventor
Harry L. Guy
By: Roland C. Rehm
Atty.

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H. L. GUY

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3 Sheets-Sheet 2

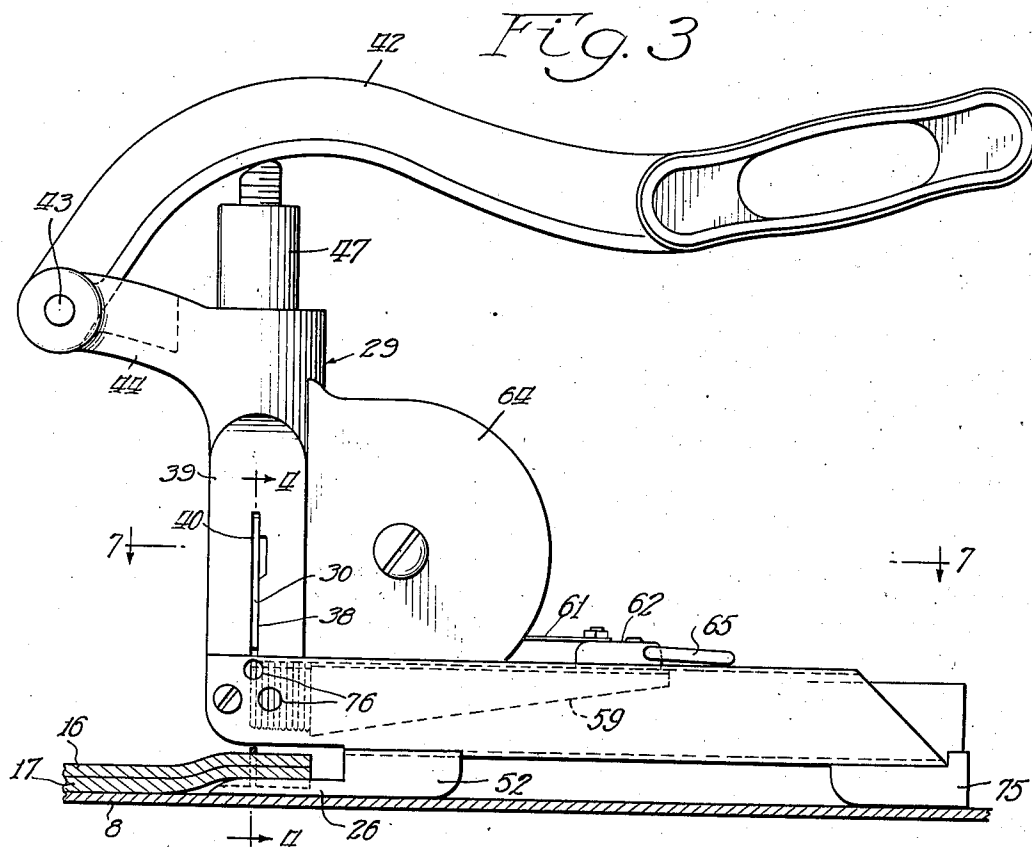
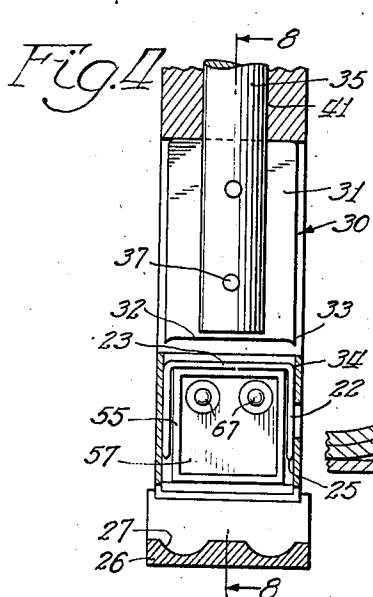
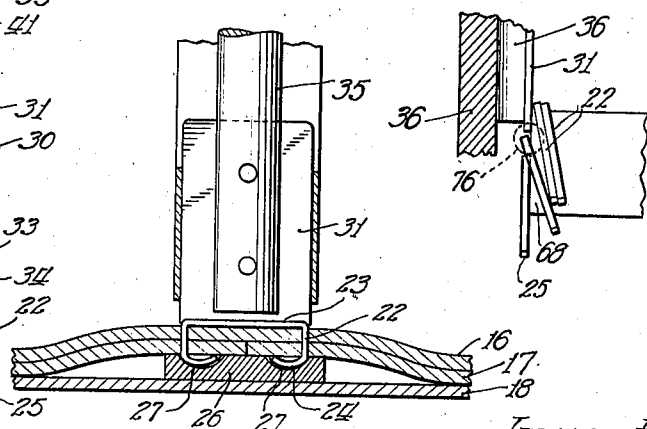


Fig. 5

Fig. 6



Inventor
 Harry L. Guy
 By: Roland C. Rehm *Att'y.*

May 18, 1937.

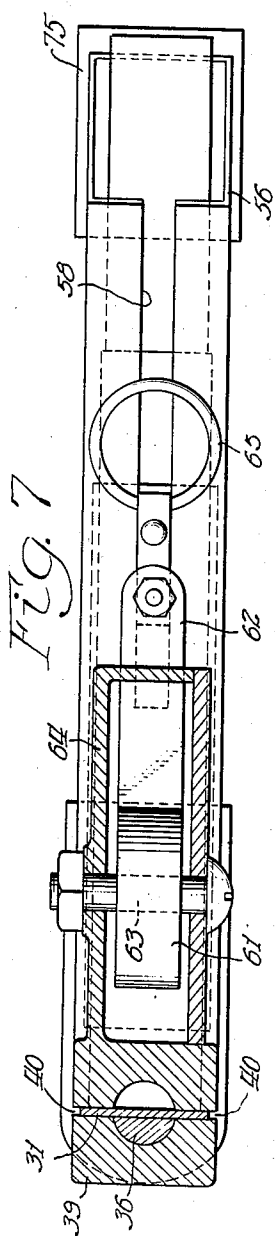
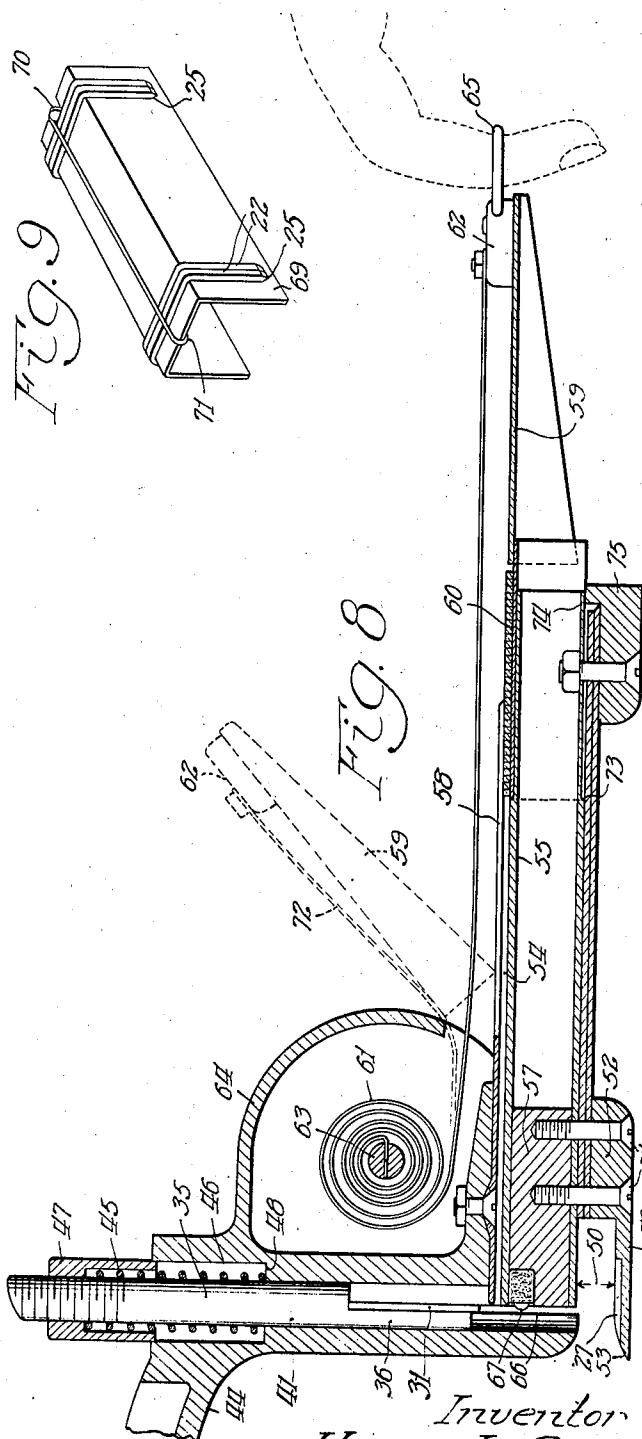
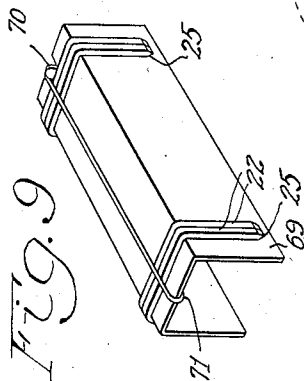
H. L. GUY

2,080,912

ROOFING FASTENER

Filed May 15, 1933

3 Sheets-Sheet 3



Inventor
Harry L. Guy
By: Roland C. Behm Atty.

UNITED STATES PATENT OFFICE

2,080,912

ROOFING FASTENER

Harry L. Guy, Chicago, Ill., assignor to Ford
Roofing Products Company, Chicago, Ill., a
corporation of Illinois

Application May 15, 1933, Serial No. 671,093

8 Claims. (Cl. 1—49)

This invention relates to roof coverings, and among other objects aims to provide practical and efficient means for improving the efficiency of the roof covering without impairing the protection against leakage.

The nature of the invention may be readily understood by reference to one illustrative embodiment thereof shown in the accompanying drawings.

In said drawings:

Fig. 1 is a perspective view of a roof covering presenting hexagonal shingle outlines together with apparatus for applying fastening means;

Fig. 2 is a plan view, somewhat diagrammatic in character showing the fastening means applied to a roof covering formed by overlapped courses of rectangular shingles arranged in a so-called "Dutch lap" relationship;

Fig. 3 is a side elevation of a fastener applying apparatus positioned to affix a fastener;

Fig. 4 is a transverse vertical section of the apparatus taken on the plane 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 4 showing the completion of the operation of applying and clinching a staple;

Fig. 6 is a diagrammatic view of the forward end of the staple driving mechanism, illustrating the arrangement to prevent jamming of two staples in the guideway;

Fig. 7 is a plan section of the apparatus taken on the plane 7—7 of Fig. 3;

Fig. 8 is a longitudinal section of the apparatus taken on the plane corresponding substantially to the plane 8—8 of Fig. 4 and showing the relation of parts during the charging of the apparatus with staples;

Fig. 9 is a perspective view of a staple cartridge or nut for delivering the plurality of staples to the apparatus; and

Fig. 10 is a perspective view of the forward end of the apparatus showing an alternative form of anvil applied thereto.

The invention is here shown embodied in roofing material made from flexible asphalt-coated roofing sheets which are usually surfaced with some colored mineral surfacing 8, such as a crushed slate. The slate surfacing is generally a substantial one by reason of the fact that in manufacture an excess of slate is applied to the adhesive asphalt coating of the roofing material and embedded therein under pressure, resulting in a slate layer of substantial depth. The applied pressure causes the uppermost particles 9 of slate, (which are flat in character and of substan-

tial area, some reaching a size of one-eighth inch square) to lie quite flat, thus presenting a hard and relatively resistant surface. Afterwards, particles of slate not adhering to or embedded in the sheet, are allowed to fall away.

Such roofing material is cut into individual shingles or into so-called shingle strips having a plurality of shingle tabs which, when laid in overlapped courses, simulate individual shingle outlines. It is desirable from the standpoint of appearance as well as of economy, to have the exposed areas of the shingles or shingle tabs as large as possible. Among other reasons this is because the more expensive rigid roofing units, such as slate, etc., can be and are laid with large areas exposed (relative to the unexposed area), thereby producing a more attractive appearance.

It has not been possible heretofore to simulate this large-shingle effect or to utilize the possible economies inherent therein, without providing some locking or fastening means to hold down the free edges of the shingles or shingle tabs to prevent their being blown up by wind to admit rain and cause leakage. Locking means whether in the form of so-called lock shingles or otherwise not only affect the appearance or shape of the shingles or distort the outline into some unattractive, unconventional shape which not only betray the locked, flexible shingle, but result in buckling the roofing or producing bulges or wrinkles which prevent the roofing from lying flat. This effect is magnified in the heavier grades of roofing material to such an extent that it has practically eliminated the interlocking feature from this type of shingle notwithstanding its advantages.

Moreover whatever form of lock shingle or locking means is employed, the desired effect of the shingle outline is completely lost, and no satisfactory large-shingle roof surface has been possible either in simulation of the effects produced by the more expensive rigid shingle or otherwise.

According to the present invention flexible shingles or strips having conventional large-shingle outlines may be fastened down by means which leave the roofing intact as regards leakage, which involve no alteration of the shingle outline, and which cause the shingles to lie flat without buckles or wrinkles both in the light and heavy grades of roofing material. The invention has been illustrated in the drawings in connection with a few conventional shingle outlines.

In Fig. 1 the roof surface is formed by so-called hexagon shingles 10 (each having a projecting

semi-hexagonal tab 11 laid in overlapping courses with the ends 12 of the shingle tabs of one course registering with the bases 13 of the recesses between the shingle tabs and covering the joints between the shingles, of the next underlying course. The result produced is a hexagonal shingle outline which of course may be considerably varied not only as to size but as to proportions of the sides of the shingle outline. As herein shown the depth of each shingle 10 is made great enough so that the upper edge 14 of the shingles in a given course underlaps by the distance 15 (which in the present instance is about $3\frac{1}{2}$ "') the bases 13 of the second overlying course of strips. In the present design of shingle the inclined top edges of the shingles, underlap the lower inclined edges of the shingle tabs of the next overlying course by an adequate amount, in this case about $2\frac{1}{2}$ ". Thus at the ends of each of the tabs 11 and for a distance 15 above the same, three thicknesses 16, 17 and 18 of roofing material occur (see Fig. 5). The shingles are here shown nailed as at 19 by nails or the equivalent which underlie the tabs 11 but pass through the subjacent layers 17 and 18 of the roofing on opposite sides of the joints 20 between the shingle units. The heads of the nails or other appropriate fastening means are therefore concealed and protected. The free ends 12 of the shingle tabs are fastened down in the region of the nails by fasteners 21, here shown in the form of metal staples or clips which straddle the joints 20 and penetrate the upper two thicknesses 16 and 17 of the roofing but are independent of and do not penetrate the underlying thickness 18. Thus the free edges of the shingle tabs are fastened down so as to lie perfectly flat and without penetrating the bottom layer of roofing material, thus leaving the latter imperforate to protect against leakage at this point. Moreover the fastener is independent of the lower layer of roofing material and the attaching nails and their location. It is possible therefore to locate the attaching nails without regard to the fasteners. Where there are spaced roof boards the nail cannot always be placed in a definite place on the shingle but must be located where it can strike a roof board.

Preferably the fastener is made of some rust-proof material such as copper wire of square or round section or rust-proof plated soft steel wire. Preferably the plating is of such a character that the exposed portion of the fastener will harmonize with the roofing and be inconspicuous.

The fastening of slate or other mineral surfaced roofing by a staple of this character presents a substantial problem not met in fastening other materials. The hard particles of slate tend to deflect or upset the staple prongs 22. Even greater distortion of the staple occurs when an attempt is made to affix it with a sudden or percussive blow: not only will the prongs bend but the staple head (i. e. the transverse portion 23 connecting the prongs) may be bent and buckled, thus deflecting the prongs (even if they be not bent) so that they could not be satisfactorily clinched after passing through the upper layers of roofing. The need of curling or bending the staple prongs as at 24 (Fig. 5) so that they will not penetrate the bottom thickness of roofing, makes it important that the prongs penetrate the roofing without deflection.

The illustrative staple and the method of applying it produces satisfactory results. The staple prongs are made adequately stiff by employing a wire of round or square cross section so that

the prongs will be stiff in all directions, as is necessary because of the variable character of the deflecting forces caused by the slate surfacing. The present staples are made of hard copper wire of approximately .055 inch square cross section. The head 23 of the staple is approximately an inch long so that it will properly straddle joints between shingle units, and the prongs are about three-quarters of an inch terminating in chisel or other appropriate points 25.

The staple is preferably applied by pressing or forcing (as distinguished from a percussive or sudden blow) its prongs through the upper layers of roofing against an anvil interposed between the upper layers and the bottom layer of roofing to prevent penetration of the latter by the prongs and to upset or bend the surplus prong length to clinch the staple and allow the roofing to lie flat in the region of attachment. While the speed of the driving force may be considerably varied, depending upon the extent of resistance encountered, a sudden or percussive driving blow should be avoided, since even a slight or momentary resistance is thereby greatly magnified and either distorts the staple or deflects the prongs so that proper application or clinching is impossible. Preferably the means for applying the driving or affixing force should permit variation of the speed of the force in accordance with the resistance encountered—thus if a staple prong squarely impinge against a large particle of slate the force may be relaxed to give the point of the prong an opportunity to slide off the slate particle without being bent.

As here shown the anvil 26 is provided with curved die surfaces 27 arranged to bend or curl the prongs inwardly in the plane of the staple. This bending is facilitated by the circumstance that the edge of the chisel point 25 on the prongs lies transversely of the plane of the staple and will thus readily slide over the curved die surface and not dig into it. To facilitate withdrawal of the anvil 26 the curved die surfaces 27 are made in the form of open ended grooves (see Figs. 8 and 10) extending in the direction in which the anvil is inserted under the roofing (as indicated by the arrow 28, Fig. 1), thereby permitting it to be withdrawn easily after the clinching operation, without interference by the bent over portions 24 of the staple.

The means for applying gradual and variable force to affix the staples is here shown (see Figs. 3 to 10) in the form of a hand operated apparatus 29 embodying a device 30 for driving the staple to penetrate the roofing material and the anvil 26 for bending over the staple prongs as above described. The staple driving device 30 comprises a vertically reciprocating blade 31 in this instance of the thickness of the staple wire and having its driving end 32 shaped to conform with the contour of the top 23 of the staple and including curved ends 33 which fit and seat the shoulders 34 of the staple and provide support against bending or deflection while the staple is being driven. The blade 31 is reciprocated and reinforced by a cylindrical rod 35 whose lower end 36 is cut to semi-circular section, the flat face thereof bearing against the front of the blade and connected thereto by appropriate fastening means 37 (see Figs. 4 and 8). Thus the rear face 38 of the blade is flat throughout and presents no obstruction which would interfere with the feeding or driving of staples as presently described. The blade 31 is guided in the body 39 of the apparatus not only by the guideways 40 75

which are in the form of open slots but by the cylindrical bore 41 in the body through which the rod 35 passes.

The blade is periodically depressed to drive a fastener, by an operating lever 42 hinged at 43 to a projecting bracket 44 (in this case integral with the body of the machine) which lever engages the upper end of rod 35. The blade is normally held in elevated position by a spring 45 seated in a recess 46 surrounding the rod and bearing against an adjustable nut 47 on rod 35. The distance to which the blade may be depressed is limited by engagement of the lower end of the nut 47 with the bottom 48 of the recess. The nut therefore permits an adjustment of the travel of the blade to insure complete driving of the staple into the roofing but limits its travel so as to prevent injury to the roofing by driving the blade down too far. Adjustment is generally required where the thickness of roofing to be penetrated by the staple, varies.

The anvil 26 is here shown in the form of a projecting, relatively thin blade 49 carried by the apparatus and spaced a distance 50 therefrom to permit the thicknesses of roofing to be secured, to be inserted between the anvil and the staple driving portion of the apparatus. The resistance offered by the staple to penetration of the roofing and the resistance set up upon the clinching or curling of staple prongs, is therefore transmitted to and carried by the anvil which prevents the apparatus from being raised and insures an adequately firm clinching of the staple. The anvil is advantageously removably connected to the apparatus (by machine screws 51, see Fig. 8) to permit replacement by another anvil in the event the apparatus is used with roofing having a materially different thickness. The amount of spacing is determined by the thickness 52 of the base portion of the anvil. The base portion is set back sufficiently from the staple to permit the latter to be affixed an adequate distance above the edge of the shingle. The forward edge 53 of the anvil blade is beveled so as to facilitate insertion underneath the roofing material.

The apparatus is here shown provided with a staple magazine by means of which a succession of staples are automatically supplied to the driving blade 31 upon successive full reciprocations thereof. The staple magazine is here shown comprising a raceway 54 extending transversely of the line of reciprocation of the blade (in this case horizontally) from a point below the upper position of the blade. The raceway is here formed by an inner tube 55 of rectangular cross section surrounded by walls 56 spaced therefrom a distance only slightly greater than the thickness of the staple wire. The forward end of tube 55 passes over block 57 by which it is anchored in place and to which it is connected by screws 51. The forward ends of the side walls 56 are likewise connected to the staple driving structure 39 (see Fig. 3). The outer walls extend over the top of the tube (see Fig. 6) but terminate in spaced relation to provide a slot 58 for a follower actuator. A retractable follower 59 whose contour is substantially that of a staple is adapted to slide into the raceway behind a column 60 of staples to move the staples into affixing position and to hold them immovably together so that they will not be disturbed during the handling of the apparatus. The raceway terminates at the plane of the rear face 32 of the blade. The follower is in

the present instance resiliently urged forward by means in the form of a coiled clock spring 61, one end of which is connected with the actuator 62 which travels in slot 58. The other end of the spring is anchored in a transversely extending shaft 63 held against rotation in the sides of the housing 64 which surround the spring. The spring is given sufficient tension (by an appropriate rotation of shaft 63) to maintain adequate pressure on the column 60 of staples to effect the feeding of the entire column and yet free enough to allow it to be drawn out (see Fig. 8) so as to withdraw the follower 59 completely from the raceway in order to introduce an additional supply of staples. For the latter purpose a ring 65 is connected with the actuator 62 to facilitate withdrawal of the follower.

The tension of the follower spring forces the leading staple against the opposite face 66 of the guideway 40 and into alignment with the blade 31. Depression of the operating handle then causes the blade to engage the staple and drive it downwardly through the roofing material and against the anvil, the movement continuing so as to curve or clinch the staple prongs (as at 24, Fig. 5) until the nut 47 arrests movement by engagement with the surface 48 (see Fig. 8). During such operation the blade itself closes the raceway and prevents further advance of the staples. Upon raising of the blade by spring 45 to a position above the raceway, the next staple is forced into affixing position in the guideway 40.

Accidental dropping of the leading staple (particularly when tension of the spring 61 is relaxed by withdrawal of the follower) is prevented by a catch carried in block 57 in the form of a pair of spring pressed check balls 67 which project into the guideway 40. These catches are standard devices on the market and need not be more fully described. They are forced to recede from the guideway 40 by engagement of the staple head under the positive force of the blade 31. These catches assist in preventing two staple heads from being forced into the guideway 40 in position one above the other. While it would not be possible even without the catches to force the prongs of two staples completely into the guideway, it would be possible by tilting the second staple to cause its head 23 to lie in the guideway above the leading staple (if the latter were depressed). To insure against jamming of staples in the guideway in the event the head of one became lodged one above the other (see Fig. 6), the lower portion of the rear side of the guideway 40 is open to the rear as at 68 to allow the prongs of the second staple to swing back and to be ejected in such swing back position (see Fig. 6). The second staple will therefore not become jammed and can be ejected merely by depressing the operating handle.

Staples may advantageously be supplied in cartridges consisting of a holder 69 having approximately the inner dimensions of the staple and which is straddled by a column of staples. The holder may advantageously be made of thin sheet metal with a bendable lug 70 struck up from one end to hold the staples against escape. A rubber band 71 or some other appropriate means may be employed for encircling the column of staples to retain them on the holder. To charge the magazine with staples it is merely necessary first to withdraw the follower 59 which may be raised above the magazine and allowed temporarily to assume the dotted line position 72 (see

Fig. 8). A cartridge or holder 69 (with the rubber band removed and the lug 70 bent down) is then inserted into the raceway with its end against the shoulder 73 of the inner tube 55 which is offset at its rear end 74 to receive the holder and allow it to be positioned with its surfaces flush with the forward end of the tube beyond the shoulder. The follower 59 is then restored to position and shoves the column of staples from the holder into the raceway. The empty holder may then be withdrawn. When square wire staples are employed no means are necessary to prevent their being wedged in the raceway, since their adjacent faces are flat and square with the raceway. When round wire staples are employed, their curved adjacent faces tend to wedge one staple above the other under pressure of the follower. This may be avoided by applying a small amount of solder or other adhesive to hold the staples in alignment in the raceway. The driving blade readily severs the bond between the staples.

To compensate for elevation of the forward end by the anvil, a block 75 is attached at the rear end of the apparatus to raise that end. The block also serves to maintain the spacing of the walls of the raceway which are bolted thereto.

Preferably openings 76 are made in the side walls 56 of the magazine adjacent the forward end thereof so that the column of fasteners may be observed and so that it may readily be determined when the magazine is empty. Preferably one of such openings is made to register with the line of travel of the staple driver 30 to permit observation of its functioning particularly with reference to whether it squarely engages the staple heads.

Where it is desired to apply staples to staggered courses of the ordinary arrangement of square butt or other shingles wherein the weather portions of the individual shingles are spaced hardly more than one-half inch, it is desirable to employ a narrow anvil which may be inserted in the slot between adjacent shingle tabs (Fig. 10). For that purpose an anvil 77 whose transverse width 78 is less than the distance between the shingle tabs may be affixed to the side of the unit instead of behind the attaching position as the device shown in Fig. 8. This permits the anvil to be inserted laterally into the slot and the staple to be attached in a vertical instead of a transverse position as indicated in Figs. 1 and 2.

In Fig. 2 is shown a roof surfacing comprising rectangular shingles 79 arranged in "Dutch lap" pattern. Such a pattern is formed by overlapping each course of shingles at their side edges as at 80 by a distance 81 which is conventionally about 2 or 2½". The lower edge of each overlying course overlaps an underlying course by the distance 82 which is conventionally about 2 or 2½". Fastening nails 83 occur at the side overlaps 80 and pass through the lower side lap and also through the upper portion of the next underlying course of shingles. The heads of the nails are covered by the overlapping side margin 84 of each shingle. The fasteners 21 penetrate the upper thicknesses of roofing, that is, the overlapping side margins 80 but not the bottom thickness and are preferably located closely adjacent the fastening nails 83. Thus the free overlying corners of each shingle is fastened to the underlying shingle and that in turn is firmly held down by the closely adjacent fastening nail 83.

Many other, in fact most arrangements of shingles or shingle units are susceptible of fastening as aforesaid. Illustration thereof is unnecessary. It is apparent that the shingles may be made of substantial size without increasing the conventional overlap and still be securely held in flat relationship against leakage. No alteration in the conventional design or manner of laying the shingles is required.

Obviously the invention is not limited to details of the illustrative embodiments thereof herein shown and described. These may be variously modified. Moreover it is not indispensable that all of the features be used conjointly, since various features may be employed to advantage in different combinations or subcombinations.

This application is a continuation in part of my co-pending application Serial No. 581,565 filed December 17, 1931.

Having described my invention, I claim:

1. Apparatus for fastening the lower exposed edge of a shingle to the next underlying course comprising in combination a magazine for holding a plurality of staples having bendable prongs, a driving device for engaging the top of the fastening element and forcing it through the roofing material, a guide for guiding the fastening elements toward the roofing, said guide being arranged to leave the ends of the prongs free to deflect in order to pass a particle of mineral surfacing on the roofing, an anvil connected to said apparatus having a projecting anvil blade opposite the line of staple travel and adapted to be inserted underneath the underlying course to upset the staple underneath said underlying course and to prevent it from penetrating any lower course of shingles, an operating handle for applying a slow pressure to said driving device to allow an opportunity for the aforesaid deflection of the staple prongs in penetrating the mineral surfacing, and a feeding device for feeding staples successively to said driving device.

2. Apparatus for fastening shingle units made of relatively thick and soft prepared asphalt roofing comprising in combination a magazine for holding a plurality of headed fastening elements having bendable prongs, a reciprocable driving device for engaging the head of the fastening element and forcing it through the roofing material, a guide for said driving device, an anvil connected to said apparatus having a projecting anvil blade opposite the line of fastener travel and adapted to be inserted underneath a shingle to upset the fastener underneath said shingle and to prevent it from penetrating any lower shingles, adjustable means for limiting the advance of said driving device to protect the shingles from damage thereby and to permit adjustment of said advance for variations in thickness of the shingles, an operating handle for applying a slow pressure to said driving device so that the fastener may be pressed slowly through the shingle, and a feeding device for feeding fasteners successively to said driving device.

3. Apparatus for fastening shingle units surfaced with hard mineral granules comprising in combination a magazine for holding a plurality of wire staples of substantially rectangular shape, said magazine having therein a raceway corresponding in shape to said staples, a resilient follower in said raceway to press against the staples to hold them together in a column, said staples presenting flat front and rear faces perpendicular to the raceway thereby eliminating any tend-

ency of one staple to ride above another and jam the raceway, means including a staple driver movable transversely across the end of the raceway to drive one staple at a time and to allow the staple prongs an opportunity to shift slightly if pieces of hard roofing surfacing material be encountered, an anvil fixed to the apparatus and having a blade spaced therefrom a distance equal to the thickness of the material to be shaped together, and an operating member for moving the staple driver relatively slowly to force a staple through the material.

4. Apparatus for fastening shingle units made of mineral surfaced prepared roofing comprising in combination a frame carrying a vertically reciprocable staple driving device for engaging a double pronged staple and forcing it through the shingle units, means carried by said frame for presenting a staple to said driving device when the latter is in elevated position, an anvil blade having a beveled forward end rigidly carried at the bottom of said frame and projecting forwardly and transversely of the plane of the staple into register with the line of travel of said staple driving device and having on its upper face a pair of curved staple prong bending surfaces arranged transversely of said blade in alignment with the staple prongs and open to the forward end of the blade to bend the prongs in the plane of the staple, said blade being spaced below said staple driving device a distance equivalent to the thickness of a plurality of shingle units and being adapted to be slipped under the said shingles by a forward movement of said apparatus, an operating handle pivoted at the forward end of said frame in front of the line of travel of said staple driving device for advancing the latter to apply a staple, said handle extending to the rear of said staple driving device and longitudinally of said anvil blade, whereby the apparatus may be positioned by said handle and said staple driving device operated by a downward movement of said handle.

5. Apparatus for fastening the lower edges of mineral surfaced asphalt shingle units or the like to an underlying course of shingle units comprising in combination a magazine for holding a plurality of pronged fasteners made of wire of substantially square cross section, a fastener driving device for engaging the fastener and causing the same to penetrate the roofing, said fasteners having prongs with a minimum thickness of about five hundredths of an inch so as to be relatively stiff in all directions against substantial deformation under the pressure of the driving device, said prongs being adapted to bend slightly or deflect in penetrating the roofing in order to pass the particles of mineral surfacing on the roofing, an anvil rigidly connected to the apparatus and having a thin projecting anvil blade spaced from the bottom of the apparatus by a distance substantially equivalent to a plurality of thicknesses of shingle units and having a clinching cavity open to the forward edge of the anvil for upsetting the fastener, said anvil being located opposite the line of travel of the driving device, said anvil being adapted to be inserted under the upper two thicknesses of previously laid shingle units to upset the fastener prongs after they have penetrated the upper two thicknesses and to prevent their penetration of any underlying shingle units, a rearwardly extending operating handle for positioning the apparatus and exerting a controlled slow driving force on said driving device so that the fastener

prongs may be forced slowly through the shingles without premature bending thereof, and means for feeding fasteners successively to said driving device.

6. Apparatus for fastening shingle units made of mineral surfaced prepared roofing comprising in combination a frame carrying a vertically reciprocable staple driving device for engaging a double pronged staple and forcing it through the shingle units, means carried by said frame for presenting a staple to said driving device when the latter is in elevated position, an anvil blade rigidly connected to the bottom of said frame, the forward extremity of said blade being relatively thin for insertion under shingle units laid on a roof and being spaced below the bottom of said frame a fixed distance sufficient to receive the thicknesses of roofing to be stapled together, the operating portions of said apparatus being arranged above the plane of the anvil bottom to permit operation of the apparatus while resting on the anvil, the upper surface of said anvil having a pair of curved staple prong bending surfaces which extend to and are open at the forward end of said anvil to permit the anvil to be readily withdrawn after a stapling operation, an operating handle pivoted to said frame in front of the line of travel of said staple driving device and extending to the rear thereof and adapted when manually depressed to advance said staple driving device slowly and thereby to press a staple through the shingle units, and adjustable means for preventing excessive advance of said staple driving device to protect the shingle units against damage thereby.

7. Apparatus for fastening shingle units made of mineral surfaced prepared roofing comprising in combination a frame carrying a vertically reciprocable staple driving device for engaging a double pronged staple and forcing it through the shingle units, means carried by said frame for presenting a staple to said driving device when the latter is in elevated position, an anvil blade at the bottom of said frame, said blade being relatively thin for insertion under shingle units laid in a roof and being spaced below the bottom of said frame a fixed distance sufficient to receive the thicknesses of roofing to be stapled together, the operating portions of said apparatus being arranged above the plane of the anvil bottom to permit operation of the apparatus while resting on the anvil, an operating handle pivoted to said frame in front of the line of travel of said staple driving device and extending to the rear thereof and adapted when manually depressed to advance said staple driving device slowly and thereby to press a staple through the shingle units, and means for rigidly connecting said anvil blade a fixed distance below said frame to prevent increase in the distance separating said anvil and frame during the driving and upsetting of a staple.

8. Apparatus for fastening shingle units made of mineral surfaced prepared roofing comprising in combination a frame carrying a vertically reciprocable staple driving device for engaging a double pronged staple and forcing it through the shingle units, a magazine having a staple raceway arranged transverse to the direction of travel of said staple driving device, a resilient follower in said raceway for pressing a column of staples toward said staple driving device, an anvil blade at the bottom of said frame, said blade being relatively thin for insertion under shingle units

laid in a roof and being spaced below the bottom of said frame a fixed distance sufficient to receive the thicknesses of roofing to be stapled together, the operating portions of said apparatus 5 being arranged above the plane of the anvil bottom to permit operation of the apparatus while resting on the anvil, an operating handle pivoted to said frame in front of the line of travel of said staple driving device and extending to the rear 10 thereof and operatively connected with said staple driving device at an intermediate point, said handle adapted when manually depressed to advance said staple driving device slowly and thereby to press a staple through the shingle units, and means for rigidly connecting said anvil blade 5 a fixed distance below said frame to prevent increase in the distance separating said anvil and frame during the driving and upsetting of a staple.

HARRY L. GUY. 10